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## INFLUENCE OF SOCIO-ECONOMIC VARIABLES AND EXTENSION INHIBITORS ON FOOD SOVEREIGNTY IN AKWA IBOM STATE, NIGERIA

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## ABSTRACT

This study assessed the influence of socio-economic variables and extension inhibitors on food sovereignty in Akwa Ibom State, Nigeria. This study identified and proffered solutions to extension inhibitors to food sovereignty. A multi-stage sampling technique was used to select one hundred and twenty respondents used for the study. Data analysis comprised the use of percentages, frequency, means and Tobit regression model. The result of the socio-economic characteristics of the respondents showed that 27.50% of the respondents were from 41 and more years of age, while 25.00% were within the age range of 31 to 40 years. 8.33% of them were in the age brackets of 20 to 30 years. Majority of the farmers were very strong, agile and could adopt extension teaching methods easily. About 49.17% of the respondents were at tertiary level of education, while 23.32% had primary level of education. The result showed the mean ( $\bar{x}$ ) response rate of extension inhibitors on food sovereignty as follows; inadequacy of funds ( $\bar{x} = 4.65$ ), use of poorly trained personnel ( $\bar{x} = 4.04$ ), ineffective research extension linkage ( $\bar{x} = 4.21$ ), lack of evaluation ( $\bar{x} = 4.422$ ), poor policy ( $\bar{x} = 4.04$ ) among other factors. The hypothesis showed that gender, marital status and farm size were positive and significant at 1% level of probability. The result of the  $H_{01}$ , showed that any increase in farm size led to a corresponding increase in the probability and intensity of extension inhibitors on food sovereignty in the study area. Also, the coefficient of education was positively signed but not significant. This showed that education though very important but had no severe influence on the extension inhibitors. In the result, there was significant relationship between socio-economic variables and extension inhibitors on food sovereignty in the study area. The study concluded that some of the inhibitors of extension on food sovereignty are; inadequate funding, lack of extension service evaluation on food sovereignty situations, ineffective research extension linkage and use of poorly trained personnel. The study also concluded that majority of the farmers are of age and well educated to positively influence extension inhibitors with the view to improving food sovereignty situations in the study area. It was recommended that women being the majority in the study area should be involved in extension activities and evaluation, with a view to improving on food sovereignty.

**Key words:** Akwa Ibom, Extension, Food Sovereignty, Influence, Inhibitors, Socio-economic and Variables



## INTRODUCTION

Food Sovereignty takes the form of people influencing each other mutually and meaningfully by means of food production and security [1]. Farmers can only share common experiences, express wants and desires, create likes, feelings, and participate in common agricultural and social life where they convey messages on food sovereignty and agriculture to each other and retain them in time [2]. This is done through extension communication according to Ekwe *et al.* [3] is a process and an interaction that allows individuals, groups and institution to share ideas on food production and sovereignty [4,5]. Effective extension, communication and education strategies are keys to sustainable food sovereignty, strengthening food security and combating hunger, malnutrition and sickness. This is made possible through various socio-economic variables such as age, education, sex, farm size, household size among very many others.

A survey by the National Agricultural Extension Research Liaison Service (NAERLS) and Project Coordinating Unit (PCU) in 2020 showed that 26 (70.5%) of states Agricultural Development Projects in Nigeria are influenced by socio-economic variables of education, contacts with extension and radio programmes. Of these 75.6% are in local Nigerian languages to enhance food sovereignty [6]. The same survey revealed that only 48.6% of the Agricultural Development Programmes now produce and Air Television Programmes on food sovereignty, of these 58.9% are in local languages. Thus, the National Agricultural Extension Research Liaison Service (NAERLS) and Project Coordinating Unit (PCU) effectively compliment the States ADP in food sovereignty and farm broadcasting. To date, it is the radio and television that shares knowledge on educational and extension contacts including farming seasons [6,7]. Sustainable food sovereignty will continue to elude Nigeria unless there is an effective transfer of innovations to farming populations and the rural households [8,9].

Nigeria has witnessed enormous investment in food security, agricultural research, sovereignty and development of new innovations in the last 30 years [9, 10, 11]. Despite these enormous investments, the country is still witnessing poor performance of food sovereignty and agricultural production because of ineffective and inadequate socio-economic variables such as communication strategy, training and visit system, extension farmer ratio and ineffective Farmers Field School (FFS). The disproportionate extension agents to farm family ratio in Nigeria is worrisome because it hinders dissemination of agricultural innovation on food sovereignty [12,13]. As a result of this, Aboh & Effiong [14,15] observed that extension officers in the local levels have not been able to carry out these functions effectively. This is because they lack resources, mobility and other facilities that required the effective transmission of ideas on food sovereignty. The anticipated trickledown effect of



extension messages on food sovereignty from contact to non-contact farmers through face-to-face strategies are hardly realized especially where the farming population is dominated by selfish and egocentric farmers who would either distort or hide such messages [16,17]. This underscores the need for heterogeneous and anonymous focus group strategies to bring a number of farmers from different backgrounds to different social strata and innovative focused levels together to interact and share agricultural knowledge as it affects food sovereignty.

In a nation's development process, agricultural extension workers are expected to help farmers to identify and analyze their farm production problems [18], make them become aware of opportunities for improvement in crop and animal production yields in order to obtain a better standard of living. The function of an Agricultural Extension worker includes but is not limited to improve practices, technology dissemination, method demonstration, information management and production practices among very many others [19]. It is through education and extension services that agricultural extension officers are able to bring about change in farmers' knowledge, attitudes and skills which help to put farmers in a frame of mind that is conducive for adopting proven agricultural innovations. Also, Van Den Ban & Hawkins; Idachaba [31, 33] stated that the major role of agricultural extension in many countries in the past was seen to be transfer of new technologies from researchers to farmers. Now it is seen more as a process of helping farmers to make their own decisions by providing them with a range of options in a given innovation from which they can choose, and by helping the farmers to develop into the consequences of each option.

The roles of agricultural extension service that have been expressed succinctly above are not properly performed in the developing countries because of the problems facing the service. The problems in most parts are associated with the peculiarities of developing countries. To effectively discuss the problems, it is pertinent to, first, highlight the typical characteristics of agricultural extension systems. They are, according to Agbamu [28].

The control and direction of the activities of agricultural extension systems in developing countries are usually from top to bottom, with professional extension officers at the operative level carrying out rigidly designated activities. The extension systems are typically entrenched as part of the ministry of agriculture. They often exist as independent establishments separate from agricultural research or teaching institutions and have few bureaucratic linkages with other agencies to facilitate the flow of technical information and research findings into the extension systems [29]. Professional development activities, training, motivation and support funds for agricultural extension officers are limited. The systems are subject to intensive political control. In addition to the educational functions, agricultural extension workers in many developing countries are expected to perform a wide range of non-





extension duties that include regulatory functions or enforcement of government rules and supply services [30].

## METHODOLOGY

The study was conducted in Akwa Ibom State, Nigeria. Akwa Ibom State is one of the six states in the south-south agro-ecological zone of Nigeria; others are Cross River, Bayelsa, Delta and Edo States. The State is made up of 31 Local Government Areas. The State has a population of about 2 million people and a total land area of about 9000 Square kilo Meters [20]. The state is divided into three agricultural zones namely: Uyo, Ikot Ekpene and Oron agricultural zones. Akwa Ibom has the following soil types namely; loamy, clayey and sandy soils, there are also some pockets of red, deep soils rich in iron and gravels among others. The area has a mean annual rainfall of about 2600mm, distributed over 11-months period (February to December). The climate condition of Akwa Ibom State supports the cultivation of plantain, banana, yam, rubber, cocoa, cassava, rice, cocoyam, fruits and all types of crops. Agriculture is the major occupation of the people of Akwa Ibom State. About 70% of the population are engaged in subsistence farming, while a few are engaged in large scale farming [20]. The population of this study included all farmers in Akwa Ibom State.

A multi-stage sampling technique was adopted for this study. The purposive selection of the state for the study was based on the fact that the State has sound agricultural extension system, managed by the agricultural development project (ADP). At stage one, a simple random sampling technique was used to select two out of the three agricultural extension zones in the State. Uyo and Ikot Ekpene zones were selected from the three agricultural extension zones. At stage two, two blocks namely: Itu/Uyo and Ikono/Ikot Ekpene blocks were randomly selected from each of the two zones that were randomly selected from the zones. At stage three, a cell was randomly selected from each of the blocks namely: Itu/Uyo cell, Ikono/Ikot Ekpene cells. At stage four, sixty (60) farmers were randomly selected from each of the 4 cells making a total of one hundred and twenty (120) farmers used for the study. The respondents were provided with a questionnaire.

### Hypothesis of the study

H<sub>01</sub>: There is no significant relationship between socio-economic variables and extension inhibitors on food sovereignty in the study area.

### Model Specification

Tobit regression model was used for the analysis. This model is suitable in modeling the effect of extension inhibitors on socio-economic variables [21]. The dependent variable is the inhibitor, while the independent variables are the socio-economic



variables for the generalized case, the value of the log likelihood functions for inhibitors was specified as follows, according to Hanson [22,35,36].

Y = Extension inhibitor

X<sub>1</sub> = Gender (male = 0, female =1)

X<sub>2</sub> = Age (years)

X<sub>3</sub> = Marital Status (dummy variables; 1=married, 0 = otherwise)

X<sub>4</sub> = Educational level (years of schooling)

e = Error terms

## RESULTS AND DISCUSSION

### Socio-economic characteristics of the respondents

The result in Table 1 showed that 27.50% of the respondents were from 41 and above years of age, while 25.00% were within the age range of 31-40 years of age. About 8.33% of them were in the age brackets of 20-30 years. The result indicated that majority of the farmers were very strong, agile and can easily adopt extension teaching methods and agricultural innovations with the view to achieving food sovereignty. Engaging in food sovereignty needs energy and agility to succeed. Age is said to be a primary character on food sovereignty decision making process. The ability of a farmer to break risk factors in food sovereignty rest solely on age factor [23].

The result also indicated that 49.17% of the respondents were at tertiary level of education, while 23.32% had primary level of education. Also, 15.00% were at secondary level of education. A fairly good proportion of the respondent belong to those with tertiary education level, education is a panacea to food crop production visa vise food sovereignty in Akwa Ibom State. Educated farmers have the ability to manage unfamiliar technologies that can bring about food sovereignty [24]. Also, the result in the Table indicated that a good number of the farmers (47.50%) had farm size of 2-3 hectares, while 3.33% and 3.33% had farm sizes ranging from 6 - 7 and >7, respectively.

This result is an indication of the fact that the larger the farm size, the more food sovereignty an organization or individual is exposed to. Also, Effiong *et al.* [25] noted that the more the availability of land for food crop production, the more food sovereignty in a country or state. The Table indicated that majority of the respondents 55.00% were females while 45.00% were males. This result showed that, there were more females than males engaged in food sovereignty. According to Aboh *et al.* [26] extension workers meet female farmers often in their farms than their male counterparts. According to Effiong [27], 70% of the farmers in Akwa Ibom State provide most of the food consumed by the indigenous female farmers. Female farmers are prone to food sovereignty than their male counterparts. More so, the



result revealed that majority of the respondents 60.88% were married, while a small proportion 5.00% were separated. The high number of married farmers is an indication of the availability of farm labour in the farms. Additional farm labour brings more production capacity and increased food sovereignty in the study area.

### **Extension Inhibitors on food sovereignty**

The result in Table 2 showed the mean ( $\bar{x}$ ) response rate of extension inhibitors on food sovereignty as follows: inadequacy of funds ( $\bar{x} = 4.65$ ); use of poorly trained personnel ( $\bar{x} = 4.04$ ); ineffective research extension linkage ( $\bar{x} = 4.21$ ); lack of evaluation ( $\bar{x} = 4.22$ ); poor policy ( $\bar{x} = 4.04$ ) and poor extension farmer ratio ( $\bar{x} = 4.33$ ). The result showed that all the respondents had mean ( $\bar{x}$ ) value higher than the bench mark mean of  $\bar{x} = 4.00$ , indicating that they were all in agreement with the response questions on the factors inhibiting extension on food sovereignty initiatives, such questions were: adequacy of funds was an inhibitor and use of poorly trained personnel became inhibitors among other questions. These results were in agreement with Agbamu [28], that a myriad of constraints are known to plague agricultural extension services in Nigeria and other developing countries in their quest to have food sovereignty. The inhibitors vary with countries because, varying extension systems are practiced in different places and each system has its own peculiar problems [28]. However, a lot of the inhibitors are common to different developing countries because of similar socio-economic circumstances and stage of development [29].

### **Regression estimates of relationship between socio-economic characteristics of the farmers and extension inhibitors on food sovereignty**

Table 3 indicated that any increase in farm size led to a corresponding increase in probability and intensity of extension inhibitors on food sovereignty, in the study area. This is, however, expected and in accordance with the a priori expectation that the larger the farm size the more difficult it is for extension coverage bearing in mind the low extension farmer ratio in the study area. The coefficient of education was positively signed but not significant. This indicated that education, though very important, has no severe influence on the extension inhibitors in the study area. This is in tandem with Anyaechi [32,34], that without the necessary logistics, training and education of an extension agent, it may not bring the needed food sovereignty in Akwa Ibom State.

## **CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT**

Based on the results of this study, it is necessary to state that majority of the farmers are of age to positively influence food sovereignty through adoption of improved technology, without being influenced by inhibitors of extension services. Majority of the farmers are married, indicating increased labour from family sources. The higher





the number of farmers, the more food sovereignty is acquired in a community. There are many graduates in the study area; this means there is a tendency to understand the principles of extension services that can bring about food sovereignty. Some extension inhibiting factors on food sovereignty are: inadequate funding, lack of extension service, evaluation of food sovereignty availability situation, ineffective research extension linkage and use of poorly trained personnel, among others very many inhibiting factors. A deep look at the many constraints facing food sovereignty and agricultural extension in developing countries would show that hopes are lost in revamping this sub-sector. We should not be discouraged by the multitude of constraints, as these, can be solved and turn extension activities on food sovereignty more efficient and more admirable.

There is need to create more awareness of food sovereignty and the extension inhibitors, with a view to solving the problems of inhibitors using tertiary level educated contact farmers in the study. These individuals are more susceptible to new technology than the non educated farmers. Producers of extension programmes on food sovereignty should engage more on constant evaluation of their activities as this would lead to a better improvement of the food sovereignty programmes. Women farmers are the majority in the study area. The study recommends that women should be involved in extension activities with a view to improving food sovereignty. For extension inhibitors on food sovereignty to be solved, there must be the political will to undertake system re-organization, increased funding, establishing a framework for privatization and contracting for extension with regard to funding, linkages and logistics. Private extension provision is more in industrialized countries. Poor countries are still depending on public extension services for the provision of food sovereignty. This study recommends the introduction of private extension system in the study area in order to reduce some of the extension inhibitors on food sovereignty.



**Table 1: Distribution of Respondents according to socio-economic characteristics of farmers in the study area**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age</b>		
20-30	10	8.33
31-40	14	11.67
41-50	30	25.00
51 and above	33	27.50
<b>Total</b>	<b>120</b>	<b>100</b>
<b>Gender</b>		
Female	66	55.00
Male	54	45.00
<b>Total</b>	<b>120</b>	<b>100</b>
<b>Educational Status</b>		
No formal education	15	12.5
Primary education	28	23.32
Secondary education	18	15.00
Tertiary education	59	49.17
<b>Total</b>	<b>120</b>	<b>100</b>
<b>Farm size</b>		
< 2	32	26.67
2-3	57	47.50
4-5	21	17.50
6-7	4	3.33
>7	4	3.33
<b>Total</b>	<b>120</b>	<b>100</b>
<b>Marital Status</b>		
Single	32	26.67
Married	73	60.88
Separated	6	5.00
Widowed	9	7.50
<b>Total</b>	<b>120</b>	<b>100</b>

**Table 2: Distribution of Respondents according to extension inhibitors on food sovereignty among farmers in the study area**

S/n	Variables	SA	A	UD	D	SD	Total	Mean ( $\bar{x}$ )
1.	Inadequacy of funds	65(376)	35(141)	6(17)	12(25)	2(3)	557	4.65
2.	Use of poorly trained personnel	60(300)	30(120)	10(30)	15(30)	5(5)	484	4.04
3.	Ineffective research extension linkage	70(350)	23(100)	10(30)	10(20)	5(4)	505	4.21
4.	Lack of Clientele participation in Programme Development	55(275)	35(140)	20(60)	5(10)	5(6)	490	4.08
5.	Poor policy	65(325)	25(100)	12(36)	8(16)	10(10)	487	4.04
6.	Lack of evaluation	64(377)	35(140)	6(16)	11(25)	2(2)	556	4.22
7.	Poor extension farmer ratio	80(400)	20(80)	5(15)	10(20)	5(5)	520	4.33

SD = Strongly agreed; A = Agreed; UD = Undecided; D = Disagreed; SA= Strongly disagreed  
 Bench Mark mean  $\bar{x}$  = 4.00. Figures in parenthesis are the frequencies

**Table 3: Tobit regression estimates of relationship between socio-economic characteristics of the farmers and extension inhibitors on food sovereignty**

S/n	Variables	Coefficient	Estimates	T. Values
1.	Constant	0.6755	4.3144	0.15
2.	Gender	2.3332	0.0859	3.80***
3.	Marital Status	2.8100	1.0691	4.61***
4.	Age	1.4421	0.2338	4.99***
5.	Farm Size	0.2151	0.0674	4.11***
6.	Education	0.0077	0.5340	0.01

LR Chi<sup>2</sup> 25.00\*\*  
 Pseudo R<sup>2</sup> 0.7316  
 Log Likelihood = -10.123  
 \*\*\* is significant at 1% level of probability

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