International Journal of Agricultural Extension and Rural Development Studies
Vol.3, No.2, pp.26-33, May 2016
Published by European Centre for Research Training and Development UK (www.eajournals.org)

CONTRIBUTION OF HOME GARDENING TO FAMILY FOOD SECURITY IN DELTA NORTH AGRICULTURAL ZONE, DELTA STATE, NIGERIA

Uzokwe U.N, Giweze E.A and Ofuoku A.U

Department of Agricultural Economics and Extension, Delta State University, Asaba Campus

ABSTRACT: *This study examined the contribution of home gardening to family food security in Delta north agricultural zone of Delta State, Nigeria. The minor objectives were to: determine the type of home gardening people practiced, establish crops people produce in the home garden and determine the contribution of home garden to the family food security. A sample size of 174 respondents was used for the study. Data was collected with the use of questionnaire. Analysis of data was done using means, percentages and frequency. The results showed that they practiced improved home gardening .and produced many types of crops, about 16. The most popular crops were maize (64.4%), cassava (58%), pumpkin (52.9%), yam (48.3%) and okro (40.8%). Hypothesis test result showed a positive significant relationship between home gardening and household food security status. The study established that home gardening does not only contribute to their house hold food supply but also their income. It is therefore important to sensitize people to utilize empty plots around their home for home gardens.*

KEYWORDS: Home Gardening, Family and Food Security

INTRODUCTION

In most regions of most countries worldwide family food production systems exist. There has been a substantial raise in overall poverty as a result of the recent increase in global food prices which has pushed many people into malnutrition. This has resulted in world progress towards the achievement of the first Millennium Development Goal (MDG), which is the reduction of extreme poverty and hunger by 2015 becoming a mirage (Ivanic and Martin, 2008). Consequently, many households have been forced to adapt destructive methods of survival like reducing food that they consume, eating staple foods instead of micronutrient rich foods, disposing of household and agricultural production assets. increased borrowing to survive and putting many households in financial debt. All these coping measures have long term negative consequences for food security, nutrition, health, and people development (Food and Agriculture Organization, 2008. Klotz et al. 2008).

The practice of home gardening is already very common in most poor households in rural areas, However, the practices are not on a large scale and therefore does not offer adequate products for all year round nutrition. Home gardening is classified into three (3) categories: "Traditional", "improved" and "developed". Traditional gardens are maintained on scattered plots, seasonal and with a few traditional fruits and vegetables such as pumpkins. Improved gardens produce more varieties of fruits and vegetables than the traditional gardens but only during certain times of the year and are maintained on fixed plots. Developed gardens produce a wide variety of fruits and vegetables that are available throughout the year and are maintained on fixed plots. (Helen Keller International, 2008. Talukder, De pee and Bloem, 2008).

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

Home gardening contributes to nutrition and household food security by providing quick and direct access to different foods that can be harvested, prepared and eaten by family members often daily. Even, landless or near landless and very poor people practice home gardening on small patches of homestead land, roadsides, edges of field, vacant plots or in containers. Home gardening can be done with little or no economic resource, by the use of locally available planting materials, green manures, life fencing or indigenous methods of pest control. Home gardening production system can easily be done by the poor (UNDP, 1996).

UNDP, (1996) and Marsh, (1998), opined that home gardening is an important source of supplementary income for poor rural and urban households around the world. The garden may become the principal source of household food and income during periods of stress like the pre-harvest lean season, harvest failure, prolong unemployment, health or other disabilities suffered by family members, agricultural or economic disruption caused by flood or war.

Marsh and Talukder (1994) and Zerihun, Weyessa and Adugna (2011), stated that home gardening provides a diversity of fresh foods that improve the quantity and quality of nutrients available to the family. Household with gardens obtain more than half of their supply of vegetables and fruits including secondary staples such as plantain, cassava, cocoyam, sweet potato, yam, medicinal plants, herbs and rearing of animals for their animal protein.

According to FAO (1995), the returns to land and labour which are often higher than those from field agriculture are potential economic benefits from home gardening. It serves both as a source of income generation and food provision. They also provide supplies for household needs example furniture, fuelwood, handicrafts, baskets and as well as fodder for animals. Low cost gardening and low input has almost no barriers to entry. Often times marketing of garden produce and animals are often the only source of independent income for women. Home gardening is just however only one of the possible ways of ensuring food security for the poor and it should be considered in the context of a broader national food security strategy (Zerihun, Weyessa and Adugna, 2011).

With the high level of food insecurity in the country land grabbing is on the increase and dwindling land resource in some part of the country especially in the area of study, there is need to promote home gardening as an instrument of coping with food insecurity. This study therefore examined the contribution being made by home gardening to the household food security of people in the Delta North Agricultural Zone of Delta State. The following objectives were use for the study to: determine the type of home garden people practiced, investigate crops people produce in the home garden and to determine the contribution of home garden to the family food security. It was hypothesized that home gardening does not significantly contribute to household food security.

MATERIALS AND METHODS

This research work was carried out in Delta North Agricultural zone of Delta State, Nigeria. Out of nine Local Government Areas (LGA) that make up Delta North agricultural zone, 4 were selected namely; Aniocha South, Ika South, Ndokwa West and Oshimili North. Proportion random sampling was used to select the number of respondents used in each LGA. These were selected with the use of table of random numbers. This resulted in the selection of 41 respondents from Aniocha, 41 from Ika South, 55 from Ndokwa West and 31 from Oshimili

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

North. This gave a sample size of 174. The data for the study was collect with the use of well structured questionnaires (146) and interview schedules in cases where the respondents were not literate in English language. (28). One hundred and two (102) males and seventy two (72) female headed households were interviewed. Data was organized using frequency counts and analyzed using percentages and means. The contribution level of home gardening was computed by calculating the mean distribution, grand mean contribution and the contribution index. The mean contribution score was calculated by dividing the total score of contributions ratings of (strongly agreed (4), agreed (3), disagree (2) and strongly disagree (1) by the sample size. The grand mean was calculated by summing up the mean scores and dividing it by the number of contribution settlements. The contribution index was computed by dividing the grand mean by the number of scales. USDA (2012) classified food security status into food secure, food insecure, without hunger, food insecure with moderate hunger and food insecure with severe hunger. The food security status of families was computed by placing these classification on 4 point likert-type scale of food secure 4, food insecure without hunger (3), food insecure with moderate hunger (2) and food insecure with severe hunger (1), The food security status mean for the household size groups were computed as in the case of contribution to household food security. The same way, as in contribution to Household food security, the grand mean food security status and the family food security index were computed. The hypothesis was analyzed with the use of Pearson Product Moment Correlation (PPMC).

RESULTS AND DISCUSSION

Socioeconomic characteristics of respondents

Table 1 shows the socioeconomic characteristics of all the respondents. It showed more male headed households in the study area (58.6%). Most of them (65.5%) were married with most of them having a mean household size of 5. They belonged to different occupation with farming (25%) and teaching (22.4%) being most prominent. Most of them *(90.8%) have formal education with 56.9% having tertiary education. Their mean years of* involvement in home gardening was 6years.

Table 1: Socioeconomic characteristics

Socio-economic variables	Frequency	Percentage
Gender		
Male	102	58.6
Female	72	41.4
Total	174	100.0
Age		
20—25	5	2.9
26---30	19	10.9
31---35	25	14.4
36---40	42	24.1
41---45	28	16.1
46---50	19	10.9
51---55	16	9.2
56---60	8	4.6
<60	8	4.6
Total	174	100

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

Marital status		
Single	25	14.4
Married	114	65.5
Divorced	22	12.6
Widow/ widower	13	7.5
Total	174	100.0
Household size		
2-5	113	65
6-10	61	35
Total	174	100.0
Educational qualification		
No formal education	16	9.2
Primary education	12	6.9
Secondary education	47	27.0
Tertiary education	99	56.9
Total	174	100.0
Occupation		
Farming	44	25.3
Trading	25	14.4
Artisan	28	16.1
Public/ civil servant	38	21.8
Teaching	39	22.4
Total	174	100.0
Religion		
Christianity	145	83.3
Traditional religion	29	16.7
Total	174	100.0
No of years of planting in home gardening		
1—5	87	50.0
6---10	43	24.7
11---15	13	7.5
16---20	11	6.3
21---25	10	5.7
26---30	10	5.7
Total	174	

Types of crops produced in home gardens

From table 2 it was seen that many different types of crops were produced in the home gardens. The most popular crops were maize (64.4%), cassava (58%), pumpkin (52.9%), yam (48.3%) and okro (40.8%). The study established that 31.6% rear animals in their home garden. This agrees with the assertion of Marsh and Talukder (1994) and Zerihun,Weyessa and Adugna (2011) that household with gardens obtain more than 50% of their supply of vegetables and fruits including secondary staples such as plantain, cassava, yam, sweet potato, medicinal plants and animals rearing for their protein

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

Table 2: Crops produced in the garden

Crops	Involvement Frequency	Percentage
Plantain	34	19.5
Cassava	10 1	58.0
Cocoyam	11	6.3
Yam	84	48.3
Sweet potato	8	4.6
Pumpkin	92	52.9
Green leaves (amaranthus)	48	27.6
Okra	71	40.8
Pepper	69	39.7
Tomato	17	9.8
Maize	112	64.4
Spices	12	6.9
Banana	16	9.2
Legumes	62	35.6
Watermelon	10	5.7
Cucumber	10	5.7
Other	11	6.3

Types of home gardening

Table 3 showed that 71.7% planted in one location, 23.7% in two locations while 2.3% planted in three different locations and 2.3% in unspecified locations. The total mean number of crops planted by them was 6, 5, 6 and 4 respectively out of a total of about 16 different crops. The mean years of planting on their home plots was 6years as shown on table 1. All of them except those who used roadside and edge of field (16.1%) maintained fixed plots. From the the respondents planting information and pattern it means that they practice improved home gardening using the classification of types of home garden by Talukder and Bloem (2008).

Table3: Types of home gardening

Location of home gardens no of crops	Frequency	Percentage	Mean
Front of house	27	15.5	6
Side of the house	21	12.1	5
Back of the house	49	28	6
Road side	18	10.3	7
Edge of the field	10	5.8	5
Front and back	10	5.8	4
Back and edge of field	8	4.7	4
Back and side	11	6.3	6
Front and side	4	2.3	6
Back and roadside	4	2.3	4
Back, front and side	4	2.3	6
Roadside and edge of field	4	2.3	5
Other locations	4	2.3	4

Source: Field survey, 2015.

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

Household food security status

Table 4 indicates that all the household size brackets were food secure except the household sizes of 10 to 12 persons. The food security index of 0.7875 is an indication that 79% of the households were food secure. This can be attributed to the fact that most food eaten by households are sourced from family farming activities, especially home gardening. The produce from home gardening are consumed and the surplus sold. The income generated from such sale is used to purchase what the household could not produce. FAO (1995) assert that home gardening has a dual purpose of provision of food and income generation for households that practice it.

Table 4: Food security status

Household Size	Food secure (4)	Food insecure with no Hunger (3)	Food insecure with moderate hunger (2)	Food insecure with severe hunger (1)	Score	Mean
1-2 (n=20)	16 (64)	4 (12)	0 (0)	0 (0)	76	3.90
3-4 (n=32)	26 (104)	6 (18)	0 (0)	0 (0)	122	3.81
4-5 (n=61)	24 (96)	28 (84)	6 (12)	3 (3)	195	3.20
6-7 (n=26)	9 (36)	8 (24)	5 (10)	4 (4)	74	2.85
8-9 (n=18)	5 (20)	5 (15)	8 (16)	0 (0)	51	2.83
10-12 (n=17)	2 (8)	5 (15)	7 (14)	3 (3)	40	2.35

Cut-0ff score = 2.50 (≥ 2.50 = food secure, < 2.50 = food insecure,)

Grand food security mean = 3.15

Food security index = 0.7875

Contributions of home gardening to the household food security

Table 5 showed that home gardens contribute significantly to family food supply (mean=3.34).

The study further showed that the household consume all they produce while (mean=3.56) sell the surplus after the family food needs had been met to generate additional income for the household (mean=3.98). This provides additional income and also fills the pre harvest food gap (mean=3.28). This corroborates the assertion by United States Development Programme (UNDP) that home gardening provides direct access to different foods that can be harvested, prepared and fed to family members often on daily which contributes to household food security and nutrition. The overall mean (grand mean) of 3.20 indicates that home gardening contributes to the household food security. The home gardening contribution index of 0.80 implies a high level of contribution of home gardening to household food security in the study area.

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

Table 5: Contributions of home garden to family food security

Indicators	Responses					
	SA 4	A 3	DA 2	SD 1	source	mean
Home gardening contribute significantly to your family food supply	91(364)	64(192)	10(20)	9(9)	585	3.34
Home gardening contribute significantly to your family income.	171 (684)	3(9)	0(1)	0(0)	693	3.98
You consume all the food you get from your home garden.	140 (560)	1(3)	23(46)	10(10)	619	3.56
You sell some of the produce	28(112)	5(15)	52(104)	89(89)	320	1.84
It help to fill the pre harvest food gap.	113 (452)	3(9)	56(116)	2(2)	579	3.28

Source: Field survey, 2015.

Cut of score= 2.50 (≥ 2.50=2.50=Agree; < 2.50=Disagree)
Grand mean contribution = 3.20
Contribution index = 0.80

Test of hypothesis

Estimation of the contribution of home gardening to household food security shows a significant contribution of home gardening to household food security (r=0.546).Though the level of contribution in moderate, it is significant. That implies that households get foods and income from home gardening activities. This confirms the assertion of FAO (1995) which indicated that home gardening contribution to household food security and income.

Table 6: Estimation of contribution of home gardening to household food security

Variable	Home gardening	Household food security status
Home gardening	1.000	0.546
Household food security status	0.546	1.000

CONCLUSION AND RECOMMENDATION

This study portrayed home gardening as one of the possible answers to family food security especially among the poor landless rural households in Nigeria. There is common for families to cement their unused portion of land within their compound for weed control and esthetics and leave a small portion for planting flowers. The practice of cementing the compound should be discouraged and areas should be demarcated for planting of fruits, vegetables and flowers in such a way that esthetics can be maintained. This practice needs to be encouraged by the government through extension services, community leaders and health workers.

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910

REFERENCES

Adeyemi, O.A., Sobayo, R. A. and Aluko, F. A. 2008. A survey of duck farming activities in Abeokuta metropolis of Ogun State, Nigeria. *Nigeria poultry science journal, 5(1): 21-27.*

Food and Agriculture Organization **(**1995), *Improving nutrition through home gardening: a training package for preparing field workers in Southeast Asia.* Rome.

Food and Agriculture Organization (2008), The State of Food Insecurity in the World: High food prices and food security - threats and opportunities. Food and Agriculture Organization, Rome, Italy.

Helen Keller International (2008), Homestead Food Production Program in *Char* area in Bangladesh. Report of the final evaluation of the project. Helen Keller International, Dhaka, Bangladesh.

Ivanic, M. and Martin, W. (2008), Implications of higher global food prices for poverty in low income countries. The World bank Policy Research Working Paper 4594. World Bank, Washington, DC, USA.

Klotz, C., De Pee, S., Thorne-Lyman, A., Kraemer, K. and Bloem, M. (2008), Nutrition in the perfect storm: Why micronutrient malnutrition will be a widespread health consequence of high food prices. Sight and Life bulletin. 2: 7-1

Marsh, R. & Talukder, A. 1994. Production and consumption effects of the introduction of home gardening on target, interaction and control groups: a case study from Bangladesh. In *Proceedings of the International Symposium on Systems-Oriented Research*, November 1994, Montpellier, France. Montpellier, France, Association for Farming Systems Research/Extension (AFSR/E).

Marsh, R**.** 1998. Household food security through home gardening: evidence from Bangladesh and Central America. In *Proceedings of an International Livestock Research Institute (ILRI)-Rockefeller Foundation Workshop*, November 1994, Addis Ababa, Ethiopia.

Ovwigho, B.O. (2011). Construction of a socioeconomic status scale for heads of rural farm families in the north agricultural zone of Delta State Nigeria. *Journal of Human Ecology*, 33(2):113-118.

Talukder, A., Kiess, L., Huq, N., de Pee, S., Darnton-Hill, I. and Bloem, M.W. (2000), Increasing the production and consumption of vitamin A-rich fruits and vegetables: Lessons learned in taking the Bangladesh homestead gardening programme to a national scale," Food and Nutrition Bull. 21 (2): 165-172.

Talukder, A.De pee, S. and Bloem, M.W. (2008), Homestead food production for improving nutritional status and health. In: Semba RD, Bloem MW (eds) Nutrition and Health in Developing Countries. Second edition. Humana Press, Totowa, NJ.

UNDP**, (** 1996). *Urban agriculture: food, jobs and sustainable cities.* New York, NY, USA.

Zerihun, K. Weyessa, .G. and Adugna, D.(2011) Understanding Home garden in Household Food Security Strategy: Case Study Around Jimma, Southwestern Ethiopia. *Research Journal of applied science.* 1 (6): 38-43.

Print ISSN: ISSN 2058-9093 Online ISSN: ISSN 2058-910