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The Nexus between Urban Agriculture and Poverty Alleviation in Zimbabwe's Cities: A Case of Kadoma City

Rumbidzai Debra Katsaruware[1*] Anyway Katanha[2] Taurai Jacob Nyakujara[1]
1. Department of Agricultural management, Zimbabwe Open University. Mashonaland west Region , P. O Box 285 Chinhoyi, Zimbabwe
2. Department of Geography and Environmental Studies, Zimbabwe Open University. Mashonaland central Region, Bindura
*Email of the corresponding author: rdkatsaruware@gmail.com

Abstract
A study was carried out in Eiffel Flats suburb in Kadoma City to investigate the impact of urban agriculture on poverty alleviation. The objectives of the study were to investigate major reasons behind urban agriculture (UA), establishing social classes and gender involved and identifying the relationship between urban agriculture and a subsequent poverty reduction. A sample size of 98 respondents was randomly chosen from the sample. Questionnaires, personal interviews and observation were used for data collection. The major reasons behind urban agriculture were: low incomes, unemployment and large families. The study revealed that UA alleviated poverty because residents produce food, generate income from surplus and save household income which is channeled to other needs. The age group of 31-60 with women dominating was most active in the practice and both the employed and unemployed were involved in UA. Kadoma city council supports UA by creating agro-zones. The major limitations of UA in Eiffel Flats are land shortage and inadequate resources such as inputs and draft power. The council is recommended to create more agro-zones and to register farmers with AGRITEX department so that they could benefit from government supplied inputs as well as technical knowhow from the local extension services.
Keywords: nexus, poverty alleviation, urban agriculture

1.0 Introduction

According to FAO (1999), globally induced economic crisis, rapid population growth and migration, deterioration of national economies, or persisting economic difficulties are the major causes of urban agriculture in most developing countries such as Zimbabwe. Nevertheless, urban food production would have less importance by far if there were not a shortage of adequate and accessible income opportunities and unsatisfied demand for appropriate quantity and quality of agricultural products in cities on local level. Hence, urban farming can be seen as a crisis strategy, ensuring survival of the poorer segment of the population, and at the same time satisfying the demand for a variety of fresh and preferred agricultural products by dwellers (UNDP, 1996).

In many parts of the world, urban farming augments urban food supplies, but not only, of fruit and vegetables. Urban area food production can operate on at a profit farm scale, producing high quality fresh food (including protein rich products) on a relative small amount of space that include aquaculture, hydroponics, greenhouse and open spaces (Bower,1998).

Nurgent (1997), asserts that local agriculture-food system provides a relative secure and more and locally controlled source of food. Urban agriculture has turned to be very beneficial to many urban dwellers because they save money through selling some of their produce and at the same time keeping some of the produce for consumption. Urban agriculture has also brought in mini industries to suburbs by way of installing grinding mills to process crops like maize grain and groundnuts to mealie-meal and peanut butter respectively. This creates employment for some of the unemployed youths and also brings the service nearer to the residents (Kinsley, 2002).

1.1 Urban agriculture in Zimbabwe

Mapaure and Drammond (1996), points out that, in Zimbabwe, urban cultivation dates back to the formation of first colonial cities. Lazarus (2000) indicated that, within the last ten years the practice has gained momentum in urban centres to increase urban food security, concern over environmental degradation of land and water, competition from other land uses and popularity as a long standing practice of open space cultivation.

Historically, municipal governments planning processes have looked urban migration that dwindles as cities and urban economies grow. Urban farming has not been given any policy attention other than restricting it as much as possible or permitting it only as a temporal use on sites until full functions took over its use (Tevera, 1999). Consequently, and coupled with serious land shortage, urban farmers are found cultivating in public areas and undeveloped spaces within the urban zones and that has led to conflict with local authorities (Sebego, 2013).

(Naab *et al*, 2013), argue that, accessibility of land to the urban farmers is curtailed by intense

competition from other urban land use such as housing and industry development hence creating urban land conflict. Planners in most Zimbabwe urban centres view urban open space cultivation as standing in the way of urban development.

Furthermore, the promotion of free markets operations in the distribution of urban land entails the poor and powerless being completely pushed out of the urban economic operations. Today, economic hardships have necessitated the growth of urban agriculture and competition for land among the farmers themselves (Naab *et al*, 2013).

Shuman (1999), states that, historically no support has been given to poor urban farmers to enable them to have access to land to practice agriculture. In cities like Harare, the practice of urban agriculture has advanced to the production of maize the main staple food. Urban agriculture mainly practiced by lower income groups in the capital Harare has become common in the affluent suburbs like Avondale, Marbelreign etc, where maize and vegetable plots are sprouting up to counter expected shortages brought about by economic meltdown that has seen the inflation shooting above 8000% in December 2007 (Tevera, 2010).

However, effort has been made towards recognizing and supporting urban agriculture. The Urban Councils Association of Zimbabwe (UCAZ) together with other stake holders and government department heads signed a declaration on Peri- Urban Agriculture (PUA) in Nyanga in June 2002. A year later, August 2003, in Harare, the Ministers of local government from Zimbabwe, Malawi, Swaziland, Kenya and Tanzania also signed a similar declaration (Tevera, 2005**).**

1.2 Statement of the problem

Mougeot (1993), argues that, the persisting economic difficulties and rapid population growth in urban areas has resulted in increase in urban agriculture. Those in employment are earning meagre salaries and finding it difficult to make ends meet, consequently, turn to urban farming so as to supplement their earnings. By growing vegetables in the backyard and maize on the open land in and around the city, residents save much money meant to buy the grown products and redirect the saved money to buy other household commodities which they could not afford if they were not practicing urban farming (Bower,1996).

1.3 Objectives of the study

- To investigate major reasons behind urban farming in Eiffel Flats from 2004 -2014.
- To identify the benefits of urban agriculture in terms of poverty alleviation
- To establish the social classes and gender involved in urban agriculture in Eiffel Flats
- To evaluate the potential of urban agriculture on urban food security

2.0 Materials and methods

2.1 Description of the study Area

Kadoma is the sixth city in Zimbabwe, situated in Mashonaland West province. It is an industry based city located 140km along the Harare–Bulawayo highway with major economic activities such as gold mining, textile industries, paper milling, paper making consolidated by farming, especially cotton, beef, maize and tobacco. Eiffel Flats suburb is situated 8km from Kadoma city centre on the South-Eastern direction along the Kadoma-Mhondoro road. Eiffel flats was converted to municipal location in the year 2000 when Rio Tinto sold most of its gold mines around Kadoma and localized to become Rio Zimbabwe (Rio-Zim) and remained only with Eiffel Flats mine which also scaled down its operations. After scaling down operations the company sold most of its houses to its workers and some government workers such as teachers. Eiffel Flats is composed of three types of housing densities that follow the mine pattern accommodation as follows, Chemukute- high density, Parktown-middle density and Eiffel Blue- low density.

2.2 Research Design and sampling procedures

A qualitative research design was used in this study. This is a descriptive technique like questionnaires, interview, and observations. The interviews complemented the questionnaire because some respondents could not read or write making it impossible for them to answer the questionnaire. Observations were also made especially to find out places where cultivation took place and the attitude the city council on UA. The strength of this method is that, the respondent is unaware of being observed and therefore can behave in a natural manner, thus reducing bias

The descriptive survey provides accurate answers to the questions and also describes what actually happens and what we see. A descriptive survey research is probably the best method of collecting original data for purpose of describing a population large enough to observe directly.

Eiffel Flats suburb has a total of 1055 households. A stratified random sampling method based on proportional allocation and social diversities in these residential areas was used so as to come up with a sample of 105 as follows: high density=943 households, low density=57 households and Medium-low density=55

households.

Table 1: Eiffel Flats households research sample

	Residential Area	Population	Respondents
1	High	943	94
2	Medium	55	5
3	Low	57	6
TOTAL		1055	105

2.3 Data Collection and analysis

The questionnaire was distributed to every household sample and the respondents who had difficulties in completing the questionnaire were assisted on the spot and questionnaire collected. Personal interviews were conducted especially to assist those who had reading and writing problems so that they could understand the questions. Observations were made to assess where urban agriculture took place and the action of the city council towards urban agriculture. A statistical software SPSS Statistics version 20 was used to analyze the data.

3.0 Results and discussion

3.1 Age-Sex composition

The results indicate that there are 53 (54.1%) women and 45 (45.9%) men practicing UA. The age group 41-50 dominated UA with 36 (36.7%) and women in the same age group dominating and 21 (21.4%) men constituting 15 (15.3%). The 31-40 age group came second with 24 (24.6%) and within the same age group women dominated with 13 (13.4%) while men were 11 (11.2%). The age groups 51-60 and 20-30 came fourth, each having 16 respondents who constitute (16.3%). The only difference is that in the 51-60 age group women dominate with 10 (10.2%) and men are 6 (6.1%), whilst in the 20-30 age group men dominate with 9 (9.2%) and women are 7 (7.1%). The last group to be active in UA is the over 61 age group which had 4 males (4.1%) and 2 women (2%).

There is a higher proportion of women who are involved in UA because culturally, women remain at home taking care of children and doing some field or garden work while the men are at formal employment. The research findings correlate with Mougeot (1999), who pointed out that UA is female dominated. This is in agreement with (IDRC, 1998), who indicated that the poor and women in particular, participate in the greening of the city and reuse of urban waste. This shows that UA plays a pivotal role in alleviating poverty especially to women who are the most vulnerable group in most societies in developing countries (Palmer, 1991).

Table 2: Age-sex composition

Age (Years)	Sex	Respondents	Frequency (%)	Total %
20-30	male	9	9.2	16.3
	female	7	7.1	
31-40	male	11	11.2	24.6
	female	13	13.4	
41-50	male	15	15.3	36.7
	female	21	21.4	
51-60	male	6	6.1	16.3
	female	10	10.2	
61+	male	4	4.1	6.1
	female	2	2.0	
Total		98	100	100

3.2 Marital status

The results indicate that 56 (57.1%) urban farmers are married as compared to 42 (42.9%) who are not married (Table 3).This could be attributed by the fact that, a lot of people were killed by Aids leaving their spouses being single. Some marriages might have broken because of the economic hardships of 2008 which lead to exodus of people mainly the male counterparts looking for greener pastures in the diaspora.

Table 3: Marital status

Marital status	No of respondents	Frequency (%)
Unmarried	42	42.9
Married	56	57.1
Total	98	100

3.3 Employment status

The results shows that urban farmers who are formally employed 38 (38.8%) dominate in UA, followed by those in informal employment 33 (33.7%) and lastly the unemployed 27 (27.5%).

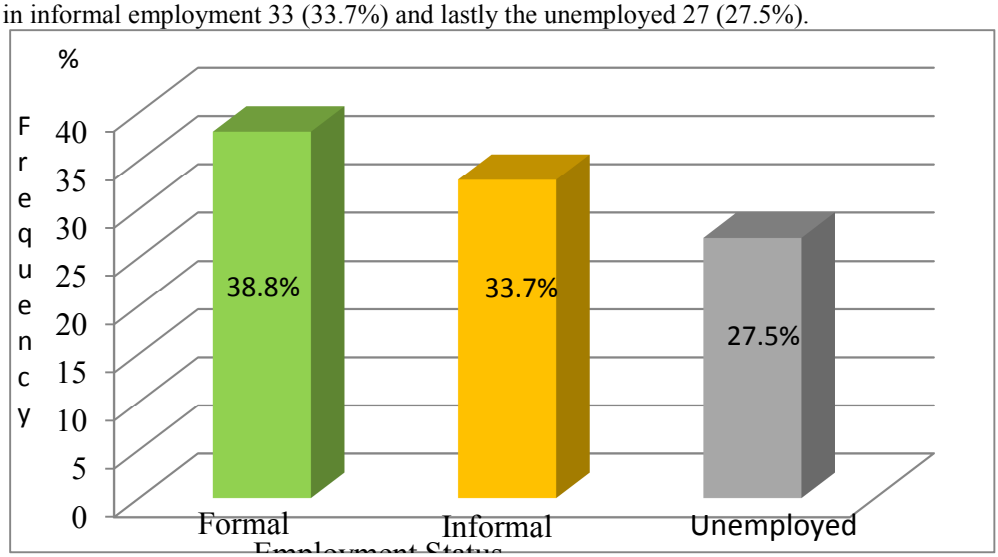

Fig 1: Employment status

The domination of UA by the formally employed people in Eiffel Flats can be attributed by the fact that, the majority of the residents are employees of a gold refinery plant which is based in the suburbs as well as some small scale gold mines that surround the suburb. This situation is in contrast with FAO (1999), who said that most towns and cities in developing countries have difficulties in coping with the creation of sufficient formal jobs opportunities for the poor. The findings are also contrary to Kensey (2002), who highlighted that a large proportion of the people in urban agriculture are the urban poor and the unemployed.

3.4 Family Size

The findings (Table 4) indicate that the family size of 5 member dominated UA with 27 (27.6%). This was followed by the 6 and 7 member families with 17 (17.3%), then comes the 3 member family size with 16 (16.3%), the 4 member family size with 12 (12.2%), then comes 2 member family size with 7 (7.1%) and lastly 1 member family size with 2 (2.0%). The majority of the families with 1 and 2 members do not practice UA. This could be attributed by the fact that, those with smaller families can manage to survive with the meager income from either formal or informal employment

Table 4: Family size

Family size (Number of people)	Respondents	Frequency (%)
1	2	2.0
2	7	7.1
3	16	16.3
4	12	12.2
5	27	27.6
6	17	17.3
7	17	17.3
Total	**98**	**100**

3.5 Urban farmers

The results (table 5) show that the majority of urban residents practice urban agriculture with 92 (93,9%) while 6 (6.1%) did not practice urban agriculture. The indication is that most of the city dwellers practice urban agriculture. This is a clear testimony that the residents are heavily dependent on urban. This is in line with work by Zziwa and Maxwell (1992) who highlighted that approximately half of the residents in Accra are involved in urban agriculture. In another study of Kampala (Uganda), Maxwell and Zziwa (1992), estimated that 36% of the population was involved in urban agriculture and the involvement of so many people in urban agriculture indicates its centrality amongst informal sector activities. According to the UNDP (1996), 80% of families in Libreville (Congo), 68% of urban dwellers in six Tanzanian cities, 45% in Lusaka (Zambia), 37% in Maputo (Mozambique), 36% in Ouagadougou (Burkina Faso), 35% in Yaounde (Cameroon) are involved in urban agriculture. .

Table 5: Urban farmers

Category	Number of respondents	Frequency (%)
Practice UA	92	93.9
Do not practice UA	6	6.1
Total	98	100

3.6 Urban agriculture products

Table 6 indicates that 90 (91.8%) people grew maize for grain, 88 (89.8%) grew vegetables, 86 (87.8%) grew fruits, 40 (40.8%) grew sugar-cane, 56 (57.1%) grew sweet-potatoes, 38 (38.8%) kept broilers, 5 (5.1%) kept rabbits and 8 (8.2%) kept pigeons. The findings show that, the main grown crop is maize followed by vegetables and fruits. The results agree with Lazarus (2000) who said that, urban agriculture include food products from different types of crops (grain, root crops, vegetables, mushrooms, fruits) and animals (poultry, rabbits, cattle, pigs, guinea pigs, bees and fish) as well as non food products (like aromatic and medicinal herbs, ornamental plants, tree products etc) or combination of these.

Table 6: Urban agriculture products

Urban agriculture Products	Responses			
	Yes	Frequency (%)	No	Frequency (%)
Maize grain	90	91.8	8	8.2
Vegetables	88	89.8	10	10.2
Fruits	86	87.8	12	12.2
Sugar-cane	40	40.8	58	59.2
Sweet-potatoes	56	57.1	42	42.9
Broilers	38	38.8	60	61.2
Rabbits	5	5.1	93	94.9
Pigeons	8	8.2	90	91.8

3.7 Farming Purpose

The results of the study (Fig 4) show that the majority of the respondents 76 (77.6%) practice urban agriculture for self consumption, followed by 17 (17.4%) who practice urban agriculture for both self consumption and trading while 5 (5.1%) practice urban agriculture only for sale.

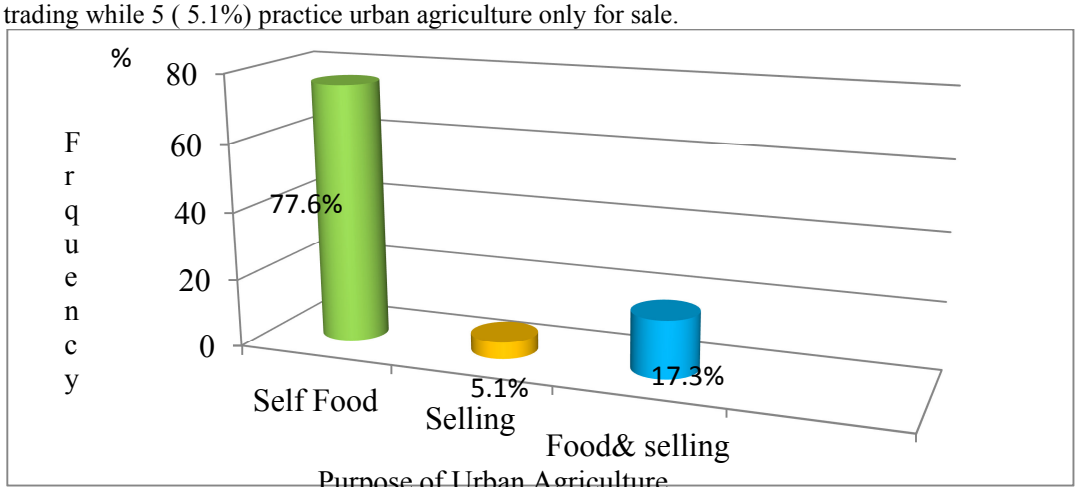

Fig 4: Purpose of UA

The research findings concur with the work of Klemensu (2000), who said that in most cities in developing countries an important part of urban agriculture production is for self consumption, with surplus being traded. UNDP (1996); FAO (1999), believe that, in addition to production for their own consumption needs, large amounts of food are produced for other categories of the population. Sawio (199), notes that many sub-Saharan African countries import food and/or rely on food aid, indicating that food supplies from the countryside are inadequate as rural areas often do not produce enough food to feed both rural and urban people. These countries are not able to supply enough food to urban areas because of low productivity in rural areas due to lack of agricultural technology so it has become more necessary for urban dwellers to grow some of their food.

3.8 Yield Status

Fig 5 shows that 40 (40.8%) produced adequate food requirement for their family needs per season while 33 (33.7%) produced adequate food and 25 (25.5%) produced food that is below their family requirement. The results are in line with UNDP (1996) and FAO (1999), who cited that, in addition to production for their own consumption needs, large amount of food are produced for other categories of the population. Lazarus (2000) also explains that in most cities in developing countries an important part of urban agriculture production is for self consumption, with surplus being

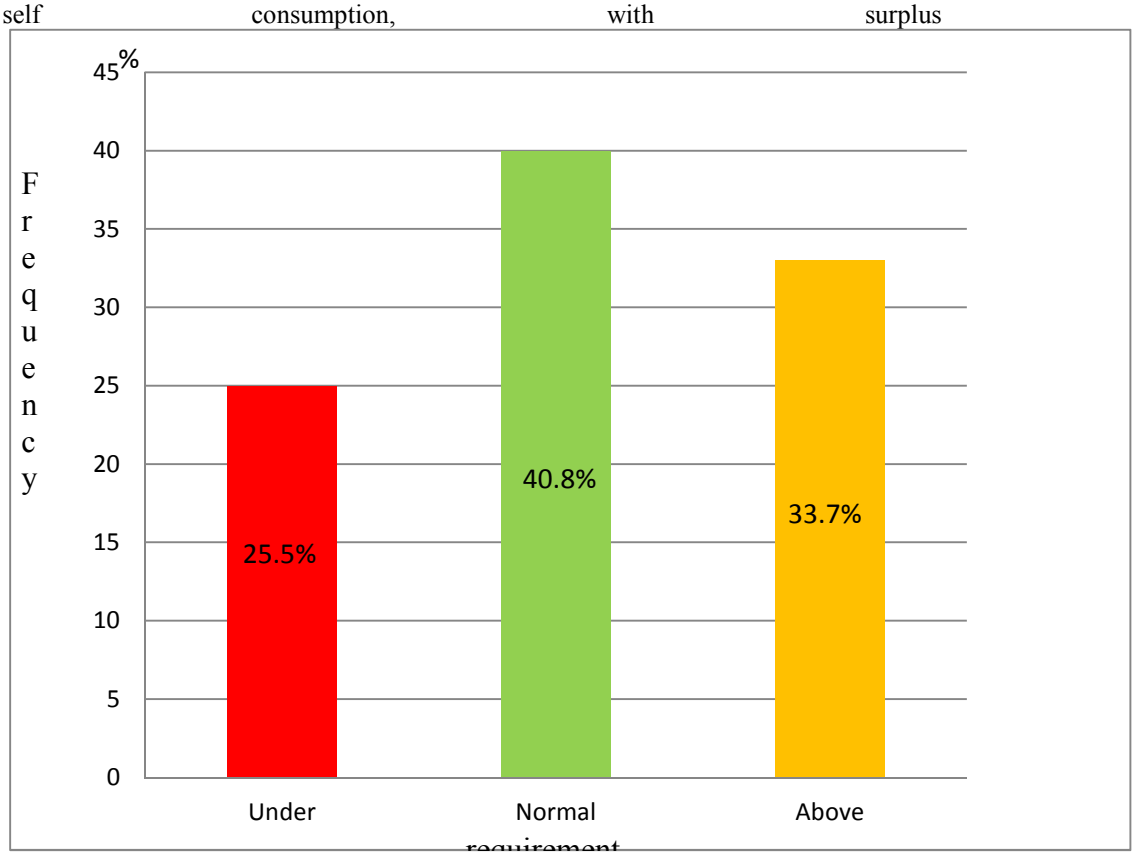

Fig 5: Yield Status

3.9 Income generation

The findings (Table 6) show that 67 (68.4%) residents who practice urban agriculture generate income while 31 (31.6%) do not generate income from UA. The results are in line with Tevera (1997), who points out that savings accruing to small scale Harare farmers are equivalent to more than half a month's salary. In Addis Ababa, above normal profits are earned by even the smallest scale backyard products with very low capital (Drangert, 1997).Urban farmers who produce enough products than their family requirement normally sell the surplus to their neighbours, shops and markets and get an extra income from the sale of the produce.

Table 6: Income generation

Category	**Number of respondents**	**Frequency (%)**
Generate income	67	68.4
Do not generate income	31	31.6
Total	98	100

3.10 Savings made

Urban farmers make savings by growing their own food and save substantial amounts that they could have used to purchase the grown food products.

Table 7: Savings made**Category**	**Number of respondents**	**Frequency (%)**
Made savings	75	76.5
Did not make Savings	23	23.5
Total	98	100

Table 7 indicates that 75 (76.5%) make savings and 23 (23.5%) do not make any savings from practicing UA. This is in agreement with Savenije (1998), who indicated that, growing one's food saves household expenditure on food since the poor people spend a substantial part of their income on growing the relatively expensive vegetables, therefore saves money as well as bartering of produce. Community and residential gardening, as well as small-scale farming, save household food dollars and promote nutrition and free cash for non-garden foods and other items (FAO, 1996; Rojas and Orta 2011)

Poverty datum line (PDL) = (US$500 as per Ministry of Finance, 2014 Zimbabwe**)**

The results (Fig 5) indicate that 66 (67.3%) earn below PDL, 20 (20.4%) have income equal to PDL while 12 (12.2%) earn above PDL. The results indicate clearly that the majority of Eiffel Flats residents earn below poverty datum line from any source of employment be it formal or informal and this has likely to be the reason why most of them have ventured into urban agriculture to supplement their incomes.

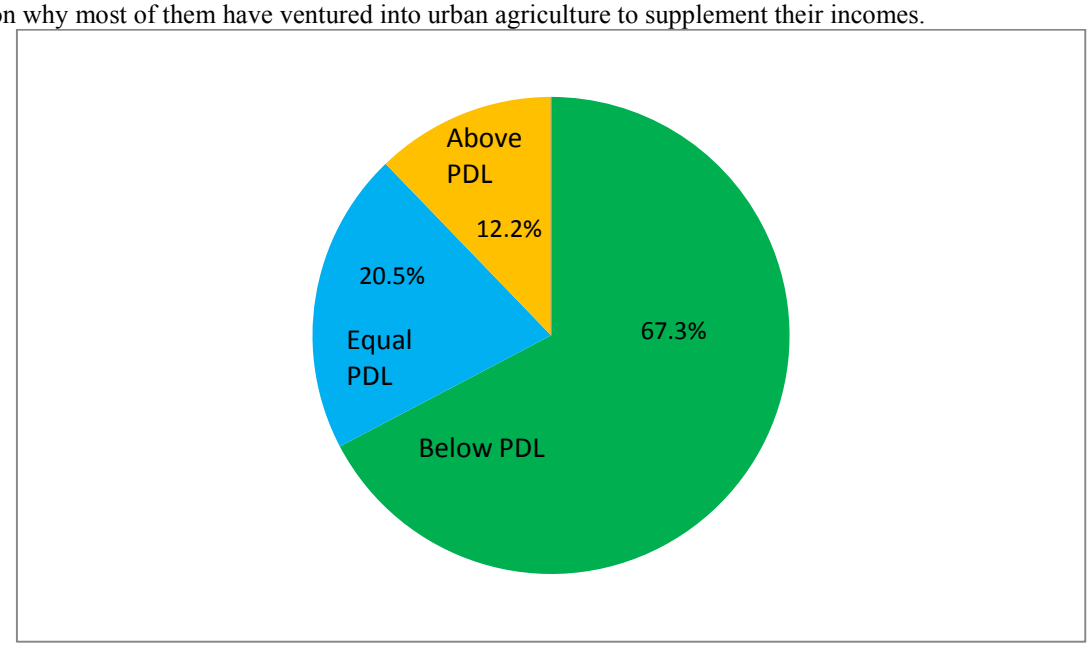

Fig 5: Poverty datum line status of farmers

3.11City Council Support

Urban agriculture seems to be gaining some recognition from both the urban councils and central governments because of its importance in poverty alleviation and urban food security.

Table 8: City Council Support

Response	Number of respondents	Frequency (%)
No	21	21.4
Yes	77	78.6
Total	98	100

Table 8 shows that the city council supports urban agriculture with 77 (78.6%) acknowledging the support that is given by the city council in urban agriculture and 21 (21.4%) saying there is no support from city council.

4.0 Conclusion and recommendations

The research study found out that, the main causes of urban agriculture (UPA) was poverty as a result of unemployment, large family sizes that cannot be sustained by the incomes that the people are getting. The activity is practiced by people from diverse social and economic backgrounds. The study revealed that urban farmers benefited primarily on food provision for their consumption, and also on income obtained from the sale of the surplus produce. The income is therefore directed to other household needs such as paying household rent, access to health services, paying school fees for the children hence resulting in poverty alleviation. It is therefore recommended that the city council encourages the central government to assist urban farmers with inputs just like is done to rural farmers so that they increase yields which will lead to poverty alleviation and enhance urban food security or input subsidization which will make the inputs such as fertilizers and seeds affordable to most farmers. The city council is also encouraged to create more agro-zones designated for urban cultivation.

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