

Women Participation in Home Garden Farming in Abuja-FCT, Nigeria

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ABSTRACT

The study examined women participation in home garden farming in Abuja FCT, to achieve the study objective, multi-stage sampling technique was used to select 114 respondents from three Area Councils in FCT. Validated interview schedule with reliability coefficient of 0.71 was used for data collection and data collected were analyzed using descriptive and inferential statistics. The result revealed that about 40.0% of the respondents were within age range of 41-50 years, while 46.4% of the respondents attended tertiary education. Findings indicated that higher proportions of the respondents cultivated pumpkin (98.2%), bitter leaf (98.2%), green vegetables (94.7%) and maize (91.2%). Women farmers were found to have highly participated in almost all home garden activities. The result also showed that home garden farming provides fresh vegetables/spices (81.5%), food/fruits (80.7%) as well as nutritional (77.1%) and medicinal (71.9%) benefits for the household of the respondents, which enhance their food security. The result further indicated that age, educational level, access to adequate space and housewifery had significant and positive influence on women participation in home garden farming. Some of the severe constraints faced were lack of extension services and pest infestation. Thus, it was recommended that urban city planners should make provision for adequate space for home garden farming while designing original master plan of cities or urban centres to encourage home garden farming. It was also suggested that the scope of extension services in FCT should be expanded to adequately cover cities and urban centre's home garden farming families.

Keywords: Abuja-FCT, Farming, Home garden, Participation, Women

INTRODUCTION

In the recent past Nigeria economy was in recession which led to inflation and consequently persistent increase in the price of general goods and services. This affected the price of both locally grown foods and imported food stuffs owing to the fact that Nigeria imports most of the foods that were consumed by the populace. This trend has renewed the calls for more sustainable methods of food production systems in order to meet up with the increasing demand. Home gardens have been touted as a means of meeting the food needs of many low income households especially women.

Home gardens or backyard farms are usually established around the house to cater for the immediate food needs and demand of members of a household and sometimes referred to as family food production system. This system is found in most regions of the world and is an

integral part of both rural and urban communities. Home gardening can be a sustainable strategy for improving food security and income generation when the gardens are well adapted to local agronomic practises and preferences (Midmore *et al.*, 1991).

This type of gardening can easily be accessed by the poorest people since it relies on low-cost technology and provides direct access to food that can be harvested, prepared and fed to the family on a daily basis. Also, landless individuals such as women can practice it on small patches of homestead land, vacant plots, roadsides or edges of fields or in containers placed around the house to augment and at the same time improve family diet by supplementing vitamins, minerals and proteins that are necessary for a nutritionally balanced diet (Hoogerbrugge and Fresco, 1993). Therefore, in towns and cities where there is shortage of land for farming coupled with over-population, areas of land around the house that tends to be useless, overgrown by weeds and turned into refuse dumps could be an effective means of ensuring household food security and nutrition if properly cultivated. It is against this background that this study was carried out to provide useful information to the government to come up with policies and incentives targeted at the home gardeners, in order to promote the practise of green space in general as a means of improving local food production. The specific objectives of the study are to:

- i. describe the socio-economic characteristics of women gardeners in the study area;
- ii. ascertain the major crops grown by the respondents in home gardens;
- iii. examine level of participation of women in home garden farming activities in the study area;
- iv. identify the benefits derived from home garden farming;
- v. determine factors influencing level of participation of women in home garden farming; and
- vi. identify constraints faced in home garden farming in the study area.

METHODOLOGY

The study was carried out in Abuja Federal Capital Territory (FCT). FCT falls between Latitudes 8°25` and 9°20` North and Longitude 6°45` and 7°39` East. The yearly precipitation ranges somewhere around 1,100mm and 1,600mm, with average annual temperature of 25.7°C. Abuja has six Area Councils. The territory is located in Guinea Savanna Ecological zone of Nigeria and some of the crops grown are yam, maize, sorghum, millet, cowpea, soybean, beans, rice and groundnut. While livestock reared include goat, sheep, cattle and chicken. Major ethnic groups in FCT are Gbaya, Koro, Gede, Bassa, Gwandara and Ganagana among others (Federal Capital Development Authority, 2015).

Multi-stage sampling technique was adopted for the study. At the first stage, three Area Councils were randomly selected (namely Gwagwalada, Bwari and Abuja municipal), at the second stage; one semi-urban and urban centre were selected from each of the selected Area Councils. The third stage involved the use of accidental sampling method to get a total of 114 respondents for the study. This was based on the fact that there was no documentation or presence of any sampling frame of home gardeners to ascertain the actual population of those involved in home gardening farming. Content validity of interview schedule was ensured through experts' consultation. The validated data collection instrument which was subjected to Cronbach's Alpha reliability test ($r=0.71$) was used for data collection in September, 2017. Primary data were collected on socio-economic characteristics, crops grown, level of participation, benefits derived and constraints faced.

Age and education were measured in years, while family size was measured in the number. Accesses to space and association membership were measured as dummy variables. Occupation, crops grown and benefits were determined by asking the respondents to indicate their primary occupation, type of crops cultivated and benefits derived respectively. Level of participation was measured using 4 points Likert type scale of Very Often=4, Often=3, Rarely=2, Never=1. After the measurement, values of the scale were added up and the sum was divided by the number of the values of the scale to get 2.5. Thus, any activity with mean of 2.5 and above suggests high participation, while below 2.5 depicts low participation. Similarly, constraints faced was measured using 3 points Likert type scale of Very severe=3, Severe=2, Not severe=1. In this case, a mean of 2 was used as the decision point to determine the severity of the constraints (i.e. 2 and above depicts severe constraint while less than 2 was regarded as not severe). Descriptive statistics were used to achieve objectives one, two three, four and six. While objective five was achieved using ordinary least square regression model. The model is specified implicitly and explicitly as follows:

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, e)$$

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e_1$$

Where:

Y = Level of participation (activities' participation score)

$\beta_1 - \beta_6$ = Parameters estimated

$X_1 - X_6$ = Independence variables

X_1 = Age (years)

X_2 = Educational level (years)

X_3 = Family size (number)

X_4 = Access to adequate space (Yes = 1, if otherwise = 0)

X_5 = Association membership (Yes = 1, no = 0)

X_6 = Primary occupation (Housewife=1, if otherwise=0)

e = error term

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

Result of Table 1 indicated that 37.7% of the respondents were within 41 – 50 years of age, while 34.2% of the respondents were within the age bracket of 31 – 40years. These finding implies that majority of women home garden farmers were within the active age range of 31 – 50 years. The result revealed that 46.4% of the respondents had tertiary education. This suggests that most of the respondents were literate which can be attributed to the urban nature of the study area where levels of educational attainments are usually higher. According to Umar and Mohammed (2017), the level of education of a farmer not only increases farm productivity but also enhances ability to comprehend and assess different farming strategies. Table 1 also showed that 41.2% of the respondents were house wives, while 21.1% and 20.2% of the respondents were civil servants and traders, respectively.

The result further revealed that almost half (48.2%) of the respondents had family sizes of 1 – 5 peoples. This implies that majority of home garden farmers has small household size. Umar *et al.* (2009) inferred that large household is advantageous in farming as labour may be derived from family for use in home garden. Similarly, Table 1 indicated that 59.7% of the respondents had access to adequate land for home garden farming; on the other hand, 40.3% of the respondents reported that they did not have access to adequate land for home garden farming in the study area. The implication of this finding is that women with free access to land would be more encourage practicing home garden farming than those without access to lands. Table 1 also indicated that more than half (52.6%) of the respondents belonged to one association or another giving room for improved access to information that may help better their participation in home garden farming activities.

Table 1: Age distribution of respondents in years

Variables	Frequency	Percentage
Age		
21 – 30	8	7.0
31 – 40	39	34.2
41 – 50	43	37.7
Above 51	24	21.1
Total	114	100.0
Education		
No formal education	12	10.5
Primary education	14	12.3
Secondary education	35	30.7
Tertiary education	53	46.4
Total	114	100.0
Primary occupation		
House wife	47	41.2
Trading	23	20.2
Civil servant	24	21.1
Others	20	17.5
Total	114	100.0
Family size		
1 – 5	55	48.2
6 – 10	38	33.3
11 – 15	20	17.5
16 – 20	1	0.9
Total	114	100.0
Access to adequate farming space		
Yes	46	40.3

No	68	59.7
Total	114	100.0
Association membership		
Yes	60	52.6
No	54	47.4
Total	114	100.0

Source: Field survey, 2017

Major Crops Grown by the Respondents

Findings in Table 2 showed that higher percentages of the respondents cultivated vegetables such as pumpkin (98.2%), bitter leaf (98.2%), green vegetables (94.7%), tomatoes (91.2%), okra (76.3%) and pepper (55.3%). Some of the food crops and fruits grown by the respondents in home gardens with lower percentages were in this order: cassava (50.9%), maize (49.1%), yam (40.4%), groundnut (36.8%), plantain (15.8%), cashew (15.8%), orange (14.0%) and mango (10.5%). Those results suggest the dominance of vegetables in home garden farming in the study area which could be adduced to the seeming difference in vegetable and food crop management requirements. Also, the dominance of vegetables can be attributed to the high nutritional and medicinal values of fresh vegetables that are in high demand especially by urban households which home gardens provides easy day-to-day access to. This finding agrees with that of Mathews-Njoku (2008) who reported that vegetables form majority of the crops cultivated in gardens, which sustains the households.

Table 2: Crops grown in home gardens by the respondents in the study area

Types of crops grown	Frequency	Percentage
Pumpkin	112	(98.2%)
Bitter leaf	112	(98.2%)
Pepper	63	(55.3%)
Green vegetables	108	(94.7%)
Maize	56	(49.1%)
Plantain	18	(15.8%)
Tomatoes	104	(91.2%)

Okra	87	(76.3%)
Yam	46	(40.4%)
Cassava	58	(50.9%)
Banana	6	(5.3%)
Orange	16	(14.0%)
Guava	9	(7.9%)
Mango	12	(10.5%)
Cashew	18	(15.8%)
Groundnut	42	(36.8%)
Melon	2	(1.8%)
Garden eggs	33	(28.9%)

Source: Field survey, 2017

Level of Participation in Home Garden Farming Activities

Findings in Table 3 indicated that women respondents highly participated in almost all the home garden farming activities namely harvesting ($\bar{x} = 3.61$), planting ($\bar{x} = 3.46$), land preparation ($\bar{x} = 3.30$), weeding ($\bar{x} = 3.26$), watering ($\bar{x} = 3.22$), land clearing ($\bar{x} = 3.13$), processing ($\bar{x} = 2.71$) and staking ($\bar{x} = 2.54$), except for chemical application ($\bar{x} = 2.32$) fertilizer application ($\bar{x} = 2.06$) and mulching ($\bar{x} = 1.98$) where the respondents were found to be lowly involved in the activities. This result affirms the findings of Ogunlela and Mukhtar (2009) who stressed that women are greatly involved in crop production activities in Sub-Saharan African countries and that in some regions in Nigeria women have completely taken over the production of vegetables and annual crops. However, the low participation of women in agrochemical and fertilizer application may be attributed to inadequate access by women to agricultural inputs such as fertilizer, herbicide and pesticide.

Table 3: Level of participation in home garden farming activities by the respondents

Activities	VO	OF	RA	NV	WS	WM	Remark	Ranking
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Land clearing	48	38	23	5	357	3.13	HP	6 th
Land preparation	59	36	13	6	376	3.30	HP	3 rd
Planting	64	42	6	2	395	3.46	HP	2 nd
Weeding	50	46	16	2	372	3.26	HP	4 th
Watering	50	44	16	4	368	3.22	HP	5 th
Mulching	8	20	48	38	226	1.98	LP	11 th
Processing	33	31	34	16	309	2.71	HP	7 th
Chemical application	15	30	46	23	265	2.32	LP	9 th
Stalking	27	31	33	23	290	2.54	HP	8 th
Harvesting	76	32	5	1	411	3.61	HP	1 st
Fertilizer application	26	9	25	54	235	2.06	LP	10 th

Source: Field survey, 2017

Key: VO= Very often, OF= Often, RA= Rarely, NV= Never, WS= Weighted sum, WM= Weighted mean, HP = High participation, LP = Low participation

Benefits Derived from Home Garden Farming

Table 4 revealed that home gardens provides ready source of fresh vegetables and spices to 81.5% of the respondents in the study area, while 80.7% of the respondents stressed that home gardens supplies foods and fruits to their households. Similarly, 77.1% and 71.9% of the respondents respectively derived nutritional and medicinal benefits from home gardens. On the other hand, home garden farming helps in eliminating bushes from the surroundings for 57.8% of the respondents and reduced erosion for 22.8% of the respondents. Provision of fresh vegetables and spices to household was perceived as the greatest benefit derived from home garden farming,

followed by foods and fruits supplies to the households as well as meeting nutritional and medicinal needs of the respondents. This by implication and as asserted by the World Bank (2009) confirms that women play a pivotal role in the three components of food security of food production, accessibility and utilization. This affirms the findings of Harrison (2016) who stated that the reasons behind the establishment of home gardens are food security and nutritional benefits.

Table 4: Benefits derived from home garden farming

Benefits	Frequency	Percentage
Food/fruit supply to the household	92	80.7
Income generation	33	28.9
Nutritional benefits	88	77.1
Medicinal benefits	82	71.9
Ready source of fresh vegetables/spices	93	81.5
Reduce feeding expenses	53	46.4
Reduce erosion	26	22.8
Eliminates bushes from the surroundings	66	57.8

Source: Field survey, 2017

Factors Influencing Women Participation in Home Garden Farming

The result in Table 5 showed that 68.69% of the variations that occur in the level of participation of women in home garden farming in the FCT were explained by the independent variables captured in the model. It was also observed that age of the respondents had positive significant influence on their level of participation in home gardens farming, which implies that as the age of the respondent's increases, their level of participation in home gardens farming would

increase. The possible explanation for this is that older women spend more time at home, which gives them the opportunity to partake in many home garden activities. This finding is consistent with that of Harrison (2016) which stated that age has positive and significant effect on women's involvement in vegetable production.

Moreso, educational level of the respondents had positive and significant influence on the level of participation in home gardens farming in the study area. This is expected because education increases the awareness, knowledge and skill of the people in the society. Therefore, the more the level of education attained, the more intervention in different economic and social activities would be by the society. Result further indicated that access to adequate space for home garden farming positively and significantly influenced participation level of respondents in home garden activities, which is a pointer that if women have access to more space or land, their level of participation in home garden activities and farming generally would increase in the study area. The positivity and significance of primary occupation implies that being a housewife gives more room and time to engage in more farming activities and production around homes.

Table 5: Factors influencing women participation in home garden farming

Variables	Coefficients	T values	P- values
Age	1538.478	3.07***	0.003
Educational level	19302.65	13.01***	0.000
Family size	-5975.868	-0.99 ^{NS}	0.322
Access to adequate space	.2169702	2.80***	0.006
Association membership	3911.149	0.30 ^{NS}	0.763
Primary occupation	3504.673	1.77**	0.079
Constant	117400.6	2.78***	0.006
R square = 0.6869, Adjusted R square = 0.6514			

Source: Computed from field survey data, 2017

***Significant at 1%

**Significant at 10%

NS = Not significant

Constraints of Home Garden Farming

Figures in Table 6 revealed that severe problems encountered by the respondents in home garden farming were inadequate extension services (\bar{x} =2.61), pest infestation (\bar{x} =2.18), poor yield (\bar{x} = 2.04) and inadequate inputs (\bar{x} =2.00). The result suggests that most of the women farmers who

engaged in home garden farming had limited or no access to family extension services and pest infestation problems, which poses major challenges for home garden farmers in the study area just like in conventional farms. The challenge of poor yield may be attributed to the problem of accessibility to inputs such as improved seeds, fertilizers and agro-chemicals by women. In a related study, Mitchell and Hanstad (2004) identified access to agro-inputs and weak advisory services as the key constraints of home gardens farming.

Table 6: Constraints encountered by home garden farmers

Constraints	VS	SV	NS	WS	WM	Remark	Ranking
Inadequate extension contact	73	35	6	297	2.61	S	1 st
Pest infestation	48	38	28	248	2.18	S	2 nd
Poor yield	39	54	34	233	2.04	S	3 rd
Inadequate inputs	34	46	44	228	2.00	S	4 th
Disease outbreak	24	36	54	198	1.74	NS	5 th
Inadequate water supply	15	35	64	179	1.57	NS	6 th
Inadequate labour supply	13	28	73	168	1.47	NS	7 th
Pilfering	9	22	83	154	1.35	NS	8 th
Erosion problem	12	14	88	152	1.33	NS	9 th

Source: Field survey, 2017

Key: VS = Very severe, SV = Severe, NS = Not severe, WS = Weighted sum, WM = Weighted mean, S = Severe, NS = Not severe

CONCLUSION

From the findings of the study, it can be concluded that most of women home garden farmers were in their active age range. Vegetables production dominate home garden farming activities

in the study area. With the exception of mulching, chemical and fertilizer application, most of the women respondents highly participated in other home garden farming activities. Some of the benefits derived from home garden farming include provision of fresh vegetables/spices and foods/fruits for the household of the respondents. Age, educational level, access to adequate space and housewifery influenced women participation in home garden farming. Some of the severe constraints faced were lack of extension services and pest infestation.

RECOMMENDATIONS

Given the high participation of women in almost all the home garden activities, effort should be made by relevant stakeholders such as Agricultural Development Programme (ADPs) and Fadama Development Programme to assist women with necessary home garden inputs. This will further encourage them and open a wider window for new entrants into home garden farming.

Following the numerous benefits derived from home garden, coupled with the high cost of food items specifically in towns and cities, more urban women should be encouraged by extension agents to go into home garden farming as a means of ensuring food availability and security.

Access to space for farming was one of the factors that influenced participation of women in home garden farming. Thus, urban city planners should make provision for adequate space for home gardens while designing original master plan of cities or urban centres to facilitate home garden farming.

In order to lessen the problem of extension services, the scope of extension services in FCT should be expanded to adequately cover cities and urban centre's home garden farming families to expose them to modern production techniques of home garden farming.

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