

# Managing Education for Food Security in Nigeria: A Case Study of Sweet Potato Farmers in Obubra Local Government Area, Cross River State, Nigeria

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## Abstract

This study investigates constraints confronting sweet potato farmers in Obubra Local Government Area of Cross River State, Nigeria. Sweet potato is the third most widely used tuber crop after cassava and yam in sub-Saharan Africa. The importance of sweet potato as a high-yielding and quick-maturing tuber appears to have been ignored in the quest for food security in Nigeria. The study aimed at discovering the challenges faced by farmers engaged in the cultivation of sweet potato in five communities in the study area. Two sets of questionnaires, the closed and open-ended were used to collect data from 104 respondents used for the study. Data were analyzed using simple averages and percentages from the values derived from the four-point Likert scale questionnaires containing eleven items. Results indicate seven critical challenges confronting the farmers under study. They include lack of formal as well as professional education, scarcity and non-application of instructional materials by extension agents, lack of improved crop varieties and virtual absence of farm inputs, lack of education on sources of credit and unstable food security policy of government. The study concludes that it is possible to expand the cultivations of sweet potato to other areas of the State and country and makes recommendation on how to improve its cultivation to ensure food security for Nigeria.

## Introduction

Agriculture is currently sustaining the world's still expanding population of over six billion people globally, yet there are about one billion poverty-stricken undernourished people almost all of whom are in the developing countries (Barraclough, 2000).

Anderson, Rajul and Rosegrant (2001) noted that the extent and depth of food insecurity in the developing world at the turn of the 21<sup>st</sup> century remains an issue of concern. They noted that about 800 million people (i.e. one-sixth) of the developing world's population do not have access to sufficient food for healthy productive lives. The Food and Agricultural Organization of the United Nations (F.A.O, 2010) forecasted that the world food summit goal of halving the number of food insecure people from 800 million in 1995 to 400 million by 2015 may not be achieved until 2030 if situation is not managed to increase food production.

The World Health Organization (WHO, 1996) observed that the balance between food supply and population growth is one of the major pre-occupations of our time and the gravity of the global food situation is increasingly apparent in which man's future ability to feed the growing number of people on earth is becoming a problem, hence each nation must devise an independent and educative knowledge towards resolving global food crisis. Oniah, Kuye, Adinya, Ayabie and Enya (2005) noted that China, India, Pakistan, Taiwan and some other Asian countries have attended dramatic increases in food crop production to achieve food security through investments in their local technologies and management practices. These tremendous achievements were realized through investment in education and managing purposeful research on productive factors. Omolade (2010) reported that the issues of food insecurity have resulted to pockets of violence and coup d'état in places like Egypt, Haiti and many developing countries of the world. He added that developing economies therefore should borrow experience from some Asian countries to avert the challenges they encountered in resolving food crises in their domain. In Nigeria, agriculture is still the important sector of the Nation's economy in terms of large number of people who earn a living from it, for it provides food for the citizenry, raw materials for our industries, create employment for our teeming youths and generates foreign earnings to the nation's economy. Managing education for food crop production to achieve food security among small farmers who produce 80% of the bulk of food crop produced in the country is a daunting task for all stake holders if the country must achieve the millennium development goal of reducing absolute hunger by half by the 2015 deadline.

### **The Concept of Food Security**

The World Bank (1996) defined food security as “access by all people at all times to enough food for active health in a given economy”. The central theme of this definition is that food security aims at ensuring adequate food production, continuous flow of food supplies and ensuring access to available food supplies on the part of those who need these foods.

FAO (2010) noted that the concept of food security has four main components; which are food availability, food accessibility, food utilization and food system stability which implies sustainability. Osunkeye (1998) reported that food security of a nation confers on her the political stability and international respect in contrast to a nation which is incapable of feeding her citizenry. He added that failures to deal with human basic issues of hunger and survival often leads to the inevitable alternatives of painful growing interpersonal violence, domestic upheaval and wars. Ebong (2010) opined that access to food by the citizenry of a nation requires the management of the physical and financial resources, including the social and institutional factors in which the government must have political will to organize to achieve the goal.

Wilson (2002) observed that Africa unlike many parts of Asia where famine was averted through Green Revolution technologies that was applied consistently across million of hectares of land, the countries in sub-Saharan Africa have special challenges of poor soils, unsuitable conditions for irrigation, wide variations in climatic factors where millions of small scale farmers grow crops on fragile areas, on hillsides, marginal soils, dry land and wet-land in which growing any kind of crop is a challenge. Therefore, the management, training and educating small scale farmers who form the bulk of food crop production in Nigeria on the use of productive technologies and the environments for sustainable food crop production is eminent.

Benor and Baxter (1984) noted that sustained high levels of agricultural production and incomes are not possible without an effective agricultural research that will enhance a greater output of agricultural production, sustainable food production and food security that will meet the needs of the present and future generation. This implies that if food security must be pursued in all honesty, education has to be managed to conduct researches on productive factors, farmers trained on how to use these productive technologies and the environment conserved for sustainability. It also implies that agriculture education should be a core subject at the primary and secondary school education curriculum to provide basic foundation knowledge.

### **The objective of this study**

The objective of this study is to access the education needs and related constraints faced by small scale sweet potato farmers in Obubra local Government Area of Cross River State, Nigeria.

### **Sweet Potato As A Food Security Crop**

Sweet potato is the third most important tuber crop after cassava and yam in sub-Saharan Africa. Africa produces only about six percent of the world's total output which is almost consumed locally (Hahn, 1992). Andreas, Reginal, Oscar, Jurgen and John (2009), reported that sweet potato has several advantages within the context of Africa cropping system. It produces food in relative short time, gives reliable yields in sub-optimal growth conditions, requires low labour inputs (appropriate for vulnerable households) than other staples, serves as alternative food source for urban population to reduce Vitamin A deficiency among others in sub-Saharan Africa. Sweet potato is grown in few regions as a principal staple food crop, but in most countries it is grown as a food security crop. In Eastern and Southern Africa, the crop is generally cultivated on areas with frequent drought stress where cereal crops produce only marginal yields and farmers seek to exploit their agrobiodiversity to buffer stress events. Sweet potato produces stable and reliable yields under often marginal growth conditions in a relative short period of time to serve as back-up for the main staple or to bridge the time until their harvest is reached. Oniah, Enya, Agba, and Odey (2007) reported that Kenya, Rwanda and Uganda produced sweet potato on a large scale which have made an important contribution to household food security and it is also gaining importance as a cash crop sold as fresh tuber root crop on their urban markets.

The persistent food crisis in Nigeria has been a thing of concern for the Federal and State Governments, Local Governments, development partners, the Non-Governmental organizations (NGOs) and the ordinary citizen.

**Research Questions:** The questions which this research provides answer to are: (1) What are the education needs of sweet potato farmer in Obubra Local Council Areas of Cross River State, Nigeria? (2) What are the constraints faced by sweet potato farmers in Obubra Local Council Area of Cross River State?

**Research Methodology:** The study adopts a descriptive survey in exploring education needs and constraints confronting sweet potato farmers in six communities in Obubra Local Government Area of Cross River State.

**Area of study:** Obubra is located in the central Senatorial District of the State by political delineation and it is one of the oldest local government areas in the country established as a British Colonial District in 1902 and later as a division in 1967. It has a land mass of 1,089.27 square kilometers, a mean temperature range of between 21°C and 29°C, an annual rainfall lasting for seven months and so the climate of Obubra is characterized by distinct wet and dry seasons. Ecologically, Obubra is situated in the tropical rainforest belt which promotes the

cultivation of many arable crops upon which sweet potato is cultivated mostly on inland valleys by small scale farmers (CRADP, 1992).

**Research Instrument:** Two research instruments, the structured along with the open-ended questionnaires were used to elicit information from 104 samples from the study communities. Part A of the instruments captured the bio-data of the respondents while the B part comprising of eleven items were based on educational needs and challenges faced by sweet potato farmers in the area. Content and construct validation of the instruments were done by two research experts from the faculty of education of the Cross River University of Technology, Calabar.

**Sampling Techniques**

The purposive random sampling technique was used to select the respondents for the study. Accordingly, villages of Apiapum, Ababene, Ofodua, Onyadama, Ovonum and Ovokwa known to cultivate sweet potato on inland valleys in Obubra Local Government Area were purposively selected. The second stage was the proportionate random selection of respondents from the villages based on the degree of cultivation.

**Data Analysis**

The data collected were analyzed using simple descriptive statistics, of frequency distribution, simple averages and percentage to discuss the socio-economic characteristics educational needs and constraints of the farmers. The Likert scale rating technique was used to determine the degree education need or constraints put forward by the farmers in their cultivation. To determine the level of constraints faced by the farmers, the four-point modified Likert scale model was adopted with values of 4,3,2 and 1 to represent “strongly agree”, “partially agree”, “agree” and “disagree” respectively. Any factor with a variable mean score of 2.50 and above was considered a critical need or constraint, while any factor with a variable mean score of less than 2.50 was considered a minor constraint.

**RESULTS AND DISCUSSION**

Table 1. Distribution of socio-economic characteristic of the farmers

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>	<b>Number</b>	<b>%</b>
20-29	29	28
30-39	49	47
40-49	15	14
50 and above	11	11
Total	104	100
<b>GENDER</b>		
Male	76	73
Female	28	27
Total	104	100
<b>EDUCATION LEVEL</b>		
No formal education	45	43
Primary school	33	32
Secondary school	16	15
Tertiary school	10	10
Total	104	100
<b>FAMILY SIZE</b>		
1-5	3	2
6-10	59	57
11-15	34	33
16 and above	8	8
Total	104	100

**Source: Field survey, 2012**

Table 1 indicates the Socio-economic characteristics of the farmers. The table reveals that 29 of the respondents which represent 28 percentage within the age bracket 20-29 years; 49 of the respondents which represents 47 percent are within the age bracket of 30-39 years, while those in the age bracket, of 40-49, and 50 years and above are represented by 13 percent and 11 percent respectively. The findings it show that majority of the sweet potato farmers are in their prime ages of 20-39 years as these age brackets constitute about 78 percent of the farming population. They are still young and in their productive years.

The variable of gender shows that majority of the sweet potato farmers are males and this is represented by 73 percent for males and 27 percent for females respectively. The variable of educational level attainment shows that 43 percent of the famers had no formal education, 32 percent primary education, 15 percent had secondary

education while only 10 percent had tertiary education. The low level of those with secondary and tertiary education background and high level of no formal education suggests that adoption of improved technologies for sweet potato production may be a problem or slow to adopt in the area. On family size parameter, the table shows that those with household sizes of between 6-15 persons per household constituted about 90 percent of the farming population of the respondents. This suggests that there is available family labour who may offer their services in the family for sweet potato cultivation in the area.

**Table 2: Farmers response on their education need**

<b>Educational Needs</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Partially Agree</b>	<b>Disagree</b>	<b>Total score</b>	<b>Total no. of respondent</b>	<b>Mean score</b>	<b>Remarks</b>
Farmers lack the benefit of high level education	60	20	15	9	9	339	3.26	Critical
Extension agents are too few to educate all farmers	50	2	30	30	4	324	3.12	Critical
Extension agents lack practical tools to educate farmers.	54	10	14	14	18	316	3.05	Minor
Farmers lack education on improved varieties of crops	41	22	36	36	5	307	2.95	Critical
Farmers lack education on sources of credit facilities	47	24	9	9	24	302	2.19	Critical

**Source: Field survey, 2012**

**Table 3: Farmers response on constraints faced to improve on sweet potato cultivation**

<b>Constraints</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Partially Agree</b>	<b>Disagree</b>	<b>Total score</b>	<b>Total no. of respondents</b>	<b>Mean score</b>	<b>Remarks</b>
High cost of farm labour	10	16	25	53	191	104	1.82	Minor
Absence of farm inputs for improved yield	62	30	8	4	358	104	3.44	Critical
Unstable food security policies by government	22	50	23	9	293	104	2.82	Critical
Poor pricing for sweet potato	10	28	34	32	224	104	2.15	Minor
Few inland valleys for sweet potato cultivation	4	12	30	58	170	104	1.68	Minor
Problem of pests and diseases	07	13	24	60	175	104	1.68	Minor

### **Discussion of findings**

Table 2 shows farmers' response on their education constraints that hinders their ability to improve on sweet potato cultivation to sustain food security. The table shows a mean score of 3.26 or 76.92 of the respondents indicating low level of farmers education in the study area. From table 1 we saw that 43% of them had no formal education while 27% had only primary education. These show that majorly of the farmers have not had any formal training on agriculture. As a result they depend on traditional agricultural knowledge and practices in their production effort. From this finding, the need for universal basic education for all Nigerians becomes critical. Education makes a person more easily adaptable to any field of endeavour he may chose and makes it easier for him to benefit from professional education. Hence the need for Nigeria to borrow a leaf from Asian countries by investing in education as pointed out by Oniah, Kruye, Adinya, Ayabie & Enya (2005). Few or non-availability of extension agents in the study area is another critical challenge to the productivity of farmers. Extension agents play significant role in farmers education and productivity. They educate farmer on new farming techniques, improved variety of crop, access to agro inputs and lots more. From the table it can be seen that 82 respondents representing 78.85% agree that where extension agents are available, they operate without instructional materials to demonstrate the theoretical education they provide. This shows that the extension agents are not adequately equipped for effective education of farmers. There is therefore the need for the

extension agents to be better equipped for more productive services to farmers.

Also on table 2 a critical means score of 2.95 shows that farmers lack education on the need to adopt improved varieties of crop. This means that farmers are being denied of the benefits of using improved crop varieties such as increased yield, quick maturation and disease resistance.

The study also reveals that farmers lack education on sources of credit to finance and expand their farm sizes. On constraints faced by farmers, table 3 reveals two critical needs of farmers. These are absence of farm inputs for improved yield and unstable food security policy by government. This shows that farmers are not being encouraged on a continuous basis to increase productivity as they lack inputs like fertilizers, improved varieties of crop and store houses.

Other findings from the study which are important but not critical are the issue of high labour cost, poor pricing for sweet potato, few inland valleys for sweet potato cultivation and pest and disease control.

### Conclusion

Arising from the findings of this study, it can be concluded that sweet potato can be produced on inland valleys as a food security crop in Obubra Local Government Area of Cross River State by small scale farmers if farmers' basic as well as professional education level are improved, if the number and working tools of extension agents are increased; if improved varieties of crop are provided and if farmers are educated in the sources of credit facilities to improve on their farm sizes. There is also the possibility that potato cultivation can be popularized in other parts of the state and country for food sustainability.

### Recommendations

The study recommends that farmers be educated on innovative productive technologies during training, using instructional materials for demonstration. Government should formulate appropriate food policy programmes on food security to encourage small scale potato farmers as well as educating them on how to obtain credit facilities to improve on their cultivation. The study also recommends the deployment of more extension agents to the area and other farming communities and the provision of farm inputs within the reach and affordability of farmers to ensure food security. Farmers should be provided access to the needed general and professional education, while agro research institutes should be encouraged to come out with more improved varieties of crop.

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