Contribution of home gardening to household dietary intake among peri-urban households of Imo State, Nigeria

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Abstract

Rapid urbanization, industralization, land grabbing and dwindling land resources is fast eroding the practice of home gardening in peri-urban areas. This has altered the dietary intake pattern of peri-urban households who hitherto could augment their meals from products of gardens around their homes. The study assessed home gardening contribution to dietary intake among households in peri-urban areas of Imo State. Specifically, the study sought to ascertain the types of home gardening practiced, the contribution of home garden to the household dietary intake and identify the constraints of peri-urban households in practicing home gardening. Multistage sampling technique was adopted in the selection of sample. Okigwe, Orlu and Owerri-West Local Government Areas (LGAs) were purposively selected from each of the agricultural zones in Imo State for their peri-urban nature. Four communities were purposively selected from the three LGAs were home gardening was mostly practiced. A survey was conducted to find out households which practiced home gardening. Ten households each were then randomly selected from these communities, making a total of one hundred and twenty (120) respondents for the study. Data collected were analysed using descriptive statistics (mean, frequency and percentage). The result showed that majority (54.2%) of the respondents practiced mixed crop home gardening while 43.3% practiced mixed farm home gardening. The level of contribution of home gardening to dietary intake among households was (53.3%). A fairly high number (47.5%) of peri-urban households expressed experiencing high constraints to practicing home gardening. It is recommended that peri-urban households should be educated on other methods of home gardening where land is in limited supply to improve household dietary intake.

Keywords: Home gardening, Dietary intake, Peri-urban households.

1.0 Introduction

In most developing countries, agriculture is an essential sector and a great proportion of agricultural activities take place in the rural areas more than in urban and peri-urban areas. Since agriculture has been said to be the backbone of the rural economies, many countries rely upon it for survival (Todaro and Smith, 2000). For many generations, small plots of land near the homestead have been used as home gardens while livestock keeping has also been practiced in Africa (Sigot, 2001). This has been done to facilitate direct access to a diversity of nutritionally rich foods by households, which include roots, tubers, green leafy vegetables, condiments, nuts, legumes, fruits and livestock products (FAO, 2001, Shrestha *et al.,* 2001). In recent years, governments and other development organizations in both developed and developing countries are emphasizing the importance of building local food production systems in peri-urban areas as a means to ensure consumption of mostly fresh vegetables and as an integrated strategy and a safety net for food security. Today the world faces a fundamental challenge of ensuring that millions of households living in hunger have access to enough food to maintain a healthy life. This can be achieved by home gardening.

There are different definitions of home garden however, Kumar and Nair (2004) defined home gardens as the intimate, multi-storey combination of various trees and crops in association with domestic animals around homestead. Furthermore, Odebode (2006) referred to home gardening as a cultivation of small portion of land which may be at the back of a home or within a walking distance from home. This is especially important in peri-urban areas where people have limited land for cultivation and poor access to markets. A peri-urban area is not only a zone of direct impact experiencing the immediate impacts of land demands from urban growth and pollution, but is also a wider market-related zone of influence that is recognizable in terms of the handling of agricultural and natural resource products (Simon, McGregor and Thompson 2006). A well-developed home garden has the potential, when access to land and water is not a major limitation, to supply most of the non-staple foods that a family needs every day of the year, including roots and tubers, vegetables and fruits, legumes, herbs and spices, animals and fish. Landon-Lane (2011) stated that home gardening offers immense benefits to peri-urban households which include improved food security, increased availability of food and better nutrition through food diversity, income and enhanced rural employment through additional or off-season production, decreased risk through diversification, environmental benefits from recycling water and waste nutrients, controlling shade, dust and erosion, and maintaining or increasing local biodiversity.

The broad objective of the study was to assess home gardening contribution to dietary intake among households in peri-urban areas of Imo State. The specific objectives were to; ascertain the type of home gardening practiced, determine the contributions of home garden to the household dietary intake and identify the constraints of peri-urban households in practicing home gardening.

2.0 Methodology

2.1 Study Area

The study was carried out in Imo State which is one of the 36 states of Nigeria. The State lies between latitude $5^0 45^I$ and $6^0 35^I$ North of the equator and longitudes $6^0 35^I$ and $7^0 28^I$ East of the Greenwich meridian. It lies to the southeastern area of Nigeria with Owerri as its capital. Imo state is made up of three (3) Agricultural Zones, which are Orlu, Owerri and Okigwe Agricultural Zones. The state is made up of twenty-seven (27) Local Government Areas.

Multistage sampling technique was employed in the selection of sample. The first stage was a purposive selection of the three Local Government Areas (Owerri-West, Okigwe and Orlu), one from each of the three agricultural zones because of their peri-urban nature. The second stage was a purposive selection of four (4) communities that mostly practice home gardening from each of the selected Local Government Areas. At this stage also, a survey was carried out to know the communities that practice home gardening. A list of households that practice home gardening was collected from each of the selected communities. The third stage was a random selection of ten (10) households that practice home gardening from each of the selected communities, making a total of one hundred and twenty (120) respondents for the study. Data was collected using structured questionnaire and was analysed using descriptive statistics.

In order to ascertain the types of home gardening practiced, the respondents were presented with a list of four possible home gardening types. Respondents were to indicate (a) Yes if he/she practices that particular type of home gardening and (b) No if not. It was analysed using simple percentage.

The contributions of home gardening to the household dietary intake was measured using an array of eleven (16) possible questions that can help determine the contributions of home garden to the household dietary intake. Respondents were asked to express their disposition on a four point Likert scale. The highest possible score was 64.0 and the lowest possible score was 16.0.
The result for the 120 questionnaire was computed, using the summary of scores, the mean was calculated. Based on the mean score of 52.6, respondents were categorized into two. Respondents with scores equal to or above the mean score were categorized as agreeing that home garden has made a high contribution to household dietary intake while the respondents with scores below the mean score were categorized as agreeing that home gardening had low contribution to household dietary intake.

In order to ascertain the constraints encountered by peri-urban households in practicing home gardening, the respondents were presented with a list of fourteen (14) possible constraints. Respondents were asked to express their disposition on a four point Likert scale. The highest possible score was 56.0 and the lowest possible score was 14.0.

The result for the 120 questionnaire was computed, using the summary of scores, the mean was calculated. Based on the mean score of 42.4, respondents were categorized into two. Respondents with scores equal to or above the mean score were categorized as indicating high constraints while the respondents with scores below the mean score were categorized as indicating low constraints to home gardening.

3.0 Results and discussions

3.1 Types of home gardening practiced

The result on Table 1 showed that a large percentage (54.2%) of the respondents practiced mixed crop home gardening followed by 43.3% that practiced mixed farm home gardening. This was in line with the statement of Kumar and Nair (2004) who referred to home gardening as an intimate, multistory combinations of various trees and crops, sometimes in association with domestic animals, around homesteads.

Table 1 Types of Home Gardening (HG) Practiced

GH Type	Frequency	Percentage (%)
Single crop HG	1	0.8
Mixed crop HG	65	54.2
Livestock garden	2	1.7
Mixed farm HG	52	43.3

3.2 Contributions of Home Garden to the Household Dietary Intake

Table 2a showed contributions of home garden to the household dietary intake. A large percentage (87.5%) of the respondents strongly agreed that home garden has contributed to their household dietary intake by being an easy source of fresh food. This is in line with the statement of Marsh (1998) that home garden provide easy day-to-day access to an assortment of fresh and nutritious foods for the household.

From the result also, 65.0% of the respondent strongly agreed to having better nutrition as a result of home gardening. This is in line with the statement of Talukder *et al* (2000) that through home gardening, households can have better access to a diversity of plant and animal food items that lead to an overall increase in dietary intake and boost the bioavailability and absorption of essential nutrients.

Majority (78.3%) strongly agreed that they generate income from sales of produce from their farm (home garden). This implies that practicing home gardening can help improve livelihood. This corroborates the findings of Calvet-Mir *et al* (2012) that bibliographic evidence suggests that home gardens contribute to income generation, improved livelihoods, and household economic welfare.

Table 2a: Contributions of home garden to the household dietary intake

Contributions	SA		A		D		SD	
Options	F	%	F	%	f	%	F	%
Easy source of fresh food	105	87.5	15	12.5	0	0	0	0
Ease emotional stress	47	39.2	35	29.2	17	14.2	20	16.7
Better nutrition	78	65.0	40	33.3	1	0.8	0	0
Reduction in family food budget	77	64.2	42	35.0	1	0.8	0	0
Conservation of medicinal plants	57	47.5	52	43.3	3	2.5	7	5.8
I generate income from sales of produce from my farm	94	78.3	15	12.5	2	1.7	9	7.5
Pleasure/hobby	41	34.2	14	11.7	25	20.8	39	32.5
Environmental beautification/keeps business away	53	44.2	34	28.3	7	5.8	24	20.0
Relieve mental	44	36.7	32	26.7	19	15.8	21	17.5

fatigue								
Growing cries own food as much as possible makes best economic sense	75	62.5	41	34.2	2	1.7	1	0.8
Home gardening helps in attaining the MGDs of food security, nutrition, health	51	42.5	57	47.5	2	1.7	8	5.7
Source of nearly all the food crops we need	52	43.3	43	35.8	2	1.7	23	19.2
Home gardening contribute significantly to daily family food need	80	66.7	33	27.5	0	0	5	4.2
Home gardening produces food almost at all seasons of the year	69	57.5	43	35.8	2	1.7	4	3.3
Reduce weeds and bush around the home	72	60.0	35	29.2	6	5.0	5	4.2
Food reserves for emergencies and special occasions	63	52.5	52	43.3	1	0.8	3	2.5

Categorization of contribution level of home gardening to household dietary intake

The result on Table 2b showed that the level of contribution of home gardening (53.3%) to dietary intake among households was relatively high. This implies that house hold gardening has highly contributed to dietary intake of households in the area. This is in line with the findings of Michell and Hanstad (2004) that multiple social benefits of home gardening include enhancing food and nutritional security in many socio-economic and political situations, improving family health and human capacity. This also corroborates the statement of Landon-Lane (2011) that home gardening offers immense benefits to peri-urban households which include improved dietary intake, increased availability of food and better nutrition through food diversity.

Table 2b Categorization of contribution level of home gardening to household dietary intake

	Frequency	**Percentage (%)**
Low	56	46.7
High	64	53.3
Total	120	100

3.3 Constraints of Peri-Urban Households in Practicing Home Gardening

Table 3 showed constraints peri-urban dwellers encounter in keeping home gardens. Majority (71.7%) of the respondents strongly agreed to prevalence of pests as a constraint. This implies that the major constraints to home gardening in the areas was infestation by pests. Likewise, 55.8% agreed strongly that disease infestation is a constraint. This is in concord with the findings of Pandey *et al* (2007) that damage due to insect pests, diseases are constraints to home gardening.

Some of the respondents (42.5%) agreed strongly to lack of improved planting stock as an impediment to home gardening. Likewise, 39.2% of the respondents strongly agreed to lack of ready market for produce as an impediment. Some (35.8%) strongly agreed that inadequate fund is a constraint to home gardening. This was in agreement with some of the constraints encountered in home gardening as identified by Mitchell and Hanstad (2004) as access to capital or credit, access to water, seeds and planting materials, weak extension and advisory services, access to labour, and access to markets.

Table 3 Constraints of peri-urban households in practicing home gardening.

Constraints	SA		A		D		SD	
Options	**F**	**%**	**F**	**%**	**f**	**%**	**F**	**%**
Inadequate funds	43	35.8	33	27.5	5	4.2	38	31.7
Destruction of animals	74	61.7	28	23.3	2	1.7	16	13.3
Land scarcity	61	50.8	28	23.3	12	10.0	18	15.0
Prevalence of pests	86	71.7	21	17.5	7	5.8	5	4.2
Inadequate storage facilities	43	35.8	27	22.5	11	9.2	39	32.5
Lack of ready market for produce	47	39.2	33	27.5	7	5.8	29	24.2
Weed infestation	77	64.2	28	23.3	7	5.8	5	4.2
Disease infestation	67	55.8	40	33.3	7	5.8	5	4.2
Inadequate fertilizer/chemicals	53	44.2	19	15.8	22	18.3	24	20.0
Damage by weather	80	66.7	27	22.5	5	4.2	7	5.8
Lack of improved planting stocks.	51	42.5	28	23.3	26	13.3	24	20.0
Drought	41	34.2	28	23.3	16	13.3	34	28.3
Wrong panting time	41	34.2	22	18.3	18	15.0	36	30.0
Pilfering (Theft)	57	47.5	46	38.3	4	3.3	13	10.8

Categorization of constraints of peri-urban households in practicing home gardening.

The result on Table 3b shows that a fairly high number of respondents considered the constraints to home gardening in peri-urban areas as high. Abugu *et al* (2013), ascertain there are quite a number of constraints in production of vegetables in areas where urbanization is creeping in. Despite these constraints, home gardening still has high contribution to dietary intake in the study area (see Table 2b). This implied that addressing constraints in the practice of home gardening will improve dietary intake in peri-urban households.

Table 3b Categorization of constraints of peri-urban households in practicing home gardening.

	Frequency	Percentage (%)
Low	63	52.5
High	57	47.5
Total	120	100

4.0 Conclusion and Recommendation

Evident from the study indicated that the contribution of home garden to the household dietary intake was relatively high. Some of the constraints of peri-urban households in practicing home gardening as noted in the study were, prevalence of pests and weed infestation. The study therefore recommends that households be introduced to alternative methods of home gardening as land was in limited availability to improve dietary intake and also improve food security.

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