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RESEARCH ARTICLE

FACTORS AFFECTING THE IMPLEMENTATION OF URBAN AGRICULTURE AT HOUSEHOLD LEVEL: THE CASE OF HOLETA ADMINISTRATIVE TOWN, OROMIA, ETHIOPIA

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UA – Urban Agriculture,
CFSC - Community Food Security Coalition,
FHHs –Female Headed Households,
MHHs – Male Headed Households

ABSTRACT

Urban agriculture contributes to food security and food safety in two ways: first, it increases the amount of food available to people living in cities, and, second, it allows fresh vegetables and fruits and meat products to be made available to urban consumers. This study was attempted to investigate the factors affecting the implementation of UA at household level and the economic benefits it has in Holeta Town. From Holeta administrative town, two kebeles which have large number of households Goro Qerensa and Burqa Harbu were purposively selected. From each sampled kebeles, 30 households were selected purposively. Thus the study was conducted on 60 households (i.e. 36 males and 24 females). To gather the required information for the study, structured and pretested interview schedule was used. The collected data were analyzed using descriptive statistics (Percentage and Mean). The analysis disclosed that 68 per cent of the people lived in the town had enough land for producing different urban farm products for their consumption. However, only 23 per cent of the households had different vegetable productions, 7 per cent of the households had dairy production and 5 per cent of the households had poultry production for their family consumption and out of this, only 10 per cent of them supplied for the local market and they got an income of Birr one thousand to ten thousands per year. Out of the people lived in the town, 70 per cent spent Birr 250 – 500 (15 - 25% of their monthly income) for buying different vegetables, fruits, poultry and dairy productions for their family consumption. Around 63 per cent of the households did not believe that UA is improving the livelihood of people living in and around cities and they were not ready to implement it. So these indicates that households lived in the study town did not use UA not due to lack of enough land in their garden, but due to lack of awareness and knowledge about benefits of UA. Most of the households agreed that there were no defined policies which are converted to practice about the implementation of UA and the government & nongovernment bodies did not give them the awareness. Thus, some of the factors affecting the implementation of UA were having low attitude toward UA, lack of knowledge and awareness about the implementation and benefits UA, lack of defined policies which are converted to practice, lack of technologies about UA and so on. Based on the findings, the following recommendation was made: Environmental health education and awareness through dissemination of good practices in urban agriculture to farmers to enable them to generate both environmental and socioeconomic benefits have to be organized.

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INTRODUCTION

Urban Agriculture is the practice of cultivating, processing and distributing food in, or around, a village, town or city. Urban agriculture in addition can also involve animal husbandry, aquaculture, agro-forestry and horticulture. Urban agriculture contributes to food security and food safety in two ways: first, it increases the amount of food available to people living in cities, and, second, it allows fresh vegetables and fruits and meat products to be made available to urban consumers. Including Urban Agriculture in local plans and as proper land use will continue to help impoverished communities gain a better well-being while fighting urban poverty (René van Veenhuizen, 2006).

Data drawn from different studies support the importance of urban food production for both income and consumption. In Kenya, 67% of Nairobi's urban families are farmers but only 29% produce food within the municipal boundaries. Home-grown food is critical to maintain the nutritional status of the

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families: 25% of urban families in the six major cities claim they cannot survive without self-produced food. Although most food is grown for consumption, 23% of the urban farmers sell some of their production, often buying fuel for cooking. About 30% of the women food vendors grow their own food. Livestock is kept by 51 % of these urban households, but only 17% in their urban place of residence. In Nairobi, only 7% kept livestock within the urban area, primarily poultry. A few large dairy herds remain within urban boundaries and supply milk to Nairobi (Axumite, 1994)

In Kampala, 50% of the land in the city is framed by about 30% of the total population: 70% of poultry and eggs eaten in the city are produced there. Even the basic staple crop of tubers is grown in the city: about 20% is consumed by the growers, the rest sold. In Addis Ababa, the cooperative members are primarily growing vegetables commercially, but the families also consume some of their produce, saving 10-20% of their income that would otherwise be spent on food (Axumite, 1994).

Urban agriculture can be seen as a means of improving the livelihood of people living in and around cities. Taking part in such practices is seen mostly as informal activity, but in many cities where inadequate, unreliable, and irregular access to food is a recurring problem, urban agriculture has been a positive response to tackling food concerns. Households and small communities take advantage of vacant land and contribute not only to their household food needs but also the needs of their resident city.

Statement of the Problem

Different data shows that 50% of the world's population lives in cities and low income urban dwellers spend between 40% and 60% of their income on food each year. By 2015 about 26 cities in the world are expected to have a population of 10 million or more. To feed a city of this size at least 6,000 tons of food must be imported each day. Moreover, 250 million hungry people in the world live in cities. So to alleviate these problems today urban agriculture can be something to help both developed and developing nations (René van Veenhuizen, 2006).

Urban agriculture is wrongly considered an oxymoron. Despite its critical role in producing food for city dwellers around the world, urban food production has largely been ignored by scholars and agricultural planners; government officials and policymakers at best dismiss the activity as peripheral and at worst burn crops and evict farmers, claiming that urban farms are not only unsightly but also promote pollution and illness. Contradicting this image, recent studies document the commercial value of food produced in the urban area while underscoring the importance of urban farming as a survival strategy among the urban poor, especially women heads of households.

Nowadays in the world as we have seen above there is a problem of food securities and many countries search different mechanisms to feed their people. When we come to Ethiopia the problem is very severe; due to the price of food items and other commodities is increasing form time to time and the purchasing power of our societies is very low and many people are in problem due to lack of sufficient and balanced diets.

Most of Holeta town people have low income and some of them have no jobs and they simply spend their time without doing anything. However, the prices of commodities especially for food items are increasing continually. So to survive they should use Urban Agriculture for their consumptions. Therefore, this study is conducted to produce empirical data that can provide a clear understanding of the factors affecting the implementation of Urban Agricultural at household level and the economic benefits it has in Holeta town.

Objectives:

The specific objectives of this study are:

- To determine the potential/access of land for implementation of Urban Agriculture in the study area.
- To identify the awareness of people to implement the Urban Agriculture in the study area.
- To examine the economic benefits of the Urban Agriculture if it is implemented in the study area.

Significance of the Study

The result of this study can be used to analyze the problems of implementation of Urban Agriculture in the study area. The findings of this study can be used in guiding the development partners by creating awareness and make understanding about the implementation of Urban Agriculture while designing agricultural projects within the region. Therefore, the result of this study might be enabling others to know the economic benefits of the Urban Agriculture in the country.

METHODOLOGY

Holeta town is located 33 km west of Finfine, on the way to Ambo town in Oromia Regional State. The elevation is around 2500 masl with minimum and maximum Temperature of 5^0c and 28^0c respectively. The area receives an average rainfall of 1,085 mm per annum. The major crops in the farming system around Holeta town are barley, wheat, teff and feba bean *(Vicia faba)*. The main soil types in and around Holeta town are Nitisol and Vertisol. Mixed farming system i.e. crop-livestock production is common around Holeta town.

Holeta town has four kebele administrations. Due to financial and time limitations only two kebele administrations have been selected for the purpose of this study. Those kebele administrations which have large number of FHHs and MHHs namely, Goro Qerensa and Burqa Harbu have been purposively selected for this study.

Using random sampling technique, from each Kebele, 30 households having their own house were selected. Accordingly, from two kebeles, 36 (60%) Male and 24 (40%) Female, totally 60 households were included in this study. Interview schedule was used to collect the necessary

information. To gather additional and authentic information, formal and informal discussions were conducted with households. The data collected were presented in percentage in tables for which more discussion and explanations were given. During the analysis of data, however, the categories were clubbed into three categories viz., agree, undecided, and disagree so as to make the analysis clear and easier. This was purposively done to report the percentage responses by combining the two outside categories: 'strongly agree' and 'agree'; 'disagree' and 'strongly disagree' into 'agree' and 'disagree', respectively.

RESULTS AND DISCUSSION

Out of the total 60 households, 36 (60%) were males and 24 (40%) were females. According to their occupation, 55 per cent were government and non-governments employees, 25 per cent were merchants, 13 per cent were farmers and 7 per cent belonged to other categories. Considering the family size of the respondents, 53 per cent had 6-7 members, 30 per cent had 4-5 members, 12 per cent had 8-9 members, where as only 5 per cent had 3 members.

Availability of Land at Household Level for Urban Agriculture in the Study Town

To identify whether there are enough land or not for urban farming at household level in Holeta town, information were gathered from 60 households living in two kebeles and the results are presented in Table 1.

Table 1. Availability of Land at Household Level for Urban Agriculture in the Study Town

S.No.	Items	Category	No. of respondents	% of respondents
1	Do all of you (age ≥ 18) have a job (employed)?	Yes	35	58.33
		No	25	41.67
2	Who is/are unemployed?	Husband	2	3.33
		Wife	12	20.00
		Son	5	8.33
		Daughter	6	10.00
3	Do you have vacant land in your garden?	Yes	41	68.00
		No	19	32.00
4	How many m^2 of vacant land do you have?	≤ 10 m^2	5	8.33
		11 – 20 m^2	6	10.00
		21 – 30 m^2	16	26.67
		31 - 40 m^2	10	16.67
		≥ 41 m^2	5	8.33

It was found that 68 per cent of the people lived in the town had enough land for producing different urban farm products for their consumption. Particularly more than 50 per cent of the people who have been living in the town had more than 20 m^2 of land in their garden; which is enough for producing fresh vegetables for their own consumption. However, according to this study only 23 per cent of the households had vegetable production, 7% of the households had dairy production and 5 per cent of the households had poultry production.

Economic and Social Benefits of Urban Agriculture in the Holeta town

This study shows that out of the total respondents (age ≥ 18) lived in Holeta town, 43 per cent had no productive work or job. Out of these, 20 per cent were mothers, 10 per cent were daughters, 8 per cent were sons and 3 per cent were fathers. Only 35 per cent of the households lived in the town produced vegetables, dairy and poultry products for their family consumption and out of this, only 10 per cent supplied for the local market and got an income of Birr one thousand to ten thousands per year. Therefore, these show us, if those households who have land can grow/produce different vegetables, fruits, dairy and poultry products, they can feed their families with fresh and balanced food. Additionally they can generate income for their families and reduce unemployment of the town. However, practically few households practiced urban farming to alleviate these economic and social problems.

The Community Food Security Coalition (CFSC) defines food security as, all persons in a community having access to culturally acceptable, nutritionally adequate food through local, non-emergency sources at all times. Here, urban agriculture plays an important role in making food more affordable and in providing emergency supplies of food. In addition CFSC advocate that access to nutritious food is another perspective in the effort to locate food and livestock production in cities. With the tremendous influx of world population to urban areas, the need for fresh and safe food is increased.

On the other hand, more than 70 per cent households living in the town were spending Birr 250 - 500 for buying different vegetables, fruits, poultry and dairy products for their family consumption. This covers almost 15 – 25 per cent of their monthly income. Since the cost of these products is increasing from time to time some of the households living in this study town could not afford and they couldn't consume these products regularly. Some of them stopped buying fruits, poultry and dairy products and fish for their family.

To the contrary of above findings, in Kenya, 67 per cent of Nairobi's urban families are farmers but only 29% produce food within the municipal boundaries. Home-grown food is critical to maintain the nutritional status of the families: 25 per cent of urban families in the six major cities claim they cannot survive without self-produced food. Although most food is grown for consumption, 23 per cent of the urban farmers sell some quantity of their production for buying fuel for cooking. About 30 per cent of the women food vendors grow their own food. Livestock is reared by 51 per cent of these urban households. In Nairobi, only 7 per cent have poultry within the urban area. A few large dairy herds remain within urban boundaries and supply milk to Nairobi (Axumite, 1994)

In Kampala, 50 per cent of the land in the city is framed by about 30 per cent of the total population; 70 per cent of poultry and eggs eaten in the city are produced there. Even the basic staple crop of tubers is grown in the city: about 20 per cent is consumed by the growers, the rest are sold. In Addis Ababa, the cooperative members are primarily growing vegetables commercially, but the families also consume some of their produce, saving 10-20 per cent of their income that would otherwise be spent on food (Axumite, 1994)

Table 2. Economic and Social Benefits of Urban Agriculture in Holeta town

S.No.	Items	Category	No. of respondents	% of respondents
1	On your vacant land, do you grow vegetables, fruits and tree seedlings and have fish & poultry production?	Yes	17	28.33
		No	25	41.67
2	Which of the following have you been growing/producing for your consumption?	Vegetables	10	23.33
		Fruits	0	0.00
		Poultry	3	5.00
		Fish	0	0.00
		Dairy	4	0.00
3	Did you supply your produce for the market?	Yes	6	10.00
		No	11	18.33
4	What is your annual income from these sales?	≤ Br 1000	0	0.00
		Br 1001– 3000	2	3.33
		Br 3001 – 5000	1	1.67
		Br 5001- 10,000	3	5.00
5	How many birr per month do you spend for the consumption of different vegetables, fruits, eggs, fish & poultry?	≤ Br 100	5	8.33
		Br 101– 250	12	20.00
		Br 251 – 350	15	25.00
		Br 351 - 500	9	15.00
		> Br 500	2	3.33
6	How many percent do you spend for the consumption of different vegetables, fruits, eggs fish, & poultry from your family monthly income?	≤ 10%	8	13.33
		11 – 15%	21	35.00
		16 – 20%	14	23.33
		21 – 25%	0	0.00
7	Since the price of different vegetables, fruits, eggs, fish, & poultry is high, we couldn't consume them regularly.	Yes	43	71.67
		No	17	28.33
8	Which of the following have you been consuming regularly?	Vegetables	46	76.67
		Fruits	12	20.00
		Poultry production	16	26.67
		Fish	0	0.00
		Dairy production	20	33.00

Table 3. Factors affecting the implementation of UA

S.No.	Questions	Disagree		Undecided		Agree	
		No.	%	No.	%	No.	%
Q-1	I have not enough land for the growth/production of vegetables, fruits, fish, dairy and poultry.	39	65.00	3	5.00	18	30.00
Q-2	Even though I have enough land for the growth/production of vegetables, fruits, poultry and fish, I feel it wastage of time & useless.	23	38.33	0	0.00	37	61.67
Q-3	I have no knowledge about the implementation & benefits of UA and nobody give us the awareness.	17	28.33	2	3.33	41	68.33
Q-4	I do not believe that UA is improving the livelihood of people living in and around cities.	15	25.00	7	11.67	38	63.33
Q-5	If I implement UA in my garden, I can satisfy not only my household food needs but also I can supply for the market.	26	43.33	3	5.00	31	51.67
Q-6	I believed that UA is an important opportunity for women since they can carry out along with household tasks and child care.	13	21.67	5	8.33	42	70.00
Q-7	I am not believed that UA is one of the survival strategies poor urban residents adopt to reduce poverty and improve their food security.	16	26.67	3	5.00	41	68.33
Q-8	There is no defined policy about the implementation of UA & government and nongovernment bodies do not give us the awareness.	6	10.00	7	11.67	47	78.33
Q-9	I do not have initial cost to start UA (at least different vegetables & poultry production) for our consumption.	38	63.33	4	6.67	18	30.00
Q-10	I believed that if I implement UA in my garden, not only I can reduce cost of consumption of my families but also I can feed my families with fresh vegetables.	7	11.67	2	3.33	51	85

The CFSC states that Community and residential gardening, as well as small-scale farming, save money spent on household food. They promote awareness on nutrition and provide free cash to start UA. This allows families to generate larger incomes by selling to local grocers or to local outdoor markets, while supplying their household with fresh and nutritious produce. However, in Holeta town households did not intensively use this facility and benefitted from UA as expected.

Factors Affecting the Implementation of Urban Agriculture in the Holeta Town

Out of the total population, 65 per cent of the households disagreed to the statement "I have not enough land for the growth/production of different vegetables, fruits, fish, dairy and poultry", whereas 30 per cent were agreed. However, 62 per cent of the households felt that UA is useless and time wastage. Similarly, 68 per cent of the households agreed and

28 per cent disagreed to the statement that "I have no knowledge about the implementation & benefit of UA and nobody gave us the awareness". In addition, 63 per cent of the households did not believe that UA is improving the livelihood of people living in and around cities (see Table 3). So, these indicates that households lived in the study town have not used UA not due to lack of enough land in their garden, but due to low attitude towards UA and lack of awareness and knowledge about benefits of UA.

However, as shown in the Figure 1, 70 per cent of the households believed that UA is an important opportunity for women since they can carry out along with household tasks and child care. Also 50 per cent of the households believed that if they implement UA in their garden, they can satisfy not only their household food needs but also they can supply for the market. In addition they believed that if they implement UA in their garden, not only they can reduce cost of consumption of their families but also they can feed their families with fresh vegetables. This shows that even though some of them know the benefit of UA, they were not ready to implement it.

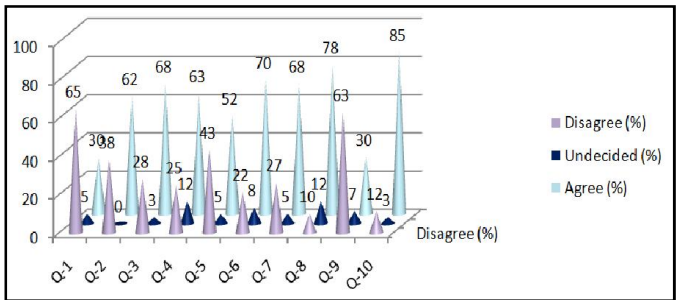

Figure 1. Factors affecting the implementation of UA

As shown in the Figure 1, for Question No.8, 78 per cent of the households agreed that there is no defined policy about the implementation of UA and government & nongovernment bodies did not create the awareness. From this point of view the investigator gathered additional information about the UA policy from town municipality. According to the information given, at Federal level there is a written policy about UA. However, in most towns the policy is not converted to practice at household level. Research in India shows that women make up a disproportionate share of unpaid helpers in household enterprises, and concentrated more than men in the agricultural sector. Wages for women in agriculture averaged roughly to 20 per cent of men's wages (Duchin and Sinha, 1999).

According to Pretty *et al*. (2003), if food poverty is to be reduced, then it is important to ask who produces the food, who has access to the technology and knowledge to produce it, and who has the purchasing power to acquire it? Many surveys indicate that women dominate in urban agriculture. This conveniently enables women to earn income, improve household diets, perform household chores, and exert greater control over household resources, budgets, and decision making (Mougeot, 2000). Binns and Lynch (1998) concur to this view by stressing that there is a strong propensity among poor urban women to grow food crops to feed their families in the face of escalating market prices.

In line with above result Van den Berg and Van der Straaten (1997) said that local governments and their agencies are the most important policy influences on the viability of urban farming. These authorities are responsible for determining where an activity can occur, if at all, through zoning; what resources are available and in what condition; provision of informational services and orderly marketing arrangements; and provision of a secure legal and economic environment.

Conclusion

In the study town there has been enough land for producing different urban farm products for their consumption. Among the respondents, 68 per cent of the people lived in the town had enough land for producing different urban farm products for their consumption. However, according to this study, only 23 per cent of the households had different vegetable production, 7 per cent of the households had dairy production and 5 per cent of the households had poultry production for their family consumption; and out of this only 10 per cent was found to supply for the local market and they got an income of Birr one thousand to ten thousands per year.

Despite the fact that urban agriculture has the proven capacity to contribute to food security and income generation only few households feed their families with fresh and balanced food and very few families generated income for their families and reduced unemployment of the town.

Out of the people lived in the town, 70 per cent of the households spent Birr 250 – 500 (15 - 25% of their monthly income) for buying different vegetables, fruits, poultry and dairy products for their family consumption. Since the costs of these products are increasing from time to time most of the households living in this study town could not afford and they couldn't consume these products regularly. Some of them stopped feeding their families with fruits, poultry, dairy and fish products. Around 63 per cent of the households did not believe that UA is improving the livelihood of people living in and around cities and they were not ready to implement it. So, these indicates that households lived in the study town did not practice UA not due to lack of enough land in their garden, but due to low attitude toward UA and lack of awareness and knowledge about benefits of UA. Most of households agreed that there is no defined policy about the implementation of UA and the government & nongovernment bodies did not create the awareness. Therefore, it was concluded that success and expansion of urban agriculture will therefore depend on the ability of policy makers, administrators and urban farmers to use integrated social, economic and environmental strategies that effectively address food security and urban poverty.

Recommendations

To ensure that the full potential of urban agriculture in reducing food poverty is realized in Ethiopia, the following recommendations are proposed:

- Integrate urban agriculture into city development plans by re-zoning the city and incorporating agro-residential planning in city development plans. Local authorities

should devise policies and provide different technologies for community gardens.

- Urban agricultural diversification which promotes production of high-value specialty foods such as mushrooms, which require little space for production but provide good monetary returns, should be encouraged.
- Urban farmers should be capacitated to produce different vitamin rich vegetables, protein rich pulses such as soya beans, poultry production in their gardens to improve the dietary quality of their households.
- Environmental health education and awareness through dissemination of good practices in urban agriculture to farmers to enable them to generate both environmental and socioeconomic benefits have to be organized.
- Adopt multi-storey gardens which have been successfully implemented in Kenya. These gardens involve growing vegetables in empty cereal bags and empty cans rather than growing them directly in the ground. These gardens use minimum land space and are water efficient and ideal for areas with contaminated and/or poor soil quality.
- To fight against hunger and malnutrition and to facilitate the access to food by an impoverished sector of the urban population, local government and their agencies are the most important policy influencers on the viability of urban farming.

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