The role and potential of urban agriculture: Exploratory research

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- The objective of this study is to understand the role and potential of urban agriculture in and around Ethiopian cities, using Addis Ababa as an example.
- Our findings indicate the important role of urban agriculture in Addis Ababa by highlighting its contribution to food security and price stability, employment opportunities, and environmental management – including issues such as urban greenery, urban aesthetics, and proper waste utilisation.
- The main challenges for urban agriculture in Addis Ababa include the competitive demand for land, lack of water and water pollution, warehouse and limited market linkage, mismanagement of solid and liquid wastes, and poor coordination among stakeholders.
- The main opportunities include the recently improved recognition and institutional structure of urban agriculture, the presence of complementary initiatives, the high demand for practising urban agriculture, and the demand for urban agriculture products.

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Introduction

Urban agriculture plays a significant role in diversifying urban diets, expanding job opportunities, managing the environment, and improving urban ecosystem services. Its importance has increased in light of local and global events that disrupt global and local food supply chains.

Despite its increased importance, with the exception of some conflicting anecdotal literature and micro-level case-studies of small sub-samples, there is little to no quantitative research documenting the extent and contribution of urban agriculture in Addis Ababa in particular and Ethiopia in general.

The major objective of this study is to understand the role and potential of urban agriculture in and around Ethiopian cities, using Addis Ababa as an example. We collected and examined a number of existing secondary data and reports as well as primary sources and conducted key informant interviews with some of the major stakeholder organisations working in urban agriculture. Because this is an exploratory study, we analyse the data using descriptive statistics and present it in tables and graphs.

Policy motivations

Municipal governments across low- and middle-income countries have increasingly focused on the potential of urban agriculture to tackle food security, including through the United Nations New Urban Agenda (2016) and initiatives by the Food and Agriculture Organization. Urban economists typically think of agriculture as an inefficient use of urban land, with the theoretical literature instead emphasising agricultural mechanisation and improving rural-urban linkages by reducing the cost of transit. However, implementing these policies can be expensive, difficult, and time-consuming. In light of increased food insecurity following COVID-19, the oil crisis, high inflation, and the Ukraine-Russia conflict, governments are considering promoting urban agriculture as a second-best, fast, and temporary solution that functions alongside these policies.

Described as “another way of feeding cities” by the Veolia Institute (2019), urban agriculture is gaining global attention, with both national and international experiences showing its potential to improve urban food security. With a population of more than five million people – many of whom are poor and 19.3% of whom are unemployed – Addis Ababa could potentially see significant benefits from urban agriculture in the form of poverty and unemployment reduction.

The government of Ethiopia has immense interest in this subject, evidenced by the formation of the Farmers and Urban Agriculture Commission under the Addis Ababa City Administration, while the Prime Minister of the country has emphasised the importance of promoting urban agriculture in the contemporary

context of both the country and the world. The mandate of urban agriculture at the federal level has been shifted from the Ministry of Urban and Infrastructure Development to the Ministry of Agriculture.

Key findings

Stakeholders in urban agriculture

Different actors have a stake in urban agriculture, including farmers, cooperatives or enterprises, households, and institutions. However, poor coordination and interaction among these actors have led to disintegration and duplication of efforts. While urban agriculture is the main source of income for cooperatives or enterprises, it is a supplemental activity for farmers, households, and institutions. The significance of these incomes as a source of livelihood remains unknown. The lack of organised data on the different aspects of urban agriculture has made it difficult to solicit relevant data from secondary sources.

Contribution to food security

Urban agricultural products in Addis Ababa include cereals, pulses, oil seeds, vegetables, dairy, meat, and poultry. Table 1 shows the crop and vegetable production in the city. It shows that cereals and oil seeds production increased from 2018 to 2021 while pulses production declined during the same period. The production of each vegetable, as well as the total vegetable production, increased from 2018 to 2021, except for snap beans, pumpkins, and cauliflower, which registered a reduction in production during the same period. A study, citing the Farmer and Urban Agriculture Development Commission (FUADC), reported that in 2021, there were around 106,280 registered urban vegetable producers in Addis Ababa, providing roughly 60% of the city's vegetable consumption, especially leafy vegetables (Serbessa et al., 2023). This significantly contributes to the city’s food and nutrition security.

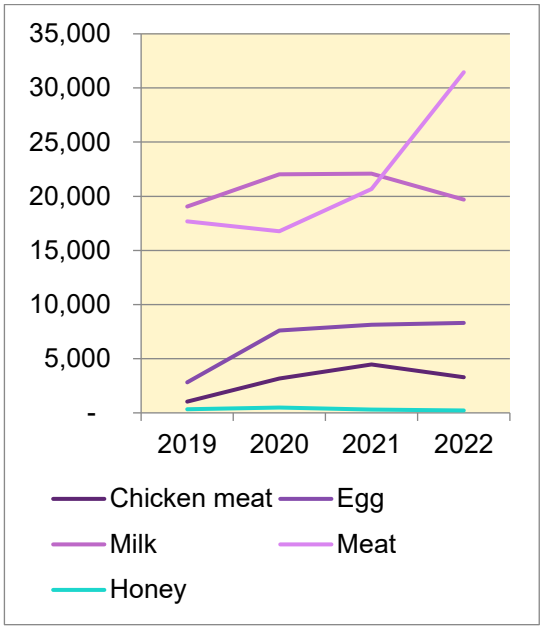
The city’s dairy, poultry, and meat production (in tons) is presented in Figure 1. Egg production has increased throughout the reporting period (2019-2022), while meat production, after slightly declining from 2019-2020, shows an increasing trend from 2020-2022. On the other hand, after increasing for three consecutive years, chicken meat and milk production declined in 2022. Except for honey production, all products have shown a significant increment in quantity of production between 2019 and 2022. Initiatives such as “Yelemat Tirufat” – a four-year development programme that aims to boost the production and productivity of dairy, eggs, chicken meat, honey, and related hive products – are expected to enhance the food security situation of the city.

Table 1: Crop and vegetable production in Addis Ababa

Crop Type /vegetable/ Fruits/ Plantation type	Production in Quintals	
	2018	***2021***
Cereals	**81,137**	**142,246**
Pulses	**10,375**	**5,590**
Oil Seeds	**435**	**666**
Vegetable/roots		
Potato	5,702	6,912
Tomato	8,250	10,450
Carrot	7,250	7,250
Onions	4,620	6,532
Garlic	1,275	1,445
Pepper (Green)	938	1,563
Beet root	2,310	2,750
Head Cabbage (ጥቅል ጎመን)	3,928	4,870
Cabbage (የሃበሻ ጎመን)	14,898	15,280
Lettuce	16,634	11,568
Swisschard	14,460	25,875
Onion(Baro)	420	452
beans snap (ፎሶሊያ)	827	496
Pumpkins	3,465	1,250
Cauliflower	906	600
Total vegetables	**85,882**	**97,292**

Source: FUADC (2023)

Figure 1: Dairy, poultry, and meat production (in tons)



Source: Drawn using the information obtained from the FUADC (2023)

Role in employment creation

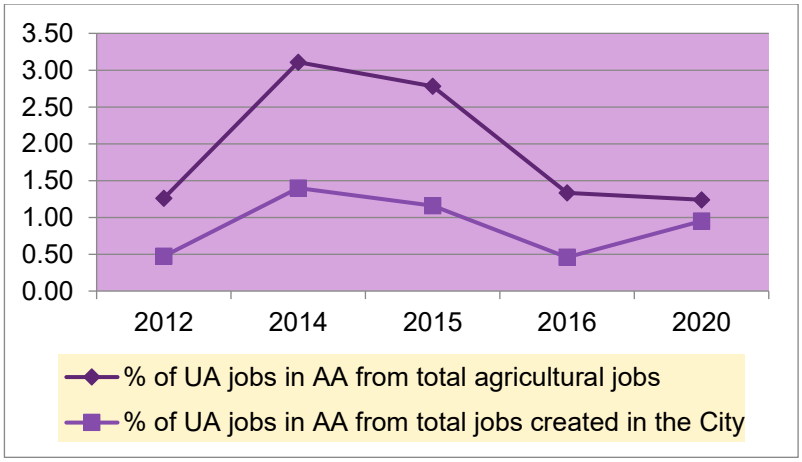
Figure 2 shows the role of urban agriculture in employment creation in the city. To illustrate the pattern of change, urban agriculture employment in Addis Ababa is compared to urban agricultural jobs created across Ethiopia and the total jobs created in Addis Ababa. The percentage share of urban agricultural jobs created

in Addis Ababa, both from the total national-level agricultural jobs and the total job opportunities created in the city, have a similar pattern, with the exception of the period from 2016 to 2020 – when the share of urban agriculture in total jobs created in the city increased while its share from the total agricultural jobs declined. The share of urban agriculture in the city was the highest in 2014, both compared to total agricultural jobs and total jobs in Addis Ababa. The city's lowest share of urban agricultural jobs was registered in 2020 compared to the total agricultural jobs (1.24%) and in 2012 compared to the total jobs created in Addis Ababa (0.472%).

The urban employment and unemployment survey results seem to underestimate the share of urban agricultural employment since they exclude subsistence farming and work in private households, which were considered neither formal nor informal activities.

The information from interviews and the literature reported higher contributions of urban agriculture to employment opportunities in Addis Ababa. One study reported that there were around 106,280 registered vegetable producers in Addis Ababa in 2021 alone (Serbessa et al., 2023). The crop development unit of the FUADC reported that the unit alone creates job opportunities for more than 22,000 individuals per annum. The Urban Food Security and Safety Net Department of the Ministry of Urban Development and Construction reported that in the 2022/23 fiscal period alone, about 45,000 participants in the urban safety net programme were engaged in urban agricultural practices. Consistent with the recent attention given to urban agriculture, the number of participants in urban agriculture in the city increased to about 380,000 in 2021/22 from about 107,000 in 2021/21. For the 2022/23 fiscal year, there were about 378,000 participants in urban agriculture. The difference in figures mainly emanates from the definition of terms, the method of counting urban jobs, and related issues.

Figure 2: Role of urban agriculture in employment creation



Source: Drawn using data extracted from the Urban Employment and Unemployment Survey Report (2012, 2014, 2015, 2016, and 2020)

Role in environmental management

Urban agriculture in Addis Ababa has been contributing to waste management solutions by utilising urban wastes for productive agricultural inputs such as compost. However, the scale and its impact are not known. With proper intervention, urban agriculture has the potential to utilise treated wastewater for irrigation purposes. Among the licensed urban agricultural enterprises in the city, 36 are licensed to prepare and distribute compost for the market. Composting not only contributes to waste management but also generates income for practitioners. Moreover, urban agriculture is a component of urban greenery that improves the urban microclimate, increases biological diversity, and enhances the aesthetics and recreational functions of urban areas. All the key informant interviewees emphasised the important role of urban agriculture in environmental management.

Policy implications and conclusions

This policy brief presents and covers a range of issues regarding urban agricultural activities in Addis Ababa, with several implications for policy. First, urban agriculture can indeed contribute to the city's and country's food security. Up to 60% of the city's vegetable supply, including leafy vegetables, comes from urban agricultural practices. Its contribution to food security is even more important in light of global and local conflicts that disrupt local and international food supply value chains.

Second, urban agriculture has the potential to contribute to price stability. This is because institutional practitioners of urban agriculture provide urban agricultural products to their employees and the surrounding community at lower prices. However, the scale and contribution to price stability are unknown, and further investigation is required to establish evidence of urban agriculture's effect on price volatility.

Third, in light of high unemployment and huge internal migration to the city, urban agriculture can contribute to employment opportunities. In this regard, even if the urban employment and unemployment survey reports underestimated the employment creation opportunities of urban agricultural activities due to the surveys' definition of formal and informal employment, the information from responsible offices reports higher figures. For example, the FUADC has reported that the number of participants in urban agriculture in the city increased to about 380,000 in 2021/22 from about 107,000 in 2021/21. For the 2022/23 fiscal year,

the number of participants in urban agriculture was about 378,000. Given the high informality of urban agricultural practices in the city, formulating clear policies and regulations as well as designing projects and programmes aimed at urban agriculture could enhance the employment opportunity contribution of the sector.

With proper planning and intervention, urban agriculture has the potential to contribute to food security, employment creation, environmental management, and related issues. It is also important to integrate urban agriculture with urban planning practices. In urban planning, 30% of the land is for urban greenery, 40% for settlement, and the remaining 30% is for other services. Hence, it is important to integrate urban agriculture into the urban greenery portion of urban land allocation. This approach is also instrumental in addressing some of the key challenges encountered by urban agricultural practitioners, such as shortages of land and water as well as pollution problems.

Issues for further research

Much remains to be further researched and investigated with proper data and rigorous analysis. Given the poor coordination among the different stakeholders and the fragmented and disintegrated data about urban agriculture in the city, soliciting relevant data from secondary sources is difficult and will provide an incomplete picture of the situation.

Despite the attempts to utilise urban waste for productive agricultural inputs (compost), the scale of its application and contribution to urban waste management are unknown. Also unknown is whether the application of compost prepared from urban waste is a cost-effective alternative to chemical fertiliser. In addition, one understudied issue is urban agriculture's contribution to environmental management.

Is urban agriculture an attractive investment venture? Further research is required to understand why individuals choose to become involved in urban agricultural practices. It is not clear whether they are involved because urban agriculture is an attractive investment venture or simply because they lack alternative employment opportunities. Hence, it is important to investigate the impact of urban agriculture on the income and livelihood of the participants.

Is urban agriculture a sustainable investment or just a transitory strategy? The issue of land allocation and competition for land from other sectors is high. There is debate about whether allocating land for urban agricultural practices is an efficient option owing to the high productivity of other sectors compared to urban agricultural practices. Given the large, unutilised, and vacant land in Addis Ababa and the underdevelopment of other sectors, the question remains of whether

urban agricultural practices can be sustainable in the long run. This issue has to be further investigated with rigorous analysis and data.

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