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PARTICIPATION OF HOUSEHOLDS IN URBAN AGRICULTURE AND PERCEIVED EFFECT ON LIVELIHOOD IN IBADAN METROPOLIS, OYO STATE OF NIGERIA

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ABSTRACT

Urban agriculture has a great role to play in achieving household food security. It is an important source of alternative income for many households. This study evaluated the participation of households in urban agriculture and perceived effect on livelihood in Ibadan metropolis, Oyo State of Nigeria. Multistage sampling technique was used in selecting 206 respondents and data were collected through the use of structured questionnaires and interview schedules. Data collected were analyzed using descriptive statistics such as frequency counts and percentages and logit regression model. The result of socioeconomic profile of the respondents indicated that 66% were male while 44% were female. About 52% of the respondents were between 15 and 35 years while those above 46 years were 16.5%. About 42% were married. About 31% of the respondents earned monthly income between #15,001 and #30,000. About 54% of the respondents participate in urban farming. The respondents engaged in livestock farming are 33.3% while 37.2% of the respondents are into crop production. Only 19.4% of the respondents belong to association. Majority of the respondents perceived that urban agriculture provides alternative income while 14.7% perceived that it enhanced household nutrition. The challenges facing urban agriculture include limited access to farm land, inadequate access to credit and lack of farers organization to facilitate adequate advocacy. Factors influencing participation in urban farming are age, household size and income. The study recommends that urban agriculture should be integrated into land use planning of all urban centers in Nigeria.

Keywords: Urban agriculture; Livelihoods; Households; Ibadan metropolis; Oyo State

INTRODUCTION

Urban agriculture is any agricultural enterprise within or on the fringes of a town, city, or metropolis that grows or raises, processes, and distributes food and non-food products (Bryld, 2003). Some scholars have considered related practices, such as the production of agricultural goods by urban residents within officially defined urban spaces (Zezza and Tasciotti, 2010). Yet others define urban agriculture as any farming activity occurring in built –up 'intra-urban' areas and 'peri-urban fringes of cities and towns (Thornton, 2008). These varied definitions illustrate the peculiarity and diversity of urban agriculture and, therefore, the range of policies and actors it affects. Urban agriculture in Africa is as old as colonialism itself, when farming flourished in urban areas.

In Nigeria, the practice of urban agriculture plays a crucial role in enhancing urban food security and livelihood. This is because the cost of supplying and distributing food to urban areas that rely on rural production and imports, continue to increase. Also, the supply of food does not meet the demand of urban residents, especially the urban poor. An increase in food demand and a high rate of unemployment are common features in Nigerian cities. According to Olayioye (2011), traders, civil servants and artisans find it difficult to cope with the high cost of living. The poor income in the urban area has encouraged agricultural activities production within cities vicinity. Urban agriculture (UA) contributes to local economic development, poverty alleviation, the greening of the cities and the productive reuse of urban wastes (Oyedipe, 2009).

For years now, the role of urban agriculture in improving the situation of urban residents has been ignored and, in some areas, treated as having only very little contribution to the urban economy. It has been considered a public health nuisance and activity of the rural community not urban economics. As a result, people who engaged in urban agriculture have been unsupported and harassed, even in years of food shortages. Now, as the potential benefits of UA for food security and environmental management becomes better understood in policy circles, official attitudes in some countries are slowly but steadily changing (Arku *et al.*, 2012). Urban agriculture engages more than 800 million people worldwide (UNDP, 1996) contributing about 50% to the food security safety of city dwellers (Appeaning – Addo, 2010).

Research study by the Food and Agriculture Organization (FAO) indicated that the condition of adults and children plagued with diseases and living in low-income

areas can significantly improve if they are engaged in urban agriculture (FAO, 2007). Such engagements can reduce malnutrition and increases the quantity of food intake (Bryld, 2003). The urban populace who depend mostly on the urban market for access to food, purchase more than 90% of their food (IFPRI, 2003). With the rapid growth of Africa's urban population, demand for fresh foodstuff will continue to increase. Therefore, to ensure urban food security there is a need to assess the effect of urban agriculture, using Ibadan metropolis in Oyo State, Nigeria, as a case study.

According to FAO (2007), a world without hunger is one in which most people can obtain the food they need for an active and healthy life by themselves. Food security exists when all people at all times have physical or economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. It is also argued that the condition of adults and children afflicted with diseases and living in low-income areas can improve significantly if they are engaged in urban farming (FAO, 2007). Today, cities attract people worldwide. Thus, the population tends to concentrate in urban centres (Gomez and Salvador, 2006). The present-day worldwide growth of cities resulted in an unprecedented increase in the number and size of cities which is a fundamental phenomenon of the modern times with far reaching consequences for man. This study examined households involvement in urban agriculture to determine the factors influencing their participation and perceived effect on livelihoods in Ibadan metropolis.

METHODOLOGY

Study Area

The city of Ibadan is located approximately between longitude 3º30'to 4ºE and latitude 7º to 7^{0}30'N. Ibadan is linked to many settlements in the west of Nigeria by roads, rail and air routes –southeast direction. The physical setting of the city consists of ridges hills that run in northwest – southeast direction. The highest peaks of these hills are found within the central part of the city such as Mokola, Mapo and Aremo. These hills range from 170 -400 meters above sea level.

There are eleven Local Governments in Ibadan Metropolitan Area consisting of five urban Local Government Areas (LGAs) in the city and six semi-urban LGAs. The five urban LGA where the study was conducted are North-West, North, South- West, North-East, and South-East. With their respective population sizes in 1991 and 2006 respectively, their percentage increase and growth rates as shown in table 1.

Table1.1: Population of the study area

Local Government	1991 pop	2006 pop	% Increase	*Rate of Growth*
Ibadan North	302,271	306,795	1.5%	0.10%
Ibadan North East	275,627	330,399	19.87%	1.22%
Ibadan North West	147,918	152,834	3.32%	0.22%
Ibadan South East	225,800	266,046	17.82%	1.10%
Ibadan South West	227,047	282,585	2.00%	0.13%

Source: National Population Commission (NPC), 2009

STUDY POPULATION

The population of the study comprises of all the inhabitants in the LGAs of Ibadan urban areas, that is, North-West, North, South-West, and South-East because the research is investigating urban agriculture (Table 1). The population of Ibadan metropolis comprises of North-West, North, South-West, and South-East (Table 2 below). From the table below it is clear that Ibadan urban population growth has increased in the past 15 years. This increase has its attendant problems like poverty, food insecurity and malnutrition. **Sample and**

Sampling Techniques

The sample comprised 206 people living in the study area and engaged in agricultural activities. Random sampling technique was used to select these respondents in

proportion to the sample frame. This was done through balloting. The technique is unbiased since each person, event, object or thing in the population is given an equal opportunity of being selected for the study (Table 2).

Sources of Data

Primary data sources-reconnaissance survey: Questionnaires and oral interviews in and around the five local governments in Ibadan metropolis were employed to achieve the aim and objectives of this study. Information collected include socioeconomic profile of the respondents, participation in urban farming, factors influencing urban farming, types of urban

farming practiced and perceived contribution of urban farming to livelihood

Table 2: Sampling frame

Local Government	*2006 population*	*Population of urban farmers*	*No of respondents*
Ibadan North	306,795	856	42
Ibadan North East	330,399	857	42
Ibadan North west	152,834	777	40
Ibadan South East	266,046	816	41
Ibadan South West	282,585	817	41
Total	1,338,659	4123	206

A reconnaissance survey was carried out by personal observation to get firsthand information on how the urban populace in the study area participates in urban agriculture. Structured questionnaires were then used to obtain respondents' information concerning the residents' urban agricultural activities. The information collected included; respondents' data, agricultural activities the contribution of farming to livelihood and other relevant information related to the study. A total of two hundred and six questionnaires were administered. All administered questionnaires were collected, although 6 of the questionnaires were found not useful for the analysis. The number of questionnaires recovered represents 97% of the total distributed, which is considered adequate for the analysis.

Data Analysis

The analytical techniques used were:

(a) Descriptive statistics, namely; simple percentages, tables, bar charts and pie charts

(b) Logit regression model

A logit regression model was used to determine respondents' participation in urban agriculture. The model specifies the relationship between respondents' socioeconomic profile and participation in urban agriculture. The implicit model is expressed as follows

$Y= \beta_0 + \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+ \beta_6X_6+ e$

Where;

Y_i= dichotomous response variable such that; Y=1 if respondent own farm and Y = 0 (if respondent do not own farm; β_0 = intercept; β_1 – β_6= coefficients of the estimated parameters;

X_1 = Age (years);

X_2 = Gender (1=male; 0=female);

X_3= Marital status (Married=1; Single=2; Divorced/ Separated=3; Widowed=4)

X_3 = Level of education (No formal education=0; primary =1; secondary=2 and tertiary =3)

X_4 =Household size (population of the household)

X_5 = Household income (₦);

X_6 = Membership of association (1=Yes; 0=No)

X_6 = Access to credit (1=Yes; 0=No)

e = Error term.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

The demographic characteristics of respondents included gender, marital status, age (years), educational background, primary occupation, monthly income level, number in household and position in household.As presented in Table 3, 66% of the respondents are males while 44% respondents are females indicating that majority of the respondents were males. This result disagreed with the findings of Paola (2003), who reported that women are more dominant in farming due to the fact that they are responsible in feeding the family and supported Baba *et al*, 2015 that it is generally assumed that men in Nigeria make the key farm management decisions both at home and in the society which necessitated their high involvement in agricultural activities while the women are involved in staple food production for household consumption and processing activities. Respondents between the age of 26 to 35 years were 31.5% and 36 to 45 years (31.5%), followed by respondents that are aged 15 to 25 years (20.5%) while respondents aged 46years and above are in the minority. This is indicative that people that are full of vigor and strength are more involved in urban agriculture. Olofin (2006) established that farmers between 30 and 70 years of age undertake urban crop production. 85 (42.5%) respondents that participate in urban farming are married, 28.5% respondents are single, 30 15% respondents are divorced while 14% respondents are divorced/separated while 14% respondents are widowed. This shows that married people were more involved in

urban agriculture. This can be associated with the need to take care of their family (Paola, 2003).

Furthermore 45.5% respondents have tertiary education, 54 (27%) have secondary education, 34 (17%) respondents have primary education while 21 (10.5%) respondent have no formal education. These levels of education show that a higher percentage of urban residents that involving in urban agriculture possess at least a tertiary have higher education. Effersion (1994) noted that good education enhances the ability to work out more profitable lines of investments. The majority of the respondents, comprising 30.5% that are self-employed and 20.5% apprentices engaged in urban farming. This shows that respondents that are not engaged in white collar jobs are more engaged in urban farming, as noted by (Omonona,2001).

Only 16.5 % of the respondents earn a monthly income of above ₦45,000. The result shows that the majority of the urban dwellers that engaged in urban agriculture do not earn much, and as such use urban agriculture as an alternative source of income. Thus, urban agriculture serves as a respite to financial inadequacies. More than half of the respondents (58.5%) claimed they belong to households that are not more than four (4) members. A higher percentage 39% of the respondent is fathers, followed by dependents (31%) and finally mothers (30%). This reveals that more of the urban dwellers that are involved in urban agriculture are fathers.

As revealed in Table 3, majority (80.6%) of the respondents are not members of any farmers' association. The study shows that most of the urban dwellers that engage in urban farming do not engage in farming as the primary occupation, and thus, do not see the need to be part of any farmers' association.

Ownership of farm among the respondents

The result presented in Table 4 showed that most (64.5%) of the respondents have farms. This result indicates that the majority of the sampled urban dwellers have a place of their own in which they practice. The location of the farm (Table 5) as noted by the respondents indicated that 39.5%, 32.6% and 31.8% were public land, compound, and underdeveloped private land respectively. The result shows the willingness of urban residents to engage in urban agriculture wherever there is available land.

Table 3: Demographic Characteristics of Respondents

Demographic Characteristic	Options	Frequency	Percent (%)
Gender	Male	112	66.0
	Female	88	44.0
Age group (years)	16– 25	41	20.5
	26 – 35	63	31.5
	36 – 45	63	31.5
	46 and above	33	16.5
Marital Status	Married	85	42.5
	Single	57	28.5
	Divorced/Separated	30	15.0
	Widowed	28	14.0
Educational Status	Primary	34	17.0
	Secondary	54	27.0
	Tertiary	91	45.5
	Informal	21	10.5
Primary occupation	Civil/Public Servant	57	28.5
	Organised private sector worker	41	20.5
	Self-employed	61	30.5
	Apprentice/Unemployed	41	20.5
Income Level (₦)	1,000 - 15,000	56	28.0
	15,001 - 30,000	61	30.5
	30,001 - 45,000	52	26.0
	Above 45,000	33	16.5
Household size	1 – 4	117	58.5
	5 – 8	52	26.0
	9 – 12	21	10.5
	Above 12	11	5.5
Position in household	Father	77	39.0
	Mother	60	30.0
	Dependent	62	31.0
Membership of association			
	Yes	39	19.4
	No	161	80.6
	Total	200	100.0

Table 4: Possession of Farm

Farm Possession	Frequency	Percent (%)
Yes	129	64.5%
No	71	35.5
Total	**200**	**100.0**

Table 5: Farm Location

Location	Frequency	Percent (%)
Compound	42	32.6
Public Land	51	39.5
Place of Work	12	9.3
Undeveloped private land	41	31.8
Total	**129**	**100.0**

Types of urban agriculture practised by the respondents

As presented in Table 6, higher percentages of the respondents are involved in crop farming (37.2%) and livestock farming (33.3%). The study implied that among the selected agricultural practices, crop production is most practiced. The study indicated that urban farming system in the study area is in form of home gardening and surrounding/environment farming. The production system under these farming systems is characterised by upland or lowland farming, solely crop or livestock production, and crop-livestock integration. The crop production systems are however rain-fed with the use of hoes and cutlasses as farming tools. Although most of the Nigerian urban agriculture practitioners largely produced for home consumption, a few of do so for income generation through marketing of harvested or surplus farm produce (Ogunniyi *et al.*, 2017).

Table 6: Type of farming

Type	Frequency	Percent (%)	Rank
Crop Farming	48	37.2	1
Livestock Farming	43	33.3	2
Fish Farming	17	13.2	4
Horticulture	21	16.3	3
Total	**129**	**100.00**	

Factors influencing household participation in urban agriculture

The result presented in Table 7 showed the factors influencing respondent's participation in urban agriculture. It was revealed that the estimated parameter obtained for age (β= 0.3767; p<0.01) was positive and significant at 1% level of probability. This implied that the probability of participating in urban agriculture is higher among older respondents. The coefficient obtained for education (β= 0.2560; p<0.10) was positive and significant at 10% level of probability. This finding was similar to the finding of Ibrahim *et al.* (2020). The implication is that the more education the tendency for the respondents to engage in urban agriculture. Education could enhance access to different source of information farming that could stimulate interest in agricultural practices. Level of education also has a role to play especially in the spread of the nutritional importance and diversification of household economic activities (Omolehin*et al*., 2014). Also, household size was positive and significantly related to participation in urban agriculture. Positive influence of this variable indicates that large households tend to participate in urban agriculture.

Contributions of Urban Agriculture towards Improving Life Situation of Urban Residents in Ibadan

The presentation in Table 8 shows that the respondents indicated that urban farming has contributed to their livelihood. The major contribution it has is serving as an alternative source of income (51.2% responses). It also serves a main source of income for a reasonable percentage of respondents (34.1%). 14.7% respondents

noted that it serves as a source of nutritional enhancement to their livelihood. This shows that urban farming contributes to the livelihood of urban dwellers by increasing their financial capacity and enriching their nutrition.

Table 7: Factors influencing household participation in urban agriculture

Variable	Coefficient	Std. Error	t-value
Gender	-0.4158	0.41798	-0.99
Age	0.3767***	0.0294	12.80
Education	0.2560*	0.1336	1.92
Marital Status	-0.37691	0.462752	-0.81
Household size	0.0989***	0.0010	9.24
Membership of association	0.9547***	0.3795	2.52
Access to credit	0.7438	0.4587	1.62
Constant	0.0468	0.098	0.05

* = P<0.10 ***=P<0.01

Table 8: Contribution of Urban agriculture to Livelihood

Contribution	Frequency	Percent (%)
Nutrition	19	14.7
Alternative source of income	66	51.2
Main source of income	44	34.1
Total	**129**	**100.0**

CONCLUSION AND RECOMMENDATIONS

The contribution of urban agriculture to the socio-economic development of urban dwellers cannot be underestimated as it goes a long way in improving their living hood. This study has revealed that household in urban areas engaged in urban farming with crop production as most practiced types of agriculture. Major benefits derived by urban families were household food supply, income and full-time employment opportunity. Most of the respondents were found to attain certain level of education and engaged in crop production, livestock, fishery and other types of farming. It's evident from the study that most of the urban farmers did not

belong to association or group. Socioeconomic profile such as age, education, household size and membership of association were found influencing participation in urban agriculture. The study recommends integration of urban agriculture in land use planning of all urban centers in Nigeria.

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