FACTORS INFLUENCING PINEAPPLE PRODUCTION AMONG SMALL SCALE FARMERS IN AKWA IBOM STATE, NIGERIA.

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Abstract

The study examined the factors influencing pineapple production among small scale farmers in Akwa Ibom State with the aim to: describe the socioeconomic characteristics of small scale farmers in pineapple production; ascertain the constraints to effective pineapple production among the farmers' and suggest strategies for enhancing pineapple production in the study area. Data were collected with structured questionnaire administered to 60 respondents from selected households. Percentages, mean scores and chi-square were employed for data analysis. Findings show that farmers in pineapple production were dominated by married (45.8%), non-formal educated (39.0%), and female farmers (59.3%). Major factors affecting pineapple production included no guidance and monitoring by extension agents ($\bar{x}$ =3.08), no access to fertilizers and pesticides ($\bar{x}$ =3.10). Also revealed as farmers' major enhancing factors in pineapple production were increased supply of pineapple sucker, fertilizer and pesticide ($\bar{x}$ =3.34), technical guidance and training by extension agents ($\bar{x}$ =3.22), assistance in marketing of pineapple ($\bar{x}$ =3.17). It was recommended that small scale pineapple farmers should be provided with relevant and timely supply of farm inputs, information, guidance and training to boost production. Awareness on the various health benefits of pineapple should also be increased to improve its market demand.

Keywords: Determinants, Constraints, Pineapple, Production, Food Security

Introduction

Pineapple is a tropical and subtropical fruit grown in many parts of the states in Nigeria with current production of about 17,000metric tons per annum (Ibeawuchi, *et al.,* 2015)**.** In support, Iwuchukwu, *et al*.,(2013) revealed that Nigeria can produce 364,490 metric tons of pineapple per annum if its production challenges are properly addressed. Pineapple is very succulent and its production seems to have introduced new taste, variety and a greater source of income to farmers. The popularity of pineapple is due to its sweet sour taste containing 15% sugar, malic and citric fruit acids. It is also high in vitamin B1, B2, B6 and C. It contains protein digesting enzyme, bromelain seems to help digestion at the end of a heavy protein meal (Nwosu, 2011). According to Adegbite,*et al,* 2014), Pineapple is an excellent cerebral toner; it combats loss of memory, sadness and melancholy. The increasing need for pineapple in most parts of the world is not met due to the low awareness of its benefits. In Nigeria, pineapple has become a household fruit as it is being consumed and also used by the fruit juice industries to make different kinds of juice.

Pineapple production in Nigeria seem found among small scale farmers who are involved in indigenous practices of farming and have little or no knowledge in changes of technologies in food production. Mgbenka (2015) affirms that the small scale farmers are the main producer of 98% of food consumed in Nigeria. Enhancing agricultural productivity in Nigeria seemed often linked to farmers' access to and use of agricultural information. There is need to effectively disseminate innovation in pineapple production to farmers. This can be achieved through effective linkage mechanism between the farmers and agricultural organizations. Fawole (2008) noted that it is important to disseminate improved technology in forms easily understood by the farmers in improving production, and that which is applicable to pineapple production.

Pineapple (*Ananas comosus*) farming in Nigeria had always being produced among small scale farmers. These species of pineapple are mainly the dwarf species which do not look as succulent as present day pineapple found in Nigeria market, sold among farmers. Access to international market has enhanced the value of fresh fruits and encouraged large scale farms where pineapple is produced as a mono crop (Fawole, 2008). To enhance pineapple production in Nigeria, there is need for agricultural information to be disseminated to farmers who are the primary users. The information should be at the disposal of the farmers and at the level of the farmers understanding (Okoli, *et al.,*2014). Fawole (2008) revealed that though much information are at the disposal of the farmers, but the dissemination and flow of numerous Information sources may also have effective linkages to the utilization of information, essential in packaging and adapting information for local relevance.

In Nigeria there is no known pattern in marketing of pineapple rather pineapple is sold in wheelbarrow on the streets by hackers or in open stalks of open market. Hawkers especially women sell peeled pineapples in transparent plastic containers on the streets. In developing countries like Nigeria, most of the fresh pineapples produced

are sold in domestic markets and bought for domestic consumption (Adegbite, *et al.,* 2014). The cost of transporting pineapples from farms in the hinterland to cities seems expensive due to bad feeder roads. There is no qualitative market information to guide the farmers especially in pineapple exportation. According to Odusote (2013), there are new and attractive investment opportunities in Nigeria, especially in the juice processing industry. The author asserted that Nigeria produces 920,000 tonnes in Pineapple, as against Kenya and South Africa that were ranked second and third, in the 2011; and recording 371,310 and 108,636 of pineapple production respectively.

The number of successful pineapple farmers is low due to a number of socioeconomic factors affecting production such as gender, age, marital status, educational level, household size, primary occupation, farming experience, farm size (in hectares) amongst others. Adelani and Oyesola (2013) stressed that the domestication and cultivation of fruits have always been impeded by several factors which includes unsuitable soil, climatic condition and diseases. These factors mostly influence small scale farmers who have little or no access to information and improved technologies.

Experience has shown that small scale farms out yield large farms and is more efficient, although limited by unfavorable conditions and lack of accessibility to agricultural innovations. If provided with the right inputs, feasible technology and relevant information, they are capable of transforming traditional agriculture especially as in the case of pineapple production. Information dissemination by the extension agents to the rural farmers on recent innovation such as high yielding seedlings of high disease resistance, improved methods of organic/low input farming and appropriate marketing channels have contributory linkages to the utilization of information essential for local relevance.

If Nigeria is to become a highly recognized exporter in pineapple production, there has to be an increased efficiency in the linkage system available for the transfer of innovations and useful technology generated from extension agencies and worldwide bodies to the rural farmers who then utilize it to increase productivity. Emodi and Dimelu (2010), however opined that the low performance of the agricultural sector is rather viewed as a system problem as prevalently seen in the inadequacy and missing links in the Research Extension Farmers Input Linkage System (REFILS).

Objective of the study
Specifically the objectives of the study were to:
- describe the socioeconomic characteristics of small scale farmers in pineapple production in Akwa-Ibom State;
- ascertain the constraints to effective pineapple production among farmers in the study area and
- suggest strategies for enhancing pineapple production among farmers in Akwa-Ibom State.

Methodology
The study was carried out in Akwa-Ibom State which is located at latitudes 4° 33' and 5° 33' N and longitudes 7° 25' and 8° 25' E. It occupies a total land area of 7,246 square kilometers, with a population of 3,920,208 million people (NPC, 2006). It is located in the coastal southern part of Nigeria. The state constitutes 31 Local Government Areas (LGA) which are Abak, Eastern-Obolo, Eket, Ibiono-Ibom, Etim-Ekpo, Ibeno, Ibesipo-Asutan, Ikono, Ikot-Abasi, Ikot-Ekpene, Ini, Itu, Mbo, Mkpat- Enin, Nsit-Ibom, Nsit-Ubium, Obot-Akara, Okobo, Onna, Oron, Oruk-Anam, Etinan, Ukanafun, Udung-Uko, Uyo, Uruan, Esit-Eket, Ika, Essien-Udim, Urue Offong/Oruko. It is bounded by Cross Rivers State on the East, Rivers State and Abia State on the West and the Atlantic Ocean on the South. Akwa-Ibom State lies in the tropical rain forest area of Nigeria with heavy period of rainy season and a short dry season from November to March. The predominant occupation of the people is fishing and farming, its vegetation is characterized by a mangrove forest in the south and thick rainforest vegetation in the North with arable land for cultivation of various food and cash crop such as plantain, yam, oil palm, pineapple, potato, cassava etc. The area was selected for the study based on its representativeness of a typical pineapple growing area.

All the small scale farmers in Akwa-Ibom State constituted the target population of the study. A multi-stage sampling technique was used to select respondents for the study. The first stage involved delineation of the study area into the 6 AKADEP (Akwa-Ibom Agricultural Development Project) zones which are Abak, Oron, Eket, Etinan, Ikot-Ekpene and Uyo zones, the second stage involved purposive selection of one village from each of the AKADEP zones and the third stage involved purposive selection of 10 farmers from each of those villages giving a total sample size of 60 respondents that was used for the study. Fifty nine respondents who correctly filled their copies of questionnaire were used for the study The instrument for data collection was a structured questionnaire; the questionnaire was grouped into 3 sections. Section A sought for the socio-economic characteristics of farmers, Section B revealed the constraints facing small scale pineapple farmers and Section C proposed strategies for enhancing pineapple farming among small scale farmers. Information on Section B and C were determined using a 4-point Likert's type scale of which Strongly Agree=4, Agree=3,

Disagree=2, Strongly Disagree=1. The mean was calculated thus: 4 + 3 + 2+ 1= 10/4= 2.50. In the decision rule, any variable with mean score of 2.50 and above were considered as enhancing/constraining factors in pineapple production whereas any variable less than 2.50 were not considered. The questionnaire was also supplemented with oral interview in places where respondents cannot read or write. Analysis of the hypothesis was done by the use of chi-square relationship analysis.

Results and Discussion
Socio-Economic Characteristics of the Farmers
Entries in Table1 show that majority (59.3%) of the respondents were females, married (45.8%) and with a mean age of 44.5 years. This implies that pineapple production in the study area is dominated by women. This is consistent with the findings of

Oyeniyi and Olofinsawe (2015) which states that the role of women cannot be over-emphasized especially in the area of food security and agricultural growth. This in line with Emodi (2012) finding that most farmers marry in order to have large number of children that would contribute to farm labour. The result also shows that about (39.0%) of the respondents had non-formal education and 25.4% had farming experience of 11-15 years. This revealed that most of these farmers were not learned and it might influence their understanding of new technology in pineapple farming. Table 1 reveal that majority (52.6%) of the respondents had household size of 4-6 persons, 23.7% had household size of 1-3 persons, and average household size was 5 persons. This implies that farm labour would be distributed with ease without employing extra labor in terms of tasks in pineapple farming.

Table 1: Distribution of respondents' according to personal and Socio- economic characteristics

Variables	Frequency(n=59)	Percentage (100%)
Gender		
a. Male	24	40.7
b. Female	35	59.3
Marital status		
a. Single	8	13.6
b. Married	27	45.8
c. Divorced	10	16.9
d. Separated	11	18.6
e. Widow	3	5.1
Age(in years)		
a. 20-29	2	3.4
b. 30-39	13	22.0
c. 40-49	22	37.3
d. 50-59	20	33.9
e. 60 and above	2	3.4
Educational level		
a. Primary education	8	13.6
b. Secondary education	15	25.4
c. Tertiary education	13	22.0
d. No formal education	23	39.0
Farming experience		
a. 1-5	5	8.5
b. 6-10	14	23.7
c. 11-15	15	25.4
d. 16-20	12	20.3
e. 21 and above	13	22.1
Household Size(persons)		
a. 1-3	14	23.7
b. 4-6	31	52.6
c. 7-9	12	20.3
d. 10 and above	2	3.4

Source: Field survey 2015

Constraints to Pineapple production among Farmers
Data in Table 2 show that of the seven items, the respondents perceived six items as major constraints

in pineapple farming. They include, little or no new information ($\bar{X}$=2.83), lack of access to funds and credit ($\bar{x}$=2.81), absence of marketing channels ($\bar{x}$=2.71), lack of roads, electricity and water supply

($\bar{x}$=2.69), no access to fertilizers and pesticides($\bar{x}$=3.10), no guidance and monitoring by Extension Agents($\bar{x}$=3.08). Lack of farmers clubs and trade unions ($\bar{x}$=2.46) was of less constraints. No access to fertilizers, pesticides and no guidance, and monitoring of pineapple farming by Extension agents were the two major constraints to growth of

pineapple farming. There are constraints in fertilizer use due to high import prices, high marketing costs and supply, poor road network worsened by lack of proper credit facilities for farmers (Emodi, 2012). Baruwa (2013) supported the reasons for the low production due to shortage of improved planting materials and low level of production technology.

Table 2: Mean distribution of constraints to pineapple production as perceived by farmers.

Items	SA	A	D	SD	Total	Mean	Remark
Little or no new information on pineapple farming	22.0	42.4	32.2	3.4	100	2.83	High
Lack of access to funds and credit	16.9	49.2	32.2	1.7	100	2.81	High
Absence of marketing channels to sell produce	13.6	47.5	35.6	3.4	100	2.71	High
Lack of farmers clubs and trade unions	8.5	39.0	42.4	8.1	100	2.46	Low
Lack of roads, electricity and water supply	20.3	33.9	40.7	5.1	100	2.69	High
No access to fertilizers, pesticides etc	30.5	49.2	20.3	-	100	3.10	High
No guidance and monitoring of pineapple farming by Extension Agents	33.9	42.4	22.0	1.7	100	3.08	High

Source: Field Survey 2015.

Strategies for Enhancing Pineapple Production among Farmers
In Table 3 the respondents agreed that all the items were strategies for enhancing pineapple farming. They include: organization of workshop and training ($\bar{x}$=2.97), demonstration of new planting techniques in farmers' field ($\bar{x}$=3.14), solving of farming problems($\bar{x}$=2.92), provision of credit and finances($\bar{x}$=3.03), provision of better roads, electricity and water($\bar{x}$=2.92), ways of reducing pineapple spoilage($\bar{x}$=3.08), increasing supply of inputs such as (pineapple sucker, fertilizer and

pesticide) ($\bar{x}$=3.34), technical guidance and training by extension agents($\bar{x}$=3.22). Fawole (2008) opined that it is important to disseminate improved technology in forms easily understood by the farmers in improving production, which is applicable to pineapple production. The results also showed increasing supply of inputs(pineapple sucker, fertilizer and pesticide) and technical guidance and training by extension agentswere considered as very effective strategy for enhancing pineapple production among farmers.

Table 3: Mean distribution of strategies for enhancing pineapple production

Items	SA	A	D	SD	Total	Mean	Remark
Organization of workshop and training	28.8	40.7	28.8	1.7	100	2.97	High
Demonstration ofnew planting techniques in farmers field	35.6	44.1	18.6	1.7	100	3.14	High
Solving of my farming problems	20.3	55.9	18.6	5.1	100	2.92	High
Provision of credit and finances	22.0	59.3	18.6	-	100	3.03	High
Provision of better roads, electricity and water	30.5	33.9	32.2	3.4	100	2.92	High
Improving ways of reducing pineapple spoilage	42.4	27.1	27.1	3.4	100	3.08	High
Increasing supply of pineapple sucker, fertilizer and pesticide	47.5	39.0	13.6	-	100	3.34	High
Technical guidance and training by extension agents	33.9	54.2	11.9	-	100	3.22	High
Assistance in marketing of pineapple	32.2	52.5	15.3	-	100	3.17	High

Source: Field survey, 2015

Test of Hypothesis
H_O : There is no significant effect of socio-economic factors on pineapple production among small scale farmers in Akwa-Ibom State. H_O will be rejected

H_A: There is significant effect of socio-economic factors on pineapple production among small scale farmers in Akwa-Ibom State. H_A will be accepted.

Table 4: Chi-square analysis on relationship between socio-economic factors and level of production

Parameters	Degree of freedom (D_f)	Significant level(P)	Decision
Household size versus production	16	0.000	Significant
Experience versus production	16	0.015	Significant
Age versus production	16	0.037	Significant
Marital status versus production	16	0.020	Significant
Sex versus production	16	0.825	Not Significant

Source: Field survey 2015

Table 4 revealed that the Chi-square analysis on relationship between socio-economic factors and level of production showed a significant (p<0.05) difference between household and production. This implies that household size is important in pineapple farming because it is labour intensive in nature and therefore requires large household to assist in labour. Using family labour reduces cost since there will be no need to pay for hired labour. In experience versus production, the significant level, 0.015 is less than 0.050 meaning that there is significant difference between experience and production. Farmers with more farming experience tend to be better producers in pineapple farming due to their wide range of knowledge on environmental and marketing factors. In age versus production, the significant level, 0.037 is less than 0.050 meaning that there is significant difference between age and production. Good managerial farming function requires strength and mental alertness of the farmer to face farming hurdles and challenges. Baruwa (2013), states that majority of the farms in the age range of 41-50 are still in their active age and more receptive to innovation. This implies that majority of the farmers are in their middle age, and have a higher state of efficiency and productivity. In marital status versus production, the significant level, 0.020 is less than 0.050 meaning that there is significant difference between marital status and production. In sex versus production, the significant level, 0.825 is higher than 0.050 meaning that there is no significant effect between gender and production. The gender, whether male or female, does not really affect pineapple farming production

Conclusion
Though pineapple production is viable in Akwa-Ibom state, the demand still exceeds supply. This may be attributed to several factors such as size of land, sources of labour, input supply (fertilizer, pesticides, improved seeds, credit facilities etc), cultural practices and climatic conditions. Constraining factors such as little or no new technology on pineapple production, may contribute to low levels of pineapple production. There is need for research institutes and universities to develop; disseminate useful and practical innovations as regards pineapple production, processing and value addition.

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