

THE URBAN GARDENS BETWEEN GREEN SPACE AND FOOD UTILITY

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The lands within the build-up areas of the rural or urban areas are currently under the siege of residential, industrial, commercial, and agricultural employment. At present there is a larger interest in strengthening and increasing the local food production as an attempt to diminish the negative effect triggered by population growth, global climate changes or the volatility of food prices. Under the circumstances, the researchers' attention has been drawn to a long overdue resource neglected by microeconomics, namely the rural and urban gardens. In the rural environment, the gardens are those areas located in the immediate proximity of the household buildings and intended to produce agricultural products for own consumption. They also include a sort of perception related to a supplementary system of alimentary production on a small scale managed by the members of the family. This system is constituted of a variety of species of plants and animals which mirrors the natural ecosystem.

The paper has a paralleling approach of the agriculture's ingress into the urban spaces through the multifunctional employment of the greenfield sites. Certainly, there is no question about urban agricultural replacing the traditional one as no city or town will ever be able to produce alone its entire necessary food. Yet, the urban gardens are a reality that should be seen as such since they can have a key role in the territorial land planning and designing.

The value of agriculture from the urban spaces is first supported by their utility as an education and involvement tool within the community and, also backed by the fact that the products obtained offer the people involved in the process that unique sense of work value and the cultural continuity of a certain type of tradition as well.

Keywords: urban gardens, food security, urban agriculture

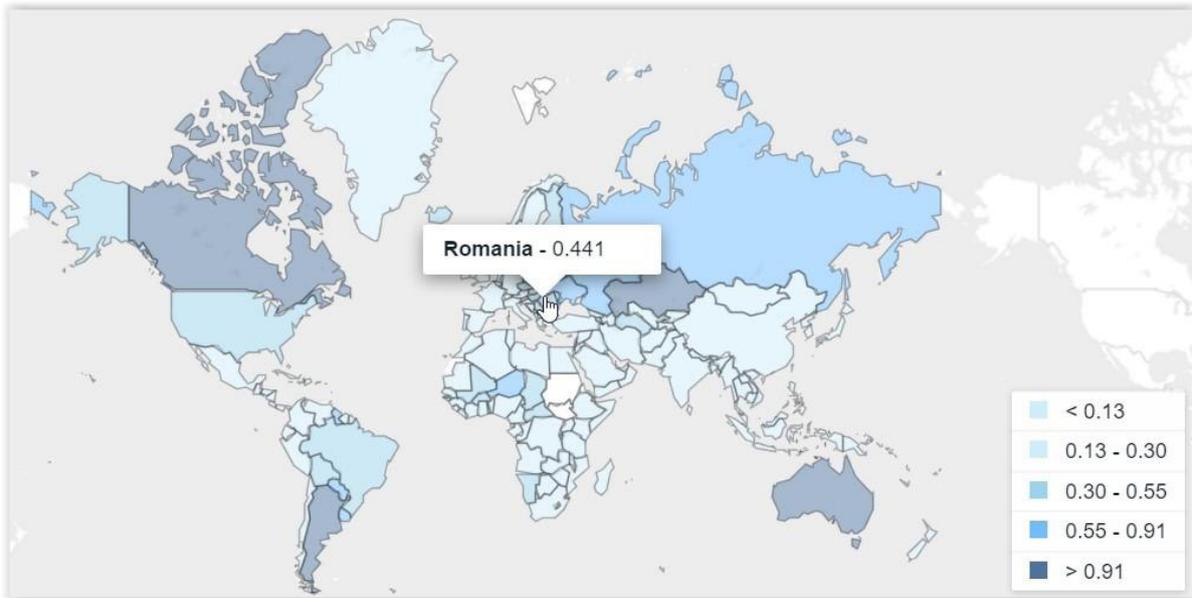
1. Introduction

The European Union is one of the most urbanized areas in the world as over 70% of Europe's citizens live in a form of municipality, suburbs or similar urban area (EUROSTAT). According to ONU predictions, this figure will increase to 80% by 2050. More than 70% of all workplaces in Europe are located in urban areas, while municipalities or cities host over 80% of the people aged between 25 and 64 years old who are college-educated as well (UE, 2016). For the first time in history, more precisely since 2008 the world urban population exceeded in number the rural population. This urbanization process highlights the very problems that have always been since the beginning, such as urban poverty, good insecurity and social or supply chains vulnerabilities. As cities or towns expand, the food needs of families

are also growing and the urban consumers get more "addicted" to food purchasing. Given that any price or income variation is directly turned into a decrease of food purchasing, the degree of food security is quite fragile and increasingly depending on the possibilities of local supply. On the other hand, in the context of a growing world population, the very problem of food access is increasingly harder to manage, particularly in the less economically and socially disadvantaged countries, where agricultural lands are in low numbers due to the harsh terrain or climate, especially the low fertility of the lands (Map 1). In addition, there is worth mentioning the undeniable certainty of climate change and its impact upon the environment and the pressure on the lands located at the outskirts of metropolises and cities, as well as the stress exercised on the residential buildings or industrial parks.

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Map 1. The distribution of arable land on Earth (ha/person)



Source: FAO, 2016

Given that food demand is continually growing and the agricultural lands are decreasing, it is only natural to explore solutions for supporting the food needs of a growing population.

The present study aims to analyze the development potential of urban gardens in Romania. The starting point of the analysis relies on the hypothesis of their structure on two levels: a) the possibility of introducing agriculture in the urban policies; b) green infrastructure and the natural capital management of cities.

2. The place of urban gardens in the metropolitan green infrastructure

The cities are generally defined by a mosaic of space uses (Puertas et al. 2014, Salvati 2014). The development of urban centres is influenced by a wide range of factors, such as natural conditions, metropolitan demographic and economic evolution, and manner of urban planning. Thus, cities are intricate systems generating socioeconomic patterns (Amorim et al. 2014) which project themselves into the cityscape through functional zonifications of the territory which, in turn, seek meeting the needs of the city from a broad spectrum of views: socially, economically, educationally, culturally, environmentally, not to mention the

means of transportation, services and leisure (Jaeger et al. 2010). The distribution of green spaces in the urban area is closely connected to their functional zonification, the establishment of new neighbourhoods, and the changes that have occurred over time under the pressure of politics, economy, or social changes.

In the European Urban Atlas (2011), the green space comprises public surfaces addressing recreational and leisure activities, such as: gardens, zoo parks, botanical gardens, parks, natural suburban areas and forests, green bordering areas managed and used for recreational purposes. While documenting the present analysis, a broad spectrum of opinions expressed by landscape specialists has been identified. They all reveal a high degree of specialization which is the current hallmark of the domain. Thus, Bell et al. (2007) establishes the differences between parks and gardens: natural and semi-natural spaces; green corridors and so on, while Swanwick et al. (2003) makes an inventory of green spaces which is based on certain groups and sub-groups: green spaces for leisure, functional green spaces, semi-natural habitats and linear green spaces.

The European cities are vastly diverse due primarily to the natural conditions of the urban

site (geomorphological, climate, and biological factors are to be considered), historical context where they have developed and social needs and demands as well. Further, the social initiatives, technological progress, awareness of environmental problems, urban creativity and citizens' involvement lead to the emergence of novel types of green spaces inside the cities (community gardens, roof gardens, rain gardens, bio retention systems, sustainable drainage and collection systems, as well as mobile gardens or other forms of unconventional gardening as guerrilla gardening, for instance).

Although the importance of individual gardens (primarily rural gardens) is often underlined due to its historical and cultural role over time (Turner, 2011), (Gross and Lane, 2007), one of the possible causes for the increased interest in urban gardening lies, most likely, in the fact that it is perceived as an antidote for the crowded vulnerabilities of the modern Western society. Particularly speaking, the metropolitan inhabitants acknowledge a series of anxieties and risks caused by changes of lifestyle which, in turn, are generated by the technological development, globalization or environmental degradation (Bhatti și Biserica, 2004). From a sociological perspective, the garden becomes the place where the individual can have management and control over the social relations and reconnect with the semi-lost natural environment, at a certain point between the social institutions and the political system. Economically speaking, the urban gardens go through a **wide range of altitudes**, some determined by the food scarcity as a result of 2009 crisis, others are replicas of consumerism (Matei, Chiriță, 2018) or merely provide solutions to the increasing congestion of cities by expanding the green spaces (Marta et al, 2019).

The development magnitude of urban gardens caused the foundation of The Urban Agriculture Network in 1992, established under the umbrella of the Development Programme of the United Nations and which comprises organizations, institutions, persons, communities and administrations concerned with the food production, economic growth, and increase of the environmental quality in cities and urban areas.

3. Urban gardens and/ or green spaces?

From a conceptual perspective, the durable development is supported by three pillars (economy, society, and environment) balanced and coordinated in a manner that allows and pursues economic growth of each geographical territory, either urban or rural. On the other hand, the city is a living organism under constant change. The urban gentrification, metropolization, urban atomization are all key factors that determine the emergence of a tenacious resistance embraced by citizens for keeping and expanding the land areas which can meet and fulfill their need of natural environment, greenery, and face-to-face interaction within the community. The urbanists' vision of the green space is based on the correspondence of green space with a sequence of the urban masterfully exploited by the landscape specialists, horticulturists, foresters or planning engineers who aim to create a better cityscape and leisure places, as well as an improved metropolitan life comfort. On this line, the green spaces do not include — *stricto sensu* — the spaces with agricultural purposes. In Romania of 2017, the National Institute of Statistics provides data on the country's green spaces landscaped as parks, public gardens, squares, parcels of fruit trees and flowers, forests, graveyards, terrains of the sports grounds and bases located within the perimeters of building areas in localities, in other words, the public green spaces. Obviously, the statistics do not record the areas occupied by lands containing green houses, plant nurseries, vegetable gardens or agricultural lands. However, from 2010 till now a new category of green space has emerged in Romania, namely, the urban gardens. Whether it concerns community gardens, school gardens or social gardens, they all speak about the existence of some spaces which have always been part of the Romanian metropolitan profile. Also, it is quite true that it is rather difficult to establish, methodologically speaking, the limits between the urban gardens and the peri-urban ones due to the fact that expansion of the Romanian big

cities is generally done at the expense of the agricultural areas, forests or peripheral lands. Although there is a globally well-documented discussion on the concepts of peri-urban and interurban, in Romania the statistics of the General Agricultural Directory (2010) and those of the National Institute of Statistics provide data for the categories of urban and rural only, without registering differently the peri-urban sector. Therefore, it is challenging finding out which of the metropolitan green spaces (as in the current greenery) can be regarded as gardens used for agricultural purposes within the city. All small and medium towns have urban neighbourhoods which have admirably preserved and protected the traditional structures of the vegetables gardens, small orchards or bee hives around houses. These gardens often include greenhouses, solar-powered greenhouses (present in great numbers in towns such as Dorohoi, Tg. Frumos, Tecuci, etc.) or shelters for animal husbandry. The transition between these two forms is met in the neighbourhoods located at the outskirts of the city/ town. A completely novel approach and dimension, rediscovered and redefined urban habits and traditions are represented also by the structures enclosed by the local administration around building areas, in the build-up areas of the city, where groups of persons can farm in small areas, such as community gardens.

The conversion to residential of the terrains (urban or rural) decreases the occupancy rate of land through construction as well, in other words the gardens are replaced by green spaces similar to woodland edges or lines of trees and shrubs, while the concrete courtyards are replaced by lawns landscaped with floral and shrub arrangements next to vegetable beds. This type of landscape is starting to become a common feature of the urban-rural created at the cost of the pure urban where the green spaces were suppressed by the presence of parking lots, garages or different storage facilities.

4. The urban agriculture in Romania — niche segment or historical recognition?

The urban agriculture is a (dynamic) concept containing a variety of agricultural systems, from the subsistence production and product processing in the household to a completely commercialized agriculture. It comprises cultivation, processing and distribution practices of the food to the urban areas or around them and it directly refers to agriculture, gardening and horticulture, animal husbandry, aquaculture, forestry and urban beekeeping. The urban agriculture is deeply rooted in the social, economic and cultural life of the city and defined as such when it is present in the peri-urban areas, although its forms may have different features.

From a methodological point of view, within the urban agriculture there are operated certain distinctions between various forms of gardening and agricultural practices. In this respect we are dealing with urban gardening and farming.

The urban gardening includes activities of low economic impact and higher weight on leisure, reduced stress and social interaction. Regardless of the motive behind, the activities are operated on a low scale and, therefore, easier to manage and implement and, generally, based on a participative approach. Depending on the purpose of their existence, size of the production obtained and their destination, the urban gardens can be grouped as it follows (Table 1):

- Gardens based on individual production (family gardens and allotment gardens);
- Gardens based on collective schemes and serving a social purpose (educational gardens, therapeutic gardens, and community gardens).

The urban farms refer to business models made for providing local or regional agricultural goods and/ or services, where the urban location or the metropolitan surrounding area offers easy access to the city's infrastructure (markets, means of transportation, etc.) and its food demands. The farms which have adjusted their business strategies and have an interurban or peri-urban location can be classified, according to their type

of activity, into farms focused on the production of food and/ or other different types of agricultural products (fibers, cosmetics), while other farms offer opportunities for recreational and leisure

activities, educational exercises, therapeutic or social activities as well. (Table 1).

Table 1. The typology of the urban agriculture (Szalók et al, 2019) adjusted in accordance with Cost Action Urban Agriculture Europe

Urban Garden		Urban Farm	
Type	Features	Type	Features
Allotment Gardens	Subdivided gardens; rented parcels based on a rent contract; Highly formalized and often managed by an organization/ association.	Local Farms and Food Goods	Products for local markets; direct relations with consumers; non-alimentary production included (cosmetics, fibers).
Family Gardens	Production of non-commercial food products for household use and consumption; institutions or organizations are not involved in this case.	Experimental Farms	Testing of new agricultural technologies, production methods, varieties and breeds or methods of social and economic interaction with their urban environment.
Educational Gardens	Teaching tools regarding the food production, processing, and consumption; raising public awareness and spreading ideas.	Educational Farms	Pedagogical tool; education programmes or short-term activities addressed to schools.
Community Gardens	It is based on bottom-up initiatives and collective trends; the food production and supply of social functions to and for the community.	Recreational and Leisure Farms	Providing leisure opportunities closely connected to agricultural activities.
Social Gardens	Approaching social problems; promoting the integration of persons facing social exclusion risks.	Social Farms	Approaching social problems; promoting the rehabilitation of the disadvantaged persons and integration of persons facing social exclusion risks.
Therapeutic Gardens	Located within the institutions for mental and physical health; Contemplation gardens and active gardens focused on production	Therapeutic Farms	Employing activities related to agriculture for mental and physical health and well-being as well; occupational too.

Illegal Gardens	Food production on raw lands; informal, irregular, unregistered, and not subject to public policies	Environmental Farms	The high natural and ecological value and/ or the contribution to the preservation of biodiversity or agricultural biodiversity; part of the disaster planning and prevention against floods or fires; green infrastructure and networks, green belts, Natura2000.
?		Patrimony Farms	Preserving the tangible and intangible cultural heritage by maintaining traditional materials, buildings, crops, breeds and cultivation techniques.

Source: Szalók et al, 2019

It is worth mentioning that although the current urbanism policy has not formally accepted the urban gardens yet, one of the aspects addressed by the metropolitan administrations is the garden quality and merit to increase the area occupied by green spaces. In this context, Romania is following the eco trend of the new constructions by planning interior gardens, green terraces and roofs. Between 2017 and 2018, in Bucharest only, more than 350.000 square meters of office buildings with wide green spaces were constructed. The investors themselves commissioned the landscape elements in the projects (study case ESOP I Corfac International, 2019). In Iași, for instance, since this very year, certain initiatives, in this regard, have emerged, as making urban gardens similar to the French model

permis de végétaliser, which allows citizens to adopt public spaces in the neighbourhoods or around the blocks of apartments that are property of the local public authority and are, generally, raw fallow lands. These actions complete the efforts of the public authority for increasing the green infrastructure by encouraging citizen initiative, partly financed by the local administration. Another city located in the North-East Development Region of Romania, namely Piatra Neamț, has recently signed 2 European projects which aims to construct urban public gardens in two peripheral neighbourhoods. These examples along with those from Table 2 (which localizes different types of urban gardens across the country) highlight the attention paid to the concept under study.

Table 2. Urban gardens in Romania (around the municipality of Bucharest)

Type of Urban Garden	Locality	Appearance Year	Surface (sqm)	Type of Land Used	Source
Community Garden	Turda, Cluj county	2018	45	Industrial premises typical of a former brewery	Cotidian de Turda (Turda Daily Newspaper)

School Garden	Bacău	2019	700	Arable land	https://municipiulbacau.ro/
School Garden	Bacău	2019	300	Arable land	https://municipiulbacau.ro/
Park Garden	Deva, Hunedoara county	2018	3.861	Reconversion of a degraded zone	Deva City Hall
Community Garden for seniors	Buhuși, Bacău county	2019	1.050	The village of the Milly Seniors	https://jurnaldebacau.ro
Community Garden/ School Garden	Bistrița	2018	1.000	Educational reconversion of the premises of a former brewery	www.ziardebistrita.ro
Urban Gardens	Timișoara	2018	15 locations, 1100 parcels of different sizes	Arable land	

Although the urban farms are subject to market regulations and specific legislation to the core business, the urban gardening has a particular behaviour similar to the niche activities due to the fact that it occurs randomly depending on the spare time and relaxation needs of an individual or social group. Another key feature is the interstitial engagement in the activities in private spaces or spaces neglected by society (raw lands, abandoned spaces or spaces that have a double utility, such as balconies, terraces, roofs, certain parts of a building, and so on).

In Romania the situation is considerably more nuanced as the cities/ towns have always had a lower rate of urbanization than the cities from the Western Europe. In 1930, for instance, merely 20% of the country's population lived in the urban space. Following the violent shifts during the world war two and then Stalinist period (holocaust, nationalization, administrative restructuring, etc.) in the communist period it was decided to couple agriculture and industry through a movement that considerably diminished the percentage of the long-rooted

urban population. Thus, cities were populated by ex peasants converted into workers, clerks, various service providers, and so on. At the same time, numerous villages were forced to be part of metropolitan administrations, under the title of *belonging villages* or turned into simple streets.

By this manner, the urban population, *in theory*, registered a spectacular growth, from 23,4% in 1948 to 52,5% in 1989, while the peripheral areas of cities were abundant in agricultural units known as C.A.P. (Agricultural Production Cooperative) or I.A.S. (stables, silos and fields) and their inhabitants went on farming the same way as before coming to cities, by preserving the save rural mentality. The socioeconomic degradation period of the 80th marked a new stage for the ruralization of cities as many ex farmers would grow vegetables in the sparse patches of land among the blocks of apartments or raise chickens or pigs in the outbuildings and enclosure built next to the blocks.

After the fall of the centralized industry, the suburbs turned into either residential

neighbourhoods under the pressure of the real estate market (on the rise in the big cities of the country) or remained simple streets, more precisely rural lanes. At the same time, an increased migration of a larger number of discontent cityfolk to the rural areas is registered. The first major shift occurred in 2004, when a series of villages (most of them in dire lack of any sort of infrastructure), turned, basically overnight, into towns. However, the agriculture was still the most important activity in these newly born towns. Therefore, the idea of urban agriculture is not entirely novel in Romania, we could even state that it has been a constant landscape feature of the Romanian towns and cities. What is indeed novel is its entrance in the eco fashion and its attempt of passing from the private family gardens (so typical for the Romanian rural space) to the community gardens of different types where the stress is mainly on education and social aspects. This natural background of the landscape and represented by agriculture allows the co-existence of rural, peri-urban, and interurban elements within the same urban ecosystem in most Romanian cities and towns. However, these three features have different purposes and percentages, **yet always interacting and completing each other**. One thing is certain: to be worth of the name of urban agriculture, beyond the localization in the defined area of a certain town/ city, the actions described above should own a key innovation feature or element (technical, economic, social). Therefore, the agriculture will be more or less urban depending on the manner it will make use of the urban ecosystem and, in turn, it will generate products which can be used by the same urban ecosystem.

4. Conclusions

The accelerated population growth in the cities of the developing countries exerts a heavy pressure on the urban territorial systems of food supply. Agriculture, whether it is about crops or horticulture, animal husbandry, fishing, forestry, fodder or dairy products, is gradually and swiftly spreading across the cities. The urban

agriculture provides fresh food, creates jobs, generates and keeps the ecological balance and, also strengthens the resilience of the urban soils to climate change. It is quite true that the urban soils are mostly covered by concrete, bitumen or buildings, which severely interferes with the drainage and the corresponding surface, and their chemical composition is contaminated and off the balance, which decreases their functional purposes and negatively impacts upon the nearby streams of water. The waste disposal on urban lands and the industrial heritage of the big cities often translates into an increased environmental and technological risk, an issue already found on the agenda of FAO and developing countries. However, as agriculture has evolved in the rural space, the urban agriculture can no longer be operated through classical means, but by more efficient tools and solutions provided by the digital technologies. The Chinese and American researchers have identified the agricultural innovations in the brand new digital era as part of the fourth industrial revolution, while one of the greatest advantages of the urban agriculture is given by engaging new technologies which generates the diversification of the economic sectors within a locality.

Part of the solutions provided by researchers for turning cities or towns into food suppliers will soon become viable and advance this sector (as the hydroponic agriculture or precision agriculture already prove it), others will most likely show that it is simply enough for the cities/ towns to become greener by measures and regulations that will make them more aesthetically pleasing and environmentally friendly. In the end, regardless of the acceptance or nonacceptance of the urban agricultural at the moment, the space waste is a phenomenon which any sound economy should avoid and, regardless of the type of problem that shadows abandoned or neglected spaces, it is necessary, if not imperative, to take pragmatism measures to re-activate them, such as the type of measures offered by the agricultural use.

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