



Turkey's Urban Agriculture Opportunities and Peri Urban Agriculture's Relationship with Law No. 6360

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ABSTRACT

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Population growth in the world has increased the pressure of urbanization and led to the growth and expansion of urban areas. In addition, this situation has caused some problems in the production of food in cities. These problems can be solved by applying peri-urban agriculture, which is an alternative land use model where interfaces in the urban-rural context can be best evaluated. In addition to being a sustainable land use, urban agriculture also contributes to environmental, social, health, and economic areas. In this study, the definitions, contributions and benefits of urban agriculture and peri-urban agriculture are explained. There is no clear policy framework for urban and peri-urban agriculture in Turkey. But in fact, urban interfaces are and will remain subject to the work of planners and policymakers. The process of transforming villages in big cities into communities has been presented from a utilitarian perspective in light of Law No. 6360. In the urban and peri-urban areas, urban agriculture has been adopted as a profitable way out in terms of production, and suggestions for the development of urban agriculture practices in Turkey are presented.

1. INTRODUCTION

More than half of the world's population lives in cities (Orsini et al., 2013). As the urban population grows to 68 percent by 2050, a resilient and sustainable food system will become increasingly important to city dwellers (United Nations, 2018). Around a quarter of the poor in the developing world is estimated to live in cities, but poverty is becoming more urbanized, and the poor are urbanizing faster than the general population. However, some studies have found that not only is urban poverty increasing rapidly, but it is also being underestimated in the past (Hoornweg & Munro-Faure, 2008; Eshetu, 2011).

Poverty was previously associated with rural conditions, but rapid urbanization has resulted in the birth of a large class of urban poor, owing to migration from certain events (conflict, natural disasters, etc.) in many developing countries, and thus poverty has clearly become more urban (Eshetu, 2011).

In recent years, urban and peri-urban agriculture has gained traction as a viable strategy for the urban poor to produce food and earn income, thereby reducing their reliance on cash income (Ibrahim & Bint Ahmad, 2014). In other words, Urban and Peri-urban Agriculture (UPA) is a kind of response to the increasing demand for food in urban areas (FAO, 2011). Because the costs of supplying and distributing food to urban areas based on rural production and imports continue to rise and are not meeting demand, particularly among the poorer segments of the population, urban agriculture plays an important role in improving urban food security (Eshetu, 2011).

As the urbanization rate increases, food production facilities should be located close to the main consumption centres (Orsini et al., 2013). Because food supply and distribution from rural areas to urban areas or food imports to cities and their costs are constantly increasing, urban food insecurity is expected to increase in the coming period (Van Veenhuizen & Danso, 2007).

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Therefore, one of the proposed solutions to make cities more sustainable and to address food insecurity is to implement local urban farming systems (FAO, 2012).

It was aimed in this study to discuss the concepts of 'urban agriculture' and 'peri-urban agriculture,' both of which aim to protect the remaining agricultural areas in urban areas, and to present a utilitarian perspective to the applicability of urban agriculture in light of Law No. 6360.

The question of “whether urban agriculture actually provides environmental, economic, social and health benefits in urban areas and some of the challenges of peri-urban agriculture is discussed. It is important to emphasize that UPA and UA (Urban Agriculture) cannot be developed without land use policies, regulations, and frameworks that facilitate access to urban areas and ensure their use for agricultural purposes, and that municipalities bear significant responsibilities in this regard.

1.1. An overview of the concept of urban agriculture

Urban agriculture, according to Mouget, is a way of increasing the city's food supply while also increasing the poor's income (Bakker et al., 2000; Mougeot, 2000).

Urban agriculture; defined as any agricultural activity located in or within the boundaries of a town, city or metropolis that grows, operates and distributes food and non-food products (Moustier, 1999; Mougeot, 2006; Lovell, 2010).

In another study, urban agriculture was described as an essential component of the growth of cities and their adjacent rural areas, with the potential to dramatically shorten food and ecosystem service supply chains in the face of rising urbanization (Van Veenhuizen & Danso, 2007; Peters et al., 2009). Urban agriculture provides food sources in cities through new technologies, increases the resilience of food systems and ensures food security in urban areas (Grewal & Grewal, 2012; Haberman et al., 2014).

The contribution of urban agriculture to food security and a healthy diet is probably its most valuable asset. In most cases, urban food production is a response by the urban poor to inadequate, unreliable, and unregulated food access, as well as a lack of purchasing power (UNDP, 1996).

UA is found in every city as a result of this response, sometimes hidden and sometimes obvious. In a big city, there is very little unused space if you pay attention. Valuable vacant land is rarely left unused, and it is frequently taken over and turned into productive land, either formally or informally (Mougeot, 2006; Van Veenhuizen & Danso, 2007)

As a result, urban agriculture plays a significant role in the food security and safety of approximately half of the world's city dwellers (Apeaning Addo, 2010; Eshetu, 2011).

1.2. An overview of the peri-urban agriculture

The concept of urban agriculture created the idea of agriculture on the urban periphery, and research into food production in both the city centre and the surrounding areas of the city began (Tsuchiya et al., 2015; Benis & Ferrão, 2017; Tedesco et al., 2017).

The concept of peri-urban agriculture (UPA) is today generally seen as a middle road between urban centres and rural areas and/or as the interface between cities and rural areas (Marshall et al., 2009).

More commercially oriented agriculture is practiced in peri-urban agriculture. Because these areas rely on the city for economic survival. Employment opportunities are higher and they are realized in lands with lower wages in peri-urban agriculture, which is carried out in large areas where natural resources are plentiful. Agricultural areas are located further away from existing markets on these lands. Furthermore, these lands are vulnerable to urbanization, and it is highly likely that urban periphery agricultural lands will become urban agricultural areas as a result of rapid urbanization (Drescher, 2001).

Prekarious land occupation in the context of competition for land use with pressures for urbanisation, housing, and industry is the major constraint to UPA's sustainable development. Cities grow, food demand rises, but arable land declines. Land values rise as demand for non-agricultural uses rises, as the new urban population seeks access to arable land. The environment is highly competitive, and players in urban and peri-urban food production are rarely heard; there are many competitors for agricultural land, and these lands are rarely protected by safe tenure regulations (FAO, 2011; Ibrahim & Bint Ahmad, 2014).

While UPA makes a significant contribution to improving food security, employment opportunities, and household income, more coordinated work by city farmers, local organizations, municipal authorities, and an interdisciplinary researcher is required to maximize its utility (Eshetu, 2011).

And UPA's ability to consistently provide food to the urban poor depends on better planning based on accurate agro-ecological information, which is also a way to increase the sustainability of the system (Gittleman, 2009).

In the absence of appropriate policies and strategies for UPA, existing urban farmland is being neglected at an increasing rate, this situation posing a threat to food security and resilience. Legislation to support emerging UPA organizations and their entrepreneurial activities is needed, as are restrictions on the redevelopment of farmland for non-agricultural purposes and the construction of informal housing on or near farmland. Facilitating the integration of urban agriculture into urban policies and programs, building capacity between local governments and other local stakeholders, and multi-stakeholder policy-making and action planning are all critical (Tawk et al., 2011). Governments and local governments must seize the opportunities that have arisen. By adopting policy responses that better integrate agriculture into urban development, the UPA can

improve urban food security and livelihoods (FAO, 2012).

With the Law No. 6360 on the Establishment of Metropolitan Municipality and Twenty-Six Districts in Thirteen Provinces, and Amending Some Laws and Decrees, the villages in 26 provinces were included in the neighbourhoods and were included in the city boundary (Official Gazette, 2012).

This situation shows that especially metropolitan cities can expand on existing agricultural lands and increasing urbanization pressure on these areas.

Considering the difficulties that arise as a result of rapid urban growth, there is a need for healthier and utilitarian plans within the framework of an urban planning focused on sustainability.

The country's current urbanization policies, as well as agricultural production policies, treat agriculture and the city separately, viewing agriculture as a separate activity from the city. Rural areas, including natural areas other than urban areas, are managed in an urban management style under Law No. 6360. Given Turkey's past urbanization experiences, it is expected that the transformation of these areas into urban areas will accelerate (Yenigül, 2016).

However, if the concept of urban peri-urban agriculture is addressed in these areas at the periphery of the city and encouraged by local governments in terms of law and practice, these areas will be freed from the possibility of being under the pressure of intense urbanization and the concept of urban perimeter and urban agriculture will be included in the legislation.

Therefore, it would be appropriate to establish a link between UPA and Law No. 6360 (Official Gazette, 2012) in terms of legislation in Turkey.

1.3. UPA and Law No. 6360

Uncontrolled rapid urbanization and land use change create plenty of issues that can have positive and negative consequences for the natural, social, and economic environment (Brook & Dávila, 2000).

Peri-urban agriculture can play a strategic role in addressing these problems in a positive way in Turkey.

For instance, many villages in Turkey's metropolitan cities have been merged into the city limits as a result of Law No. 6360. Agriculture and agricultural production will inevitably continue under the name of peri-urban agricultural activity in these new neighbourhoods (formerly defined as villages).

UPA is affected by rapidly changing land rights, uses and values. There is a possibility that some urban farmers will lose their land and have to stop their production activities. Thus, many farmers do not have access to urban land, and as urban areas expand, increasing land demand and changes in land use often put pressure on land tenure arrangements that are traditional or informal and have no connection with formal legal institutions (FAO, 2011).

Land ownership issues are a potentially significant constraint for UPA food production. To enable agricultural use, the solution grants temporary and flexible land use rights to those involved in agriculture.

Temporary ownership arrangements are frequently required to allow vacant land to be used for food production and livelihood protection, as well as the temporary resettlement of displaced populations. Developing an appropriate policy that governs how the UPA is carried out can play a critical role in ensuring the industry's sustainability, food production, and pollution prevention, so city managers, planners, and policymakers should pay attention (FAO, 2011).

Law No. 6360 will be a good opportunity for UPA farmers and local governments in Turkey to develop and implement the necessary regulations as soon as possible. Thus, urban agriculture in Turkey will continue to be practiced both in the city and in the peripheries of the city.

2. BENEFITS OF URBAN AND PERI-URBAN AGRICULTURE

Urban agriculture has many and varied potential benefits, including economic development, improving environmental quality, meeting food demand, and contributing to human health (Saha & Eckelman, 2017). Furthermore, urban and environmental agriculture addresses the issues of urban poverty and food insecurity, providing strategies to reduce them and contribute to food demand (Abdulkadir et al., 2012).

2.1. Environmental Benefits

Urban Agriculture leads to the greening of cities, the reduction of air pollution, the rise of humidity, and the cooling of temperatures (Smit et al., 1996; Mougeot, 2006).

UA expands aesthetic and recreational areas associated with green spaces in cities (Saldivar-Tanaka & Krasny, 2004).

Urban agriculture aims to reduce food insecurity in cities while also helping to solve a number of other environmental concerns such as rising recreational space and biodiversity (Parece & Campbell, 2017).

In addition, urban agriculture has the potential to aid in the productive recovery of contaminated lands, especially in terms of environmental management. While contributing to the utilization of rainwater currents and the reduction of air pollution with the increased vegetation cover thanks to urban agriculture, it increases urban biodiversity and helps to protect species (Kaufman & Bailkey, 2000; Van Veenhuizen, 2006).

2.2. Social Benefits

Another reason people participate in urban agriculture is for social reasons (Ackerman et al., 2014).

In the urban socio-economic system, urban agriculture can be an important strategy for poverty reduction and social integration of newcomers and disadvantaged groups (Hodgson et al., 2011).

Urban agriculture welcomes women and children. It creates employment, especially for women, the elderly and young people, and can form the basis for broader processes to revitalize and improve the entire neighbourhood (Eshetu, 2011).

The positive impact of urban agriculture on women, youth, and children has been documented in cities all over the world (Mawois et al., 2011). Worldwide, it is estimated that approximately 65% of urban farmers are women (Van Veenhuizen, 2006).

For city dwellers, a garden or rooftop farm is a place where they can come together for mutual benefit and also establish and connect a shared social and cultural identity (Ackerman et al., 2014).

Although the socio-cultural services and benefits of urban agriculture are difficult to quantify, the majority of them are focused on improving the quality of urban life. Community-based (HOPE Collaborative etc.) UA formats enhance social interactions and mutual communication between citizens of different ages, cultures and social backgrounds (Galluzzi et al., 2010).

As a result, UA's socio-cultural services appear to be more important than their agricultural functions, extending the apparent aesthetic and recreational values typically associated with green in the city (Saldivar-Tanaka & Krasny, 2004).

By improving ties between different ethnic origins and age groups, community involvement, and social interaction with community gardens, urban agriculture can have a positive impact on health and environmental issues (Hodgson et al., 2011).

Besides that, urban agricultural activities are fertile green spaces that allow people to come together and grow crops at the level of individual parcels. Collectively, these areas form a network of multifunctional, productive features that provide citizens with many benefits beyond just producing food (Balmer et al., 2005).

2.3. Health Benefits

Food production in and around cities is an integral part of the urban fabric in most of the developing world. In these regions, urban and peri-urban agriculture (UPA) plays an important role in diversifying urban diets and providing environmental services in urban and peri-urban areas (Sy et al., 2014).

Urban agriculture initiatives provide the community with healthy, safe, fresh produce and encourage physical activity. Gardening three to four times a week has the same benefits as moderate walking or cycling and has been found to reduce stress, anger, and even blood pressure (Hynes & Howe, 2002).

Moreover, the practice of growing food and horticulture rebuilds people's bond with the land and nature, reduces stress, depression and anxiety in people, and contributes to a healthier diet for some groups (Mitchell & Popham, 2007; Kortright & Wakefield, 2011; Douglas, 2012).

In addition, increased exposure to green spaces has been linked to lower levels of attention deficit disorder, hyperactivity disorder, and delinquency in children (Kuo, 2010; Marcus, 2012; Parece et al., 2017).

Food availability and nutritional status are improved by urban agriculture. Self-food production resources can be used to supplement home diets by purchasing other nutritious foods like fish, fruit, and vegetables (Bryld, 2003).

Urban and peri-urban farms can also play a significant role in providing citizens with recreational opportunities. After basic needs are met, city dwellers may pursue gardening for the physical and/or psychological relief it provides, rather than for food production.

2.4. Economical Benefits

Urban agriculture is an important economic sector, although in many cities it is largely an informal sector due to the lack of official recognition and support. For substantial categories of the urban and sub-urban population, urban agriculture is the main or important additional source of income and constitutes an important survival strategy for new immigrants and the unemployed (De Zeeuw, 2004).

Agriculture will provide various economic benefits in urban areas. It is effective in reducing the maintenance costs of public spaces, increasing local employment and income-generating opportunities for the low-income group levels of the city, processing unused resources (e.g. roofs, roadsides, public services and vacant lands), and increasing property values (Kaufman & Bailkey, 2000; Van Veenhuizen & Danso, 2007).

Urban agriculture can also reduce the energy used in food transportation by saving the way food must travel from producer to consumer, (Peters et al., 2009) therefore, while saving energy, it reduces greenhouse gas emissions and carbon emissions.

As can be seen, urban agriculture provides many benefits in many areas. However, rather than benefits, raising awareness on urban agriculture and implementing it in the best way is a priority area that should be taken into consideration by both local governments and decision-makers (Table 1).

Table 1. Conceptual Framework for Understanding the Benefits of Urban and Peri-Urban

ENVIRONMENTAL BENEFITS
<ul style="list-style-type: none"> • Reduce pollution • Clean air • Improve Humidity • Increased Green Spaces • Reduces greenhouse gas • Use of household waste as compost in the UPA farms
HEALTH BENEFITS
<ul style="list-style-type: none"> • Improve health • Provides nutritional variety • Improve nutrition • Provides psychological relief • Reduces stress
ECONOMICAL BENEFITS
<ul style="list-style-type: none"> • Job creation • Women and young empowerment • Income generation • Reduce the energy used in food transportation
SOCIAL BENEFITS
<ul style="list-style-type: none"> • Increased welfare • Community revitalization

3. CONCLUSION AND DISCUSSION

The objective of urban agriculture implementation varies between developed and developing countries. Even though it is used in developed countries for landscaping, energy efficiency, and socialization, it is also used in developing countries to improve food security.

Through constructing cities that are more durable, productive, and safer in terms of food production, urban and peri-urban agricultural practices will play an important role in reacting to a variety of challenges facing developed countries (De Zeeuw, 2011).

Urban agriculture and peri-urban agriculture can be a sustainable and innovative solution as a productive land use model with many contributions such as reducing the urban heat effect, greening the city and supporting food production, and refreshing the city's air.

Urban agriculture can help build communities that integrate food production with all aspects of human life, closing the production-consumption cycle.

As a summary, the concepts of urban agriculture/peri urban agriculture and the potential benefits of urban agriculture are discussed in this study.

In particular, with the Law No. 6360, suggestions were made to decision-makers, metropolitan councils, and other local authorities, in order to increase the potential benefits of the peri-urban agriculture by allowing agriculture on the interfaces that serve as a transition between urban and rural areas.

Suggestions have been presented in line with many studies in the literature that contribute to urban agriculture.

To implement healthier urban and peri-urban agriculture in Turkey;

- The UA and the UPA should be given due attention and included in development plans
- Existing land use systems must also be adapted to enable them to better support the purpose of urban agriculture.
- In the process of urban agriculture land use, it should be included in the "Spatial Plans Construction Regulation."
- Urban agriculture regulation should be announced (Richards & Taylor, 2012).
- The General Directorate of Geographic Information Systems and the General Directorate of Spatial Planning should work together to promote urban agriculture in metropolitan areas as soon as possible.
- Public land inventories should be made, vacant or underutilized areas for community gardens or other urban agricultural uses on properties leased by or owned by the Municipality should be identified (Balmer et al., 2005; Horst, 2008; Mendes et al., 2008; McClintock & Cooper, 2010; Pulighe & Lupia, 2016).
- For a better implementation of urban agriculture, legal criteria should be reviewed, and decision-makers should develop urban agriculture regulations (Mendes et al., 2008).
- The outputs of urban agriculture should be reviewed; more attention should be paid to its

benefits and its disadvantages should be minimized.

- Once the existing regulatory obstacles to urban agriculture have been established, it is important to decide how to protect urban agriculture and to increase public knowledge of urban agriculture.
- Urban agriculture should be controlled and institutionalized by multidisciplinary teams as part of the city ecosystem (Mougeot, 2000).
- Urban agriculture; should be integrated into the food production system in all aspects (taking into account human life, past and possible natural disasters).
- Urban agriculture should be viewed as a component of the social food system, with voluntary partnerships and communities playing a role in bridging the gap between food production and consumption.
- Urban farmers should be provided with training and professional technical assistance, support should be provided in the production and processing stages, and the opportunity to sell their products in public places such as school canteens, markets and associations should be offered.
- Especially local governments should revise both infrastructure works and recreation activities in a way that supports urban agriculture.
- Providing land by the municipality to low-income groups in the city through renting and revitalizing production should be encouraged.
- Agriculture and agricultural-based activities should be established in areas that have acquired urban status but have not yet been urbanized as a result of Law No. 6360.

And in conclusion of course Urban Agriculture is not a panacea for all urban problems, and its positive effects can be balanced against negative effects, especially if certain risks to public health and the environment are taken into account.

But first, the question of why urban agriculture is not implemented or expanded on a larger scale in developing countries and why its benefits are not focused more must be sought.

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Author Contributions

The contributions of the Authors of this article is equal.

Conflicts of Interest

There is no conflict of interest between the authors.

Statement of Research and Publication Ethics

Research and publication ethics were complied with in the study.

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