

## Urban Homestead Vegetable Farming Inanambra State, Nigeria

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**Abstract:** The study examined urban homestead vegetable farming in Anambra State. Structured interview schedule was used to elicit information from farmers. A total of 100 respondents were selected using multi stage sampling technique. Descriptive statistics such as percentage, and mean scores were used to analyze data collected. Findings showed that, majority 72.0% of the farmers were female, married 75.0%, with mean age of 40 years, had formal education 93.0%, had farming as primary occupation 47.5%, had a household size mean of 5 persons with monthly income mean of ₦10,500 and source of income was from sales of vegetables 62.0%. A good proportion 67.0% of the respondents travel 2-3 kilometers to sell vegetables to consumers in market, had farming experience mean of 15.5 years, 58.0% of the respondents had farm size mean of 1.5 ha, and land acquisition inherited 65.0%. Effects of green leafy vegetables production on farmers in urban area are: vegetables are cultivated and sold for income ( $\bar{x}$  =3.38), vegetable get to consumers fresh when cultivated in urban area ( $\bar{x}$  =3.50), vegetables are well stored in refrigerator in urban area ( $\bar{x}$  =2.67), there is good transportation system in urban area ( $\bar{x}$  =2.90) and easy access to farm input in urban areas ( $\bar{x}$  =2.57). Constraints to production of green vegetables by farmers in urban areas include non-availability of land farm ( $\bar{x}$  =2.82), lack of finance ( $\bar{x}$  =2.82), among others. The study recommends that homestead vegetable farming should be encouraged in order to increase vegetable production.

**Keywords:** Household stead, vegetable, urban

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### I. Introduction

Among the rural dwellers in Nigeria, especially in the southern part, green vegetables such as amaranthus, basil, bitter leaf and fruited pumpkin are cultivated at the backyard gardens or farms close to their living houses in small scale. It seems that small scale farming is the genesis of agricultural and communal life; and known to contribute to food security. Backyard farming on small plots of land has been in existence from the time of communal settlement among the cave men (Dilrukshi, Russell and Karim, 2013). Cultivating vegetables close to the house is intended for ease, convenience and accessibility while cooking, and getting it fresh straight to the pot. Backyard garden could be seen as ways to relieve hunger and its concerns in the face of food crisis. These vegetables are harvested and collected fresh from the farm to the pot at will, without specified harvesting season. It was noted that most households consume majority of their produce, though sell some that are produced in excess (Mgbada, Adesope, and Enyinda., 2014). These proceeds are partly used to purchase other foods that are needed by the family members which are not cultivated in their homestead farm. The cultivated vegetables are waste from previously bought and used seed or stalk from the market. Through this, environmental wastes can be reduced, climate change and bio degradation would be cut to minimal.

Vegetables play important role in body building due to its nutritional value, economic security and its short maturity cycle. The aim of eating fresh vegetables is for the nutritional content and therefore it requires being consumed fresh for body nourishment. According to Dimelu and Odo (2013), Vegetable composition is imperative in human nutrition, because it contains vital nutrients such as vitamins C (ascorbic acid), A, thiamine (B1), pyridoxine (B6), niacin (B3), Folicin (B9), E, minerals, and dietary fiber. Adequate consumption could reduce human diseases, such as gastrointestinal cancer deaths, cardiac disease and stroke deaths worldwide (Dimelu and Odo, 2013). In support, American Heart Association (2013) reported that fruit and vegetables are estimated to reduce cancers of the digestive system to about 19%, heart disease to 31% and stroke to 11%. Vegetables were said to be rich in vitamins and minerals substances such as antioxidants and beta-carotene which are assumed to protect the body against damaging chemicals.

Vegetable consumption seems high in demand, and vegetable farming is becoming a lucrative business in developing countries such as Nigeria. They are served in parties and used to garnish dishes to make them appetizing especially in urban areas, towns and cities. It seemed difficult for farmers to meet up with high demand of vegetables because of poor road network, poor transportation, timing; poor packaging and branding

of vegetables (Tavonga, 2014). In occasions that vehicles break down on the road, vegetables for its perishable nature, would weaken with time spent in transportation, and most times might get rotten before they reach the market and the consumers. This has led to many rural households especially small scale farmers migrating to urban areas to be closer to the consumers; and catch up with this new wave in vegetable demand and reduce costs. Vegetables nutritional content depletes because the consumers will not receive it fresh for consumption. The indigenous methods of vegetable preservation by the rural farmers such as spreading out vegetables to the night dew and drying is good but does not make for freshness (Masarirambi, Mavuso, Songwe, Nkambule and Mhazo, 2010). The beauty of vegetable and its nutrients is in consuming it fresh straight from the farm to the pot. Vegetables are perishables and lack of electricity, refrigerators and poor preservation mechanization is a problem in this technological age.

The planting of these vegetables in urban areas, will reduce the problems of lack of freshness to an extent. This will increase the quantity of vegetable sales by farmers and more income will be added to the farmers households. It will reduce the cost of planting and transportation of vegetables from the rural areas to urban towns due to poor transportation network. According to Ubani and Okonkwo (2011), farmers poor earnings from agricultural produce are in part related to poor storage and transportation of vegetables to distant markets, where it can yield better economic returns. These migrant farmers in a bid to continue with farming as their occupation unfortunately cultivate these vegetables on road sides, vacant plots of undeveloped lands in urban and sub-urban areas. In effort to market fresh vegetables to consumers in urban area, some farmers acquire farms that are close to the market and within the reach of the consumers. The migration of rural farmers has resulted to over use of little path-ways, highways and farm lands in vegetable cultivation. This has led to over application of inorganic fertilizer to replenish the soil nutrients (Omotayo and Chukwuka, 2009). According to Serpil (2012), the ground waters which are the main source of drinking, is polluted by the nitrogen and other chemicals in fertilizers.

Anambra State recently has been faced with influx of rural dwellers in its urban towns. The unanticipated migration of rural dwellers is accompanied with weighty social instability in these towns. According to Scott (2015), swift increase in population can create severe problems, particularly if sufficient coping strategies were not made to cope with the new inhabitants.

This study calls for rethink to make room for urban development, expansion and welfare of small scale farmers (Bangudu, 2012). Investing on agricultural activities in urban homestead farming will potentially increase households earnings and food security. The urban homestead farming appears not to be gaining attention of policy makers in Nigeria. This farming system contributes in no small measures to solving food insecurity issue and supplementing incomes of poor households, This work therefore was designed to shed light unto the unknown drivers of homestead gardening with a view for using such drivers as guide to policy makers to promote it in Nigeria.

### **Objectives of the Study:**

The major objective of this study was to asses urban Homestead vegetable farming among farmers for increased agricultural productivity in Anambra State

Specifically, this study was carried out to:

1. examine the socio economic characteristics of Homestead vegetable farmers in the study area,
2. ascertain the effects of vegetable cultivation by farmers in the urban areas of Anambra State;
3. identify the constraints faced by the farmers in the study area

## **II. Material And Methods**

- I. Anambra State is one of the 36 states in Nigeria with the capital at Awka. The State is located on latitude  $5^{\circ} 80'$  and  $6^{\circ} 10'$  North and longitude  $6^{\circ} 85'$  and  $7^{\circ} 60'$  East. It shares boundary with Enugu and Kogi States in the north, Delta State in the south, Edo State in the west and Imo and Abia States in the east. It occupies an area of about 4,885 square kilometres with a population of 4,177,828 people (National Population Commission (NPC, 2006), with a total of twenty-one local government areas. The State is located at the rain-forest zone with two main seasons: the rainy and dry seasons. The State is predominantly rural with subsistence farming as the major means of livelihood; though there is diversification into trading and other non-farm activities.
- II. The study was conducted in Onitsha zone which is one (Aguata, Anambra, Awka and Onitsha) of the four Anambra state Agricultural zones. Onitsha zone is made up of five (5) Local Government Areas (LGAs) namely Onitsha North, Onitsha South, Ogbaru, Idemili North and Idemili South.
- III. The target population for the study was green vegetable farmers. Both purposive and multi-stage simple random sampling techniques were used to select sample for the study. First, two communities were purposively selected from each of the five LGAs, giving a total of ten communities. They were purposively

selected based on the presence of vegetable farming. In the second stage, ten (10) farmers were randomly selected from each of the communities. A total of one hundred (100) vegetable farmers were selected for the study, but only ninety eight (98) farmers who correctly completed their copies of questionnaire were used for analysis. Data for this study were collected through a structured questionnaire and interview schedule. Data collected were analyzed with descriptive statistics such as frequency, percentage and mean.

**IV. Result**

**V. Socio Economic Characteristics of the Farmers**

- VI. The results in Table 1 show that majority (73.5%) of the farmers were female implying female dominance in vegetable production in the study area. This finding agrees with Odok and Agbachom (2012) that women are dominant in vegetable enterprises. In support, Ugwu, Omoloye, Asogwa and Aduloju (2015), found in a study that more females were involved in homestead vegetable production, This implies that homestead is a good means of reducing stress in household meal planning and responsibilities. A good proportion of the farmers (78.6%) were married. This indicates that they can take discussions on farming matters, and receive assistance from their family members in terms of labour to spur for more productivity (Emodi, 2012).
- VII. The farmers mean age was 35.5years. This implies that most of the vegetable farmers were in their middle age. The study also reveals that majority (93.0%) of the vegetable farmers had formal education which implies that the respondents could read, and write; this could be essential pointer to change the focus and direction of innovation acceptance and their managerial skills (Emodi and Madukwe, 2011). In support, Osondu, Obike and Ogbonna (2014) noted that educational attainment is the precursor to skill increase, expansion of knowledge and opportunity cost of being self-employed.
- VIII. Data in Table 1 also show that (63.3%) the farmers major source of income was sales of vegetables. Majority (50.0%) of farmers had household sizes between 4-6 persons. The household mean was 5 persons. Monthly income was ₦20,000 and below (65.3%), the mean income was N10,500. This implies that the respondents were more concerned in commercial vegetable production than subsistence farming. This reveals that respondents could feed and attend to their essential needs (Clothing, shelter and feeding) through vegetable farming. It could be that the farmers preferred vegetable production because it provides relatively quick income in small farm holding.
- IX. Table 1 show that good proportion (68.4%) of the farmers travel 2-3 kilometers to sell vegetables to consumers in market. This indicates that most of the vegetable consumers reside in urban areas. This explains why most farmers were migrating to urban areas to farm and be close to consumers. Having the farm close to consumers makes it possible to reduce cost on transportation, reduce decay and get the vegetables fresh to the consumers; and as when needed. Also, findings show that majority (73.0%) of the respondents had self-owned hired vehicle, 64.3% of the farmers had farming experience between 11-20 years. The mean of farming experience was 15.5years. This indicates that the respondents were well experienced and skilled in use of traditional methods in vegetable production. Long years of farming put farmers in a better position to make useful contributions on the issue of skills and expertise (Emodi, 2012). Majority (59.2%) of the respondents had farm size of 0.1-2.0 ha. The farm size mean was 0.5ha, indicating that homestead vegetable farming is still at small scale level. This finding corroborated the finding of Nwalieji and Ajayi (2009) that vegetable production is still subsistence with mean farm size of 0.63ha. Majority (67.4%) of the respondents' land acquisition was inherited, and 37.8% of the respondents sell vegetable direct to customers. This implies that these respondents were not only small scale vegetable farmers, but were accessible to their farm lands when need be.

**Table 1:** Socio economic characteristics of homestead vegetable farmers:

Sex	Frequency N=98	Percentage (%)	Mean ( $\bar{x}$ )
Male	26	26.5	
Female	72	73.5	
<b>Marital status</b>			
Single	16	16.3	
Married	77	78.6	
Divorced	5	5.1	
<b>Age (in years)</b>			
21-30	7	7.1	
31-40	49	50.0	35.5years
41-50	34	34.7	
Above 50 years	8	8.1	
<b>Educational level</b>			
Primary school	7	7.1	
Secondary school	77	78.6	
Tertiary school	9	9.2	

Non formal education	5	5.1	
<b>Occupation</b>			
Farmer	48	48.9	
Trader	23	23.5	
Civil servant	27	27.6	
<b>Household size</b>			
1-3	24	24.5	
4-6	49	50.0	5persons
7-9	23	23.5	
10-above	2	2.0	
<b>Sources of income</b>			
off-farm activities	13	13.2	
Farm activities	23	23.5	
Sales of vegetables	62	63.3	
<b>Monthly income (Naira)</b>			
20,000 and below	64	65.3	
21,000- 40,000	11	11.2	N10,500
41,000 – 60,000	14	14.3	
61,000 and above	9	9.2	
<b>Distance from the market to urban consumers</b>			
Half-one kilo	21	21.4	
2-3 kilo	67	68.4	
4-5kilo	10	10.2	
<b>Transportation system</b>			
Self-owned and driven	9	9.2	
Group-owned vehicle hired	17	17.3	
Self- owned hired vehicle	72	73.0	
<b>Years of Farming Experience</b>			
5-10	14	14.3	
11-20	63	64.3	15.5 years
21-30	21	21.4	
<b>Farm size (Ha)</b>			
0.1-2.0	58	59.2	
2.1-4.0	23	23.5	0.5ha
4.1-6.0	17	17.3	
<b>Acquisition of land</b>			
Inherited	66	67.4	
Purchased	21	21.4	
Leased	7	7.1	
Community land	4	4.1	
<b>Means of Vegetables sales</b>			
Farm gate sale	20	20.4	
Middleman(retailers)	10	10.2	
Direct to customers	37	37.8	
Direct to all buyers	31	31.6	

Source: Field survey, 2017

### Effects of Green Vegetable production in urban areas on farmers

Data in Table 2 show the effects of green leafy vegetables on farmers in urban area. The farmers perceived seven items out of eight items as effects of vegetable production in urban areas. They include: It will reduce the cost of planting and transportation of vegetables from the rural areas to urban towns due to poor transportation network ( $\bar{x} = 3.85$ ), Overcome difficulty in sale of vegetables in rural market ( $\bar{x} = 3.51$ ), Vegetable get to consumers fresh when cultivated in urban area ( $\bar{x} = 3.50$ ), increase income will be added to the farmers households ( $\bar{x} = 3.38$ ), increased outlets for the sale of vegetables ( $\bar{x} = 3.28$ ), and easy access to farm input in urban areas ( $\bar{x} = 2.57$ ). Nevertheless, reducing the problems of lack of freshness ( $\bar{x} = 2.20$ ) was considered of less effect in vegetable production in urban areas. Vegetable is one of the perishable goods that dry and sometimes get rotten before they are being transported from the rural areas to the urban, but when they are produced in the urban, they get to the consumers fresh.

The closer the vegetable farm is to the market, less transportation cost will be paid by the farmer to get to the consumer. According to Food and Agriculture Organization of the United Nations (FAO, 2005) the farmers are able to transport vegetables to the consumers quickly while the prices are high. Prices are often very high when vegetable is off-season. Reduction in the cost of transportation would amount to increase in farmers income. It means the cost of production will be reduced and this will cause increase to farmers' earnings. It seems that the direct effect of low cost in production is increase in farmers' profit. The farmers are faced with harvests that are bountiful to feed their households and fulfill other obligations. Sale of vegetable is easier in the urban area, because the farmers have various outlets to market vegetable produce. These outlets include:

supermarket, farm gates. Vegetables can be hacked on the streets, and with technology, farmers contact their customers on GSM and make home delivery of their produce. Farmers deliver fresh vegetables to customers with minimized losses. Farmers presently store harvested unsold vegetables in refrigerator to keep it freshly delivered to the consumer.

**Table 2:** Perceived effects of green vegetable production on farmers in urban area

Items	Mean ( $\bar{x}$ )
Reduce the problems of lack of freshness	2.20
Increase the quantity of vegetable sales by farmers	2.45
It will reduce the cost of planting and transportation of vegetables from the rural areas to urban towns due to poor transportation network	3.85*
Increase income will be added to the farmers' households.	3.38*
Overcome difficulty in sale of vegetables in rural market	3.51
Vegetable get to consumers fresh when cultivated in urban area	3.50
Easy access to farm input in urban areas	2.57
Increased outlets for the sale of vegetables	3.28

Source: Field survey, 2017

**Factors influencing cultivation of green vegetables by farmers in urban area**

Table 3 shows the factors influencing cultivation of green vegetables by farmers in urban area. All the items investigated were accepted by the farmers as factors influencing vegetable cultivation in urban areas. These include: shortage of land to cultivate vegetables in urban area ( $\bar{x} = 3.27$ ), spend so much money to transport vegetable produce to urban areas ( $\bar{x} = 3.17$ ), vegetables from rural area do not get to the consumers fresh due to distance in transportation ( $\bar{x} = 3.12$ ), uncertainty of enough consumers to buy up the harvested vegetables in rural area ( $\bar{x} = 2.95$ ), vegetables being damaged due to animals, disease, and pests in the village ( $\bar{x} = 2.85$ ), poor storage facilities such as refrigerator in rural area ( $\bar{x} = 2.77$ ), excess of post-harvest losses ( $\bar{x} = 2.77$ ), limited access to extension worker and agricultural inputs such as tools, capitals and seeds ( $\bar{x} = 2.65$ ), and shortage of hired labour ( $\bar{x} = 2.51$ ).

Distance to market, and poor transportation network is a handicap to rural farmers in sale of vegetables and other agricultural produce. In deed vegetables for its perishable nature, get weak and spoil on a long distance journey to the market. It then reaches the consumers not fresh. This reveals why most farmers migrate to peri-urban and urban areas in search of markets closer to the costumers. This will help reduce cost of production, and would expose them to wider market in sale of their vegetables. The farmers are faced with problems of bad road network, with the farm being far from the market. There is need for access to competitve markets for vegetable produce, inputs, assets and technology, consumer goods credit and labour (Otieno, Omiti, Nyanamba and McCullough, 2009).

**Table 3:** Factors influencing cultivation of green vegetables by farmers in urban area

Items	Mean ( $\bar{x}$ )
Shortage of land to cultivate vegetables in urban area	3.27*
Spend so much money to transport vegetable produce to urban markets	3.17*
The vegetables from rural area do not get to the consumers fresh due to distance in transportation	3.12
Uncertainty of enough consumers to buy up the harvested vegetables in rural area	2.95
The vegetables are damaged due to animals, disease, and pests in the village	2.85
Poor storage facilities such as refrigerator in rural area	2.77
Excess of post-harvest losses	2.77
Limited access of extension worker and agricultural inputs such as tools, capitals and seeds	2.65
Shortage of hired labour	2.51

Source: Field survey, 2017

**Constraints to production of green vegetables by farmers in the urban areas**

Table 4 reveals the constraints in vegetable production as perceived by farmers. The findings indicated that farmers perceived five out of the eleven constraints investigated as major constraints in vegetable production. They include: lack of finance ( $\bar{x} = 2.82$ ), the farms are several kilometers away from the residents ( $\bar{x} = 2.82$ ), poor access roads to farm lands, farm gates ( $\bar{x} = 2.73$ ), inability to market vegetable produce ( $\bar{x} = 2.63$ ), weather affects vegetable production ( $\bar{x} = 2.55$ ). Less perceived constraints in vegetable production were: only family farm labour can be afforded ( $\bar{x} = 2.49$ ), disease and pest infestation of planted vegetables ( $\bar{x} = 2.46$ ), farm inputs very expensive ( $\bar{x} = 2.45$ ), supply of farm inputs at the wrong time ( $\bar{x} = 2.44$ ), extension agents not within reach ( $\bar{x} = 2.38$ ), non-availability of land to farm ( $\bar{x} = 2.36$ ),.

Lack of finance and the farm being several kilometers away from the residents were the two major factors limiting vegetable production among farmers. Roads play a vital role in attracting customers to farms. With good road, it might be easier for inputs and extension workers to reach the farmers as at when needed most. In the view of Alarima, Adamu, Masunaga and Wakatsuki (2011), good transportation network is associated with dissemination of innovation, better prices of inputs and its use for farmers. Availability of land and its security will determine whether farmers will invest on their farm land or not. Farmers would need farm lands where they can erect near permanent structures such as shades to reduce stress in farm labour. There are constraints in agricultural intensification, these include: land tenure and barriers related to land availability (Jayne, Chamberlin and Headey, 2014). Lack of finance was perceived by farmers as constraints in vegetable production. This implies that financial constraint had been an impediment to vegetable production (Greiner, Herr and Stoeck, 2003; Obinaju and Asa, 2015). Diseases and pests infestations not only cause damage to vegetables, but reduces the farmers yields and increases cost of production which corrodes their proceeds. Pests infestation could be as a result of planting the remains of infested purchased plants from the market. Extension agents not within reach of the farmers could be a factor that denials the farmers information need for appropriate source of planting material. This could result to planting materials getting to the farmers when not most needed.

**Table 4:** Constraints to production of green leafy vegetables by farmers in urban area

Items	Mean (x̄)
Lack of finance	2.82*
The farms are several kilometers away from the residents	2.82*
Poor access roads to farm lands, farm gates	2.73
Inability to market vegetable produce	2.63
The weather affects vegetable production	2.55
Only family farm labour can be afforded	2.49
Disease and pest infestation of planted vegetables	2.46
Farm-inputs very expensive	2.45
Supply of farm inputs at the wrong time	2.44
Extension agents not within reach	2.38
Non availability of land to farm	2.36

Source: Field survey, 2017

## V. Conclusion

X. Urban homestead vegetable farming actually exists in Anambra state and it is influenced by farm size, land acquisition and revenues of vegetable sales. This homestead vegetable farming has made it possible for vegetable to get to urban consumers fresh. Factors affecting vegetable cultivation in the urban areas include uncertainty of enough consumers to buy up the harvested vegetables in rural area, excess of post-harvest losses among others. However, urban homestead vegetable farming is faced with non-availability of land farm, lack of finance, among others. The study recommends that homestead vegetable farming should be encouraged. Government should provide farmers with farm lands closer to the consumers in order to increase vegetable production, reduce decay and post-harvest waste. Homestead farming should be incorporated into extension activities of the relevant government. Dissemination of information on constraints will guide further research.

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