

URBAN HORTICULTURE INNER LIVING CITY, INTERACTIONS AND TRADE-OFFS

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Abstract

Life in a city with its own advantages and disadvantages it is an object of research and open discussions, multilayered and with many facades to approach. Human nature, which creates its material and mental needs, is considered the biggest cause of urban degradation. Intense industrial growth, rapid population growth, chaotic urban planning, reckless and exhaustive use of natural resources and environmental degradation are some of the causes of the global economic, climate and health crisis. Recognizing the special living conditions in the city, which have changed the balance of nature to a worrying level, such as poverty, lack of free public spaces, deteriorating quality of food and life, climate change, etc. it was considered necessary to research questionable conditions that require an answer, in order to highlight alternative solutions. Through approaches, therefore, an attempt is made to recover the human-nature relationship. An important alternative to this can be considered the institution of urban agriculture, as a military one with the aim of partially reversing the problems of the city and its consequences. Through the approaches, an attempt is made to recover the human-nature relationship. An important, alternative solution for this, can be considered the urban horticulture institution, as a strategy aiming the partial reverse of the city's problems and their consequences.

Key words: urban horticulture, sustainable cities, climate crisis, food insecurity.

INTRODUCTION

The article contributes to a better understanding of the phenomenon of urban agriculture as an alternative solution in the context of developing the sustainability of cities. It also identifies the current conditions and problems of a large city, with references to their origins. The article, also, approaches the points that characterize a sustainable city and the interactions with urban agriculture through a literature review.

In this context, are being selected the bibliographic sources which state the causes of the degradation of the urban environment and the quality of life in the cities (Feola et al., 2020). It is noteworthy that the sustainability assessment showed that there are different perceptions of urban agriculture. Specifically, these are significant conceptual differences between urban agriculture in the global North and South or between different forms of urban agriculture.

Nevertheless, there is a general acceptance that some factors, which influence the development

of urban agriculture, are related to: climate, politics, geography, economy, cultural values and urban-rural interconnections (Anthopoulou & Nikolaidou, 2013). To achieve the goal of the current paper, a bibliographic review is carried out on the internet and in e-books. The research then focuses more on the European Union (EU) with a view to the political approach to the issue as well. In this way, an attempt is made to highlight the effort of the EU for evaluation of the issue of labor, through institutional actions.

In the process of preparing this review, relevant keywords and their combination are used. Also, in terms of the sources' chronological review, the last five years are firstly selected and then the decade.

Due to the large amount of information, an avalanche approach is followed for the sampling of the literature. Regarding the language of the texts, English, Romanian and Greek are chosen. Finally, it is noted that the chapters' structure follows a series which is related to the roles of urban agriculture.

PROBLEMS OF BIG CITIES AND ALTERNATIVE SOLUTIONS

Large cities are the main source of wealth creation and the centers of social and cultural development. Calling into question the benefits of life in the city and the uncertainty about the protection a city can offer, are frequent issues in times of crisis. It is clear that in such cases, there is recognition of the need to make new efforts to strengthen or restore the role of cities worldwide.

Life in a large city can be described as fast, intense and largely cut off from nature. And while it offers good opportunities, life can be quite exhausting and stressful. However, those living in big cities are used to this lifestyle and have difficulty adapting to a small town or village (Annoni & Weziak, 2014).

Therefore, it is necessary, the emergence and understanding of the critical city issues that arose after the spread of COVID-19 and worsened during lockdown as a first step in building urban resilience. The greatest challenge for cities and the design of public spaces, since COVID-19, is to respect social distancing. Today, despite the difficult economic conditions that are developing globally, financial instruments are available to enable cities to gain green and free spaces and promote sustainable mobility (Arvanitidis & Papagiannitsis, 2020).

Initially, it seems necessary to mention the difficulties and challenges facing all cities to a greater or lesser extent. Reference to specific examples is intended to highlight some of the efforts that have been made and to propose some state guidelines for future actions. The main aim is to bring up some crucial issues together with alternative proposals that urban policy in Europe could follow as a starting point for dialog.

Reference to existing problems in major cities

Urbanization

European Union (EU) statistics show that around 75% of its population has chosen to live in urban areas. In recent years, population growth around the world, urbanization with a choice of living in large cities, has led to a strong residential growth (European

Environment Information and Observation Network, 2017).

Today, around three quarters of Europeans live in urban areas while the urban population of Europe is expected to continue to increase by 30 million people by 2050 (Land and soil in Europe, 2020).

It is true that, the proportion of the population living in cities, towns and suburbs is higher in the EU than in the rest of the world. According to LUISA's forecasts (a program providing spatial analysis of environmental and socioeconomic changes in Europe), the urban population rate will continue to increase until 2030. Furthermore, 65% of the EU population in 2010 living in Functional Urban Areas (FUAs) is expected to reach 70% by 2050. This rate appears to be falling by about 13% across the EU between 2010 and 2050 (Kompil et al., 2015).

FUAs are becoming increasingly important at government policies level. In addition, the increasing importance of urban activities during the twentieth century, has led planners and regional economists to identify urban phenomena as the main component in the definition and shaping of FUAs (Antikainen, 2005; Fusco & Caglioni, 2011).

Another important element is the green infrastructure, which is located mainly in the periphery of the EU's cities and it has small or very small percentages per person, with a few exceptions. It must be said that green infrastructure is defined by the type of land uses it contains and those land uses are conditioned by socioeconomic factors (Kompil et al., 2015).

The percentage of green spaces in cities is declining with the increase in built-up spaces, in 2010 the average of artificial areas (built-up spaces) was 498 m² per inhabitant. Lower prices are identified mainly in southern countries such as Malta, Greece, Italy and Spain and higher prices in most northern countries such as Sweden, Lithuania and Finland. Based on the data of the program LUISA, artificial areas (structured) per inhabitant are projected to increase by 8% in 2050. Croatia, Romania, Bulgaria, Latvia, Slovakia, Ireland and Poland record the greatest change between 2010 and 2050 in terms of

artificial areas per inhabitant (Kompil et al., 2015).

It is worth noting that the lost area of arable land and pastures is proportional to the increase in the area of artificial areas (built-up spaces). Moreover, the majority of Europe's cities were built on fertile land, surrounded by fertile land, so the artificial areas covered are often productive agricultural land, with all the negative consequences (Land and soil in Europe, 2020).

Soil Sealing

Soil sealing, as a result of the building and infrastructure construction, has been recognized by the European Commission's "Thematic Strategy for Soil Protection" as one of the most important threats to soil as it changes its structure (Commission of the European Communities, 2006a).

The natural causes which make soil impenetrable include, between others, the effects of rainfall, soil treatment, dispersion of colloidal substances and mechanical soil compression. The concept of sealing should therefore be extended to include, beyond natural causes, soil surface cover with impermeable materials such as asphalt, cement, metal, glass and plastic. As these materials are used in construction, it is apparent that soil sealing is a direct consequence of urbanization. One of the effects of soil sealing in cities is the reduction of biological functions that the soil can support. It takes hundreds of years (up to thousands of years) to create a few centimeters, soil becomes a valuable, non-renewable resource at risk. The effects of degradation in soil quality have a direct impact on human health and on various ecosystems, on climate change, as well as on the economic well-being and the quality of life. In addition, sealed soils are unable to perform important functions such as the storage and transformation of chemical compounds, water storage and refilling of groundwater (Spyridis et al., 2012).

Poverty, unemployment and crime

The problems of poverty are disproportionately affecting minorities and groups with a lower socio-economic background. Poverty can include a lack of income, hunger and malnutrition, limited access to education and social discrimination. In addition, it is felt not only by the people who are experiencing it, but

by society as a whole. Also, the secondary effects of urban poverty are increasing depending on urbanization (Worsham, 2020).

It is widely accepted that the COVID-19 pandemic affected almost every country in the world. In the absence of a confirmed cure and vaccine, countries adopted social distancing as a measure by closing down large cities and, in some cases, the entire country in order to prevent the spread of the virus. Ten years before the pandemic, an economic crisis began which affected not only Europe but other continents as well. As a result of the economic and health crisis, poverty and crime have evidently increased as it is common in times of crisis or war.

In a University of Piraeus research project in 2018, it was concluded that factors affecting poverty and crime are extended artificial areas (the absence of nature in the city), levels of employment in the public sector and the general level of education. An important element is that unemployment and migration issues in cities have a less impact on crime (Mimikou, 2018).

Also, another research in India confirms that a widespread economic recession, both at global and national level, will cause a significant increase in unemployment, underemployment and poverty, as well as a reduction in the wages, profits and competitiveness of businesses. It concludes that young people who are most vulnerable during a crisis are often the first to lose their jobs and face tough competition for fewer jobs. In these cases, the result is a sharp rise in unemployment, especially in urban areas and between young people (Dutta, 2020).

Social exclusion

Social exclusion reflects the importance of human existence as part of society. It is considered to be a situation in which one individual has fewer possibilities (Robila, 2006) and is facing a lack of social adjustment caused by growing inequalities, social and economic needs and a lack of security (Bhalla & Lapeyre, 2004). A relevant study has shown that the assumption that only economic growth will reduce poverty and social exclusion is not valid (Günaydin et al., 2015). They are especially important that E.U. statistics show that 22.4% of the EU population is at risk of

poverty or social exclusion and that is why important targets have been set through the Europe 2020 program, strategy for smart, sustainable and inclusive growth (Poverty and social exclusion, n.d).

Food security and climate crisis

As the population increases, by 2050 global demand for food is expected to double. Meanwhile, food production in tropical and subtropical countries, particularly in Africa, is particularly at risk from climate change, with the effects of a major food crisis throughout Europe (Research and innovation, n.d.).

Food security is the situation where people, at every moment, have physical and economic access to adequate, safe and nutritious food. Therefore, any burden on these elements creates the food crisis. It's known that the modern way of life and the food and agriculture system in Europe and in America are damaging the environment by exacerbating climate change, biodiversity loss, water and air pollution, all these having consequences for the food and climate crisis (Karagiorgas, 2021). For this reasons, initially it is necessary to understand the climate change process so that alternative solutions can then be drafted. So far it has emerged that some critical factors of climate change such as the increase in CO₂ and air temperature combined with changing precipitation conditions, may transform almost all global ecosystems (Alizadeh & Hitchmough, 2018).

While climate change is assessed negatively, the need to tackle it creates jobs such as urban planners, landscape architectural professionals and gardener growers who seek more sustainable vegetation in urban areas. However, climate change also helps liberalize conventional thinking, making people agree with the idea that the future will not be the same as the past (AlizadehJ & Hitchmough, 2020).

The main thing is that in the context of the current recession, urban and peri-urban farming are seen as alternatives with multiple benefits. As a result of this, various initiatives have been launched by citizens, public bodies such as local government and universities but also European Union committees, which all propose new drastic measures to improve the current situation.

They have generated innovative forms of collective action on 'food justice' (e.g. urban gardens, Community Supported Agriculture-CSA, networks 'without intermediaries'). «A series of initiatives, informal networks and market-oriented activities that promote alternative short agri-food chains, food-activist, educational or other collective self-help structures empower solidarity-based economy. At the same time spontaneous public initiatives mainly deriving from the local administration in the framework of their social policy (e.g. municipal gardens) respond to the social effects of austerity and are more oriented to combat crisis stress and social exclusion» (Nikolaidou, 2017).

THE URBAN HORTICULTURE ROLE IN THE AGRO-FOOD SYSTEM (CASE STUDIES FOR BIG CITIES)

The agro-food system of a city includes the institution of urban and peri-urban horticulture. Urban and peri-urban farming is the practice of growing, processing and distributing food within or around an urban area, such as a village or town (Ryang, 2016).

At European level, the cohesion policy for urban and peri-urban horticulture should be in line with the objectives of the European Green Deal, the Farm to Fork strategy and the Biodiversity Protection strategy. These should be implemented by all economic and social actors and should be aimed above all at ensuring food security. By proposing the development of urban gardens, green roofs and hydroponic systems, the importance is stressed of enriching urban biodiversity, better waste management with composting, the collection of rainwater and the improvement of air quality. Furthermore, there is particular concern, as the pandemic of COVID-19 has shown the vulnerability of cities in the event of supply disruption, particularly concerning food. The solution proposed is to promote peri-urban horticulture by creating shorter supply chains for food systems. The aim is to produce, process and consume food locally using available alternative plant protection products, with a low environmental footprint (Opinion on cohesion policy and regional environmental

strategies in the fight against climate change, 2020/2074 (INI), 2021).

In 2003, the European Economic and Social Committee recognized the risks of development on the sustainability of cities and economic activities. It delivered an opinion on the topic "Agriculture in peri-urban areas" by setting objectives and actions to promote peri-urban horticulture. Still, created an institution, the European observatory for peri-urban horticulture whose operation depends on the the applied EU strategy on this matter (Mir & March, 2017).

In 2015 the Milan Urban Food Policy Pact was signed by more than 100 cities to develop sustainable and resilient food systems. In the context of the development of new business models the European Commission launched the Food 2030 initiative, and the H2020 work programs have consequently included research in urban agriculture (H2020-FNR2020). Finally, urban farming also contributes to the EU Pollinators Initiative (COM (2018) 395 final recognizing that pollination plays an important role in nature and is vital for ecosystems and the sustainability of agriculture (CityZen. Urban farming improves climate resilience, 2021).

Depending on local conditions, the benefits differ according to local conditions, including population density and demographics, operational scale, soil quality, and access to labour and consumers (Martin et al., 2016).

It should be mentioned that, a determining factor for the health and well-being of society is the food system, while many deaths and illnesses are due to poor nutrition. Urban horticulture could contribute to the sustainability and resilience of large cities in times of crisis if they were supported more effectively at institutional and public level. It is important that, in the Northern countries the success of the urban farming system is determined by the scale of the crop, the profitability of production, the degree of integration into urban fabric, environmental and human safety, etc. (Boglarka et al., 2021).

Implementation of urban horticulture in agro-food system

It is a well-known fact that today; consumers have turned their backs on mass-produced, industrial products. They strongly feel the

nutritional risks of processed food and seek locally-based, safe, specific quality related to the place of origin. So, the qualitative shift of consumers towards local products offers significant prospects for small-scale food business (Anthopoulou, 2013).

It is important to refer to a COST (European Cooperation in Science and Technology) survey published in "Urban Allotment Gardens in Europe" (Urban Allotment Gardens in Europe, How to strengthen the significance of urban gardens in the city, 2014) and presents a comprehensive overview of the implementation of urban horticulture in European cities, indicating their benefits and values and emphasizing that each urban garden has its own distinctive character. Each one shares traditions, expectations, attitudes of life, social relationships and friendships, competition and hard work. All these elements contribute to the proper functioning of urban crops.

Research shows that the successful implementation of urban horticulture also depends on class factors. The Biological Veranda Growers (OTGians) movement in India is looking for ways to evolve and spread the practice within other social classes, starting with "Grow what you eat, eat what you grow." Their possibilities are limited to the middle class because the inhabitants of the upper classes do not participate "leaving everything to their employees" while the lower class cannot be easily approached. The OTGs as a community stand out for their biological practices and for their ideology under which they do not commercialize their production thus contributing to food self-sufficiency (Frazier, 2018).

The need and increase in interest in growing edible species in cities has been the beginning of the creation of movements and various initiative groups with a focus on agriculture, public health and awareness. Public bodies that have undertaken the task of creating organized farming allotments have offered these premises to residents who have a low income or do not have their own available space. Inactive military camps can be an ecological and social treasure and can accommodate other compatible activities such as edible gardens.

So, the Cultural Association "Karatasiou" of the Municipality of Pavlos Melas in

Thessaloniki, started to claim in 2008 the abandoned former military Camp Karatasiou (689 acres), for citizens and local government in order to transform it into a recreational area. In 2011, the Peri-urban Cultivators group (PER.KA) was created by people in the area who aimed to collectively cultivate vegetables, seasonal fruits, flowers and aromatic herbs (Giatsidou, 2016). With their own personal work and expenses they created the first self-managed collective vegetable garden in Central Macedonia on 2 acres of inactive military camp. The cultivation is non-profit, covers part of the team members needs, supports vulnerable social groups and is implemented based on the principles of organic farming using traditional seeds and plants (Maknea & Tzortzi, 2019).

As well, on the east side of Thessaloniki, a few kilometers from the city center, at the Farm of the Aristotle University of Thessaloniki (AUPh), there are several plots of vegetable gardens, since 2011. They form what is considered an emblematic example of creating vegetable gardens with an educational aspect. Today, there are 500 cultivators who produce their own vegetables by paying a small annual fee for their participation in the organic farming program. In this case, all residents of Thessaloniki, without any social criteria, have the right to express their interest in acquiring an allotment. The farm is fenced and has 150 allotments covering an area of 100 m², each (Partalidou, 2015).

Especially irrigation water is provided with independent supply in every vegetable garden, as well as WC. Educational seminars are offered, while students and scientific staff of the University of Agriculture of AUPh, provide daily on-site consulting support. Since this action started in 2011, coupled with the financial crisis in the country, it demonstrated the possibility of small scale quality food production for family use. This action showed also the value of working with the land and the contribution to improving the quality of life of citizens.

At local level, the Central Macedonia Region is approaching the issue through the "CityZen - 'enhancing scalable innovations and new business models based on urban farming ecosystem values'" project, co-financed by the

INTERREG EUROPE European Interregional Cooperation Program 2014-2020. Its aim is food safety, human relations development, resource efficiency, etc. (CityZen. Enhancing scalable innovations and new business models based on urban farming ecosystem values. n.d.). The actions supported include, among other things, the voluntary project "Kipos3-Garden3" in Thessaloniki, which is considered a social experiment for collective vegetable garden use, in an abandoned public space. An important role in the decision making process has been consultation with local residents. Another project supported by the program is to create a vegetable garden inside a Pocket Garden, in Thessaloniki, using the D.I.Y method (do it yourself), with the contribution of pupils and the use of traditional seeds (CityZen. Urban farming in Thessaloniki: shaping policies, 2020).

A similar case is the inhabitants' initiative in the center of Athens which, in 2009, took over an abandoned public land by attributing it to all citizens on a non-discriminatory basis and turning it into a vegetable garden (Arvanitidis & Papagiannitsis, 2020).

In recent years the world has become more aware of the growing problems on an environmental, social and economic level. As a result, the development of the city movements is taking place. These movements are based on acceptance of a certain statute and have different aims with common characteristics, such as self-organization and self-management, democratic function, solidarity, understanding and creativity. Moreover, Urban horticulture is one of the movements that can help solve the problems of modern societies (Maknea & Tzortzi, 2019). Even in developed countries, the poor spend up to 85% of their income on the food market. Urban horticulture contributes to certain costs and seems to be greatly favouring both social inclusion and the reduction of gender inequalities, as 65% of urban farmers are women (Orsini et al., 2013). Even in times of crisis, the role of urban horticulture is particularly important. In 1941 a guide dedicated to the crisis vegetable garden, "the garden of the house" was published by the agronomist responsible for the Athens City Gardens, Vosinotis (1941). The guide mentions ways of survival and of tackling

hunger through urban crops under exceptional circumstances such as war.

Particularly, in many municipalities in Greece, more emphasis was given on tackling the economic crisis, and urban farming has been integrated into the wider framework of public priorities in order to develop measures to tackle poverty and social marginalization. However, in other municipalities, the initiative is more part of a broader framework of environmental actions (Anthopoulou & Nikolaidou, 2013). Therefore, due to the urgency of the issue, it was introduced into Greek legislation in 2018, the institution of urban horticulture, by a Presidential Decree referring to categories of land use.

It is worth noting that urban gardening in Barcelona has a radical foundation as it originates from occupied urban areas and is structured with visions around social entrepreneurship and social innovation (Mir & March, 2017). Also, in Warsaw, the areas granted for cultivation are still considered as vital elements of large cities (Giedych, 2013).

Especially, in İstanbul the Yedikule Bostans, are the oldest urban horticulture practices, which is also listed as UNESCO's World Heritage Sites since 1985. Furthermore, Bostans served as the biggest supplier of fresh fruit and vegetable during the Byzantine and Ottoman periods. As the neoliberal policies, the areas where urban horticulture was carried out were declared as construction areas and the historic bostans were destroyed by the Fatih local municipality in 2013 (Ülsever, 2021).

It cannot be ignored the fact that, when residents in Berlin faced the threat of privatization that included a 6,000 square meters site, they launched a successful campaign to save it, to highlight the importance of urban open spaces. This garden was created in 2009 by hundreds of residents and mainly serves social, educational and ecological purposes (Clausen, 2015).

It is also worth mentioning the example of Cuba, where Havana is considered to be the representative of urban horticulture, due to the abundance of urban gardens, the important role they play in the urban ecosystem and the well-known methods used for the cultivation of vegetable crops, organoponics. Actually, in Havana, urban horticulture is unfairly

distributed throughout the city. Most garden gardens are concentrated in low-density urban areas to ensure the availability of open spaces between buildings (Górna & Górný, 2020).

THE URBAN HORTICULTURE ROLE IN LANDSCAPING, BIOCLIMATIC DESIGN AND SUSTAINABLE LIVING CITY

The prospect of urban farming in large cities continues to inspire scientists, citizens and politicians. Its purpose and mode of operation varies between the southern and northern cities. In the North, people grow vegetables, for aesthetic or psychological reasons, on roofs, balconies, traffic islands or parks. In the south, urban farming mainly covers nutritional needs on communal land, in abandoned industrial sites and other public spaces. In any case it is a question of meeting the requirements of a sustainable city by contributing to sustainable development (Azunre et al., 2019).

The main characteristic of urban horticulture is that it can be integrated into the wider social, productive and residential fabric. This results in a close connection and lasting interaction with the urban ecosystem (Variti, 2014).

Also, depending on its role, urban horticulture can easily be adapted as a sustainable solution for large cities. Especially, by integrating urban horticulture into urban planning in the city, unexploited spaces are being used to help increase the percentage of green spaces and tackle climate crisis (Langemeyer et al., 2021).

This multi-level role of urban horticulture can also be noted in the actions of the Guerrilla Gardeners, one of the most active movements in America, Europe and Africa that occupy land, usually at night, aiming to create green spaces. These are students, academics, designers, architects, chefs, workers, etc., who contribute with their knowledge, in mobile, to the creation of vegetable gardens in cities (International Sunflower Guerrilla Gardening Day, 2020).

An important fact, can be considered a joint presentation by the landscape scholar K. Helphand and the Dutch photographer H. Wildschut, where reference was made to the vegetable gardens created in refugee camps in Jordan, Lebanon, Tunisia and France. The presentation was based on a theory that, "the

gardens are alive, they are a connection to each house, they embody hope, and they are workplaces and artistic spaces". The political importance of the vegetable gardens was highlighted as they demonstrate human resilience, dignity and struggle living in the camps (Helphand & Wildschut, 2018). The Dutch photographer documented the creation of the vegetable gardens in his book (Ville De Calais), with a visual record, from the so-called "jungle" refugee and migration camp.

Another approach to the multilevel role of urban horticulture is the design and construction of urban vegetable gardens that include landscape architectural aspects. Principally, landscaping gives emphasis to every green space linking it with sustainable development, bio-climate planning, the development of tools for environmental protection, etc. It can link green spaces with urban gardens, study the transport of citizens to these areas, support school initiatives to promote urban horticulture, contribute to environmental education, etc. (COST Action TU1201. Urban Allotment Gardens in European Cities Future, 2015).

From a health point of view, the rural approach of modern cities will actively contribute to the decontamination of contaminated subsoil and groundwater and to the reduction of carbon dioxide contamination in the atmosphere. This data was included in a study of the construction of a vertical urban farm in the southern part of the island of Roosevelt, New York (Vertical urban farms, n.d.).

Vertical planting was also tested in the city of Volos, Greece, in a so called "Vertical moving cultivation" system to investigate urban farming in buildings. The results showed the benefits of this method in comparison common planting. The improvement of the environmental conditions and the microclimate, the shading, sound protection, the aesthetic upgrading of sites, the upgrading of the food system, the development of socio-economic factors, are some of the advantages that have emerged (Tsagkalidou, 2013).

In addition, the influence of urban horticulture on people's health is another advantage which is expected to play an important role, thus contributing to the mental and physical health of the inhabitants of each city. Several studies

report that people involved in urban farming projects tend to eat more fruit and vegetables, are more active, involved in their social environment and interact more with nature (Piedrahita et al., 2020). In a similar context, in 2018, a decision by the City Council in a Municipality of Attica, Greece, granted the use of a municipal property site to create an urban vegetable garden in order to promote therapeutic gardening for people with disabilities.

Especially, the therapeutic garden is gaining popularity as a non-pharmacological approach in the modern healthcare system. It is a very useful method treating patients, reducing staff and patient stress, increasing hospital performance, increasing job efficiency and reducing treatment costs. In other words, the fact that the value of the treatment gardens is a complementary technique to medicine (Thaneshwari et al., 2018). A good example is the construction of a treatment garden in Umbria, Italy, for Alzheimer's patients, with the aim of creating an area where patients can be treated and spend a lot of time with their families for psychological support (Ranfa et al., 2017).

Also important is the offer of the school garden, in the sustainable school, in the realization of its goals at the pedagogical level (Tigas & Flogaiti, 2019) and to promote healthy eating behavior in low-income countries because of high rates of child malnutrition (Schreinemachers et al., 2020).

According to the above, Sima et al. (2010) concluded that urban horticulture can deliver multiple benefits such as: environmental, educational, cultural, recreational, economical, health benefits, aesthetics and sustainability, and can be applied at ground level, building decks and vertical surfaces.

CONCLUSIONS

In the beginning, urban agriculture was simply a hobby of gardening fans while suburban agriculture was a necessary survival system. Moreover, most of the literature sources identified during the survey, refer to peri-urban agriculture of Third World countries, highlighting its advantages to the local

economy in energy reduction and support for sustainable food production methods.

Today, after a long period of economic and health crisis, it is necessary to have unhindered access to fresh and nutritious food for all social groups of the population living in large cities. The effects of COVID-19 indeed, make the need for a transition to a more sustainable and resilient food system all the more urgent.

Undoubtedly, urban agriculture can be considered as an alternative solution to tackling the generalized urban and health crisis, especially for the poorer sections of the urban population. It can also be the catalyst for community, social and economic development.

Work highlights both the problems faced by large cities and the multiple beneficial functions of urban agriculture. The most important is the self-production of fresh vegetables, the reduction of food expenses, the environmental management (composting, contributing to heat reduction of the cities and the landscape architecture), the development of socialisation, the mental and physical health, the recreation, the education etc. For this reason, a good urban design should be able to mimic the natural ecosystems.

Recognizing the multifunctional role of urban agriculture and its benefits, it is required its institutionalization with new standards of urban and agri-food planning and with a supportive legal framework. In summary, it can be said with certainty that, if urban agriculture is managed effectively it can benefit all the social classes, the environment and sustainable development

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