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PERCEIVED EFFECT OF VEGETABLE FARMING ON THE SOCIO-ECONOMIC WELL-BEING OF URBAN HOUSEHOLDS IN CALABAR METROPOLIS, CROSS RIVER STATE, NIGERIA

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ABSTRACT

The study examined the perceived effect of vegetable farming on the socio-economic well-being of urban households in Calabar Metropolis, Cross River State, Nigeria. The specific objectives were to; describe the socio-economic characteristics of vegetable farmers, ascertain the types of vegetables cultivated in the area, and determine the perceived effect of vegetable farming on the socio-economic well-being of urban households. The study was carried out in Calabar Metropolis using a survey research design. The population consisted of all registered vegetable farmers in the area, while the sample comprised 400 vegetable farmers selected using simple random sampling technique. Data were collected using a structured questionnaire and analyzed using frequency counts, percentages, mean, standard deviation and ranking. The results revealed that 78.75% of the vegetable farmers were women, 65% were married and 49.75% of the farmers were 41years and above. It was also found that pumpkin (*Cucurbita spp*) (96.75%), waterleaf (*Amaranthus spp*) (87.25%), amaranthus (*Talinum fruticosum*) (53.5%) and afang/editan/atama (*Gnetum africanum/Lasianthera Africana/Heinsia crinita*) (50%) were the predominant vegetables cultivated in the area. The results further showed that vegetable farming brings additional income to farmers (ranked = 1st), enable them to take care of medical bills (ranked = 2nd) and enhance food supply (ranked = 3rd) etc. It was recommended that special land allocation for vegetable cultivation, credit facilities and training should be provided to urban households to enhance vegetable production in the area.

KEYWORDS: Vegetable; Farming; Urban; Households, Socio-economic; Calabar.

INTRODUCTION

Vegetable farming and consumption are becoming increasingly popular among urban households. The nutritional and health benefits of vegetables, and very recently, the growing awareness of the economic potentials of vegetables have reinforced the attraction towards urban gardening. Vegetable production offers a promising economic opportunity for reducing rural and urban poverty and unemployment, particularly in developing countries and it constitutes a veritable component of farm and income diversification strategies.

Apart from being highly affordable, vegetables provides substantial nutritional benefits to those on restricted dietary regimes (Eta, Idiku, Elemi and Eremi, 2023).

According to Pepijn, Emmy and Marco (2018) vegetables are increasingly recognized as essential food and nutrition security and the global value of fruit and vegetable production exceeds that of all food grains combined. Pepijn *et al.* (2018) therefore, maintained that vegetable intake must be nurtured through supply-and demand-side interventions since vegetables are mankind's most affordable source of vitamins and minerals needed for good health.

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Vegetables are widely considered rich sources of protective elements like minerals, salts, vitamins and other chemical substances and they are very important source of farm income. Vegetables are equally globally appreciated for their profound aesthetic value, low cost of production, variety and environmental protection capabilities etc.

According to Priyambada (2020) vegetables provides cheaper source of vitamins and minerals such as vitamin A (from leafy vegetables, carrot, sweet potato etc), vitamin B (from pea, beans, garlic, tomato etc) and vitamin C (from chili, cauliflower, cabbage, knoll, tomato etc). Underground storage roots and tubers are rich in carbohydrate (from potato, sweet potato, colocasia, tapioca etc), leguminous vegetables such as cowpea, French bean and cluster bean etc are rich source of protein. Some of the key minerals derived from vegetables include calcium, iron and phosphorus and vegetables also provide balanced diet and represent important source of food security.

Apart from nutritional benefits, vegetables are also known to provide flavouring compounds (volatile such as -aldehydes, ketones, alcohol and sulphur compounds etc; non-volatile – such as organic acid, sugar, fatty acids and amino acids); toxic compounds including trypsin inhibitor peas and beans – phytic acid, calcium oxalates such as elephant foot yam and potato etc. Vegetables are equally very important in disease prevention because of their inherent properties such as antioxidants (e.g. carrot, sweet potato, tomato, pumpkin, beans etc) and bioflavonoids – quercetin (like onion and garlic) (Priyambada, 2020). Vegetable consumption provides palatability, increase appetite and provides fiber for digestion and to prevent constipation. They also play key role in neutralizing the acids produced during digestion of proteins and fatty foods and provide useful roughages which help in movement of food in intestine. Vegetables such as sweet potatoes, carrots, onions, garlic, peas, beans, leaf vegetables (e.g. pumpkins, waterleaf, amaranthus etc), okra and tomato among others have become components of daily food consumption in the world (Ogidi-Olu, 2023).

Vegetables can be grown throughout the year by farmers for steady and regular income flow. They improve soil fertility, provide fodder to livestock and create eco-friendly conditions. Vegetables are not only nutritional, but yield per acre of land cultivated than other crops, because they mature quickly. Daily earnings from vegetables are higher, thereby providing farmers with higher income. Vegetables are also useful in agro-foestry, employment creation, aesthetics, prevention of diseases such as stroke, low blood pressure and sugar levels control, enhancement of eco-tourism and poverty reduction by improving famers income (Nowson and MacGregor, 2006; Sachder, 2022; Finotti, Bedtime and Vivanti, 2006; Eta, Eremi, Idiku and Eta, 2023).

Vegetable farming is a mainstay in Cross River State, particularly in the Calabar Metropolis where approximately 98% of the farmers are vegetable farmers. The scope of production is heavily subsistent, relying on crude implements and family labour. The level of poverty among the farming households in the area is still painfully high, with a good proportion of the farmers still living below the poverty line. This study was therefore, conceived in response to the compelling need to ascertain the role of vegetable farming in the socio-economic well-being of urban households in Cross River State.

Specific objectives of the study:

The specific objectives of this study were to:

i. describe the socio-economic characteristics of the respondents;
ii. ascertain the types of vegetables cultivated in the area by the respondents, and
iii. examine the perceived effects of vegetable farming on the socio-economic well-being of the respondents.
iv. examine the measures for improving vegetable farming in the area.

RESEARCH METHODOLOGY:

This study was carried out in Calabar Metropolis, consisting of Calabar South and Calabar Municipal Local Government Areas. The population of the study comprised all registered vegetable farmers in the area. The study adopted a two-stage sampling technique. In stage one, four extension cells were randomly selected from each of the agricultural blocks (Calabar South and Calabar Municipal) that make up Calabar Metropolis, making a total of 8 cells. In stage two, 10% of the total registered vegetable farmers were selected using simple random sampling technique, giving a total sample size of 400 respondents. Data were collected using a semi-structured interview schedule, and analyzed using descriptive statistics such as percentages, mean, standard deviation and ranking. Information on the socio-economic characteristics of the respondents was obtained using the questionnaire, where they were asked to indicate their age, sex, marital status, income, educational qualification and farm size among others. A checklist of vegetables was provided and farmers were asked to indicate the types they cultivate, while also stating other vegetables cultivated but not listed on the checklist. The respondents were interviewed extensively in order to determine the effect of vegetable farming on their socio-economic well-being and all the effects stated were analyzed and ranked according to frequency of occurrence.

RESULTS AND DISCUSSION

Socio-economic characteristics

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

Variable	Frequency	Percentage
Sex:		
Male	85	21.25
Female	315	78.75
Total	**400**	**100**
Age (in years):		
1 – 20yrs	40	10
21 – 40yrs	161	40.25
41 and above	199	49.75
Total	**400**	**100**
Educational level:		
No formal education	98	24.5
Primary school	74	18.5
Secondary school	147	36.75
Higher institution	81	20.25
Total	**400**	**100**
Farm size:		
Less than 1 plot (100m x 100m = 1 plot)	294	73.5
1 plot	106	26.5
2 plots	0	0
More than 2 plots	0	0
Total	**400**	**100**
Estimated annual income (₦):		
Less than 50,000 (< 50,000)	150	37.5
50,000 – 100,0000	199	49.75
100,000 above (>100,000)	51	12.75
Total	**400**	**100**
Family size:		
1 – 5 persons	121	30.25
6 – 10 person	200	50
Above 10 persons	79	19.75
Total	**400**	**100**
Marital status:		
Single	92	23
Married	260	65
Divorced	28	7
Widowed	20	5
Total	**400**	**100**

Source: Field Survey, 2023

The result on Table 1 show the distribution of farmers based on their socio-economic characteristics. The result revealed that the majority (78.75%) of the vegetable farmers where females, 49.75 were 41 years and above the majority (65%) of them were married, and had varied educational attainment levels. It was equally observed that a large proportion (73.53%) of the farmers cultivated less than one plot 37.5% earned less than ₦50,000 annually, while 49.75% earned between 50,000 and 100,000 annually. The implication of this result is that vegetable farmers in the area varied widely in their socio-economic characteristics. The result supports that of Okweche, Eyo and Effa (2022) that vegetable cultivation is carried out predominantly by women, particularly married women who seek alternative income sources to support their families. The study is also consistent with that of Idiku, Eremi , Ntui, Nwogo and Besong (2022), who noted that married women are involved in vegetable farming because of the need to support their families financially. The study results also show that vegetable farmers were low income farmers with limited education, mostly having secondary school as highest educational attainment. These could have influenced their method of cultivation and access to credit.

Types of vegetables cultivated

Table 2: Distribution of respondents according to vegetables cultivated (N=400)

Variables	Frequency	Percentage
Pumpkin (*Cucurbita spp.*)	387	96.75
Sweet potato (*Ipomoea batatas*)	142	35.5
Waterleaf (*Talinum fruticosum*)	349	87.25
Afang/Editan/Atama (*Gnetum africanum/Lasianthera africana/Heinsia crinita*)	200	50
Tomato (*Solanum iycopersicum*)	99	24.75
Bitterleaf (*Vernonia amygdalina*)	217	54.25
Carrot (*Daucus carota*)	0	0
Onion/Garlic (*Allium cepa/Allium sativum*)	0	0
Amaranthus (*Amaranthus spp*)	214	53.5
Pepper (*Capsicum annum*)	187	46.75
Cowpea/Peas (*Vigna unguiculata*)	62	15.5
Okra (*Abelmoschus esculentus*)	192	48
Garden egg (*Solanum melongena*)	150	37.5

Source: Field Survey, 2023; *Multiple Responses.

Table 2 shows the types of vegetables cultivated in the area. It was found that the main ones are pumpkin (*Cucurbita spp.*) (96.75%), waterleaf (*Talimum fruticosum*) (87.25%), amaranthus (*Amaranthus spp.*) (53.5%) and afang/editan/atama (*Gnetum africanum/Lasianthera africana/Heinsia crinita*) (50%). However, it was observed that the farmers did not cultivate carrot (0%) and onion/garlic (*Allium cepa/Allium sativum*) (0%), while only 15.5% cultivated cowpea/peas. The implication of this study is that farmers in the area cultivated different types of vegetable but not to the same extent. The concentration is mostly on leafy vegetables used for the preparation of soup. This result corroborates that of Eremi and Aya (2014) who pointed that Calabar women cultivated predominantly leafy vegetables that are used for the preparation of soup. Okweche, Eyo and Effa (2022) equally found that the main vegetables cultivated in the Southern part of Cross River State are pumpkin, waterleaf, amaranthus and bitter leaf. These vegetables represents the cultural and dietary delicacies in the area, and are therefore usually produced to meet local demands. Afang soup and pumpkin soup (popularly known in Efik as edikang-ikong) are the most cherished and widely consumed soups in the whole of the Southern part of Cross River State, particularly among the Efiks of Calabar Metropolis. This probably explains why these vegetables are the most widely cultivated in the area.

Perceived Effect of vegetable farming on households' socio-economic well-being

Table 3: Distribution of the respondents according to perceived effects of vegetable farming on their socio-economic well-being

S/N	Variable	Mean (□)	SD	Ranking
a.	I now make additional money through vegetable cultivation	3.82	1.73	1sr
b.	Previously I could hardly afford ₦100 per week	3.52	0.72	6th
c.	Feeding was very difficult for my household because we had no money	3.03	0.68	9th
d.	Since I started vegetable farming, we have no problems providing food	3.05	0.75	8th
e.	My children were unable to attend school due to lack of money	3.73	1.20	3rd
f.	Paying for medical services was impossible and we had to rely of native medicine	2.50	0.42	13th
g.	I could not pay my house rent because of lack of money	3.80	1.47	2nd
h.	Since I stated vegetable farming my children have returned to school because I can now pay for it.	3.70	1.07	4th
i.	Our health bills and house rent are no longer a problem because of vegetable cultivation	2.54	0.72	12th
j.	I have built my own house from vegetable cultivation	2.58	0.46	11th
k.	I am now a member of several cooperative societies	3.60	0.96	5th
l.	I have savings in bank(s) from the money I sole vegetable	3.45	0.89	7th
m.	Our feeding habits has improved because we now eat balanced diet	2.86	0.69	10th
n.	Our standard of living has improved	2.34	0.45	15th
o.	I have been losing money to vegetable farming	2.37	0.33	14th
p.	My income status has not changed despite growing vegetables	2.30	0.44	16th
q.	In fact, I have become poorer by growing vegetable	2.28	0.37	17th
r.	I feel rich now because I am getting a lot of money from vegetable farming	2.26	0.58	18th

Source: Field Survey, 2023

Table 3 shows the perceived effects of vegetable farming on the socio-economic well-being of the farmers. The results showed that vegetable cultivation was perceived to have positive effect on the well-being of urban households. Specifically, it was found that vegetable farming enable farmers to make additional income (ranked = 1st), enhance their abilities to pay for medical or healthcare services (ranked = 2nd), improve their feeding and access to food (ranked = 3rd), and enable them to pay their rent and other housing bills (ranked = 4th). However, farmers did not perceived that they were now rich because getting a lot of money from vegetable farming ranked = 18th and equally they did not perceived that their standard of living has improved (ranked = 15th). The implication of this result is that through vegetable farming is very important as it improves the socio-economic well-being of urban households in a number of ways, though there is still great room for improvement principally because cultivation is subsistent on small plots of land in a subsistent-styled farming, using traditional methods which generate limited amount of income. These findings are consisted with the submissions of Food and Agricultural Organization (FAO, 2021), Sinha, Hui, Evaranail, Siddiq and Ahmed (2010), and Smith (2023). The results reveal further that through vegetable farming, most urban households have improved their access to education, housing and healthcare services as well as improved social and community commitment to group projects. The nutritional or food needs of the people has been addressed to some extent, despite a large proportion of them cultivating only small pieces of land. This finding corroborates that of Eta *et al.* (2023).

Measures for improving vegetable farming

Table 4: Distribution of respondents according to measures for improving vegetable farming (N=400)

S/N	Variable	Mean (□)	SD	Ranking
a.	Provision of credit facilities to farmers	3.07	103	2nd
b.	Provision of inputs by the government e.g. seeds	2.80	0.69	4th
c.	Regular supply of fertilizers and organic manure to farmers	2.68	0.75	7th
d.	Improve in extension services to vegetable farmers	2.69	0.84	6th
e.	Training of farmers on the production of rare vegetables in the area, e.g. carrot, onion, cabbage etc.	2.86	0.85	3rd
f.	Government regulation of prices provision of storage and preservation facilities	2.72	0.76	5th
g.	Allocation of land for vegetable cultivation to farmers to provide support services	3.23	1.42	1st
h.	Provision of training on the cultivation of onion, carrot and cabbage	2.67	0.48	8th
i.	Provision of irrigation facilities are services to farmers	2.62	0.86	9th

Source: Field Survey, 2023; □ ≥ 2.50.

Table 4 shows the measures for improving vegetable farming in the area. The results reveal that allocation of land or plot for vegetable cultivation by the government (ranked = 1st), provision of credit facilities (ranked = 2nd) and training of farmers on the production of rare vegetables in the area (ranked = 3rd) etc could enhance vegetable farming in the area. Calabar Metropolis is an urban center where access to open space for farming is highly limited. Improve in extension services and regular supply of fertilizer (ranked = 6th and 7th) were equally identified as vital tools for promoting vegetable farming in the area. These findings are in line with Okweche *et al.* (2022) and Idiku *et al.* (2022) that access to land, credit support, provision of farm input and training of farmers through effective extension services will enhance vegetable cultivation. The findings equally corroborates that of Eremi, Eta, Eremi and Evey (2023).

CONCLUSION AND RECOMMENDATIONS

Vegetable farming provides substantial nutritional, economic and environment benefits. The high level of poverty and increased dependence on government-driven economic interventions have fueled the need to promote vegetable cultivation to provide cheap income and nutritional alternatives. Calabar Metropolis is well-known for vegetable cultivation, but the people rely heavily on small farm-holding, using traditional methods and therefore, produce far less than what is required for social and economic viability. Because the households in the area cultivated a limited number of vegetables types, the economic returns have equally been small, making the people not to derive the full benefits of vegetable farming. This leaves ground for a lot of improvement and investment in the vegetable sector of the state.

The study therefore, made the following recommendations:

i. government should acquire land specifically for vegetable cultivation and allocate plots to willing farmers to grow vegetables.

ii. Farm inputs such as fertilizer and improved seeds or varieties should be provided to the farmers to enhance yield and profitability.

iii. Credit facilities should be given to vegetable farmers.

iv. Special training programme on vegetable farming should be provided through the state ADP to develop farmers' skills on vegetable cultivation, especially onion, carrot and cabbage.

REFERENCES

Eta, H. C., Eremi, E. O., Idiku, F. O. and Eta, J. N., 2023. Pesticides use, management practices and perceived effects on the health of cocoa farmers in Cross River State, Nigeria. African Journal of Food, Agriculture, Nutrition and Development. 23(6):23558-23575.

Eta, H. C., Idiku, F. O., Elemi, G. F. and Eremi, E. O., 2023. Crop farmers' access to E-information for climate smart agriculture production, in Cross River State, Nigeria. Journal of Agricultural Extension. 27(3):26-34.

Eremi, E. O. and Aya, C. F., 2014. Analysis of socio-economic determinants of women participation in rural community-based cooperative societies in Cross River State, Nigeria. International Journal of Natural and Applied Sciences. 9(1):15-21.

Eremi, E. O., Eta, H. C., Eremi, T. O., Evey, M. I., 2023. Analysis of training needs of agricultural extension workers on agroforestry in Cross River State, Nigeria. Global Journal of Agricultural Sciences. 22(1):71-80.

Finotti, E., Bedtime, A. and Vivanti, V., 2006. Balance between nutrients and anti-nutrients in nine Italian potato cultivars. Food Chemistry. 94(4):698.

Food and Agriculture Organization, 2021. Vegetables and Economic Benefits. Rome: FAO.

Idiku, F. O., Eremi, E. O., Ntui, O. E., Nwogu, M. C. and Besong, P. J., 2022. Influence of information sources on farmers' indigenous knowledge of soil fertility management in Nigeria. Library Philosophy and Practice. https://digitalcommons.uni.edu/gi/viewcontent.cg:7article=141178.

Nowson, C. A. and MacGragor, G. A., 2006. Fruit and vegetable consumption and stroke: Meta-analysis of Cohort Studies. The Lancet. 28(6):320-326.

Ogidi-Olu Farms, 2023. Importance of vegetables. https://www.ogidiolufarm.com.

Okwuche, S. I., Eyo, K. I. and Effa, E. B., 2022. Food preference and nutrient composition of African Cricket Brachytrupes Membranaceus L. (Dury) in Cross River State, Nigeria. Journal of Insects as Food and Feed. 8(12):1501-1510.

Pepijn, S., Emmy, B. S., and Marco, C. S. W., 2018. Tapping the economic and nutritional power of vegetables. Global food Security (16):36-45.

Priyambada, P., 2020. Role of vegetables in human nutrition and national economy. https://www.slideshare.net.

Sachder, P., 2022. Health benefits of vegetables. Retrieved: https://www.webmd.com.

Sinha, N., Hui, Y. H., Evaranuil, E., Siddiq, M. and Ahmed, J., 2010. Handbook of Vegetables and Vegetable Processing. New York: John Wiley and Sons.

Smith, J., 2023. What are the most healthful vegetables? Medical Review. 8:79-84.