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TABLE OF CONTENTS

Urban Vegetable Production Among Women in Ilorin, Nigeria
Tunde, A.M - - - - - - - - - - 1

Assessment of the Changes Brought by Tegina–Makera Road to Rural Dweller's Welfare. **Akhadelor, M. O., Musa, I. J., Abubakar, S. and Mohammed, H** - - - - - - - - - 13

Spatial Variation in Diarrhoea Prevalence Among Children in Kaduna State
Y.A. Arigbede, M. Mamman, J.G. Laah - - - - - - 24

Effects of "Abega" And "Raoin" Models on Students' Academic Achievement in Environmental Education in Schools of Nursing, Zaria, Nigeria.
Obeka, S. S - - - - - - - - - - 37

Effects of Pentad Dry Spells on the Yield of Some Crops in the Semi-Arid Eco-Climatic Region of Northern Nigeria
Sawa. B. Ajiya and A. A. Adebayo - - - - - - - 49

Environmental Perception of Quality of Life in Dogarawa, Sabon-Gari Local Government Area, Kaduna State Nigeria.
R. O. Yusuf and I.O. Orire - - - - - - - - 61

Factors Affecting Airport Choice of Cargo Routing in Nigeria
Adenigbo J.A and Ubogu A.E - - - - - - - 71

Family Planning Practice Amongst Men in A Northern Nigerian Urban Centre
Abubakar, M; Mamman, M; and J. G. Laah - - - - - 84

Forecasting River Kaduna Discharge Using Hybrid Moving Averages and Smoothing Exponential Methods
Folorunsho, J. O - - - - - - - - - - 94

Informal Solid Waste Management and Livelihood Diversification in Zaria, Nigeria
J.E. Ukoje, - - - - - - - - - - 101

Analysis of Trends In Monthly Rainfall Profile For Katsina, Katsina State (1946-2006).
Hassan Y.G and Abdulhamed A.I - - - - - - - 111

Assessment of the Magnitude of Suspended Sediment Produced by the Goruba Tributary of the Kubanni River, Zaria
Yusuf, Y.O. Iguisi, E.O., Bello, A.L. and Ati, O.F. - - - - - 124

URBAN VEGETABLE PRODUCTION AMONG WOMEN IN ILORIN, NIGERIA

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Abstract

Women contribute significantly to agricultural production in both rural and urban areas in order to be food secure as well as alleviate poverty. This paper focuses on the contributions of women to agriculture within an urban setting emphasizing vegetable production in Ilorin metropolis. The study specifically examines the demographic characteristics of the women vegetable cultivators, reasons for cultivating vegetables, types of vegetable cultivated, sources of production resources, marketing and the income realised from sales of vegetables for an improvement in their well being. Precisely, 90 women farmers from three different locations within the metropolis were purposively surveyed with copies of questionnaire. Focus Group Discussions (FGDs) were also organised with the women farmers. Percentages were employed to analyze the socio-economic data and Chi-square was employed to test hypothesis. The result of the chi-square (0.918) revealed that there is a relationship between women's involvement in urban vegetable production and the well being of their households. The study concludes by encouraging more women to be involved in vegetable production in order to make vegetables available to their families and other urban dwellers.

Keywords: Farming, Urban areas, Food security, Standard of living, Vegetables.

Introduction

Urban agriculture has been seen to play crucial roles in the lives of its practitioners as well as the people employed to work on the farm. This is basically because it is a source of food, employment and income. The practice is found among the poor, low and middle income group. At times, the high income group engaged in it for myriad of reasons. One area of urban agriculture that women contribute significantly to is vegetable production. Generally, women are the main food producers in developing countries and yet they are one of the most vulnerable groups (Karki, 2009), their economic empowerment to produce more and to participate in policy formulation is critical to addressing poverty and food insecurity. The urban poor households, especially the female headed ones, are forced to prioritize their basic needs including food. Women in Nigeria contribute an average of 70percent labour force to agricultural production especially in the urban areas (World Bank, 2003).

Urban vegetable production by women complements rural vegetable production since vegetables brought from rural areas are no longer in their fresh state and not sufficient for the increasing urban population. Its production serves as an important source of food for the urban population in developing countries and a critical food "insurance policy" and it is one of the food security options for households (Nugent, 2000). Additionally, it is a way of using urban open

spaces in a productive way, treating and/or recovering urban solid and liquid wastes and managing freshwater resources more effectively.

A vegetable is defined as an edible plant or an edible part of a plant (e.g. cabbage, lettuce, bean, potato etc). Vegetables have both curative and preventive measures against diseases, and reduce repetition of nutrition (Hang, 1994). Sirmin *et. a*l (2000) reported that high intake of fruits and vegetables reduces cardiovascular diseases. Furthermore, vegetables provide better balanced diet, vitamins and minerals. Report has shown that there has been an undulating pattern in the trend of vegetable production in Nigeria, for instance about 4924.9 thousand tonnes were produced in 2005, while 2487.7 thousand tonnes were produced in 2006 (CBN, 2006).

Urban vegetable production allows women to strengthen food provisioning and work close to the homestead. It encourages their traditional child care-taking, general household management, control over household resources, budget, decision-making and benefits. Incomes realised from this are re-invested into their children's education. Various studies have confirmed that women's income has a greater positive impact on the health and nutritional status of the children than does men's income. Hovorka (2003) noted that if most urban women producers are provided with production resources, they will engage more in self-provisioning to a larger extent than men. Essentially, women tend to dominate urban cultivation because they are marginalized in other forms of employment in the formal sector of the urban economy. Past studies have indeed focused on urban agriculture generally in different parts of the country, but very few concentrated on vegetable production by women in the study area. Also, increasing demand for vegetables as a result of rapid urbanization in Ilorin has necessitated the need for a study of this kind. Hence, this study examines the contribution of women to vegetable production in Ilorin, Kwara State, Nigeria. Specifically, the study will examine the reasons for women's involvement in vegetable production and types of vegetables grown; examine major sources of production resources, determine the impact of income realised from vegetable production on the standard of living of its practitioners; and challenges encountered in vegetable production.

Materials and Methods

Ilorin comprises of three local government areas namely Ilorin West, South and East. Purposive sampling technique was used to select 90 women vegetable cultivators randomly from three different farm locations, one from each local government area. This is basically because there is no record of registered women vegetable cultivators in the study area. Farm locations chosen were Irewolede in Ilorin West, Onireke from Ilorin South and Oyun in Ilorin East Local Government Areas. Thirty copies of questionnaire were randomly administered to women farmers in each location. Focus Group Discussions were also held with them at the different selected locations in order to explore their views on the challenges confronting them in vegetable production and the impact that vegetable production have on the well-being of their households. Simple percentages were employed to analyze the socio-demographic characteristics of the respondents and chi-square was used to test the hypothesis whether or not relationship exists between women's involvement in urban vegetable production and the wellbeing of their households.

Study Area

Ilorin the state capital of Kwara state, Nigeria is the study area. It is located on latitude $8^0$3 and $8^0 50^1$N and longitude $4^0 20^1$ and $4^0 35^1$E of the equator (fig.1). The city is situated in the transition zone within the forest and the guinea savannah regions of Nigeria and occupies an area of abo

468sqkm. The climate is tropical and is under the influence of the two trade winds prevailing over the country. The daily average temperatures are in January with 25^{0}C, May 27.5^{0}C and September 22.5^{0}C. The mean monthly temperature is generally high throughout the year, (Ajibade, 2002). The rainy season is between March and November with average rainfall of about 1000mm-150mm and September is the wettest month while the dry season is between November and March.

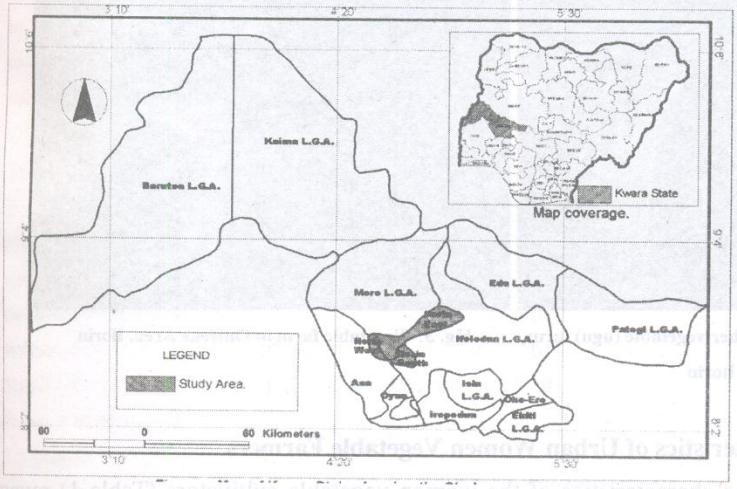


Fig. 1: Kwara State showing the Study Area.

The vegetation type found here is derived savannah with riparian forest along the river bank. The drainage system of Ilorin is dendritic in pattern due to its characteristics. The most important river is Asa River which flows in south-northern direction. Asa River occupies a fairly wide valley and goes a long way to divide Ilorin into two parts namely the Eastern and the western part. The major rivers are Asa, Agba, Alalubosa, Okun, Osere, Oyun and Aluko. Some of these rivers drain into river Niger or river Asa (Oyegun, 1986). The soil type that exists in Ilorin is namely ferruginous which support various plant species because of its variability in terms of fertility. The 2006 census put the population at 766,000 (NPC, 2006).

Results and Discussions

Location of Farms

The three locations selected include Irewolede, Onireke and Oyun vegetable farms. Respondents were asked to indicate the reasons for locating their vegetable farms along river banks and their responses were encouraging. About 70% of total respondents sampled indicated that the reason is as a result of availability of water to irrigate the farms since vegetables need regular supply of water to survive especially during dry season, 30% indicated that it is as a result of distance from their houses. The former is definitely because farming along river banks will give them the opportunity to cultivate both during dry and rainy seasons. The later will afford them the opportunity to monitor their vegetable farms from intruders such as animals and theft as well as ability to sell on farm site at any time. Fig. 2 shows a woman vegetable farmer in her farm located behind Irewolede housing estate and fig 3 shows a vegetable farm in Onireke, Ilorin.



Fig. 2: A woman farmer in her vegetable (ugu) farm at Irewolede Area, Ilorin



Fig. 3: Vegetable farm in Onireke Area, Ilorin

Socio-Demographic Characteristics of Urban Women Vegetable Farmers

The socio-demographic characteristics of the women vegetable cultivators (Table 1) revealed that 97.8% of the women farmers were between 40 and 69years of age except in Onireke where only 2.2% were between 30 and 39years. About 85.6% of the women farmers were married and from different ethnic groups. This means that a lot were married with family responsibilities such as ensuring food and income self-sufficiency in their households. Also, 58.9% had at least 7people in their households, 48.9% had no formal education, and 43.3% had primary education while the rest had secondary education. This is an indication that majority of the sampled women farmers are not well educated for adoption of new innovation. It was further discovered that 70% owned less than 0.25ha of land except in Oyun where 4.4% had above 0.5ha of farmland. Majority were full-time farmers (85%) and 88.8% had over five years farm experience. Furthermore, larger percentage (75%) of the women farmers have their vegetable farms located at distances of less than 1km while only 25% have their farms located at distances that are more than 1km. The implication of this is that those that are far away from their farms will have to add the cost of transportation from their houses to the farms and to the market to the cost of vegetables thereby making their vegetables to be a little bit costly.

Table 1: Socio-Demographic Characteristics of Sampled Women Vegetable Farmers

Characteristics	Irewolede	Onireke	Oyun	Total
Age of Respondents				
18-29 years	-	-	-	-
30-39 years	-	02	-	02(2.2)
40-49 years	18	13	16	47(52.2)
50-59 years	10	12	14	36(40.0)
60-69 years	02	03	-	05(5.6)
Total	30	30	30	90(100)
Marital Status				
Married	28	25	24	77(85.6)
Single	-	-	-	-
Divorced	-	01	01	02(2.2)
Widowed	02	04	05	11(12.2)
Total	30	30	30	90(100)
Number in Household				
1-3 persons	-	-	-	-
4-6 persons	09	11	17	37(41.1)
7-9 persons	04	09	05	18(20.0)
10-12 persons	12	05	08	25(27.8)
Above 12 persons	05	05	-	10(11.1)
Total	30	30	30	90(100)
Level of Education				
No formal education	19	12	13	44(48.9)
Primary Education	09	16	14	39(43.3)
Secondary Education	02	02	03	07(7.8)
Post Secondary Education	-	-	-	-
Total	30	30	30	90(100)
Farm Size				
Less than 0.25ha	26	19	18	63(70.0)
0.26-0.50ha	04	11	08	23(25.6)
0.51-1.00ha	-	-	04	04(4.4)
Total		30	30	90(100)
Farming Status				
Full-time	27	29	21	77(85)
Part-time	03	01	09	13(15)
Total	30	30	30	90(100)

Farming Experience	04	08	08	20(22.2)
Less than 5years	02	-	-	02(2.2)
5-10years	03	-	-	03(3.3)
11-15years	19	15	02	36(40.0)
16-20years	02	07	20	29(32.3)
Above 20years	30	30	30	90(100)
Total				
Farm Distance	10	11	10	31(34.4)
Less than 0.5km	13	14	09	36(40.0)
0.51-1.00km	07	05	11	23(25.6)
Above 1km	30	30	30	90(100)
Total				

Source: Author's Research

Note: Percentages in Parentheses

More so, this group of vegetable cultivators will not be able to spend the same time that others whose houses are nearby spent tendering their vegetables.

Reasons for Cultivating Vegetables

Women vegetable cultivators gave different reasons (Table 2) for growing vegetables. In all, about 85% of the sampled women farmers were involved in cultivating vegetables in order to generate income while 15% cultivated to supplement their main income. This is in support of Karim and Wee (1996) that about half of vegetable spices and fruits grown in the homestead were sold to supplement the family income. Other reasons for cultivating vegetables include food security (75.6%) and unemployment (5.5%), 18.9% had no other reason while nobody indicated interest as part of the reasons for cultivating vegetables. This is an indication that women are involved in vegetable production not only for income but also for food security both for their households as well as the metropolis as a whole.

Table 2: Reasons for Cultivating Vegetables

Reasons	Irewolede	Onireke	Oyun	Total
Main Reason				
Generate Income	19	28	30	77(85)
Income Supplement	11	02	-	13(15)
Total	30	30	30	90(100)
Other Reasons				
Food Security	28	20	20	68(75.6)
Unemployment	-	-	05	05(5.5)
Interest	-	-	-	-
None	02	10	05	17(18.9)
Total	30	30	30	90(100)

Source: Author's Research

Types of Vegetables Grown

Consumption of vegetables makes vitamins, minerals and energy available to human body. During the survey, it was discovered that women vegetable cultivators grow different types of vegetables but the ubiquitous one is fluted pumpkin. All of the sampled women farmers (100%) cultivate fluted pumpkin (*Telfaira occidentalis)* locally called *ugu*. The reason for this is because fluted pumpkin is very nutritious and gives short-term nourishment to the body. It has the capacity to increase the red blood cells within a short time after consumption and very rich in vitamin C. For instance, Ogunlesi, *et.al* (2010) reported that fluted pumpkin is about 129.39 mg/100g rich in vitamin C. Some other vegetables cultivated but not in large quantities by the sampled women farmers include spinach (*Spinacia oleracea)*, amaranths (*Tete* in Yoruba), water leaves (*Gure* in Yoruba), bitter leaves (*Ewuro* in Yoruba), mint leaves (*Efinrin* in Yoruba) and jute mallow leaves (smooth edge) (*Ewedu* in Yoruba).

Major Sources of Production Resources

When the major sources of production resources as revealed in Table 3 were asked during the survey, about 47.5%, 42.5% and 10% obtained investment capital and credit facilities from personal savings, friends/relation and cooperative societies respectively. Furthermore, 70% cultivate on rented and common land, while others such as borrowed and purchased recorded low scores. Common lands in Ilorin are wetlands that people do not claim ownership, invariably farmers take over. Also, 56.3% employed the use of personal/family labour to work on the farm while the rest used hired labour. Mechanization method was not used by anybody. Also, 85% obtained farm input from personal purse while the remaining farmers acquired farm input from friends and relations. None of the respondents obtained farm input from KWADP despite the fact that their farms are within the state capital.

Marketing and Marketing Channels of Vegetables

Women were asked about the marketing outlets for vegetables grown, frequency of sales, methods of sales of vegetables. Larger percentage (66.7%) of the women farmers particularly those in irewolede sell their vegetables in urban market. This is as a result of high demand for vegetables in the urban market. It was further revealed that 75% of the farmers dispose their vegetables weekly, while only15% and 10% sell on fortnight and daily basis respectively. This is attributed to the fact that women vegetables cultivators operate on small holdings and expansion is very difficult for them because of restricted accessibility to land.

Table 3: Major Sources of Production Resources

Sources	Irewolede	Onireke	Oyun	Total
Credit Facilities				
Personal Savings	15	13	15	43(47.5)
Friends/relations	09	17	12	38(42.5)
Cooperative societies	06	-	03	09(10.0
Total	30	30	30	90(100)

Land	03	06	09	18(20)
Purchased				
Rented	10	14	20	44(48.9)
Common	09	09	01	19(21.1)
Borrowed	08	01	-	09(10)
Total	30	30	30	90(100)
Labour				
Personal/Family	17	23	11	51(56.3)
Hired	13	07	19	39(43.7)
Total	30	30	30	90(100)
Farm Input				
Personal	18	29	30	77(85)
Family/relation	12	01	-	13(15)
Total	30	30	30	90(100)

Source: Author's Research

Note: Percentages in Parentheses

The little land they cultivate is what they farm on and dispose the vegetables as soon as they mature usually every week especially during rainy season. Furthermore, the low cost per unit of resource use in the production, short gestation period and quick returns on invested capital compared to other crop enterprises (Udoh and Akpan, 2007) make the sales to be fast. Method of sales is both on retail and in bulk.

Income from Vegetable Production and well being of Women Farmers

Income generated from vegetable production has assisted women farmers in terms of purchasing other needed foods, landed property, clothing, healthcare, electricity bill, water rate, housing and settling children's education among others. All these have assisted in improving the wellbeing of the practitioners and their households. From the survey, majority of them pointed out that growing vegetable has given an assurance of improved wellbeing and they now live a better life than when they were not involved in it. It was further gathered that 86.6% of the women farmers make over N20, 000 monthly from sales of vegetables. Only 4.5% at Onireke and Oyun earned less than N10, 000 per month because of inaccessibility to land. The women vegetable cultivators (60%) indicated income realised was used to acquire landed property such as land and buildings. About 30% of the respondents revealed that income was used to pay house rent and other services such as electricity bills, water rate and purchase of household items among others. This is in support of Adedayo and Tunde, (2012) that urban agriculture is a coping strategy in dealing with poverty and economic hardship in the urban areas.

Table 4: Income from Vegetable Production and well being of Women Farmers

Income	Irewolede	Onireke	Oyun	Total
Monthly income				
Less than N10,000	-	03	01	04(4.5)
N10,001-N20,000	02	02	04	08(8.9)
N20,001-N30,000	04	03	02	09(10)
N30,001-N40,000	07	11	03	21(23.3)
N40,001-N50,000	15	04	08	27(30)
Above N50,000	02	07	12	21(23.3)
Total	30	30	30	90(100)
Assets acquired				
Land	15	11	11	37(41.1)
Build House	09	05	03	17(18.9)
Education	03	01	05	09(10.0)
House rent	01	05	06	12(13.3)
Health Services	02	03	03	08(8.9)
Others (such as electricity bills and household items	-	05	02	07(7.8)
Total	30	30	30	90(100)

Source: Author's Research

Furthermore, 10% pay children school fees with the income realised. This is an indication that growing vegetables has positive impact on the wellbeing of the practitioners. According to the sampled women farmers during a focus group discussion, income generated is sufficient to take care of their families needs. This is because; basically it provided them with employment as well as income. A woman farmer in Oyun farm indicated

> " Money realised from sales of vegetables this week was used to pay my children's school fees" (FGD Ilorin, June 22nd, 2012).

Another woman farmer in Irewolede says:

> "we make more money during dry season than rainy season because consumers purchase vegetables more during dry season since most of them cannot undergo the burden of wetting their backyard vegetable farms" (FGD Ilorin, June 23rd, 2012).

The responses of the women farmers were subjected to Chi square analysis to test the hypothesis. Table 5 reveals the relationship between cultivating vegetables and the wellbeing of the households of women cultivators in the sampled locations.

Table 5: Chi-Square Analysis

Observed	Expected	O-E	$(O-E)^2$	$(O=E)^2/E$
13	10.2	2.8	7.84	0.768
12	12.4	0.4	0.16	0.013
15	20.3	5.3	28.09	1.383
2	4.6	2.6	6.76	1.470
3	5.6	2.6	6.76	1.207
13	7.8	5.2	27.04	3.467
8	8.2	0.2	0.04	0.005
13	10	3	9	0.900
11	13.9	2.9	8.41	0.605

Source: Author's Research/Computer Output

Chi Square = 9.818

H_0 is rejected because 9.818 is greater than 9.488 (for alpha = 0.05), therefore we accept the alternative hypothesis (H_1) that there is a relationship between women involvement in urban vegetable production and the wellbeing of their households.

Production Challenges of Urban Vegetable Production by Women

In order to determine the challenges confronting women vegetable farmers in the course of cultivating vegetables, women farmers were asked about constraints facing them on their farms. Some of the challenges experienced by all the sampled women in the course of producing vegetables in the three selected locations are: restricted accessibility to land in the urban areas as a result of competition from non-agricultural land uses, lack of improved farm techniques and low level of education. Water deficiency especially during dry season, theft and intrusions by animals are peculiar to respondents in Onireke. Also, lack of farm input, inadequate information and distance from market especially for those whose farms are at far distances are the other challenges facing women vegetable farmers in all the selected locations. At times during rainy season, some rivers like Asa and Oyun do overflow and result to flooding and damaging the farms especially those around Asa River as claimed by 33.3% of the respondents.

Implication of the Study for Planning

It has been widely reported that women play significant roles in socio-economic development of many developing countries. The study has actually confirmed the significant contributions of women in vegetable production in the study area. The implication of this is that women in the urban areas should be encouraged to contribute more to food security of their households in order to reduce poverty and improve their standard of living. Women should be empowered economically through programmes that will further complement their efforts in

agricultural production. Furthermore, time and labour saving technologies should be developed by agricultural research institutes and made readily available at subsidized rates to women farmers. Encouragement and opportunity should be given to women in order to improve their expertise in areas where they have comparative advantage so as to achieve an egalitarian society.

Conclusion

This paper made effort to examine the significant contributions of women to household development, improvement in standard of living and economic growth through vegetable production in Ilorin. The study revealed that there is a relationship between women's involvement in urban vegetable production and the wellbeing of the women farmers' households. More women should therefore be involved in vegetable production in order to make fresh and nutritious vegetables available to both their families as well as the urban setting. This will translate to food security, improvement in the standard of living and poverty reduction in the urban households and the city as a whole.

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