ACHIEVING SUSTAINABLE FOOD SECURITY IN EBONYI STATE THROUGH URBAN AGRICULTURE

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KEYWORDS
Urban, Agriculture, Sustainable, Food, Security

ABSTRACT
This study investigated achieving sustainable food security in Ebonyi State through urban agriculture. A descriptive survey design was adopted for the study. The population of the study was 300 urban farmers across the state, comprising of 150 males and 150females and this population formed the sample size for the study. Some concepts were clarified. A 3 in-1 instrument titled sustainable food security through urban agriculture (SFSTUAQ) was used for data collection. Three research questions and three hypotheses guided the study. The research questions were answered using mean rating t-test. The findings of the study revealed that there was a high level of awareness and participation among urban farmers due to encouragement from government. It was therefore recommended that co-opting urban farmers into co-operative societies will help immensely in reducing urban poverty.

Introduction

Agriculture refers to the practice of cultivating a piece of land, or planting and growing food plants or rearing animals, vocabulary.com while Nkire (2014) looks at agriculture as an economic activity which man has direct contact with his environment as he engages in resource extraction, processing, marketing and distribution, including consumption.

Ebonyi State according to Okoro (2018) is blessed with huge arable land which served as a platform for advancing food production and food security but these economic potentials and the comparative advantage which the state possed as an agrarian economy was wasted due to the fact that no serious efforts were put forward by the previous governments to develop the sector and use it to achieve economic prosperity. Agriculture was the main stay of the economy before the Nigerian civil war.

Ojiuzor, (2024) observed that agriculture started to show signs of decline in the late 1960s due to the political crisis of the period and the civil war which followed later. South East and South South geo-political zones of Nigeria were the theatre of that war. This scholar further opined that between 1970 and now, oil boom (petroleum) dwarfed agricultural production and crude oil (petroleum) revenue filled the country's vaults that the country entered the rough road to decline in all facets-economic, political, social, religious, cultural, technological, education and legal. Crude oil boom pulled the young farmers away from the farms, leaving the countryside desolate and despondency took over the entire primary activity of agriculture as these youths migrated to the cities in search for white collar jobs.

In this regard, Konja (2016) asserts that:

> *As a result of oil or petroleum dominance, urban food prices went up and it was followed by mass food importation into the country from different parts of the world and this shifted the food taste of an increasing urban class from locally produced food to foreign imported foods. This trend reduced Nigeria to the status of net importer of food items to be able to feed the urban households. These urban households had developed appetite for foreign vegetable oil, rice, chicken, frozen fish, turkey meat, turkey oil, apples, canned beer, palm oil, sugar, milk, tomatoes, tooth picks, bottled water etc. Food importation became the order of the day as the country exported these food items years past. Government sought ways to curtail food importation and rising food prices and to encourage back to earth mobilization. In 1976, General Obasanjo lunched back to earth programme tagged Operation Feed the Nation (OFN). Government's action was a deliberate attempt to directly address the need for every one's active involvement and participation in food production no matter how small. Since then, state governments have not made any concerted effort to arm the urban farmers to drive the urban green revolution to ensure food security.*

Jeke (2023) is of the opinion that today, "there is a general cry in the state that food production is not keeping pace with the rising domestic demand which in one part is due to unmitigated population growth of the state". Other factors that affect "food short falls across the state include double taxation, climate change, economic meltdown, insecurity and kidnapping. The most recently is the removal of fuel subsidy which hiked transportation fares on food products and availability of food items are now beyond the reach of most households".

According to Ogeri (2022) the average wage earner in the state finds his pocket empty to fill the pot(s) due to high inflation rate and under these prevailing circumstances, hunger has grown at astronomical dimension and putting food on the table is a nagging task for most households in the state. Dinku, Mokennen and Adilu (2023) suggests that this kind of situation, "makes it difficult for poor urban households to maintain a healthy diet due to lack of access to social support, such as food stamps or cash transfers". Atori (2021) opined that "2020 global hunger index revealed that Nigeria was ranked 98th out of the 109 countries surveyed with a score of 29.2% and this shows that the country has a serious level of hunger". The World Food Programme (WFP) (n.d) estimated that "6.9 million people died from hunger or under nurition in 2020" while World Business Council for sustainable development (2015) says that "by 2050 68% of the world's population is expected to reside in cities and Lopez (2023) concludes that same period (2050), more than 80% of food is expected to be consumed in cities".

Egu (2020) was apt to opine that "at this rate food security can hardly be achieved in Ebonyi State cities as many urban households do not have access to food that meets their physical and financial requirement for maintaining healthy life, talkless of catering for their taste and nutrition". Bolarin and Adetokunbo (2007) posited that "the concern of food security and nutritional wellbeing in an economy is predicated by the human element in the economy."

What Urban Agriculture is in Ebonyi State, Nigeria

Egu (2020) described urban agriculture in Ebonyi State as a farming system which entails gardening, animal rearing such as rabbitry, piggery, goat and sheep rearing, snail and bee keeping, fish farming, poultry and mushroom

keeping in vacant plots or one's compound or gardens in the city and this agricultural procedure involves intensive production methods using wastes and the re-use of these wastes like waste water, worn out tyres for snail keeping, discarded jerry cans or containers or used cement or rice bags that are thoroughly washed, filled with good soil is good enough for yam planting while sawdust that are well moistured could serve as a base for growing mushrooms. These agricultural practice(s) are limited to the confines of one's compound or back yard or vacant plots within the city.

Urban agriculture according to science direct.com refers to agricultural practices in urban areas and their surrounding regions (pri-urban) and is centralized operations involving horticulture, animal husbandry, acquaculture and other practices for the production of fresh food or other agricultural products. Food and Agricultural Organisation (FAO, 2012) opined that "raising awareness of the importance of healthy diet can help access fresh and healthier food. This can help ensure that urban residents have access to nourishment they require to lead wholesome and fruitful lives".

Ogeri (2022) posited that urban agricultural activity or activities in Ebonyi state are not meant for disadvantaged individuals or households rather it is re-definition of having access to culturally acceptable, nutritionally adequate food through local production or imported, non-emergency sources at all times. Ruaf foundations is of the opinion that daily intake of variety of fresh fruits and vegetables is linked to a decreased risk often associated with diabetics, heart diseases and cancer. Jeke (2023) says that urban agriculture provides "access to fresh vegetables, fruits, meat and other agricultural food products which help to boost urban food availability and sustainability at all times".

Ojiuzor (2024) and Ogbu (2018) are on the same page as they observed that "getting involved in urban agriculture comes with a feeling of self-esteem for one to grow and produce household food need. It is supplemental to fresh food and livestock production that complements the inflow of food items from the rural communities (areas)". Urban agriculture is a "freewill enterprise for her participants and it is a social forum for the farmers living in a given neighourhood, it improves physical activity and livelihood of participants". This agricultural practice(s) is not constrained by law rather it is guided by the national policy on agriculture. Urban agriculturists in the state are not adequately documented as they are marginalized "farmers within the farming community" in the state. Dominant participants in this farming venture include civil servants (retired and serving), artisans, traders, house wives, unemployed youths or persons and students who help their parents during vacations.

Urban Food Security in Ebonyi State

Between 2015-2023, the state government in realization of the sustainable development goal (SDG) number two zero hunger and the huge potentials and promise that agriculture holds for the development of the state and to use it to achieve economic prosperity. In this wise, the government under Engr. Dave Umahi boosted food security in the state through the provision of essentials which the state lacked. The essentials lacked by urban farmers were spacious market stalls, access roads linking the rural areas to this markets, water, electricity and large motor parks and toilets. These are in dispenable oxygen which modern markets must possess. The state government embarked on urban renewal programme which saw the construction and relocation of Abakpa (Hossana) market to Margret Umahi International market with modern facilities which situate along the trans African highway that run from Enugu-Abakaliki-Ogoja-Ikom-Cameroun. Kpirikpiri and the New markets received face lifts by way of building more stalls and the expansion of the motor park facilities and other artery roads from the rural areas. These markets has helped to easy off transport fares on food commodities from the hinterlands and they have become wholesale markets which plays the role in the organization, collection and distribution of local and imported agricultural produce. These urban markets were rehabilitated and re-modelled with modern plazas to accommodate more entries, restaurants which ensures secure, healthy, variety of locally and culturally acceptable foods at affordable prices. Lopez (2023) opined "that markets are not considered as an aspect of city planning and their location could be more strategic to meet the needs of a greater number of people and facilitate more efficient and less polluted mobility in cities". This was followed with the rehabilitation and restocking of the Nkaliki poultry and fish farms, the establishment of mushroom farm at old government house premises while fresh pepper, fruits different varieties of vegetables were readily harvested from government house

gardens and available to for sale to urban consumers and marketers (retailers) at the new government house at the centenary city. Demonstration farms at Afikpo and Onueke cities received boost from the government as these farms were expanded and extension workers provided. The fertilizer blending plant in the capital city was reburished and expanded to ensure enhanced production of various brands of fertilizer inputs at affordable prices to the farmers. Private farms in the capital city include Josel farms Ltd, Fide-Mbam farms and the Co-operative Rice Millers Association are examples of urban farmers in the state capital (Abakaliki) that have complemented government efforts in ensuring food availability, accessibility, utilization and stability at all times. The government assisted the rice millers to procure destoning machines, branded rice bags which helped the quality of the rice produced. The rice cluster got improved access roads and ancillary market for her customers. Afikpo urban farmers include Esomchi poultry farms, Onard fish farms, Nnesco integrated farms Ltd, Otunta ranch and the city has the largest fish market in the state while Onueke has the largest animal and tuber crops market in the state. These efforts enhanced the availability of fresh eggs, poultry meat and fresh fish to urban dwellers at all times. This urban renewal programme enhanced income generation base and living standard of urban dwellers.

Dave Umahi's administration embarked/or invested in social protection programme that saw civil servants and other Ebonyians receiving between two hundred and fifty thousand to one million to enhance agricultural activities but civil servants were encouraged to cultivate and rear animals within their compound.

Statement of the Problem

The scale of mining activities in Ebonyi State cities has great impact which is environmental degradation. These mining companies have adopted open caste system which results in land wastage, destruction, contamination. Health experts from the state ministry of health warns that there are potential health risks associated with human health resulting from farming directly on contaminated land (mining sites) and/or consuming the crops that was grown on such soil. These health experts posit that the constant use of waste water from mining sites for urban agriculture irrigation can enhance the spread of water borne diseases among the consuming population of such crops.

No city in the state/country is spared from herdsmen activities who often unleash their cattle on crops thereby destroying and causing urban farmers to incur losses. The issue of construction activities like mining activities, roads, housing estates, both industrial and private have consumed a lot urban land space thereby rendering the urban farmers landless and other ancillary factors include soil erosion, floods which account for the depletion of the available land and poor crop harvests due to draught. Urban agriculturists are not seen as providing quality food alternatives to the urban population as supplies from the rural areas still remain a vital option. These rural farmers are forced with the problems of double taxes from the produce inspectors on the high ways and market levies.

Conceptual Clarifications

Mezieobi and Mezieobi (2019) says that concept clarifications is meant "to provide a common frame of understanding (meaning) between the communicator and his audience and eschew the possibilities of mis-interpretations and conceptual ambiguities."

Urban

Urban refers to areas with high population densities, towns and infrastructure. It can be cities, towns or metropolitan region, education. national geographic.org.

Agriculture

Agriculture entails the cultivation of varieties of crops as well as the domestication of tree crops and animal husbandry, Nkire (2014).

Food

Food refers to things that people or animals eat according to Oxford Advanced Learners' Dictionary. Nwose (2013) states that "food is the most basic requirement of life".

Food Security

Food security is "the state of having reliable access to sufficient quantity of affordable, nutritious and safe food. It is a means that people, at all times have the physical and economic access to enough healthy and nutritious food to meet their dietary needs and live active and healthy lives, meta 1 lama 3.

Kent (2006) defined food security as the "ability and commitment of the government to ensure that its citizens are provided unrestricted access to foods at times" while committee on world food security (WFS n.d) says that "food security is the physical and economic access to adequate food by all household members without risk of losing the access". This assertion was echoed by Food and Agricultural Organization, (FAO, 2001) as she refers to food security "as a situation that exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preference for active and healthy life".

Sustainability

Sustainability refers to "the use of natural resources when the use is kept at a steady level and is not likely to damage the environment", Njoku (2018).

Research Questions

In carrying out this work, the following research questions were put forward.

i. What is the level of awareness of urban farmers towards food security in Ebonyi State?

ii. To what extent do urban household participate in urban agriculture?

iii. To what extent have urban agriculturist influenced food security in Ebonyi State?

Hypotheses

The following hypotheses were formulated.

i. There is no significant awareness of urban farmers towards food security in Ebonyi State.

ii. Urban honourable do not significantly participate in urban agriculture.

iii. Urban agriculturists have not influenced food security in Ebonyi State.

Methodology

A survey design was adopted for the study. This was to enhance generalization of findings. The population of the study was made up 300 urban farmers from the major urban cities in the state. Since the population is not large, the population was used as the respondents in the research work. The instrument for data collection was researcher constructed made up of three sections ABC containing 10 items each meant to answer each research question and test each hypothesis.

The items have 4-point modified likert scale that has the weights of 4, 3, 2 and 1. Which implies 4 is rated very high extent 3, high extent, 2 low extent and very low extent. The instrument was face validated by two experts from education foundation of Ebonyi State college of education, Ikwo. A reliability index of 0.79 was established using a test-re-test approach. Means were used to answer the research questions while the hypotheses were tested using t-test statistical analysis. Each item was analyzed and a mean of 2.5 and above was accepted while below were rejected.

Research Question 1

What is the level of awareness of urban farmers towards tool security in Ebonyi State?

S/N	Item	Respondent $\bar{X}$	SD	Decision
1	I have a garden at the back of my house	3.0	0.81	HE
2	There are farms within my neighbourhood	2.5	0.70	HE
3	These farms generate income to their owners	2.6	0.65	HE
4	We can find these farms in vacant plots	2.9	0.76	HE

5	Urban farming/agriculture is for everybody	1.7	0.41	VLE
6	Rich people do not engage in urban agriculture	2.2	0.65	LE
7	Urban authorities does not regulate agriculture in the state cities	2.7	0.68	HE
8	People get self-esteem in producing their own food	2.6	0.75	HE
9	Urban dwellers enjoy availability of fresh food	3.0	0.88	HE
10	Urban agriculture is supplemental to food supply from rural areas	2.6	0.76	HE
	Grand Mean	**2.58**	**0.71**	

The table above shows that apart from item number 5, all other items showed were rated a high extent in response to the question or statement since all indicated a rating above 2.5 average. The grand mean for male was 2.58 with SD of 0.71 while that of female was 2.59 and a SD of 0.66.

This shows that the level of awareness of urban farmers towards food security in Ebonyi State is high.

Research Question 2

To what extent do urban households participate in urban agriculture?

This research question is answered by questionnaire items 11 – 20.

S/N	Item	Respondent $\bar{X}$	SD	Decision
11	I am a fish farmer	2.1	0.72	LE
12	My wife and children feed the fish	2.0	0.57	LE
13	We are into vegetable gardening	2.5	0.92	HE
14	My son looks after our goat/sheep farm	3.1	0.81	HE
15	We own a poultry farm behind backyard	2.6	0.72	HE
16	I produce my own feeds for the birds	2.0	0.65	LE
17	My family process cassava into garri and other varieties	2.7	0.62	HE
18	I market food stuffs	2.5	0.71	HE
19	I import yams from neighbouring states	2.0	0.42	LE
20	I am into haulage	1.5	0.21	VLE
	Grand Mean	**2.30**	**0.63**	

The table above indicates the mean rating of the items on the clusted 2 of the questionnaire. Items 13, 14, 15, 17 and 18 show high extent of the participation of urban households in urban agriculture. The implication is that most of the urban dwellers participate in urban agriculture while few do not.

The grand mean and standard deviation of the respondents are x 2.30 SD 0.63. This shows a moderate participation by among the urban households.

Research Question 3

To what extent have urban farmers influenced food security in Ebonyi State?

This research question in answered by questionnaire items 21 – 30.

S/N	Item	Respondent $\bar{X}$	SD	Decision
21	It provides access to culturally, nutritionally adequate food	2.6	1.10	HE
22	There is availability of fresh foods in the market	2.9	0.10	HE
23	Food crops grown in the cities are cheaper	2.2	1.81	LE
24	Urban agriculturists are involved in extraction of raw materials and its processing	2.1	0.10	LE
25	I am involved in raw material processing	2.9	1.11	HE
26	Urban dwellers are involved in distribution	2.0	1.10	LE
27	The prices of food in urban cities are not stable	2.8	1.10	HE
28	Urban agriculturists has improved air quality to the city dwellers	2.4	1.02	LE
29	Urban agriculture reduces carbondioxide emission	2.7	1.12	HE
30	It is a means to recreation, leisure, business entrepreneurship	2.9	1.02	HE
	Grand Mean	**2.55**		

The summary of data analysis in table 3 above showed that respondents agreed that items 21, 22, 25, 27, 29 and 30 influence food security in Ebonyi State with high extent while other do not influence food security in Ebonyi State. The average mean is 2.55 which is greater than 2.5. Therefore, it was agreed that urban farming influence food security in Ebonyi State.

Discussion of Findings

The finding that urban farmers are aware that urban farming helps in ensuring food security is a good development. It is a good sign that with increased participation by more people, the state would be able to sustain other food sufficiency and export to other states in Nigeria.

The research also found out that urban households moderately participate in urban farming. Though not every household is involved, the number involved is reasonable and moderate.

Furthermore, the research found not that to high extent urban farmers do influence food security in Ebonyi State. This can be seen from the responses of the respondents.

Conclusion

From the findings of the research, it is clear that with increase urban farming by households, more food would be produced and food security will he grant guaranteed in Ebonyi State. since most of the lands in the state is fertile for agricultural activities, the increased participation of urban dwellers would boost food sufficiency.

Recommendations

The following recommendations are made:

i. That co-operative societies should engage in urban farming.

ii. Government should allocate some of her reserved areas not developed to urban dwellers for farming.

iii. Incentive should be given to urban dwellers who are involved in urban farming so that others would be attracted to participate thereby ensuring food security.

iv. This study can be replicated in other states of Nigeria.

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