ASSESSMENT OF PEPPER PRODUCTION AND SOCIO ECONOMICS OF PEPPER FARMERS IN DELTA STATE, NIGERIA

ADAIGHO DEINNI$ & NWADIOLU. R

DEPT. OF AGRIC EXT& MGT, DELTA STATE POLY, OZORO. P.M.B 5.

CONTACT: 08105294885

ABSTRACT

This study is focused pepper production and socio-economics of pepper producers inDelta State, Nigeria. Purposive sampling technique was used to select 50 farmers out of the population of pepper farmers. Structured questionnaire was used to collect the relevant information. Data collected were analyzed with help of descriptive statistics and gross margin analysis. The result of the study revealed that 44% of the pepper farmers fall within the age of 40-49 years and 54% had no formal education. The household size ranged from 6-10 persons, while about 72% of pepper farmers do notbelong to any cooperative society. The pepper producers were mostly small scale farmers and 50% of them have a farming experience of 6-10years. The result gotten from the gross margin analysis revealed a total cost per acre of ₦61,300 and the returns per acre was ₦95,000. An average sampled farmer had a gross margin of₦33,700.The rate of returns 1.6 shows that for every1.00 naira investment by pepper farmer a profit of ₦1.60 was realized. The study identified some constraints of pepper producers to includes, lack of access to credit, price instability, pest and diseases, lack of irrigation facilities among others. Based on the finding, the study recommends that farmers should be encouraged to form cooperative societies. More so, Delta state government should assist pepper farmers with farm inputs and credit with low interest rate and organize training for pepper farmers on modern practices.

KEY : Pepper Production, Socio-economic, Profitability, Problems and Potential, Delta State

1.0 **Introduction**

Pepper (Capsicum spp) is one of the varied and widely used spices in the world. Capsicum spp is a highly value crop that is grown for cash by farmers all over the World (Aliyu et al, 2012). Nigeria has a good soil and weather that can readily support the growth and productivity of pepper. Nigeria is known to be one of the major producers of pepper in the World accounting for about 50% of Africans production (Mohammed et al, 2013). ln Nigeria, pepper is massively produced from the Northern States even though that it grows well in the South West States and to a lesser extent in the South Eastern States. China is the largest producer of pepper with 10million tons. It is followed by Mexico with 1.9tons and Turkey occupying the third place with 1.5million tons. Nigeria and Ghana top tropical production with 715,000t and 270,000t respectively as largest producers. Vietnam, lndia, lndonesia and Brazil are largest suppliers to the global market, while the United State, Europe, Japan and Australia are the major destinations of pepper exports. Pepper grown in Nigeria is in high demand, because of its pungency and good flavor. Investing in pepper production is one of the ways of curbing unemployment, income generation and sourcing for foreign exchangein recent years. Pepper has achieved major economic significance in the global market due to increased World-wide interest and demand (International Pepper, (2012). Pepper can readily be dried, grounded and packaged for export. Apart from the potential of this commodity to generate foreign exchange for Nigeria, their common use in confectionary, medicinal and culinary purpose is on the increase. Pepper is use for production of spice blends and red pepper. lndustrial users also require the moderately pungent chilies (Nigerian type) for use in the pharmaceutical industries (Suleiman and lsah, 2010) .

In Nigeria, Capsicum frutescens is third among the cultivated vegetables being utilized in the dry state as spice. Capsicum spp contains an alkaloid (digestive stimulant) and is used in ointment for leaf of arithritic and neuropathic pains (Ayorinde, 2011). In Nigeria no dish seems to be complete without pepper. Apart from serving as spices, pepper is used to decorate food, to give it flavor or colour. Fresh pepper is found to be a good source of Vitamin C and calcium (Amoke, 2016). Experts believe that pepper has properties that provide relief for many ailments. For instance, it is said to offer relief from colds, sore

throats, fevers, enhances blood circulation for cold hands and feet. It also regulates blood sugar and fights prostate cancer. Pepper is believed to act as heart stimulant that regulates blood flow. It is also useful raw material in preparing creams meant for lessening pains, inflammations and itching as well (Amoke, 2016).

According to Central Bank of Nigeria (1995), the economics of pepper is characterized by wide and frequent changes in price. Pepper prices vary greatly within a season and between years. Most of the price variation within season is caused by weather effects and acreage on production (Esendugu, 2005)

1.1 Problem Statement

Nigeria still imports pepper, thus indicating that there is high demand for pepper locally despite the good weather, soil and numerous potential of pepper in Nigeria not to talk of the export. Pepper yield in Nigeria have been very low compared to Western Europe. The low yield in pepper production in Nigeria could be attributed to some production challenges which include disease, pest and poor management practices (Jaliya and Sani, 2006). Pepper production in Nigeria has once been reported to be a lucrative business (Ajibefun and Daramola, 2003).

Scarcity of resources has led to production economists think about the reallocation of existing resources to have more output with a given level of input combinations or to produce a prescribed level of output with the minimum cost without changing the production technology. Similarly, the measurement of the productive efficiency in agricultural production is an important issue because it gives pertinent information for making sound management decision in resource allocation (Mohammed et al, 2015). There are shortages of research information that dwell on the pepper production profitability, problems and potentials in Nigeria for future development. Considering the above facts, the study was designed to examined pepper production and socio economics of pepper farmers in Isoko North Local Government Area, Delta State. Specifically, the study focused on socio- economic characteristics of pepper farmers, costs and returns of pepper production and problems/potentials militating against pepper production in Isoko North Local Government Area, Delta State.

2.0 Materials and Methods

2.1 Study Area

The study was restricted to Delta South senatorial zone and the choice of this area was due to high population of pepper farmers in the area. Delta state is one of the nine states in the Niger Delta region of Nigeria. It is located approximately between longitude 5^0 00' and 6^0 45' east and latitude $5^0$00' and $6^0$30' north of the equator (Inoni and Oyaide, 2007). The study was carried out in lsoko North local government Area, Delta State. Isoko North Local government is located at the rain forest belt in Nigeria with latitude $5^0$0'N and longitude 5^0S and 6^0S. The annual rainfall of the area is about 1800mm per annum and average temperature of about 31^0c (Inoni and Oyaide, 2007).

2.2 **Data Collection and Analysis**

Primary and secondary data were used for this study. The interview method of data collection with the aid of structured questionnaire was used to obtain relevant information from the selected farmers in the study area. Data collection was centered on socio-economic characteristics of the farmers such as age, gender, household size, educational level, farming experience, sources of credit, access to extension service, cooperative membership, farm size, quantities and prices of various production inputs used by the farmers, potentials and problems affecting pepper producers.

2.3 **Sampling Procedure**

A two- stage technique was employed to select the respondents for the study. Firstly, five (5) communities were selected randomly from the study area out of the fourteen communities that make up Isoko Northlocal government. The communities selected include, Ozoro, Owhelogbo, Iyede and Ofagbe and Okpe lsoko. Secondly, fifty (50) pepper farmers were selected in all through purposive sampling method based on the size of the pepper farmers and predominance across the chosen communities.

2.2 **Data analysis**

Descriptive statistics such as frequency percentage and gross margin analysis were used in the analyses of data.

Table 1: socio economic characteristics of pepper farmers (50 Farmers)

Variables	Frequency	Percentage (%)
Age (years)		
20-29	10	20
30-39	22	44
40-49	18	36
50 and above	50	100
Sex Gender		
Male	5	10
Female	45	90
	50	100
Educational status		
No formal education	27	54
Primary education	15	30
Secondary education	8	16
Tertiary education	-	-
	50	100
Household size		
1-5	15	30
6-10	27	54
11-15	6	12
16-20	2	4
	50	100
Farming experience		
1-5	10	20
6-10	25	50
11-15	8	16
16-20	7	14
	50	100
Sources of capital		
Informal	49	98
Formal	1	2
	50	100
Membership of cooperative		
Yes	14	28
No	36	72
	50	100
Extension visit		
No visit	30	60
1-2 times	15	30
3 & above times	5	10
	50	100

Source: field survey, 2018

Table 2: Summary of production inputs and yield of pepper production per area

Variables	Unit	Mean
Nursed seedlings	Kg/Acre	14000 stands
Poultry droppings	Kg/Acre	400
Agrochemical (Insecticides and Herbicides)	Liter/Acre	2
Labour	Man-days/Acre	9
Yield	Kg/Acre	350

Table 3: Average cost and return per acre of Pepper Production:

Variables	Kg/Acre	Value/Acre (Naria)	Percentage contribution (%)
A; Average Revenue (TR)	450	120,000	
B. Variable Cost (VC)			
i) Purchase of cutlasses (2)		4,000	5.2
ii) Growing seedlings(14,000stands)		8,500	11.1
iii) Land clearing/ preparation		10,000	13.1
iv) Fertilizer/poultrydropping		6,000	7.8
vii)labour for weeding(Man-days)		21,300	27.8
viii) insecticides		3,000	3.9
ix) Harvesting/ transportation andother activities		8,500	11.1
x) Total Variables Cost (TVC)		61,300	
C. Fixed Cost (FC)		8,000	10.4
i) Renting of land		5,000	6.5
ii) interest rate on capital		2,300	3.0
iii) Depreciation of tools		15,300	
iv) Total Fixed cost		76,600	
D. Total Cost (TC)		43,400	
E. Gross Margin (TR-TC)		1.6	
F. Return per naira investment (TR/TC)			

Source: Field survey, 2018

Table4: Distribution of Respondents According to the constraints of pepper production.

Constraints	Frequency	Percentage (%)
Price instability	10	20
Pest and disease attack	10	20
Lack of irrigation facilities	2	4
Difficulty of accessing credit	18	36
Lack of market	10	20
Total	50	100

Source: field survey, 2018.

4.1 **Socio-Economic Characteristics of Respondents**

Table 1 revealed that majority (44%) of the pepper farmers are between the ages of 40-49 years with a mean age of 46.9. This implies that most of the farmers are within the active age of farming which could give rise to high productivity of pepper in the area. This result is in agreement with the finding of Obeta and Nwabo(1999) that states younger farmers are more flexible in acceptingnew ideas and takingrisk, hence they tend to adopt innovations more readily than older farmers. The result in table 1 shows that majority (90%) of pepper farmers are females, while only 10% are males. This implies that most of pepper producers in the study area are females.

The majority (54%) of pepper farmers had no formal education, while 30% of the respondents attained between 1-6 years of education. Thus the illiteracy level could affect negatively ability to welcome extension training as well as adopt high level of innovation and improved practices of pepper production.

On the household size, the result in table 1 shows that majority (54%) of the respondents had household size of between 6-10 persons. The average household size was 7.5 persons. This implies that there is appreciable number of family labour supply to accomplish various farm

operations. The result in table 1 also shows that majority (50%) of the pepper farmers had between 6-10 years of farming experience with average farming experience of 9.2 years. This is implies that the farmers in the area had enough farming experience in pepper production. The result is in support of the finding of Mohammed et al, (2015).

The result in table 1 revealed that majority (98%) of the pepper farmers derive their capital from informal sources such as personal savings relatives and friends, while the remaining 2% got their capital from formal sources such as commercial Bank and Bank of Agriculture etc. This implies that the farmer's access to credit is usually low due to inability of the pepper producers to receive grants or financial support from government. This result is in line with finding of Ekong (2003) that asserted that credit is a very strong factor that is needed to develop any enterprise. The result of membership of cooperative revealed that majority (72%) of pepper farmers do not participate in cooperative society, while 28% of farmers belong to cooperative society. The reasons for the low level of membershipof cooperative could be associated with lack of awareness on the part of farmers. The resultant effect is that most of pepper producers will not enjoy the benefits that accrue to cooperators through pooling together of resources for a better expansion, efficiency and effective/ management of resources and profit maximization. Table 1 shows that most (60%) of the pepper farmers had no access to extension agents during the farming season. The result shows that 30% and 10% of them were visited 1-2 times and 3 and above times respectively. The implication of this is that most of the pepper farmers may not have been exposed to the desired information and right knowledge on improved inputs and modern production techniques in pepper farming.

4.2 **Summary of Inputs and yield of pepper per an acre**

Table2shows the estimated production inputs and yield of pepper in the study area. Table 2 reveals that nursed pepper seedlings are procured from small scale farmers that nursed the seeds early enough in different locations beside water logged farmlands that are fertile. Table 2 also shows that an average farmer in the study area makes use of about 400kg of poultry droppings to manure an acre of pepper, while about 9 man-days is expected to conveniently cater for an acre of pepper farm. A total yield of 350kg of pepper could be realized per acre of pepper farming, while a farmer needs about 2litres of Agrochemical to preventpest and diseases infestation. Most of the farmers were into mixed cropping.

4.3 **Costs and returns per One (1) Acre pepper production.**

Table 3 shows the average cost and returns of pepper production. The gross margin of pepper production in the study area was ₦43,400. Table 3 also revealed that labour constituted about 27.8% of the total cost of production. The total revenue (TR) was ₦120,000, while the total cost (TVC+TFC) was ₦76,600.The rate of return on pepper investment by farmers in the study area was 1.6. This implies that for every ₦1.00 investment in pepper production,₦1.60 is realized. This indicates that pepper production is profitable in the study area. This finding is in agreement with research work by Mohammed et al (2015) and Ajibefun (2002) that reported a rate of return on investment of 2.28 and also recorded the highest benefit cost ratio of 3.90per naira investment in Kaduna state versus at firm-level evidence in Nigeria respectively.

4.4 **Constraints of Pepper Production**

The constraints that affect yield and profit of pepper production are presented in table 4. The most prevalent constraints to pepper production identified by the study area are Lack of access to credit, price instability, pest and disease attacks and lack of market.

4.4 **Conclusion and Recommendations**

The study assessed the level of profitability of pepper production among farmers in Isoko North Local Government. Based on the findings from the study it can be concluded that pepper production business contribute significantly to income, job creation, poverty alleviation and improvement of food security among pepper producers since pepper production is a viable or profitable enterprise. The constraints militating against pepper production in the study area includes, difficulty of accessing credit, price instability, pest and diseases attacks, lack of irrigation facilities and lack of market. The study therefore recommends as follows;

1. Pepper farmers should be encourage to form farmers cooperative group so as to enjoy the benefits that accrue to cooperators from government, such as provision of subsidize agrochemicals, fertilizer, quality seeds/seedlings and tractor for purpose of attaining increase productivity.

2. Government should assist pepper farmers with credit at low interest rate so as to motivate pepper farmers to increase the scale of production.
3. Delta state Agricultural Development projects (ADPs) should improve on the monitoring of the extension officer with a view to bringing modern technology and right information to the door step of pepper farmers and also organizing a training workshop for pepper farmers.

References

Ajibefun I.A and Daramola A.G (2003): Determinants of technical and allocation efficiency of micro-enterprises. Firm-level evidence from Nigeria African Development Bank Vol 4: 353-395.

Ajibefun, I. A (2002): Analysis of Issues in Technical Efficiency of small scale farmers using the stochastic Frontier production function with application to Nigerian farmers. Paper presented during International Farm Management Association Congress, Wageningen, Netherland

Aliyu, L., Yahaya R.A., Arunah, U L., Haruna ,l M (2012): Response of two chilli pepper varieties (Capsicum Frutescens L.) to harvesting frequency. Available online at *Elixir international Journal of Agriculture.*

Amoke C (2016): Pepper Farming: Another Cash Cow Agribusiness, Independent Newspaper, November 14th 2016.

Ayorinde,I.O(2011): Growth and yield of hot pepper (Capsicumfrutescens) as influenced by bed width and within row spacing. Submitted to the Department of Horticulture College of Plant Science and Crop Protection, University of Agriculture Abeokuta, Ogun State Nigeria.

Central Bank of Nigeria (CBN)(1995): Annual Report and Statement of Account. CBN Publication.

Ekong. E.E (2003); Rural Sociology. An introduction and Analysis of

rural Nigeria, Uyo. Dove Educational Publication.

Esengudu, G.E (2005) Economic Analysis of pepper production marketing and Management in Georgia. The cooperative extension offers educational programs. The University of Georgia, College and Agricultural & Environmental Sciences and Ft University State AGECON-05-106,http://www.agecon. Uga.edu or http://www.ces.uga.edu/Agriculture/ageco.html.

International Pepper (2012): International Pepper Proceeding of 21st conference Florida, U.S.A

Jaliya, M.M and Sani B,M (2006): Pepper production under irrigation National Agricultural Extension Research Liaison Services, Ahmadu Bello University, Extension Bulletin No. 206, Agricultural Engineering Series.

Inoni O.E and Oyaide W.J (2007) Socio-Economic Analysis of Artisanal Fishing in the South Agro-Ecological Zone, Delta State, Nigeria. *AgriculturaTropica Et Sub-tropical Vol .40 No4*

Mohammed, A.B, Ayanlere, A.F Ekenta C.M and Mohammed, S.A (2013): Cost and Return Analysis of pepper production in Ethiopia West Local Government Area, Delta State, Nigeria International Journal of Applied Research and Technology vol. 2 No2 pp 3-7.

Obeta, M. E and Nwabo E. C (1999): The Adoption of Agricultural Innovations in Nigeria: A case study of improved llTA Technology Package in Anambra State, Nigeria.

Suleiman, A and Isah S.I (2010): Spatial Integration of selected markets of dried chili pepper

and ginger in Northern Nigeria. *Savannah Journal of Agriculture Vol. 5, Pp29-37.*

Mohammed, B., Abdulsalam, Z., & Ahmed, B. (2015). Profitability in Chilli Pepper Production in Kaduna State, Nigeria. *British Journal of Applied Science and Technology, 12*(3), 1-9.