Socio-Economic Analysis of Cocoa Farmers in Selected Local Government Areas in Ondo State, Nigeria.

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Abstract: *In Nigeria, cocoa is an important cash crop that helps in generating income and poverty reduction; but there is a downward trend in cocoa production. The study investigated the socio-economic analysis of cocoa farmers in Ondo East and Ile-Oluji/Okeigbo Local Government Area of Ondo State, Nigeria. Data were collected through the use of well-structured questionnaires administered to farmers in selected cocoa producing local government areas. Data were analyzed using descriptive statistics and gross margin analysis. The result showed that most of the respondents (69.5%) were males while 30.5% were females. Few (40.5%) of the respondents had secondary education, also 38.1% fell within the age range of 30-39 years old. Findings from the study revealed that most (65.5%) of the respondents used cocoa for various purposes. The findings from the study showed that the Gross Margin is ₦244948.429. Also based on the findings of the study it was revealed that almost half (57.0%) of the respondents strongly agreed that pests and diseases are problems militating against cocoa production. Therefore, findings from the study revealed that cocoa is a profitable enterprise. It is thereby recommended that the government should provide adequate inputs to the farmers at subsidized rate and support them by providing soft loans.*
Keywords: Socio-economic, Cocoa, Farmers, Ondo State, Nigeria

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I. Introduction

Cocoa discovery and cultivation has brought a new dimension to the world economy. Cocoa is an international commodity which has played a pertinent role in the economies of the countries mostly the developing countries in Africa. It is traded in the international exchange market in two world currencies; the Great Britain Pounds and the United State Dollars (WCF, 2009). Nigeria is the 4th largest producer of cocoa in the world, producing about 250,000 metric tons annually. Given the latest technological breakthrough of research in cocoa, farmers can produce cocoa yields of 1000 kg/ha or more. The significant role of cocoa as a driver of economic growth has gained overall acceptance in all cocoa growing economies. According to the United Nations Conference on Trade and Development, UNCTAD, (2004), cocoa is a highly competitive and lucrative economic cash crop ranked highest in terms of income generation amongst other agricultural activities in the global markets. The nutritional value of cocoa to man (health supportive) with regards to its constituent elements like butter (54%), protein (11%), cellulose (9%), pentosan (7.5%), tannin (6%), water (5%), theobromin (1.2%), sugar (11%) and caffeine (0.2%) have made it a more dependable cash crop which is encouraged worldwide. Millions of people around the world enjoy consuming chocolate whether as part of a snack, drink or dessert (International Cocoa Organization, ICCO, 2001). The cocoa sector for the past years has had to contend with a number of natural elements to favor its production. Climatic factors such as rainfall, temperature, sunshine, humidity, soil moisture and wind affect cocoa production. But the two major climatic parameters which are important in determining cocoa growth are temperature and rainfall (International Cocoa Organization, ICCO, 2011). Cocoa generally requires high temperatures with a maximum annual average of 30-32°C and a minimum average of 18-21°C. Average daily maximum temperature exceeding 33.5°C should not be more than 1 month. Variations in the yield of cocoa trees from year to year are affected more by rainfall than by any other climatic factor. An annual rainfall level of between 1500mm and 2000mm which is well distributed is good. Dry spells where rainfall is less than 100mm per month should not exceed three months (International Cocoa Organization, ICCO, 2011). Apart from these natural factors, other factors such as capital, labor, cocoa prices and the number of years of farming (experience) are very essential in determining cocoa production. All these determinants have, over the years, influenced the production of cocoa. However, the rates at which these variables determine cocoa production varies and therefore it is necessary to assess the impact of one set of this determinants and suggest strategic intervention actions to ensure that the negative effects of these determinants

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are minimized. Given the need, economic and foreign exchange sources diversification, the fact that cocoa, an agricultural enterprise is capable of sustainability and the need for increased revenue to the government at federal state and local levels, it is an imperative to explore ways to increase cocoa production on a sustainable basis (Akinyemiju, 1995). The main objective of this paper was centered on socio-economic analysis of cocoa farmers in selected local government. The paper was specifically aimed at: identifying the socio-economic characteristics of the respondents in the study area; identify cocoa utilization patterns; and determine the problems militating against cocoa utilization in the study area.

II. Methodology

The study was carried out in two local governments in Ondo State which are Ondo East and Ile-Oluji/Oke-igbo with their various headquarters at Bolorunduro and Oke-igbo respectively. Ondo State has 18 local governments among which is Ondo East and Ile-Oluji/Okeigbo local government. The state is characterized by climate and heavy rainfall following the usual tropical pattern. The study was carried out in Ondo State of Nigeria. Two cocoa producing Local Government Areas (LGAs) namely, Ondo East and Ile-Oluji/Oke-igbo were purposively selected for the study. Total samples of 220 cocoa farmers were randomly selected (one hundred and twenty cocoa farmers from Ondo East and one hundred cocoa farmers from Ile-Oluji/Oke-igbo LGAs). The data used for the study were collected by administering a well-structured questionnaire to cocoa farmers in the study area. Information was obtained on the socio-economic characteristics of cocoa farmers; cocoa utilization patterns; determine the contribution of cocoa to farmers' income; and determine the problems militating against cocoa utilization in the study area. Data collected were analyzed using both descriptive statistics and regression analytical tools. Descriptive tools include the use of tables, frequencies and percentage to present the socio-economic characteristics of the respondents. The data collected were analyzed with the use of descriptive statistics, farm budgetary technique and production function analysis. Descriptive statistics such as percentages and frequency was used to describe the socio-economic characteristics and problem militating against cocoa utilization of the respondents in the study area. Regression analysis/Gross margin were used to estimate the contribution of cocoa to the farmers income in the study area.Regression analysis was employed using both Semi-log and Exponential functions to determine the level of relationship between the dependent and independent variables. Also, budgetary technique was used to determine the costs and returns, hence profitability of cocoa production.

Total Cost (TC) = Total Fixed Cost (TFC) + Total Variable Cost (TVC)
Total Revenue (TR) = Total Output (Quantity x Price/kg)
Gross Margin (GM) = Total Revenue – Total Variable Cost (TVC)
Net Profit (NP) = Total Revenue (TR) – Total Fixed Cost (TFC)
The multiple regression techniques applied linear regression. The model in its general form is:
$Q = F(X_1, X_2, X_3, X_4 \ldots\ldots\ldots\ldots\ldots\ldots\ldots Xn)$
Where,
Q= Income
X_1 = Cost of processing in Naira
X_2 = Cost of storage in Naira
X_3 = Cost of transportation in Naira
X_4 = Cost of labour in Naira
Xn = Error term

III. Results and Discussion

The socio-economic characteristics of the registered cocoa farmers in the study area are presented in Table 1. The result revealed that (69.5%) of the respondents are males while the remaining (30.5%) are females. This indicates that cocoa production in the study area was dominated by males. This is so because cocoa farming is a tedious job and requires more strength which females may not be able to provide, this study is in line with Oluyole, et al., (2013). The results also showed that 67.1 % were within the age bracket of 30-49 years. This implies that respondents within this age group are still young and agile. Findings revealed that most (72%) of the respondents were formally educated. This implies that respondent will be able to adapt to and adopt any form of innovation brought to them that can boast their farming system (Akinniran, 2016).Also majority (82.9%) of the cocoa farmers had experience between 1-15 years. This indicates that most of the farmers have been into cocoa production for a long period of time, hence, there is probability of increased output, and this study supports the findings of Akinniran, (2016).Moreover, most (78.1%) of the respondents were into either small or medium farming, while about 21.9% had a large plantation. This agrees with the findings of Ogunlade et al., (2009) which reported that cocoa farmers were either small or medium scale farmers. This could be attributed to the fact that small scale farming largely dominates the agricultural sector in Nigeria.

Table 1: Socio-economic Characteristics of Respondents

Variable	Frequency	Percentage
Sex		
Male	146	69.5
Female	64	30.5
Total	210	100
Age (years)		
20-29	32	15.2
30-39	80	38.1
40-49	61	29.0
50-59	25	11.9
60 and above	12	5.7
Total	210	100
Marital status		
Single	28	13.3
Married	164	78.1
Divorced	12	5.7
Widow	6	2.9
Total	210	100.0
Educational background		
No formal education	59	28.1
Primary education	48	22.9
Secondary education	85	40.4
Tertiary education	18	8.6
Total	210	100.0
Experience (years)		
1-5	68	32.4
6-10	67	31.9
11-15	39	18.6
16-20	19	9.0
21 years and above	17	8.1
Total	210	100.0
Farming system		
Small	59	28.1
Medium	105	50.0
Large	46	21.9
Total	210	100.0

Identification Cocoa Utilization Pattern

Results from the study shows that 1.4% of the respondents used cocoa bean for tea while 1.9% used the fruit for tea. However only 1% of the respondent used the cocoa bean in making butter, 0.5% used it in producing cream; 39% of the respondents use the cocoa bean for all of the above i.e. tea, butter and cream. Also, 20.5% of the respondents used the cocoa fruit for all of the above, while 5.7% used the cocoa pod husk for all of the above. Few (11.4%) of the respondents used the cocoa bean for other purposes, 7.1% also used the fruit for other purposes such as in the use of the young fruits as substitute for okra in cooking and 3.3% used the cocoa leaves for other purposes such as using it for wrapping. The tree was used for other purposes by 7.1% of the respondents; also 1.9% of the respondents used the cocoa pod husk for other purposes such as in the production of soft local soap. This shows that most respondents (65%) used cocoa in various combinations implying that cocoa can be used as raw materials for a variety of items. An example is the use of cocoa powder in yoghurt according to the findings of Jaiyeola (2006).

Table 2: Identification of Cocoa Utilization Patterns

	Bean	Fruit	Leaves	Tree	Cocoa pod husk	Total
USAGE						
Beverages	3(1.4%)	4(1.9%)	0(0.0%)	0(0.0%)	0(0.0%)	7(3.3%)
Butter	2(1.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	2(1.0%)
Cream	1(0.5%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	1(0.5%)
All	82(39%)	43(20.5%)	0(0.0%)	0(0.0%)	12(5.7%)	137(65.3%)
Others	24(11.4%)	15(7.1%)	7(3.3%)	13(6.2%)	4(1.9%)	52(24.7%)

Total	112(53.3%)	62(29.5%) 7(3.3%)	15(7.1%)	16(7.6%)	210(100.0%)

Regression Estimate of Cocoa Utilization

From Table 3, the adjusted R-squared is 63%, which shows a good fit of the model. One can deduce that the processing cost is negatively significant to income realized from the sale of cocoa while storage cost is positively significant to the income realized from cocoa sales. This implies that for every additional ₦1 processing cost incurred in cocoa sale, the farmer will lose 11k, also for every additional ₦1 spent on storage of cocoa products; the farmer will gain additional 23k.

Table 3: Regression Estimate of Cocoa Utilization

Explanatory Variables	Estimate	T-values
Production Cost	0.0849	0.17
Insecticide Cost	0.0849	1.13
Labour Cost	-	-
Processing Cost	- 0.1129[**]	-1.96
Storage Cost	0.2387[**]	4.05
Transportation Cost	-	-
Constant	9.8923	3.5

Number of Observation = 210   Adjusted R-Square = 63%
** = Significant at 5%,

Frequency and Percentage Distribution of Problems Militating Against Cocoa Utilization

Table 4 shows that about half (57%) of the respondents strongly agreed that pest and diseases militated against cocoa production while 4% of the respondents disagreed. This implies that respondents in the study area have challenge with pest and diseases. This study is in line with Youdeowi et al., (1999) that the major problem with cocoa production is pests and diseases in the tropics. Also, 35% disagreed that insecurity is a problem militating against cocoa production while 15% of the respondents agreed to the statement. While 35% of the respondents also agreed that bad roads is a major problem militating against cocoa production, while 9% disagreed. Although 33% of the respondents disagreed that storage is a problem militating against cocoa production, while 13% agreed to the statement. Few (36%) of the respondents were uncertain that land tenure system was a problem militating against cocoa production, while 7% strongly disagreed.

Table 4: Frequency and Percentage Distribution of Problems Militating against Cocoa Utilization

Problem	SA	A	U	D	SD	Mean
Pest and Diseases	123(57%)	43(20%)	11(5%)	24(11%)	9(4%)	1.82
Theft	31(15%)	66(31%)	25(12%)	74(35%)	14(7%)	2.87
Poor road network	49(23%)	74(35%)	14(7%)	55(26%)	18(9%)	2.61
Poor storage facilities	28(13%)	51(24%)	45(21%)	70(33%)	16(8%)	2.97
Land tenure	46(22%)	36(17%)	75(36%)	38(18%)	15(7%)	2.71
High transport cost	39(19%)	94(45%)	18(9%)	45(21%)	14(7%)	2.52
High processing cost	43(20%)	55(26%)	55(26%)	30(14%)	27(13%)	2.72

IV. Conclusion and Recommendation

The result from the study revealed that most of the respondents in the study area were male and also married take the larger percentage of the respondents in the study area. Result also revealed that product from cocoa such as the cocoa bean, cocoa pod husk are used as raw materials for a variety of items. Participants also encountered varieties of problems which include pests and diseases, bad roads and insecurity. It is therefore recommended that pesticides should be made available to the farmers at subsidized rate and provision of accessible roads to increase cocoa production.

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