

DETERMINANTS OF URBAN AND PERI-URBAN FARMING IN AKWA IBOM STATE, NIGERIA

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ABSTRACT

The relevance of Urban and peri-Urban farming in providing high quality vegetables for numerous urban dwellers in towns and cities cannot be overemphasized. The study analysed the socio-economic characteristics of urban and peri-urban farmers and determined the factors that affect urban farming outputs. Simple random sampling technique was employed to select a total of 100 urban and peri-urban farmers for the study. Primary data were obtained using structured questionnaire. Data were analysed using simple descriptive statistical tools. Also, multiple regression analysis was used to determine the factors that affect urban and peri-urban farming output. Findings reveal that majority of the people engaged in urban and peri-urban farming were women and were government-employed. Results also indicate that except for age and sex, all other factors were significant at one, five and ten percent levels.

KEYWORDS: Determinants, urban farming, peri-urban farming.

INTRODUCTION

Before the pre-colonial and colonial era, agriculture was extensively practised on rural lands with majority of food products produced by more than 70 percent of the rural populace who engage in farming. Agriculture is still the largest sector of rural economies in developing countries and majority of the rural population are engaged in this sector (Ferris and Graver, 2003). In Nigeria, agriculture employs about two-thirds of the labour force, but produces only about 30 percent of the gross domestic product (GDP) (CTA, 1998). Population explosion have however, increased the food and water demands of city inhabitants and this have compelled many city dwellers to cultivate vacant plots within and around urban residence. This practice of cultivating short-cycle crops and raising micro-livestock within and/or around city residents in order to supplement household food needs and income is called urban/peri-urban farming or city farming or urban/peri-urban agriculture or city agriculture. These words can be used interchangeably. Urban farming in many developing countries including Nigeria was seen to constitute a nuisance to the environment as was regarded as an unkempt and unconstitutional practice. It is worthy of note and mention that town planners and agriculturists have in the course of time accepted urban farming as an appropriate sustainable urban land management, urban food supply and security strategy over the years. Urban agriculture has gained prominence as an intervention strategy and panacea for the poorest of the urban poor in augmenting family income and household food supplies. As posited by Mougeot (2000), urban agriculture – agriculture located within or on the fringe of a town or city – may be one way to bolster city food supplies while also increasing the incomes of the poor. Urban farming practised within residential building or quarters often utilize biodegradable household kitchen waste as a soil-replenishing ingredient. Organic waste is systematically used in farming (Mbaye and Moustier, 2000). Urban agriculture could be practised on rented plots of land or unused plots. UNDP (1996) reported that urban farming takes place on small tracts of land than rural fields and open spaces that are vacant, idle or unsuited for urban development.

The population of Akwa Ibom State in recent times is on the increase as more investors, entrepreneurs and job seekers are settling particularly in Uyo, the capital city of the State. It is indisputable that food demands are likely to rise. The rise in population in the State does not only increase food demand and consumption but also increases resource use. Hinrichsen et al (2002) reported that as population has grown rapidly in urban areas of developing countries and per capita consumption levels have risen as well, resource use has soared.

Akwa Ibom State which was civil and public service oriented is gradually transforming into a mercantile State with most inhabitants engaging in farming on part-time basis. As posited by Etim (1998), most urban farmers in Uyo metropolis are public/civil servants who farm on part-time basis. Backyard gardening is invariably a part-time activity that supplements people's regular incomes and, in some cases, it is regarded as a hobby (Klemesu and Maxwell, 2000). Usually, cereals, vegetables and short-cycle crops are dominant with little or no emphasis on perennial crops. Udoh (1999) stated that farming activities within and around the city, primarily centre on the production of vegetable in home gardens in which waterleaf cultivation features prominently. In spite of the growing importance of urban and peri-urban farming, most studies in agriculture are primarily centred on rural settings. Studies on urban farming include Mascarenhas, (1995), UNDP (1996), Foeken and Mwangi (2000) and Etim et al (2005). None of these studies have examined the factors that determine urban and peri-urban farming in Akwa Ibom State. This study was therefore conducted to ascertain the socio-economic characteristics of urban and peri-urban farmers as well as to identify the determinants of urban and peri-urban farming in the study area.

METHODOLOGY

The urban farming survey was conducted in Uyo, the Capital of Akwa Ibom State. The area lies within the humid tropical rainforest zone of Southern-Eastern Nigeria. It has an annual rainfall of about 2000mm – 3000mm. Uyo is situated between latitude 5.17° and 5.27°N and Longitude 7.27° and 7.58°E (UCCDA, 1998). The settlement comprises mainly Ibibios but

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has other settlers from other ethnic groups. The settlement pattern in Uyo is nucleated and being an administrative headquarters, majority of civil/public servants and political office holders reside there. These people engage in part-time farming and other commercial ventures within and around their homes as a way of augmenting and supplementing family income and food supplies. Urban food production is often a necessary supplement to the household's food supply or budget (Mascarenhas 1995, UNDP 1996).

The presence of greater number of urban farmers however, informed the choice of the study area. The study population comprised only crop farmers who cultivate short-cycle crops within and around urban and peri-urban zones of Uyo metropolis. The study however, excluded urban micro-livestock farmers. Primary data were obtained with the use of structured questionnaire. Simple random sampling technique was used to select a total of 100 respondents for the study. Simple descriptive statistical tools such as means and percentages were used to analyze the data. Multiple regression analysis was also used to determine the variables that affect urban and peri-urban farming in the study area.

MODEL SPECIFICATION

The model is implicitly stated as follows

$$Y = f(Ag, Fs, Ps, F_1, C_i, Se, e)$$

Where Y = Value of output in kg per hectare (kg/ha)

Ag = Age in years

Fs = Family Size in number

Ps = Plot size in hectares

F1 = Family labour in mandays

Ci = Capital invested in naira

Se = Sex (Dummy 1 = male, 0 = female)

e = Stochastic disturbance term

RESULTS ANALYSIS AND DISCUSSION

1. SOCIO ECONOMIC CHARACTERISTICS OF URBAN AND PERI-URBAN FARMERS

Most of the urban farmers in the study area (56 percent) were women. The result confirms similar findings by (Foeken and Mwangi, 2000) that majority of the urban farmers in Nairobi are women. Similar study by Ingevall et al (2002) reveals that majority of the world's agricultural producers are women. Many studies in developing countries show that women contribute as much or more than men do to family food security and children's nutritional status when unpaid work is included in the estimation. (Engle, 2001). Sixty four percent of urban farmers were married while 36 percent were still single. Majority of urban farmers (66 percent) were between the age bracket of 31 – 60 years, 32 percent were less than 30 years of age whereas only 2 percent of urban farmers were more than 60 years of age. The result implies that most of the respondents were within the economically active age. These findings are synonymous with Asa (2003), that people in the age groups of 41 – 60 are more economically active and independent than those in the age groups of "less than 21

TABLE 1: SOCIO-ECONOMIC CHARACTERISTICS OF URBAN AND PERI-URBAN FARMERS

S/N	Characteristics	Percentage %
1.	<u>SEX</u>	
	Male	44
	Female	56
2.	<u>MARITAL STATUS</u>	
	Single	36
	Married	64
3.	<u>AGE (YRS)</u>	
	<30	32
	31 – 60	66
	>60	2
4.	<u>HIGHEST EDUCATIONAL ATTAINMENT</u>	
	Primary Education	22
	Secondary Education	60
	Tertiary Education	18
5.	<u>NUMBER OF CHILDREN</u>	
	1 – 5	58
	6 – 10	25
	11 - 15	3
	16 – 20	1
	No Children	13
6.	<u>EMPLOYMENT STATUS</u>	
	Government employed	83
	Self employed	17
7.	<u>EXPERIENCE IN FARMING (YRS)</u>	
	<5	21
	6- 10	68
	>10	11
8.	<u>FARM SIZE (Hectares)</u>	
	<1.0	78
	1.0 – 1.5	18
	>1.5	4
9.	<u>OFF-FARM INCOME N/MONTH</u>	
	<12,000	72
	12,001 – 14,000	10
	14,001 – 16,000	10
	>16,000	8
	TOTAL	100

SOURCE: Field Survey, 2000

years" and "above 60 years." The literacy level of urban farmers was high as most of the respondents (78 percent) had post primary qualifications. The result implies that access to extension would be greatly enhanced. The high literacy level by respondents could be attributed to the presence or availability of greater number of schools in the area. Fifty-eight percent of the respondents had 1 to 5 children, 25 percent had 6 to 10 children whereas 13 percent has no children. The smaller number of children by the majority of the urban farmers could be attributed to the high level of literacy in the study area which has led to parents having only the number of children they can adequately cater for. Majority of the respondents (83 percent) were government employed whereas 12 percent were self-employed. The result confirms similar findings by Etim (1998) that most urban farmers in Uyo metropolis are public/civil servants who farm on part-time basis. Most of the respondents (68 percent) had 6 – 10 years experience in farming whereas 21 percent farmed for less than 5 years. The results imply that majority of the respondents have been farming for a long time and therefore the available urban land must have been competed for by the urban poor. Most of the respondents (seventy-eight percent) had farm sizes less than one hectare, whereas only 4 percent of the respondents had farm sizes more than 1.5 hectares. The result suggests that there was generally limited land available for crop production in the study area compared to what is obtainable in rural lands, as most urban farmers farmed around their homes mainly in their backyards. The result also implies that the few urban farmers who had plot sizes more than 1.5 hectares must have practised off-plot farming in peri-urban zones of the metropolis. Majority of the respondents (72 percent) earned less than N12,000 as their monthly off-farm income while 8 percent earned more than N16,000. The result suggests that most people practising on-plot and off-plot farming in cities are mostly in the low-income class who farm mainly to augment family income and nutrition supply. The result confirms similar findings by Nugent (2000) that the poor are not the only people who produce food locally, but they are more dependent on it for income and nutrition.

3. DETERMINANTS OF URBAN AND PERI-URBAN FARMING

The estimates of the regression equation for the effect of selected factors on output of urban and peri-urban farmers is given below:

$$Y = 264.054 - 30.361 Ag - 19.927Fs^{**} + 4.303 Ps^{***} + 20.835F1^{**}$$

$$= (1.621) \quad (-0.728) \quad (-2.051) \quad (3.111) \quad (2.334)$$

$$12.615 Ci^{*} + 3.734 Se$$

$$(1.686) \quad (0.148)$$

$$R^2 = 0.64$$

Note: Figures in parentheses represent Standard Errors.

Asterisks indicate significance *** (1%), ** (5%), * (10%).

The results reveal that when size of family (Fs) is increased by one unit, the value/quantity of urban farm output decreases by 19.927 units. This may be due to the fact that most children now are, neglecting farming to their parents. This implies that the amount of labour put into farming by their parents is not sufficient to maximize output.

Plot size have positive influence on urban farm output. When farm/plot size is increased by one unit, the farm output is increased by 4.303 units. When capital invested is increased by one unit, farm output increases by 12.615 units. Similarly, increasing farm labour use by one unit, increases output by 20.835 units. The coefficient of determination R^2 of

2. FARM/PLOT CHARACTERISTICS OF URBAN FARMERS

Table 2 shows the farm/plot characteristics of urban farmers. Majority of the respondents (86 percent) had between 1 to 5 farm/plot while 14 percent had between 6 – 10 farm plots. The result is consistent with similar survey by Foeken and Nwangi, (2000) that quite a number of farmers have access to more than one plot. Sixty-three percent of urban farmers had farm plot located in their private residence, 17 percent had plots located on roadside/undeveloped lands while 20 percent of urban farmers planted on public/government land. Most urban farmers (55 percent) were landowners, 18 percent rented plots of land whereas 27 percent cropped on family land.

TABLE 2: FARM/PLOT CHARACTERISTICS OF URBAN AND PERI-URBAN FARMERS

S/N	Farm Characteristics	Percentage (%)
1.	<u>NUMBER OF FARM PLOTS</u>	
	1 – 5	86
	6 – 10	14
2.	<u>PLOTS LOCATION</u>	
	Private residence	63
	Roadside/Underdeveloped land	17
	Public/Government land	20
3.	<u>OWNERSHIP OF PLOT</u>	
	Rented Land	18
	Private landowner	55
	Family Land	27
	TOTAL	100

SOURCE: Field Survey, 2000.

0.64 implies that 36 percent of the total variation in urban farm output was accounted for by variables not included in the model.

CONCLUSION

The major focus of the study was to identify the determinants of urban and peri-urban farming in Uyo, Akwa Ibom Capital. The socio-economic, farm characteristics as well as the factors that determine urban and peri-urban farming were analysed. Findings of the study show that majority of the urban farmers were women. Results

reveal that most urban farmers own many farm plots of sizes less than one hectare at different locations within and around the city. Farmers plot size was however, directly related to output.

Urban farming is known to ensure sustained food supply in urban households. Many low-income households have tended to be involved in farming within and around their homesteads as a means of augmenting family income. Though farming is in small plots scattered at various locations around the city, by grouping themselves into co-operatives, urban and peri-urban farmers could enhance large scale land acquisition for increased, efficient and sustainable agricultural production.

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