



A Review on Urban Agriculture

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Abstract: Urban agriculture (UA) is a dynamic and recent development concept as compared to rural agriculture. Urban agriculture has a positive impacts and externalities in the cities, as well as residents who enjoy its products and represents an opportunity for improving food supply, health conditions, local economy, social integration, environmental sustainability of the city, and economic uses of land. But the current and potential roles of urban agriculture differ from country to country. Even if urban agriculture positively contributes for many of the problem affecting the urban environment, but at the same time, when there is a poor practice, it can have a negative impact on human health, the environment, and the economy. In recent years, due to the explosive growth of cities in the world, food production both within the cities and around the cities has been receiving increasing attention and adopted as a strategy or as a means of contributing to city food supplies, alleviating urban poverty, providing employment opportunities, and improving the environmental conditions of the city. The objective of this seminar is to review urban agriculture, and to summarize the contribution, challenges, and determinants of growth of urban agriculture.

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Key works: - Urban Agriculture; Growth; Determinant; Challenges; Contribution.

1. Introduction

Urban agriculture (UA) is a dynamic and recent development concept as compared to rural agriculture (FAO, 2007; Tewodros, 2007). Different authors and scholars described urban agriculture in various ways on the basis of location or time of agricultural activities and under different socioeconomic conditions and political regimes. Urban and peri-urban agriculture (UPA) can be defined as the growing of plants and the raising of animals within and around cities (FAO, 2016; RUAFA, 2016). According to Hendrickson and Porth (2012), urban agriculture also defined as the growing, processing and distribution of food crops and animal products by and for the local society within urban areas.

According to Mougeot (2000), the most important feature of urban agriculture is not merely integration to the city but by its increasing contribution to urban development both at a socio-economical and ecological perspective. Therefore, urban agriculture affects and is also affected by the urban environment. So urban agriculture has the following features: *It feeds the city inhabitants, it uses the city resources (land, labor, organic wastes, water), is strongly influenced by the contingent conditions (policies, land competition, market), and it plays a crucial role on the socio-economical conditions of urban dwellers.*

According to Smit et al. (2001), urban agriculture has the following features: *exemplifies the multiple links among an urban food supply system and other systems, localizes food production, bringing it close to the consumer and making it place-specific (because certain crops are especially suited to certain places), it has a special capacity to strengthen access to food by low-income and vulnerable groups, and incorporates innovative food delivery processes, such as community-supported agriculture and organic hydroponics.*

Urban agriculture shows a large variety of features based on the following factors:

Type of economic activities

Urban agriculture includes production activities as well as related processing and marketing activities, inputs production, services delivery by specialized micro-enterprises or NGOs, etc. In urban agriculture, production and marketing tend to be more closely interrelated in terms of time and space than for rural agriculture (Zeeuw, 2004; RUAFA, 2016; Smit et al., 2001; SIDA, 2003).

Type of location and tenancy

Urban agriculture may take place in locations inside the cities (intra-urban) or in the peri-urban areas. The activities may take place on the

homestead (on-plot) or on land away from the residence (off-plot), on private land (owned, leased, informal use vacant land) or on public land (formal or informal use of idle public land) (Zeeuw, 2004; SIDA, 2003; RUAF, 2016; Smit et al., 2001).

Type of products

Food production may include different types of crops or animals or combinations of these. Often the more perishable and relatively high valued vegetables and animal products and by-products are favored. Production units in urban agriculture in general tend to be more specialised than rural enterprises, and exchanges are taking place across production units (Zeeuw, 2004; SIDA, 2003; RUAF, 2016; Smit et al., 2001).

Scale of production and technology used

In the city, we may encounter individual or family farms, group or cooperative farms and enterprises, micro-, small (the majority) and medium-sized enterprises, as well as large-scale undertakings. The technological level of the urban agriculture enterprises may be low, intermediate or high, with a strong tendency is towards more technically advanced and intensive farming systems (Zeeuw, 2004; SIDA, 2003; RUAF, 2016; Smit et al., 2001).

Product destination /degree of market orientation

In most cities in developing countries, an important part of urban agricultural production is for self-consumption, with surpluses being traded. Products are sold at the farm gate, in local shops, on local markets or to intermediaries and supermarkets. Mainly fresh products are sold, but part of it is processed for own use, cooked and sold on the streets, or processed and packaged for sale (Zeeuw, 2004; SIDA, 2003; RUAF, 2016; Smit et al., 2001).

Type of people involved

Large part of the people involved in urban agriculture is the urban poor such as pensioners, unemployed, female headed households. Contrary to general belief they are often not recent immigrants from rural areas (since the urban farmer needs time to get access to urban land, water and other productive resources). In many cities, one will often also find lower and mid-level government officials, school teachers and the like involved in agriculture, as well as richer people who are seeking a good investment for their capital. Urban agriculture is generally characterized by closeness to markets, high competition for land, limited area of space, use of urban resources such as organic solid wastes and wastewater, low degree of farmer organization, mainly produce perishable products and also there is high degree of specialization in farming activities

(RUAF, 2014). The diversity of UA is one of its main attributes, as it can be adapted to a wide range of urban situations and to the needs of diverse stakeholder's participation (Haile, 2014).

Who are the urban farmers?

The urban farmers are men and women coming from all income groups. However, the majority of them are low to medium income earners, who grow food for self-consumption or supplementary income (Bakker et al., 2000, quoted in Mpofu, 2013). It implies that urban farmers do not form a homogeneous group but it can be found almost every socioeconomic group of an urban area.

According to RUAF (2010), urban farmers are mostly poor urban dwellers who have access to productive resources for farming, and are mostly not recent migrants since accessing the resources requires time and other contextual factors (RUAF, 2010; Tewodros, 2007; Smit et al., 2001).

2. Contribution of UA

Urban agriculture has a positive impacts and externalities in the cities, as well as residents who enjoy its products (Veenhuizen, 2014; Smit *et al.*, 2001; Mpofu, 2013) and represents an opportunity for improving food supply, health conditions, local economy, social integration, and environmental sustainability of the city (Orsini *et al.*, 2013). But the current and potential roles of urban agriculture differ from country to country (Smit *et al.*, 2001; Corbould, 2013).

According to RUAF (2016), in most of developing countries, urbanization often goes together with growing urban poverty and food insecurity related to unemployment, rising food prices, growing dependence on food imports, increasing dominance of supermarkets and fast food chains, and challenges posed by climate change. So urban agriculture is increasingly recognized for its capacity to strengthen the resilience of the urban food system, enhance access of the urban poor to nutritious food, generate employment and income, and help the city to adapt to climate change and reduce its ecological foot print.

2.1. Economic Contribution of UA

Urban agriculture have economic contributes significantly to food supply, employment creation, income generation and environmental management (Mpofu, 2013; RUAF, 2014; Mohammed, 2002; Smit *et al.*, 2001; Veenhuizen, 2014). According to Smit *et al.*, (2001), the economic benefits of urban agriculture can be discussed in terms of its role in: Employment, income generation, and enterprise development; Food security; the

national agriculture sector; and Land-use economics.

Urban agriculture also used as a strategy to address the increasing urban unemployment, poverty and hunger (Mpofu, 2013). This is because urban agriculture supports food security and nutrition, provides employment and generates income for the urban poor and the disadvantaged groups such as women, the disabled, the elderly and the unemployed youth (Veenhuizen, 2014; Smit *et al.*, 2001).

Employment creation

According to FAO (2016), it is estimated that about 800 million people worldwide engage in urban agriculture. In some Asian cities, 80 per cent of the population and in African countries, approximately 40 per cent of the urban population is involved in urban agriculture (Corbould, 2013). It implies that urban agriculture has a significant potential to create employment opportunities. Urban farming provides secure jobs to many urban dwellers in the city (Smit *et al.*, 2001), and decrease unemployment rate in urban area, since urban agriculture is labor intensive (Teferi, 2006, quoted in Zena, 2011). **Income**

Generation

Urban farming can also be a good source of income for the urban poor, if it is especially practiced as a formal sector (Tewodros, 2007), and may function as an important strategy for poverty alleviation (Veenhuizen, 2014). It provides income-generating opportunities for people with low skills and little capital, as well as for people with limited mobility, including women with children and the elderly (Smit *et al.*, 2001). It implies that urban agriculture has a significant potential to generate income for urban farmers. The economic benefits of urban farming can be seen along with the generation of supplemental or principal incomes to the households (Mohammed, 2002).

Local Enterprise Development

Urban farmers/farming households save household expenditures by growing and produce their own food. Since poor people generally spend a most part of their income (60 – 80%) on food, the savings can be substantial. It implies that, urban agriculture also have a potential to stimulates the development of micro-enterprises (i.e it has a potential to stimulate local economic development) (RUAFA, 2016; Veenhuizen, 2014). Urban farming is a competitive economic activity and the industry of choice for millions of urban entrepreneurs. For countries with foreign exchange problems, urban agriculture can be an import-substituting industry (Smit *et al.*, 2001), and has a significant potential to stimulate the growth

of enterprises in the related activities in input supply (Zeeuw, 2004).

Food security

The contribution of urban agriculture to food security and healthy nutrition is probably its most important asset for urban farmers (RUAFA, 2010; Veenhuizen; 2014, Zeeuw; 2004). Food production in the city is in many cases a response of the urban poor to inadequate, unreliable and irregular access to food, and the lack of purchasing power (Tewodros, 2007; RUAFA, 2010; Mpofu, 2013; Zeeuw, 2004).

Urban dwellers are more vulnerable to food insecurity, as they rely on external sources and exposed to supply shocks when there is a natural disaster and inadequate supply. Urban agriculture could play a major role in achieving global food security, since it produces 15 to 20 percent of the world's food supply (Corbould, 2013), and also it is the source of food for 40 percent of African and 50 percent of Latin American urban dwellers (UNDP 1996; Corbould, 2013; Zezza and Tasciotti 2008, quoted in Messay, 2010).

The National Agriculture Sector

Urban agriculture has a strong contribution for economic development of a country by supporting national agricultural sector. In many countries urban farming satisfies a significant percentage of the urban food demand and comprises a fair share of the nation's agricultural industry (Smit *et al.*, 2001).

At national level, urban agriculture to a large extent complements rural agriculture and increases the efficiency of the national agricultural system in that: it provides products that rural agriculture cannot supply easily (e.g. perishable products that suffer during transport, high-value crops that need close monitoring of the market), or can release rural lands for export production of commodities, and can substitute for food imports (Zeeuw, 2004).

Economic Use of Land

Urban agriculture is thriving in a variety of settings, from rich Tokyo to poor Kampala, and from high-density Hong Kong to low-density Managua (Smit *et al.*, 2001). When there is facing food shortages in many countries, an expansion in urban agriculture can reduce the pressure on rural land, especially the push onto new low-quality agricultural land. Urban farming also used to practice intensified production methods which means that more people can be fed on existing cultivated land without putting additional stress on marginal lands (Smit *et al.*, 2001).

According to Smit *et al.*, (2001), urban agriculture is an economical use of land for a number

of reasons. Since, urban agriculture: *Generates income from temporarily available land at the growing urban periphery and the renewing core; puts idle water bodies and steep slopes to productive use and maintains the land; generates income from idle, unbuilt parts of oversized facilities such as hospitals, factories, military bases, and airports; is a competitive land use in many cases (for example, poultry farms and ornamental horticulture on the outskirts of cities); and Generates a considerable number of jobs for the relatively little land it requires. Urban agriculture may reduce the maintenance costs for public and private facilities, for example, roadsides and parks can be put to productive use rather than being mowed.*

2.2. Social Contribution of UA

Urban agriculture in the city and around the city may also play an important role in providing recreational and educational functions to urban citizens (Veenhuizen, 2014; Smit *et al.*, 2001). Urban agriculture favors social improvement because urban farming favors both social inclusion and reduction of gender inequalities, as 65 % of urban farmers are women (Orsini *et al.*, 2013).

Urban agriculture may function as an important strategy for social integration of newcomers and disadvantaged groups (e.g., immigrants, indigent or left women, unemployed, elders, disabled, etc.) in the urban socio-economic system. Since it promotes and eases their participation in the social texture and provides them with better living conditions (Orsini *et al.*, 2013), and by integrating them more strongly into the urban network, providing them with a decent livelihood and preventing social problems (Gonzalez Novo and Murphy 2000; quoted in Veenhuizen, 2014).

Urban farming improves social equity by improving the health and productivity of poorer populations and providing an opportunity to earn additional income. The health, income, environmental, and other benefits of urban agriculture to low-income farmers all make strong positive social contributions (Smit *et al.*, 2001). Actors in urban agriculture came from various groups of urban society. They can be the poor or the rich, women or men, natives or migrants, and so on (Tewodros, 2007). The participation of these different actors will integrate urban societies (RUF 2010; UNDP 1996).

Urban farming also plays a crucial role in recreational and educational activities (Orsini *et al.*, 2013; Zeeuw, 2004; RUF, 2016). Since urban citizens may undertake gardening more for the physical and/or psychological relaxation it provides them (Zeeuw, 2004), and also may develop eco-

educational functions (bringing youth in contact with animals, teaching about ecology, etc.) or start playing a role in the provision of care to people with a psychological disorder (Zeeuw, 2004; RUF, 2016).

2.3. Health Contribution of UA

The contribution of urban agriculture to food security and healthy nutrition is probably its most important asset for urban farmers (Veenhuizen, 2014; RUF, 2010). Urban agriculture contributes to the health and well-being of a community by reducing hunger, strengthening access to food, improving nutrition, and improving environmental conditions which affect health. The benefits offered by urban agriculture are thus also both quantitative and qualitative- increasing food quantities reduces hunger, while improving food quality fosters better health and nutrition (Smit *et al.*, 2001).

Improved access to fresh food are also directly related to improved health nutrition of urban farmers and urban dwellers (Veenhuizen, 2014). Improved food nutrition is the main direct benefits to poor households that farm in cities (Smit *et al.*, 2001).

Urban agriculture helps to improve health conditions of the urban poor since it is an easier access to safe and nutritious food (mainly fresh products) and as it provides a stable source of nutrient-rich food that would otherwise be unavailable (Orsini *et al.*, 2013; Corbould, 2013).

Urban agriculture has the potential for positive impact on the health of urban populations through improved food security, nutrition and psychosocial well-being. Individual and family health indirectly benefit through the income earned from urban agriculture (Zena, 2011).

Urban agriculture has the potential to improve the nutritional status of those who lack access to nutrient-rich food. The urban poor spend 60 to 80 per cent of their income on food and they are the most vulnerable to increases in food prices; when money is short, people will tend to adjust consumption towards high calorie foods with low nutritional value. Urban agriculture has the capacity to overcome this situation by providing a secure source of nutritional food for the urban poor (Corbould, 2013). Farming also cleans and greens the living environment, reducing pollution and disease-causing pathogens and vectors. Household waste and refuse can also be recycled for agricultural uses, providing additional environmental and human benefits by reducing waste scattered around the urban environment. Finally, the presence of green spaces undoubtedly increases the sense of well-being of urban residents, particularly at a child's level.

Greenery is likely to benefit mental health (Smit *et al.*, 2001).

Generally, nutritional status is a function of environmental and physical health, food security, care giving, and nutritional quality of food. Nutritionists have determined that the dietary intake of preschool children is an important factor for healthy mental and physical development. Hunger and nutritional deficiencies can lower productivity and shorten life. Child hunger can occur as a result of poverty, an inadequate food supply, or a distribution system that both increase the cost and availability of food. So, urban agriculture is a source of solution for such type of problem by directly improving food security and nutritional adequacy. Because it enables to provide food with low cost and highly available as compare to others (Smit *et al.*, 2001).

2.4. Environmental Contribution of UA

Urban agriculture is part of the urban ecological system and can play an important role in the urban environmental management system (RUAF, 2016; Zeeuw, 2004). According to (Veenhuizen, 2014), the disposal of waste material within the city and around the city has become a serious problem in many cities of the world. So with respect to this urban agriculture also contribute to solving this problem by turning urban wastes into a productive resource through compost production, sericulture, and irrigation with wastewater (Veenhuizen, 2014; Zeeuw, 2004; RUAF, 2016).

Urban agriculture has ecological benefits by reducing the city waste, improving urban biodiversity and air quality, and overall reducing the environmental impact related to both food transport and storage (Orsini *et al.*, 2013). In addition, urban agriculture has contributed significantly towards solving waste management problems by converting urban solid waste into productive agricultural inputs such as compost while treated waste water has been used for irrigation (Mpofu, 2013).

Urban agriculture and forestry can also positively impact upon the greening of the city, the improvement of the urban micro-climate (wind breaks, dust reduction, shade) and the maintenance of biodiversity as well as the reduction of the ecological foot print of the city by producing fresh foods close to the consumers and thereby reducing energy use for transport, packaging, etc. (Veenhuizen, 2014; Zeeuw, 2004).

In most cases, urban agriculture is practiced in marginal spaces in cities and outskirts where lands are not suitable for other use. It, therefore, creates beautiful scenarios and landscapes, improved microclimate, and nutrient recycling (Tewodros, 2007). Urban and peri-urban farms in the city and

around the city may also play an important role in landscape and biodiversity management (Veenhuizen, 2014).

According to RUAF (2016), urban agriculture is part of the urban ecological system and can play an important role in the urban environmental management system or contributions to urban ecology as follows; *Firstly, a growing city will produce more and more wastewater and organic wastes. For most cities the disposal of wastes has become a serious problem. Urban agriculture can help to solve such problems by turning urban wastes into a productive resource. Secondly, urban agriculture may also positively impact upon the greening and cleaning of the city by turning derelict open spaces into green zones and maintaining buffer and reserve zones free of housing, with positive impacts on the micro-climate. Thirdly, urban agriculture and urban forestry contribute to disaster risk reduction and adaptation to climate change by reducing runoff, keeping flood plains free from construction, reducing urban temperatures, capturing dust and CO₂, while growing fresh food close to consumers reduces energy spent in transport, cooling, processing and packaging, whilst productive reuse of urban organic wastes and wastewater (and the nutrients these contain) reduces methane emissions from landfills and energy use in fertilizer production.* Generally, According to Orsini *et al.* (2013), the impact and sustainability that urban farming has on the social, economic, and environmental aspects depends on the considered typology and the adopted cropping systems.

3. Challenges of Urban Agriculture

Urban agriculture has also a negative impacts and externalities in the cities, as well as residents who enjoy its products (Veenhuizen, 2014; Smit *et al.*, 2001; Mpofu, 2013). Urban agriculture positively contributes for many of the problems affecting the urban environment, but at the same time, when there is a poor practice, it can have a negative impact on human health, the environment, the economy and also have other related challenges. The main challenges of urban agriculture may be synthesized as follows:

3.1. Health Challenges of UA

Urban agriculture also contaminates local water sources if overly high inputs of chemical fertilizers and pesticides are used and it could lead to contamination of drinking water supplies, which increase health risk of urban farmers (Veenhuizen, 2014). Urban agriculture can be a health hazard. Since, use of wastewater/polluted rivers and untreated compost may contaminate crops/livestock

(Tewodros, 2007; UNDP, 1996; Corbould, 2013). And also urban agricultural production in polluted areas of the cities may pose a serious threat to public health (Orsini *et al.*, 2013).

Urban poor, who practice urban agriculture, also have a threat of contamination and disease, since in slum areas there are unsafe water supplies, poor sanitation, uncollected garbage, polluted rivers and poor air quality. Which lead to the reduction of both crop yields and the nutritional quality of the product (Corbould, 2013).

According to (Veenhuizen, 2014; Orsini *et al.*, 2013; Smit *et al.*, 2001; Zeeuw, 2004), the main health risks associated with urban agriculture can be grouped into the following categories: *Contamination of crops with pathogenic organisms as a result of irrigation with water from polluted streams and insufficiently treated wastewater or the unhygienic handling of the products during transport, processing and marketing of fresh products; Spread of certain human diseases by mosquitoes and scavenging animals attracted by agricultural activities; Contamination of crops due to prolonged intensive use of agrochemicals; Contamination of soils and products with heavy metals due to traffic emissions and industrial effluents; and Certain diseases transmitted to humans by keeping livestock in close proximity without proper precautions being taken. Occupational health risks; which are run by persons involved in the handling of urban organic wastes and contaminated irrigation water.*

3.2. Social Challenges of UA

According to (Veenhuizen, 2014), since around 65percent of the world's urban farmers are women, Promotion of urban agriculture without due proper attention to gender aspects may lead to an increase in women's burden of work. Women are predominantly among the individuals who are involved in urban farming. However, access to the production resources such as land and water are not the same for both man and woman farmers. In many cultures, women are prohibited from owning land, sometimes even from leasing it (RUAUF 2010; Smit *et al.*, 2001; and Bryld 2003 quoted in Tewodros, 2007). So, urban agriculture with respect to production resource distribution leads to conflict and decrease social integration of urban farmers.

According to Smit *et al.*, (2001), Problems associated with urban agriculture includes; May cause women to overwork, considering other family obligations, *and* it also engages and can overwork children in the farm area.

3.3. Environmental Challenges of UA

According to Veenhuizen (2014), the disposal of waste material within the city and around the city has become a serious problem in many cities of the world. And according to (Zeeuw (2004), the main environmental risks associated with urban agriculture are the following; *the contamination of local sources of drinking water if overly high inputs of chemical fertilizers and pesticides are used in this area. The wastewater discharge from intensive poultry farms can carry heavy loads of micro-organisms and may contaminate drinking water supplies; Inappropriate farming practices may - under certain situations- lead to reduction of vegetation and siltation of water bodies; Non farming neighbors may complain of visual untidiness, dust, smell and noise created by the urban farms; Urban farmers may apply drinking water (treated at high cost) for irrigation purposes, which may be considered an inappropriate use of this resource.*

According to Smit *et al.*, (2001), a problem associated with urban agriculture includes Environmental risks as follows; *Water pollution from waste and chemicals, Insecticide air pollution, Damage to grassland if overgrazed, Soil pollution from waste and chemicals, Sometimes replaces forest cover with field crops, and Drains wetlands and reduces biodiversity, as do all urban land uses Some farming practices on riversides and steep slopes contribute to flooding and erosion*

3.4. Other Related Challenges of UA

Other related risks of urban agriculture are the following: can be unattractive, depending on how it is implemented, in some cases, the shoulders of highways used by farmers contribute to accidents, difficult to tax, to be safe, urban agriculture requires more monitoring per unit of production than some other urban production processes, in some cases occupies a site that may command a higher rent for another use, and uses expensive potable water without paying for it.

4. Urban Agricultural Growth and its Determinant

In recent years, due to the explosive growth of cities in the world, food production both within the cities and around the cities has been receiving increasing attention and adopted as a strategy or as a means of contributing to city food supplies, alleviating urban poverty, providing employment opportunities, and improving the environmental conditions of the city (FAO, 2007; Mpofu, 2013).

Urban agriculture is also experiencing burgeoning popularity, with gardens springing up in many cities in Australia, Canada, the United States,

England, France and New Zealand (Corbould, 2013). There are also many countries where governments promote the development of urban agricultural production. Such as in Latin America, Argentina, Brazil, and Cuba have developed national policies and programs that promote urban horticulture (Veenhuizen, 2014). Other countries such as Botswana, Zambia, Benin and China are preparing policies favorable to urban agriculture (Corbould, 2013). In Africa, Kenya, Tanzania, and Uganda are well known countries in Urban Agricultural production.

According to Corbould (2013), the growth of urban agriculture is a result of a global increase in migration from rural to urban areas. The main factor that enables developing countries to produce more from urban agriculture than developed countries is the proportion of the population involved. In many poor areas where urban agriculture is practiced, 40 to 80 per cent of the population is involved as compare to 10 per cent of people who are involved in North American towns. Growing urban poverty, hunger and lack of formal employment, as well as the special opportunities that a city provides for farmers have stimulated the development of a diversity of agricultural production systems in and around cities, which is called urban agricultural growth (Veenhuizen, 2014; RUAFA, 2014).

According to Echakara, (2015), growth of urban agriculture can be measured in terms of: number of Agricultural projects; amount of produce per project (Output measures); no of staff per project (number of employees in the sector); and amount of time a project takes (Life of the project).

The development of urban agriculture is constrained by a variety of negative attitudes and obstacles despite the fact that it is an economically viable industry (Mohammed, 2002; Smit et al., 2001; Corbould, 2013).

According to Smit et al., (2001), the main constraints to urban farming can be classified in to five broad types: *Socio-cultural biases and institutional constraints, Constrained access to resources, inputs, and services, Special risks of farming in the city, Post-production constraints, particularly in processing and marketing, and Organizational constraints.* But according to Mpfu (2013), the main challenges of urban agriculture classified into three broad categories, namely as, *institutional, financial, and capacity related challenges.*

The main constraints of urban agricultural growth may be synthesized as follows:

Financial challenges:

Among the most critical financial challenges or constraints that faced urban producers include: Lack of credit; (urban farmers needed *credit* to expand and modernize their farming activities), and High interest rates; (when urban farmers borrowed the money from informal institutions, they forced to pay high interest rates (Mpfu, 2013).

Space for cultivation:

Agriculture requires land. Knowing that growing food in cities requires land, it may not be prioritized in urban land uses since the demand for urban spaces to build houses is by far higher than using spaces for agricultural activities (Tewodros, 2007). So it implies that, this lack of space for growing crops in cities led to decrease urban agricultural growth and its contribution to the city.

Institutional challenges:

The factors that are constrained the sustained growth and development of urban agriculture includes: *Lack of institutional supportive in urban agriculture, Lack of integration of urban agriculture into City land use and zoning plans; and Lack of coordination among the public agencies* (Mpfu, 2013; Smit et al., 2001).

Skills-related challenges:

This is due to lack of training and/or technical support to help them improve their skills and knowledge, and increase their productivity (Mpfu, 2013).

Rapid Urbanization:

Because of increasing urbanization, peri-urban farms and vacant lots are being demolished to make way for new buildings, and the large scale conversion of urban farm land into buildings will take arable lands and push farmers onto land with low fertility and production capacity, and also the future security of urban agricultural production is uncertain (Corbould, 2013; Mpfu, 2013).

Urban sprawl: in the future, production levels and the security of urban agriculture are uncertain, because of the encroachment of urban sprawl onto farming areas or lands (Corbould, 2013). The traditional local agricultural and land distribution system is disrupted by urban newcomers seeking to buy land leading to an increase of land prices. In response, some of the traditional farmers are giving up farming, selling their land and switching to other income earning activities (Veenhuizen, 2014).

City renewal: Cities are in a constant process of building and decay. So there is the existence of open spaces and these open spaces are used for

temporary farming purpose. The creating new open spaces that may stay vacant for a long time until a new purpose and the corresponding investments are found. When there is a new investment, this open space is get built up, and the formal or informal temporary users of such areas are removed. Urban agriculture can therefore be characterized as a form of “shifting cultivation” - its locations within the city may vary over time (Veenhuizen, 2014).

Other city dynamics:

Other city dynamics that directly influence the development of urban agriculture, and how and where it is practiced, are urban traffic and industry (negatively influencing the quality of soils and irrigation water), new demands from urban citizens (need for recreational spaces, new products), changes in urban zoning and related norms and regulations, etc. (Veenhuizen, 2014).

Globalization: globalization leads to new products entering the market, more information available in general, and changing consumer preferences and thus leading to increased buying in super markets (Veenhuizen, 2014).

Illegality of urban farming:

Production and security of urban crops in developing countries is limited by the illegality of urban farming or by its uncertain legal status (Corbould, 2013). Which is also in turn a lead to reduction of crop yields, limits the production and stability of urban agriculture, and it prevents farmers from adopting sustainable farming practices (Corbould, 2013).

Lack of regulation:

As legal protection for urban agriculture is difficult to achieve, the potential role of urban agriculture will lead to reduced, and limit their accesses to resource uses for farming activities (Tewodros, 2007). The lack of official recognition also leads to economic insecurity among farmers and consequently limits their commitment to and investment in farming (Smit et al., 2001).

Environmental challenges:

Urban farmers used agrochemicals and untreated waste water for irrigating their plots. These ended up contaminating the soil as well as the agricultural products themselves (Mpofu, 2013). This is a potential threat to the urban farmers since it leads to the reduction of production volume.

Infrastructure development of the country:

In most cities of the developing world, urban agriculture already has played an important role. If it

is to continue to play a role, the encroachment of urban sprawl onto farm land must be prevented, contamination is reduced, and sustainable farming practices should be introduced, but these challenges are difficult to overcome in developing countries due to the lack of the necessary infrastructure development (Corbould, 2013).

Other related challenges:

The other major challenges of urban agricultural growth are: Lack of awareness at different levels; water availability and cost; aid dependency (dependency on NGOs or international organizations); quality and availability of seeds. Besides these, the other major constraints of urban farming include lack of policy issues about urban agriculture which resulted in less attention to the sector, limited working capital for farming and over-use of resources (Tewodros, 2007). ***Socio-cultural Biases:*** The socio-cultural biases against urban agriculture are often strong. They involve attitudes and misconceptions about aesthetics, hygiene, and modernity in general about urban agriculture (Smit et al., 2001).

Constrained Access to Resources, Inputs, and Services:

Most cities have sufficient usable land and water (surface water and wastewater) to allow farming, and urban farmers need land and water, but both are scarce urban resource (Smit et al., 2001; Tewodros, 2007). Because of high demands for other opportunistic purposes (Tewodros, 2007) and yet in some cities, urban farming is not recognized as a legitimate use of land or as a legal consumer of water (Smit et al., 2001).

5. Conclusion and Recommendation

Even if urban agriculture is a dynamic and recent development concept as compared to rural agriculture, it has the potential to become a dynamic economic sector that quickly adapts to changing urban conditions and demands, intensifying its productivity and diversifying its functions for the city. Despite of its potential and advantageous nature of urban agriculture for both urban farmers and urban dwellers in the world, but at the same time, when there is a poor practice (if improperly managed or not well located), it can have a negative impact in the cities, as well as residents who enjoy its products. So according to this seminar paper, the following recommendations are forwarded to improve the existing challenges created by UA activities as well as obstacles that hinder the practice of UA in the city.

- Creating conducive policy environment and formal acceptance of urban agriculture.

- Enhancing the productivity and economic viability of urban agriculture through provision of training and access to inputs and basic infrastructures.
- Taking measures that prevent/reduce health and environmental risks associated with urban agriculture.

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