



Urban Agricultural Practices in Turkey: The Case of Istanbul Metropolitan Municipality

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Abstract

Cities require large tracts of land to feed their large populations and become dependent on large quantities of food. While these circumstances is enhancing tendency to urban agriculture in the world, it also forces the countries to produce new policies on urban agriculture. It is known that urban agriculture contributes to decreasing poverty, local economic development, productively reuse of urban waste and wastewater, food safety, sustaining biodiversity. Due to the problems in the food supply, agriculture has started to come to the fore again in the municipalities. The development will start from the local and the local municipalities should be the owner of this work. Municipalities should be responsible not only for infrastructure services but also for agriculture. The role of municipalities is important in conscious and environmentally friendly agricultural practices. In addition to agricultural practices, municipalities should be able to provide great support for the preservation and protection of seeds and the continuation of varieties. In this study, the activities of Istanbul Metropolitan Municipality for urban agriculture practices are discussed. Within the framework of the research, first of all, a literature review was made. Afterwards, the reports and statistical data of the Istanbul Metropolitan Municipality Agricultural Services Department were scanned. Finally, the proposal for urban agriculture was brought up for other local governments.

JEL Codes: H75, R58, O13

Keywords: Urban Agricultural; Local Governments; Turkey; Istanbul Metropolitan Municipality

Introduction

Agriculture has always been associated with the imagination of the rural environment, and in fact, activities related to it have often been limited to this context. Based on this, it has long been thought that only rural plant production would be sufficient to feed the urban population. However, for many cities of the world's developing countries this turned out to be quite wrong, mainly as a result of scarce infrastructures (transports, roads, markets, etc.) and the low purchasing power of the poor population [3]. Indeed, over time, the rise in poverty and high unemployment rates, along with the opportunities the city can offer – such as food demand and proximity to markets – have spurred the development of diversity, particularly in cities specializing in the production of fresh vegetables, milk, eggs and chickens, and the crop and food systems around them. The term urban agriculture has been coined to describe both the cultivation of plants and the raising of animals for household consumption and income generation in cities. More-

over, urban agriculture includes the production and sale of agricultural inputs and other interrelated activities such as post-harvest processing and marketing of agricultural products.

Urban agriculture (UA) has long been dismissed as an irrelevant ancillary activity in cities; however, its potential is beginning to be realized. In fact, UA is about food self-reliance: it involves job creation and is a response to food insecurity, especially for the poor. Contrary to what many believe, UA is found in every city, sometimes hidden, sometimes obvious. If you look carefully, there is very little unused space in a big city. Valuable vacant land is rarely left idle and is often formally or informally taken over and made productive. Urban agriculture is a well-established subsistence activity of all scales, from the small family market garden to the large farms located on the edge of a city. It provides food and income to those who farm the city. Above all, UA makes an important contribution to food security for those without easy access. In essence, UA is the fulfillment of the saying 'necessity is the mother of invention'.

With the decrease in raw material resources, the concept of circular economy is becoming increasingly important. circular economy; It is a system in which resources are recycled or reused and the waste material is returned to be used in production again. Today, a restructuring at all levels is required for industrial production to become cyclical, which can be seen as the most obvious reason for this resource consumption. Every step, from the sourcing and use of resources, to design and production processes, to logistics and distribution, must be shaped around circularity and sustainability. With the inevitability of urban areas to adapt to the cyclicity of the economy, producers, suppliers and consumers are also changing their behavior in this context. In addition to all these developments, the importance of nature and healthy life has increased once more with the current global epidemic of COVID-19. In order to revive the society, which has collapsed due to the epidemic, it is vital to ensure efficiency and sustainability in sectors based on education, agriculture and agriculture-based production, as well as health, medicine and food supplements. In this context, the issue of 'urban agriculture' as a means of safe food production and access to safe food has taken its place on the city agenda in the world and in Turkey [14].

Today, more than half of the world's population lives in cities and it is estimated that another 2.5 billion people will live in cities in 2050. Again, 85% of the world's population lives within three hours of the city center, while 881 million people continue their lives in shantytowns on the outskirts of cities. Unemployment and poverty among the urban population and social injustice in access to basic services have reached serious dimensions. The urban population plays an important role in the creation of these problems as well as in the target of climate change and environmental problems. Although it covers 3% of the world's geography, the urban population is responsible for 70% of the worldwide CO2 emissions; in addition, the urban population consumes two-thirds of the total energy. Urban population consumes 70% of the food produced. Despite this, injustices in access to food, malnutrition and nutritional disorders, overweight, obesity and related problems have become important public health problems [5].

In this study, the work carried out by the Istanbul Metropolitan Municipality on urban agriculture is discussed, and the benefits it will provide in the long term in terms of product supply for the city and the city are discussed.

Urban agriculture

In 1999, the Food and Agriculture Organization of the United Nations (FAO) was formally mandated by its Members to include

the UPA as an integral part of their agricultural production systems and to take particular note of the UPA's contributing role in feeding cities, providing employment and creating production. they come. FAO, in collaboration with global, national and local partners and stakeholders, supports the transformation of UPA into a recognized urban land use and economic activity integrated into national and local agricultural development strategies, food and nutrition programs and urban planning. In 2020, FAO launched the Green Cities Initiative to improve people's well-being and the environment by promoting sustainable and resilient agri-food systems and green spaces in urban and urban areas where UPA is critical to contributing to people's lives and, in general, urban sustainability and for durability [6].

The terms "urban agriculture" and "environmental agriculture" are both sometimes used interchangeably without clearly defining what each term means. An important question for quantitative research is where urban and urban areas begin and end. Drechsel and Keraita [2] stated that the term "urban" refers to the administrative city boundary, while the expression "urban" is used for lands outside the periphery of the city; Because cities around the world are defined in different ways, emphasizing administrative considerations leads to definition problems.

The fourth World Urban Forum in 2006 highlighted the vital importance of UA in cities of the 21st century. During the forum, statistics were presented showing that by 2006 more than 50 percent of the world's population lived in urban areas. Also, projections show that by 2050, two-thirds of humanity is expected to live in urban areas. Thus, the Forum confronted the delegates with the challenges of such a rapid and historic change in human geography. The Forum was also notable for introducing UA during a major international event where its participants were mayors, government ministers, international organizations, researchers and members of civil society. Urban agriculture was the main topic at a number of networking events, product launches and booths in at least 20 corporate partners and eight cities. Nearly 1000 delegates participated in the networking events, especially in TC. The recognition of TC and its presence at such a large scale are indicative of the broad shifts that have taken place in policy regarding how cities are viewed and how the value of land- and food production – is perceived.

The concept of agriculture, which is mostly associated with the rural context, has gained a new dimension with its urban character in recent years. Economic, environmental and social problems caused by rapid urbanization, migration from rural to urban areas, high unemployment and urban poverty have led to an increase in

agricultural activities in the urban context. This new trend is called "Urban Agriculture". Urban agricultural activities; It is developing rapidly around the world due to its positive effects in economic, environmental and social areas. For this reason, it is used as a sustainable development strategy in many countries. Sustainable Development Goals associated with Urban Agriculture announced by the United Nations [15]

- **Goal-01:** To end all forms of poverty everywhere,
- **Goal-02:** End hunger, ensure food security and achieve good nutrition and promote sustainable agriculture,
- **Goal-12:** To provide sustainable consumption and production patterns,
- **Goal-15:** Can be listed as protecting, restoring and promoting sustainable use of terrestrial ecosystems, managing forests sustainably, combating desertification and halting and reversing land degradation and preventing biodiversity loss.

Importance of urban agriculture

The urban population plays an important role in the creation of these problems, as well as the target of the problems caused by climate change and various environmental problems, especially chemical pollution. Although it covers 3% of the world's geography, the urban population is responsible for 70% of the worldwide CO₂ emissions; in addition, the urban population consumes two-thirds of the total energy. Similarly, it consumes 70% of the food produced. Despite this, injustices in access to food, malnutrition and nutritional disorders, overweight, obesity and related problems have become important public health problems [3].

At the heart of the urbanization phenomenon are changes in diets coupled with an increase in urban food demand and growing demands for a wider range of food types that serve emerging middle class markets. These changes are challenging food production, rural-urban connections, transportation and traditional market chains. Specialized urban and peri-urban farming systems are emerging, such as large-scale poultry production or high-input vegetable farming [2].

By 2050, the world's population is expected to reach 9.7 billion, with 70 percent of them living in urban areas, particularly in low- and middle-income countries in Africa and Asia. At the same time, the current COVID-19 pandemic and the growing climate emergency are forcing us to rethink how we produce, process and distribute food. Since history recorded cities, urban and peri-urban agriculture (UPA) has played an important role in food production, and the effects of UPA have multiplied as cities expanded. Over the last few decades, UPA has grown in importance and is increasingly

recognized as a key player in feeding the growing urban population, providing safe and nutritious food from diverse plants and animals, and contributing to all urban food systems. The role of the UPA is specific and complementary to the supply of food from rural areas as it helps meet local demand and contributes to short, efficient supply chains, thereby reducing food loss and waste. The UPA also provides a variety of benefits in the daily lives of billions of people, from social to educational and economic to environmental functions, ensuring that urban and peri-urban residents have prosperous livelihoods [6].

Urban agricultural activities have an increasing share in global food production. One reason for this is that urban agricultural activities offer the potential to offer solutions to many economic, social and spatial problems faced by settlements, especially environmental problems. Increasing production efficiency, reducing input costs, optimizing resource use, and providing uninterrupted consumer access are the main economic benefits that can be considered together with urban agriculture. While the activation of transportation and resource use are topics that can be directly related to environmental conditions, the food security and food security opportunities provided by urban agriculture systems to cities contribute to the development of settlements in environmental and social terms. Creating healthy communities related to nature and agricultural production is one of the most important contributions of urban agriculture [1].

The case of Istanbul metropolitan municipality

With a population of 16 million, a geography extending to two continents, and hosting Turkey's largest trade, culture, art, science, education and historical assets, Istanbul has been included in the world's leading inter-city networks. Considering the population growth, urban space, infrastructure and transportation problems of Istanbul, the most populated city in Europe, and its vulnerability to global climate change, earthquake and similar natural disasters, the importance of the food system for an inclusive, safe, durable and nature-friendly city becomes even more important. is also gaining importance [8].

Rural areas of Istanbul, which can be considered under two main headings as natural areas, agricultural areas and villages, become areas where the distinction between city and countryside becomes blurred due to urban expansion, and agricultural production or rural landscape remains are encountered in the gaps of the urban texture. As a result of the increase in rent pressure on rural areas, forest, meadow, pasture and agricultural areas in Istanbul are decreasing at a much higher rate compared to the rest of the world.

The construction-based growth model, which is one of the most important factors causing the destruction of rural areas, values these areas in terms of rent rather than their rural potential. While mega projects such as the 3rd Bridge, Northern Marmara Motorway, Kanal Istanbul and its affiliated New Istanbul cause a change in the rural landscape, they also threaten the rural settlements on which the projects are based. In addition to these, since the beginning of the 2000s, making rural settlements invisible with various legal regulations, and the abolition of the legal entities of the villages adversely affected agricultural production. Special emphasis should be given to producers and farmers, who are among the most fragile links of the food supply chain and shoulder the burden of production, and their social security should be provided. While all these are being done, the labor that women spend in production and care services should not be overlooked [7].

First of all, within the scope of the “National Agriculture Native Seed Project” of the Istanbul Metropolitan Municipality, 75 local and national varieties were planted in 258 decares of land, 42 different regions, in order to disseminate native seeds in Istanbul [8].

Türkiye has a great potential with its irrigated and non-irrigated agricultural lands. In this respect, it is important to irrigate the lands with the right methods. In this regard, İBB has carried out a total of 18 thousand 318 meters of pipe laying in its own ponds in Mahmutşevketpaşa, Paşamandıra, Cumhuriyet and Bozhane ponds to switch to the closed-circuit irrigation system [9].

“Metropolitan and district municipalities may engage in all kinds of activities and services to support agriculture and animal husbandry.” Within the scope of the authority granted to metropolitan municipalities by the article of the İBB, the agricultural data research, which started with Pendik Göçbeyli District in order to measure the current situation and potential in terms of agricultural and livestock activities, was completed with a 3-month field study carried out in 14 districts and 211 neighborhoods. Within the scope of this study, one-on-one interviews with neighborhood headmen, chambers of agriculture, agricultural cooperatives, farmers and stakeholder public institutions were examined, and agricultural areas and livestock activities were examined on site. A database was created by collecting information such as existing agricultural areas, product patterns, production type, greenhouse activities, current status and capacity of livestock activities, marketing opportunities, irrigation resources, satellite images and field photos. In the light of the information obtained, it is planned to reveal the agriculture and livestock potential of Istanbul, to establish direct contact with the producers, to strengthen the coop-

eration with the stakeholders, and to use the data obtained in the research as a resource in the projects to be carried out in the neighborhoods [9].

The greenhouse, which was established in the Solid Waste Site in Kemerburgaz Odayeri for the purpose of seasonal flower production in 2015 by the Istanbul Metropolitan Municipality (İBB), has been inactive since 2016 after operating for about 1 year. İBB, which has made the greenhouse, which has been idle for about 5 years, operational again, distributed 3.6 million seedlings. A full 16,380 tons of yield was obtained from the seedlings planted as crops on 2,287 decares of land [11].

“Şile Beekeeping Center”, which was established with the cooperation of Istanbul Metropolitan Municipality (İBB), Şile Municipality and Yeniköy, Çayırbaşı, Balibey, Doğancılı, Akçakese, Kömürlük, Alacalı Agricultural Development Cooperative, was put into operation. In this center, which will carry out studies in many areas from the production stage to the marketing of chestnut honey, which has been registered as the first geographically marked product of Istanbul, to the diversification of products, it is aimed to be with beekeepers in processing products such as pollen, propolis and bee bread, which are bee products [12].

Istanbul Metropolitan Municipality (İBB) provides support for water buffalo breeders whose production costs have increased, especially for feed prices. Milk feed support for 3 water buffaloes is provided to producers engaged in buffalo breeding throughout Istanbul. İBB, which reduced the cost of the breeder, decided to distribute the produced milk to the children of Istanbul as Halk Sut [10].

Conclusion

In the past, only humans met their endless needs by recklessly using the scarce resources in nature. Especially in the last few centuries, the damage to nature has reached great proportions. The severity of the situation has increased when the climate change and global warming are added to the disasters experienced with the effect of this destruction. The effects and consequences of climate change have begun to affect our lives perceptibly, and consequences such as epidemics, drought, erosion, desertification, displacement of climate zones, increase in severe weather events, rise in sea level, damage to wildlife species as a result of deterioration of natural balance and deterioration of human health have emerged. out.

Finally, local governments have a role to play in adopting specific provisions to ensure that agricultural labor is available, par-

ticularly at critical points in the production process. They can also promote sustainable production, such as hydroponic and vertical farming, as systems that use the limited space of cities and create incentives to adopt renewable energy generation to power urban farms [6].

Considering the complex structure of the agriculture and food sector and its close relationship with other sectors such as health, nature, energy, finance, labor, education and housing, it is clear that the change in the food system will require reforms not only in one sector but also in all basic systems that shape economic and social life. . An environmentally friendly and stable food system without ecological agriculture and alternative clean energy sources, food sovereignty without breaking the dominance of multinational monopolies and global finance, food security without re-establishing the functions of social welfare institutions, as well as rearranging housing, transportation and labor policies for the benefit of workers. it is impossible to ensure its safety [13].

Forest fires and floods are the biggest indicators of this. The climate crisis has now begun to occupy the agenda of countries more and more. We can say that the international decisions, protocols and contracts taken so far in the process have started to gain a more active direction in the epidemic process. Studies and practices for urban agriculture developed by local governments in our country are important for the right to live in a healthy environment. In recent years, more use of renewable energy sources and the continuation of agricultural production with domestic seeds provide gains both for the fight against the climate crisis and for the independence of our country.

When we evaluate the activities of İBB in the light of all these data and facts, we see that renewable water systems for urban agriculture, the creation of systems that will provide economic use and reuse of water, incentives, incentives and control through taxation and subsidies, improved food storage, processing. In the long run, by identifying products harmful to human health and taking precautions, by establishing transportation and distribution technologies and infrastructures that connect the urban periphery and nearby rural areas, supporting especially small-scale producers, women farmers and entrepreneurs socially and economically, and strengthening food control systems. and will ensure the continuity of healthy food supply.

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