



**ASSESSMENT OF WOMEN PARTICIPATION IN HOME GARDENING IN
ABUJA, FEDERAL CAPITAL TERRITORY (FCT), NIGERIA**

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ABSTRACT

The study assessed women participation in home gardening in Abuja-FCT. Multi-stage sampling technique was used to select 114 respondents from three Area Councils in the FCT. Validated interview schedule with reliability coefficient of 0.71 was used for data collection and data collected were analyzed using descriptive statistics such as frequency, percentage and mean and regression model. The results revealed that about 40.0% of the respondents were within the age range of 41-50 years, while 46.4% of the respondents had tertiary education. Findings of the study also indicated that majority of the respondents cultivated pumpkin (98.2%), bitter leaf (98.2%), green vegetables (94.7%) and maize (91.2%). The result further showed that home garden 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. Results further indicated that age ($p < 0.01$), educational level ($p < 0.01$), access to adequate space ($p < 0.01$) and housewifery ($p < 0.10$) had significant and positive influence on women participation in home garden farming. Some of the severe constraints faced by the respondents were lack of extension services and pests infestation. The study concludes that women highly participated in almost all home garden activities. Thus, it was recommended 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, Assessment, Home garden, Participation, Women

INTRODUCTION

In the recent past, Nigerian 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 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 (Harrison, 2016). Home gardens or backyard farms are usually established around the house to cater for the immediate food needs and demands of members of the 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 (Mathews-Njoku, 2008).

This type of farming 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 practise 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 (Grivetti and Ogle, 2000). Therefore, in towns and cities where there is shortage of farm lands and 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 assess women participation in home gardening for the provision of the household food needs in the study area and also 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 describe the socio-economic characteristics of women gardeners in the study area; ascertain the major crops grown by the respondents in home gardens and examine the level of participation of women in home gardening activities in the study area. Others are to identify the benefits derived from home gardening by the participating women; determine the factors influencing level of participation of women in home gardening; and identify the constraints faced in home gardening in the study area.

MATERIALS AND METHODS

Study Area

This study was carried out in Abuja -FCT, which falls between Latitudes $8^{\circ}25'$ and $9^{\circ}20'$ North and Longitude $6^{\circ}45'$ and $7^{\circ}39'$ East. The yearly precipitation ranges somewhere around 1,100mm and 1,600mm, with average annual temperature of 25.7°C . The study area 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, 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).

Sampling and Instrumentation

Multi-stage sampling technique was adopted to arrive at the sample size of the study. At the first stage, three out of six Area Councils were randomly selected. They are Gwagwalada, Bwari and Abuja municipal. At the second stage; a semi-urban and urban centres were randomly 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. Content validity of interview schedule was ensured through experts' consultation. The validated data collection instrument was subjected to Cronbach's Alpha reliability test, result of the test revealed that most of the items used in measuring the research variables were 0.71 and above. Primary data were collected on socio-economic characteristics, crops grown, level of participation, benefits derived and constraints faced. Secondary data on climatic condition, area councils, crops grown and major tribes were obtained from FCT documented materials.

Data Collection and Analysis

Age and education were measured in years, while family size was measured in the number of people. Access 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(mean/decision point). Thus, any activity with mean of 2.5 and above suggests high participation, while below 2.5 depicts low participation. Similarly, constraints faced were 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:

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

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

Where:

Y = Level of participation (activities' participation score)-Dependent variable

$\beta_1 - \beta_6$ = Parameters estimated

$X_1 - X_6$ = Independent variables

Where:

X_1 = Age

X_2 = Educational level

X_3 = Family size

X_4 = Access to adequate space

X_5 = Association membership

X_6 = Primary occupation

e = error term

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

Results in Table 1 indicated that 37.7% of the respondents were within the age of 41 – 50 years, while 34.2% of the respondents were within the age bracket of 31 – 40 years. However, the mean age of the respondents was 43 years, these findings imply that majority

of the farmers were in their active ages. The result also revealed that 46.4% of the respondents had tertiary education. Only 10.5% of the respondents had no formal 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; this would give them enough time to engage in home gardening. On the other hand, 21.1% and 20.2% of the respondents were civil servants and traders, respectively.

Table 1: Distribution of the respondents based on their socio-economic

Variables	Frequency (n=114)	Percentage
Age (Years)		
21-30	8	7.0
31 – 40	39	34.2
41 – 50	43	37.7
Above 51	24	21.1
Mean: 43		
Education		
No formal education	12	10.5
Primary education	14	12.3
Secondary education	35	30.7
Tertiary education	53	46.4
Primary occupation		
House wife	47	41.2
Trading	23	20.2
Civil servant	24	21.1
Others	20	17.5
Family size (people)		
1 – 5	55	48.2
6 – 10	38	33.3
11 – 15	20	17.5
16 – 20	1	0.9
Mean: 6		
Access to adequate farming space		
Yes	46	40.3
No	68	59.7
Membership of association		
Had association membership	60	52.6
Had no membership	54	47.4

Source: Field survey, 2017

The result further revealed that 51.7% of the respondents had family sizes of 6 – 20 peoples, though the mean household size was 6 persons. 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 gardening; while 40.3% of the respondents reported not having

access to adequate land for home gardening in the study area. The implication of this finding is that women with free access to land would be more encourage in practicing home gardening than those without access to lands. Table 1 also indicated that more than half (52.6%) of the respondents belonged to one association or the other giving room for improved access to information that may improve their participation in home garden activities.

Major Crops Grown by the Respondents

Findings in Table 2 showed that most 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 were 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%). These results suggest the dominance of vegetables in home gardening in the study area. Also, the dominance of vegetables could also 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: Distribution of respondents based on garden crops grown (n = 114)

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 Women Participation in Home Gardening

Findings in Table 3 indicated that the respondents highly participated in almost all the home gardening 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. This result affirms the findings of Ogunlela and Mukhtar (2009) who reported 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 activities may be attributed to inadequate access by women to agricultural inputs such as fertilizer, herbicide and pesticide.

Table 3: Level of participation in home gardening by the respondents (n = 114)

Activities	VO	OF	RA	NV	WS	WM	Remark	Ranking
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
Staking	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 Gardening

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 supply foods and fruits to their households. Similarly, 77.1% and 71.9% of the respondents derived nutritional and medicinal benefits from home gardens, respectively. On the other hand, home gardening helps in eliminating bushes from the surroundings as reported by 57.8% of the respondents and reduced erosion by 22.8% of the respondents. Provision of fresh vegetables and spices to household was perceived as the greatest benefit derived from home gardening, followed by foods and fruits supplies to the households as well as meeting the 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 finding of Harrison (2016) who reported that the reasons behind the establishment of home gardens are for food security and nutritional benefits.

Table 4: Distribution of respondents according to the benefits derived from home gardening (n=114)

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 most (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 and significant influence ($p < 0.01$) on level of participation in home gardening, 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) who opined that age has positive and significant effect on women's involvement in vegetable production.

Table 5: Factors influencing women participation in home gardening

Variables	Coefficients	Standard Errors	T values	P- values
Age	1538.478	501.13	3.07***	0.003
Educational level	19302.65	14.837	13.01***	0.000
Family size	-5975.868	6036.23	0.99 ^{ns}	0.322
Access to adequate space	.2169702	0.078	2.80***	0.006
Association membership	3911.149	13037.16	0.30 ^{ns}	0.763
Primary occupation	3504.673	1980.04	1.77*	0.079
Constant	117400.6	42230.43	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

More so, educational level of the respondents had positive and significant influence ($p < 0.01$) on the level of participation in home gardening 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 participation in economic activities such as farming would be by the farmer. The result further indicated that access to adequate land for home gardening positively and significantly ($p < 0.01$) 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 will increase in the study area. The positivity and significance ($p < 0.10$) of primary occupation implies that being a housewife gives more room and time to engage in more farming activities and production around homes.

Constraints of Home Garden Farming

Results in Table 6 revealed that severe problems encountered by the respondents in home gardening were inadequate of 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 gardening had limited or no access to extension services and problem of pest infestation, which poses major challenges for home gardeners 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 to home gardening.

Table 6: Constraints encountered by home garden farmers (n = 114)

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 women home gardeners were in their active age. Vegetables production was found to dominate home garden farming activities in the study area. Most of the women highly participated in home gardening activities. Some of the benefits derived from home gardening 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 gardening. Some of the severe constraints faced were lack of extension services and pest infestation.

In order to lessen the problem of extension services, the scope of extension services in the FCT should be expanded to adequately cover cities and urban centre's home gardening families to expose them to modern production techniques of home gardening. 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 through awareness by extension agents to go into home garden farming as a means of ensuring food availability and security. 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 gardening. Access to land for farming was one of the factors that influenced participation of women in home gardening. Thus, urban city planners should make provision for adequate land for home gardens while designing original master plan of cities or urban centres to facilitate home gardening.

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