

**DETERMINANTS OF COCOA PRODUCTION UNDER THE NEW COCOA POLICY
IN OSUN STATE NIGERIA**

BY

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AEE/13/0956

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In partial fulfillment of the requirements for the award of the degree of Bachelor of Agriculture
(B.Agric)

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DEDICATION

This project is first of all dedicated to God who is the author and finisher of my faith. He has seen me through for the past five (5) years in school. I return all the Glory back to him. My special dedication goes to my parents Mr and Mrs Sunday Onyekwelu and my guardian, Professor and Dr Mrs. Jonathan Onyekwelu for their love, support and encouragement.

ACKNOWLEDGEMENT

I am grateful to God for how he has seen me through my study. He has been a faithful God and has been there always for me right from the beginning of my study in this institution of learning.

I am so much grateful to my supervisor; Dr S.C Anugwo who has seen through from the beginning of this project to the end, for patiently and painstakingly always going an extra mile for me to see that this project is successfully completed. I also want to thank him for patiently going through my work and making corrections whenever I give him my work to review. I also thank and appreciate my Head of Department; Prof O.B Adeniji for his fatherly advice.

I appreciate also Mr. O. J Aladejebi who assisted and gave his time to see that this project is a success and also to all the staff of the department; Dr. T.G Apata, Dr. M. Mkpado, Dr. M.O Abiola, Dr. S.I Ogunjimi, Mrs. C.M Egbunonu, Miss C.A Ifejerika, Mrs. Alabi, for their advice and support.

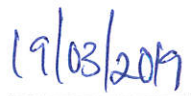
With a deep sense of appreciation, respect and gratitude, I want to thank my parents and Guardian for their love, support and encouragement. I acknowledge my guardian Professor and Dr Mrs. Onyekwelu for their love and support and who has been the financier of my education right from primary education to this very point. Lastly, I also acknowledge my siblings, friends and colleagues for their love and support, Thank you all and God bless you.

DECLARATION

I declare that this project was carried out by me under the watchful eye of Dr. S.C Anugwo of the Department of Agricultural Economics and Extension, Federal University Oye Ekiti as part of the requirement of the award of Bachelor`s Degree in Agriculture. I solemnly declare that this work has not been submitted elsewhere for the award of any degree.



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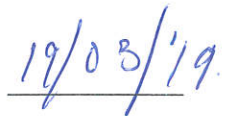


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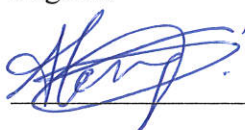
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CERTIFICATION

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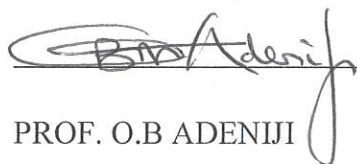


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ABSTRACT

The purpose of this study was to access the determinants of cocoa production under the new cocoa policies in Osun State, Nigeria. The cocoa policies reviewed were soil fertility, access to inputs, pest and diseases, access to credit, access to land and land management, access to information and they were examined to check if it has impact on cocoa production.

Ninety (90) respondents were sampled using a well-structured questionnaire. Data collected were analyzed using descriptive statistics, gross margin and regression analysis. Education, size of the plot and amount spent on labour were the factors significant at 10%, 5% and 1% respectively. For access to soil fertility policy, most of the farmers practice intercropping with (72.8%), they use organic fertilizer and they practice soil conservation practices such as, mulching and cocoa wastes. For access to input policy most of the farmers use improved seedling with (77.8%) and those who acquired the improved seedling at subsidized rate had a percentage of (71.1%), Most of the farmers do not use the Presidential Fertilizer Initiative created by the government because it is not available within reach, with a percentage of (38.9%). For access to pests and diseases policy, Most of the farmers use fungicides with (79%) and they were introduced to new ways of handling pests and diseases such as Integrated Crop Pest Management (ICPM) and good agricultural practices. For access to credit policy, Most of the farmers were aware of the “Anchor Borrowers Program” with a percentage of (78.9%) and those who don’t have access to Anchor Borrowers Program have a percentage of (66.7%) because they get funds for their production through their own personal savings with a percentage of (58.6%), cooperatives with (39.6%) and others with (1.8%). From this research work that was carried out in the study area, some of the agricultural policies accessed from the respondents were implemented and not all. Those

agricultural policies implemented have significant improvement in cocoa production in the study area.

Keywords: Determinants, Cocoa Production, New Cocoa Policy and Osun State

CHAPTER ONE

1.0

INTRODUCTION

1.1 Background of the study

Agriculture, since independence, held the key to Nigeria's rapid economic transformation, poverty alleviation, stable civil and good governance as well as national and food security. Agriculture employs about two-thirds of Nigeria's labour force, contributes over 40% of the Gross Domestic Product (GDP) and provides about 88% of non-oil earnings. The crops sector contributes 85% of the agricultural GDP, livestock (10%), Fisheries (4%) and Forestry (1%). Over 90% of the Nigerian agricultural output is accounted for by small-scale and subsistence farmers with less than two hectares' farm holding. Agriculture contributed 42% of Nigeria gross domestic product (GDP) in 2008 (National Bureau of Statistics), despite having grown at an annual rate of 6.8% from 2002 to 2006, 2.8% higher than the sectors annual growth between 1997 and 2001, food security remains a major concern due to the subsistence nature of the country's agriculture (Nwafor, 2008).

Cocoa is an international crop that can be exported to generate revenue for the government. In the early part before and after independence in Nigeria, Nigeria was solely dependent on agricultural output such as cocoa as means of foreign exchange and income for the government and citizenry. In West Africa, cocoa is essentially a smallholder crop, cultivated farms ranging in size from 1.2 to 2.8 hectares and employing about 10 million people (Padi & Owusu, 2008). In addition, cocoa is an important source of raw materials, as well as source of revenue to governments of cocoa producing States (Olowolaju, 2014). The South West is regarded as the

cocoa belt of the country, it accounts for 70% of Nigeria's annual cocoa production (Michael & Nzeke, 2011).

The South Western part of Nigeria was reliant on the production and sales of cocoa, so also the northern part of the country that gets its output from groundnut. The Southern parts had large amount of land which were used in the production of palm kernel and also additional income from coal from Enugu. But deductively, it has been shown that the south west which was founded only on cocoa was richer than the Eastern part that had both palm kernel and coal; this is an indication of the commercial viability and economic importance of cocoa in the community of other cash crops. Cocoa farmers worldwide depend on cocoa for their livelihood, with an annual world production of three million tones (World Cocoa Foundation, 2009). Cocoa has also played a dominant role in the place of economic development in the western region during its peak thereby providing employment opportunities for than 1million Nigerians. Cocoa grows where the annual rainfall is at least 1140mm and where the mean temperature falls below 17⁰c. Nigeria is an important player in the cocoa sector and as such, the Nigeria output has effects on the aggregate output and price level. The expansion of cocoa production is expected to eliminate possible trade distributions arising from the externally dependent economy by ensuring availability of raw materials for industries. This process could lead to an expansion in the country's industrial activities with a multiplier effect in employment opportunities for all the stakeholders in the economy such as the farm workers, factory processors, and product distributors among others. The importance inherent in any economy is that it serves as source of food and raw material. Cocoa production can add to a well significant part of GDP.

Due to low productivity, cocoa has declined in economic importance at the aggregate national level. There are reports of low productivities from cocoa farms in the country among other

problems (Daniel, 2009). However the determinant of cocoa production in Nigeria have identified certain factors that have contributed to the production of cocoa such as the swollen shoot caused by cocoa swollen shoot virus and black pod. Some factors affecting agricultural production which included poor transportation networks, inadequate research and extension facilities, unavailability of credit, shortages of fertilizer. Cocoa price is also another determinant of cocoa production, that the output price of cocoa has effect on production decisions.

However Agricultural policy was developed by the government to solve the problems faced in Agriculture which is a set of laws relating to domestic agriculture and imports of foreign agricultural products. Governments usually implement agricultural policies with the goal of achieving a specific outcome in the domestic agricultural product markets. Outcomes can involve for example a guaranteed supply level, price stability, product quality, product selection, land use or employment (wiki 2017). What are the factors affecting cocoa production? What are the impacts of agricultural policies on cocoa production? What are the cropping patterns used?

1.2 Problem statement

At a point in the Nigerian economic history, Agricultural production was a major priority of the Nigerian State. But over the time, there has been a gradual decline and small fall on output in cocoa production. Nigeria produces a little more than half of what she used to produce. Besides, there are reports of low productivities from cocoa farms in the country among other problems (Daniel, 2009). Some factors have led to the low production of cocoa such as illiteracy, lack of credit facilities, and limited number of improved seeds. The aim of this study is to know the determinants of cocoa production in the study area.

The study will provide answers to the following research questions:

1. What are the socio-economic characteristics of the farmers?
2. What are the factors affecting cocoa production in the study area?
3. What are the cropping patterns used?
4. What are the sources of input?
5. Is cocoa production profitable under the new cocoa production?
6. What are the new cocoa policies and impact on production?

1.3. Objectives of the study

The major objective of this study is the determinant of cocoa production under the new cocoa policy.

The specific objectives are to:

- I. Determine the socio-economic characteristics of the farmers
- II. Determine the factors affecting cocoa production in the study area.
- III. Determine the cropping patterns used
- IV. Determine the sources of input
- V. Determine the profitability of cocoa production under the new cocoa policies
- VI. Determine the new cocoa policies and the impact on production

1.4. Justification of the study

Cocoa is a cash crop that helps in generating revenue to the government. Cocoa is important to the economy of Nigeria. Cocoa is the leading agricultural export of the country. The crop was a major foreign exchange earner for Nigeria in the 1950s and 1960s and in 1970 the country was the second largest producer in the world but following investments in the oil sector in the 1970s and 1980s, Nigeria's share of world output declined. Currently, Nigeria is the fourth largest producer after *Cote D'ivoire*, Ghana and Indonesia contributing 12% of total world production (International Cocoa Organization, 2014). Cocoa has contributed to the economy of the country over the years and gained popularity because of the benefits from its earnings and its contribution to Gross Domestic Product (GDP) as the highest foreign exchange earner among all agricultural commodities. According to (Redmond, 2009) cocoa has a high food value, containing as much as 20 percent protein, 40 percent carbohydrate, and 40 percent fat. The importance of this study is to see how the problems faced by cocoa farmers during production can be solved and also willing to reduce rate of unemployment among the people.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction of cocoa

Perennial tree crops such as Cocoa, Orange, Cashew, Coffee, Tea etc. are long term crops that occupy the field planted for a long period of time and largely harvested every year. In the last 40 years, permanent crops, notably cocoa, coffee, oil palm, and rubber, have dominated export products in agriculture. (Nkamleu & Kielland, 2006).

Among the perennial tree crops, cocoa (*Theobroma*) is of particular interest in the west and central Africa from where approximately 70 percent of the world supply of cocoa originates and from the global chocolate industry (Nkamleu & Kielland, 2006). Cocoa (*Theobroma cacao* L.) is an important tree crop that has played significant role in Nigeria economy, especially in providing jobs and income to farmers, raw materials for the industry and foreign exchange for the country (Alamu, 2013). The Genus (*Theobroma*) is the most genus in the *sterculiaceae* family and is the most important specie in the Genus *cacao*. It is a tropical tree originating from the Amazon basin where it grows in the shaded rainforest under storey and can reach 20m in height. The tree produces pods that contain about 40 cocoa bean seeds surrounded by a sweet tasting pulp when fermented and processed the bean produce one of the most desired flavours in the world

2.2 History and Production of cocoa in Nigeria

The earliest cocoa farms in Nigeria were in Bonny and Calabar in the 1870s but the area proved not suitable for cultivation. In 1880, cocoa farm was established in Lagos and later, few more farms were established in Agege and Ota. From the farms in Agege and Ota, information

disseminated to the Yoruba hinterland about cocoa farming, thereafter, planting of the tree expanded in Western Nigeria (Wikipedia, 2017) Farmers in Ibadan and Egba land began experimenting with planting cocoa in uncultivated forests in 1890 and those in Ilesha started around 1896.

The planting of cocoa later spread to Okeigbo and Ondo Town both in Ondo State, Ife and Gbongan in Osun State and also to Ekiti State. Before 1950, there were two main varieties of cocoa planted in Nigeria. The major one was Amelonado cacao which was imported from the upper Amazon river Basin in Brazil. The second was a heterogeneous strain from Trinidad. The Amelonado pods are green but turning yellow when ripe but the Trinidad variety is red (Wikipedia, 2017)

The absolute concentration on agricultural export sub sector has given a vitalizing effect on the country foreign exchange earnings; therefore, significance of cash crops cannot just be devalued most especially in the pre- independence and early independence periods in the Nigeria's history (CBN, 2006) The agricultural export crop sub-sector plays a substantial role in the country before the oil boom of 1970's. During the early period of independence this sub-sector accounted for larger proportion of the Gross Domestic Product (GDP) and controls a large quota of growth and development of Nigeria economy. Cocoa has been the main agricultural stake of Nigeria economy until 1970's when the crude oil was discovered in the country in commercial quantity. (Oyedeki, 1974)

The crop was a major foreign exchange earner for Nigeria in the 1950s and 1960s and in 1970 the country was the second largest producer in the world but following investments in the oil sector in the 1970s and 1980s, Nigeria's share of world output declined. In 2010, Cocoa production accounted for only 0.3% of agricultural GDP. Average cocoa beans production in

Nigeria between 2000 and 2010 was 389,272 tonnes per year rising from 170,000 tonnes produced in 1999 (Wikipedia, 2017)

Cocoa (*Theobroma cacao*) has been studied and resolved to be a high valuable crop and a potent foreign exchange earner of the country's economy, among other agricultural commodities exported. Although cacao has been studied to have high economic value

Nigeria as a country has experienced a downward trend ever since 1971. (Fadipe *et al*, 2012)

(Folayan, 2006)) noted that cocoa production in Nigeria has witnessed a downward trend after 1971 season, when its export declined to 216,000 metric tons in 1976, and 150,000 metric tons in 1986, therefore reducing the country's market share to about 6% and to fifth largest producer to date, due to a combination of labour shortages and low producer prices.

Furthermore, conscious and continuous effort has been made towards revitalizing cocoa production in the past years, most recently 26 million seedlings of cocoa was distributed in the year 2000 to the 14 cocoa producing states in Nigeria to replace the old trees which was targeted towards the improvement the productivity of cocoa and visa improving income earnings of farmers (Fawole W.O.Rahji, 2016)

The total annual cocoa productions are left in the hand of some 30,000 smallholder's farmers cultivating less than five hectares per farming household

Cocoa flourishes in areas that are not more than 20 degrees north or south of the equator. The trees respond well in regions with high temperature and distributed rainfall. In Nigeria, the cocoa tree is grown from seedlings which are raised in nurseries, when the seedlings reach a height of 3 cm they are transplanted at a distance of 3 to 4 meters. The cultivation of cocoa is done by many small scale farmers on farmlands of around 2 hectares while export is dominated by a few

firms (Wikipedia, 2017). The average cocoa farmer in Nigeria hold farm size of 2.5ha which delivers less than 5 bags per season (Nwachukwu, 2010).

The dominance of smallholders in the cocoa production sector and the lack of farm labour due to increased rate of urbanization held back production. Nigeria has the potential to produce over 300,000 tons of cocoa beans per year, but cocoa production only amounted to 145,000 tons in 1999

Cocoa is cultivated widely in the southern belt of Nigeria that include: Abia, Adamawa, Akwa Ibom, Cross River, Delta, Edo, Ekiti, Kogi, Kwara, Ogun, Ondo, Osun, Oyo and Taraba with a sustaining soil and climatic condition prevailing in the area. Ondo State is rated as the largest cocoa producing state in Nigeria (Oluyole, 2005)

The major states that produce cocoa are Ondo, Cross River, Ogun, AkwaIbom, Edo, Ekiti, Delta, Osun and Oyo. Currently, farmers sell their products indirectly through a cooperative or a licensed buying agent who in turn sell it to exporting firms (Wikipedia, 2017)

2.3 Cocoa production in Osun state

Osun state farmers are seriously engulfed in cacao business, the results of the analysis done by (Fadipe *et al*, 2012) showed that a net return of N37, 705.69 per hectare was made in a production season and the profitability and efficiency ratios were 2.33 and 3.33 respectively, which means that cocoa production in the study area (Osun state) has been found profitable and efficient.

(Oyekale, 2009) Investigated the effect of climatic variables in cocoa seedling raising, production and processing and also assessed the degree of vulnerability and coping strategies adopted by the farmers and observed that rainfall, temperature and sunshine were the most important climatic factors that affect cocoa production.

(Villalobos, 1989) Reported that some factors such as: low input, inconsistent production pattern, disease incidence, pest attack and use of simple farm tools are determining factors in the production of cocoa.

(Oluyole.K.A, 2009) shows that climate change affect cocoa production in Nigeria, they noted that there was a significant correlation between cocoa output and rainfall as well as cocoa output and humidity and recommended that in as much that rainfall significantly affected cocoa output, irrigation facility should be provided to make water available especially during the dry season. This will make water to always be available year round so as to boost cocoa production.

Poor yield which characterized cocoa subsector in Nigeria have been attributed to non-adoption of improved seedlings, pests and diseases of cocoa. Old age of cocoa farms due to non-adoption of research recommendations has been reported (CRIN, 2010).

Rank	Country	Production (tonnes)
1	Coted'Ivoire	1,448,992
2	Ghana	835,466
3	Indonesia	777,500
4	Nigeria	367,000
5	Cameroon	275,000
6	Brazil	256,186
7	Ecuador	128,446
8	Mexico	82,000
9	Peru	71,175
10	Dominica republic	68021
11	Colombia	46739
12	Papua New Guinea	41200
13	Venezuela	31236
14	Uganda	20000
15	Togo	15,000
16	Siera Leone	14,850
17	Guatemala	13,127
18	India	13,000
19	Haiti	10,000
20	Madagascar	9,000

Ranking of Coca Production in the world.

Culled from the world Atlas (2017)

2.4 New Presidential initiatives on cocoa policies in Nigeria

Agricultural policies in Nigeria have undergone five main phases: The first from 1960 to 1969; the second from 1970 to 1979, the period of the oil boom; the third from 1980 to the late 1990s, during the structural adjustment program (SAP); and the current needs frame work, The mild food scarcity of 1960 to 1970 stirred up the government to concentrate briefly on food production. This was evidenced in the planned expenditure (PE) of 1962 to 1968 when 9.8% of

the PE was allocated to the entire agricultural sector. Nigeria started having problem from the first decade of the country's independence (1960 – 69). There were also rapid declines in government revenue from agriculture, in foreign exchange earnings from agricultural exports and in the labour force required in agriculture.

The 1970 to 1985 era (period of maximum government intervention)

This phase was characterized by a change of policy from minimal government intervention to maximum in the agricultural sector. . Many agricultural policies and programmes were enunciated. The fiscal, monetary and trade policies under the macro-economic policies were launched during the era as shown as follows

Fiscal policy: Budgetary allocations to agriculture were substantially increased to accommodate capital and recurrent expenditures. However large budget deficits were recorded. The capital expenditure on agriculture declined from 6.2% of total capital expenditure by the Federal Government in 1973 to 4.0% in 1985.

Tax policy: Income tax reliefs on incomes from new agricultural enterprises were pursued.

Wage policy: A unified wage structure for all public sector workers was put in place.

Monetary policy: Agricultural loans were given at concessionary interest rate of 6% per annum. In 1980s it was raised to 9% per annum

The 1985 to 1990 era (structural adjustment programme(SAP) and post SAP period)

The objectives of SAP were to:

1) Restructure and diversify the productive based of the economy so as to reduce dependency on the oil sector; 2) Achieve fiscal stability and balance of payments viability over the medium

term; and 3) Promote economic growth with single digit inflation rates. Some of these policies under structural adjustment programme are:

The National Accelerated Food Production Programme (NAFPP) started in 1972 primarily to raise farmers' income, accelerate the rate of diffusion of new agricultural technology

Agricultural Development Projects (ADPs) were set up in various parts of the country starting from 1975. Partly financed by the World Bank, these projects were to promote integrated rural development by providing facilities for intensive extension services, modern input supplies and distribution system and rural infrastructures, especially feeder roads.

Operation Feed the Nation (OFN), which started in 1976, was aimed at curtailing massive food importation into the country. The stated objectives of the programme were to meet the acute shortage in food supply, and restore some respectability to farming with the view to stemming the movement of youths from the rural areas to the cities. Urban dwellers were also encouraged, through the programme, to engage in backyard farming. The operations also attempted raising production and productivity by distributing inorganic fertilizers and improved seedlings.

Agricultural Credit Guarantee Scheme was set up, under the Central Bank to mobilize funds from the banking sector for rural development to guarantee loans by the commercial banks for investment in agriculture in order to minimize the risk involved in financing the sector. The implementation of this policy has been too slow to reach all applying farmers.

The Land Use Act was meant to facilitate an effective utilization and exploitation of the land resources for agricultural purposes. The law sought to bring the existing land tenure system under one common law.

Green Revolution which was launched in 1980, was essentially a reformulation of “Operation Feed the Nation” Programme but focused on the small farmer and the development of the rural areas. The Green Revolution intended to address agricultural production from a fully mechanized and capacity upgrading perspective. To this effect, the government supported the policy with deliberate program of procuring machineries for full mechanized farming. It also established the universities of Agriculture to enhance the nurturing of a young, educated population of modern farmers learned in mechanized production.

The new millennium agricultural policies (1999 to 2009)

Attainment of self-sufficiency in basic food commodities with particular reference to those which consume considerable shares of Nigeria’s foreign exchange and for which the country has comparative advantage in local production.

- i. Increase in local production of agricultural raw materials to meet the growth of an expanding industrial sector.
- ii. Increase in production and processing of exportable commodities with a view to increasing their foreign exchange earning capacity and further diversifying the country’s export base and sources of foreign exchange earnings; Modernization of agricultural production, processing, storage and distribution through the infusion of improved technologies and management so that agriculture can be more responsive to the demands of other sectors of the Nigerian economy.
- iii. Creation of more agricultural and rural employment opportunities to increase income of farmers and rural dwellers and productively absorb an increasing labour force in the nation.

Agricultural Transformation Agenda (2010 to 2016)

The growth enhancement scheme was part of the Agricultural transformation Agenda

The challenges of GES were:

1. Inadequate quantity of fertilizer of about two bags of 100kg each to a farmer and small quantity of improved seeds that is not always considered of good quality

11. Late arrival of inputs especially fertilizer and mismatch between available fertilizer types and farmers requirement

111. There were reported cases of leakages such as re-sales of subsidized fertilizer by farmers at the redemption centers resulting the product finding its way back to market

Agriculture promotion policy (2016 to 2020)

The objectives are:

Integrate agricultural commodity value chains into the broader supply chain of Nigerian and global industry, driving job growth, increasing the contribution of agriculture to wealth creation, and enhancing the capacity of the country to earn foreign exchange from agricultural exports; Agriculture's Share of Non-Oil Exports Earnings: 75%

II. Promote the responsible use of land, water and other natural resources to create a vibrant agricultural sector offering employment and livelihood for a growing population;

III. Facilitate the government's capacity to meet its obligations to Nigerians on food security, food safety and quality nutrition Agriculture's Share of Federal Budget: ~2.0%

IV. Create a mechanism for improved governance of agriculture by the supervising institutions, and improving quality of engagement between the Federal and State Governments.

The cocoa policies that can be found under these Agricultural policies are:

Soil Fertility: this policy helps to maintain adequate levels of macro and micro soil nutrients under intensive production systems that remove nutrients from agriculture areas, these policy

aims to look at crop rotation to improve nitrogen fixation; soil fertility reconstruction; formal fallow periods

Access to Inputs (Seeds/ Seedlings, Fertilizer): This policy looks at where the farmers get their inputs such as seedling, fertilizer and this policy has resulted to subsidy of the inputs by the government. This policy looks at the where the farmers get their input. There are new improved variety of cocoa that cocoa research institute of Nigeria has been able to produce that starts producing after 18 months such as early bearing cocoa varieties which produces high yield(2000 kg/ha compared to 500kg on farmers farm. Eight new varieties hybrids were produced by CRIN and these varieties are: CRIN TC-1, CRIN TC-2, CRIN TC-3, CRIN TC-4, CRIN TC-5, CRIN TC-6, CRIN TC-7 and CRIN TC-8

Presidential fertilizer initiative is a partnership between the fertilizer producers and suppliers of Nigeria (FEPSAN) and OCP which is a state owned Moroccan company, the OCP supply discounted phosphate to Nigeria to help support domestic blending of NPK fertilizer .The goal is to achieve local production of fertilizer and thereby reduce the cost of purchase of fertilizer from 9000 naira to 5500 naira. It was implemented in 2016 by Buhari's administration

Pest & Disease: this policy looks at how cocoa farmers can overcome the infestation of pest on cocoa pods thereby causing disease on the cocoa through inspection and enforcement of safe use of agrochemicals; enhancing access to information about safe use of agrochemicals quality assurance; promoting safe alternatives where available e.g. organic pesticides; integrated pest management and control mechanisms .

Access to Finance: this policy looks at the farmers getting credit from the Government to finance their farming. It aims at providing credit for the framers through stimulating cooperative

banking and affordable loans through commercial bank Access to multi-year finance as well as seasonal shorter-term capitals.

Anchor borrowers program: The program was launched in November 2016. The program aims to assist small scale farmers to increase production and supply of feedstock to agro-processors. It is aimed at diversifying the economy by addressing local production of agricultural product. The anchor borrowers program (ABP), Established by the central bank of Nigeria (CBN), was launched by president Muhammad Buhari (GCFR) on November 17,2015. It is intended to create a linkage between anchor companies involved in the processing and small holder farmers (SHFs) of the required key agricultural commodities. The ABP provides farm input in kind and cash (for farm labour) to small holder farmers to boost production of these commodities. At harvest, the SHF supplies his/her produce to the Agro-processor (Anchor) who pays the cash the cash equivalent to the farmers account

Access to Land and Land Management: Facilitating the recognition and entitlement of land ownership by formal or customary means to assist collateralization Land rights that incentivize small farmers to invest in their land and raise their productivity

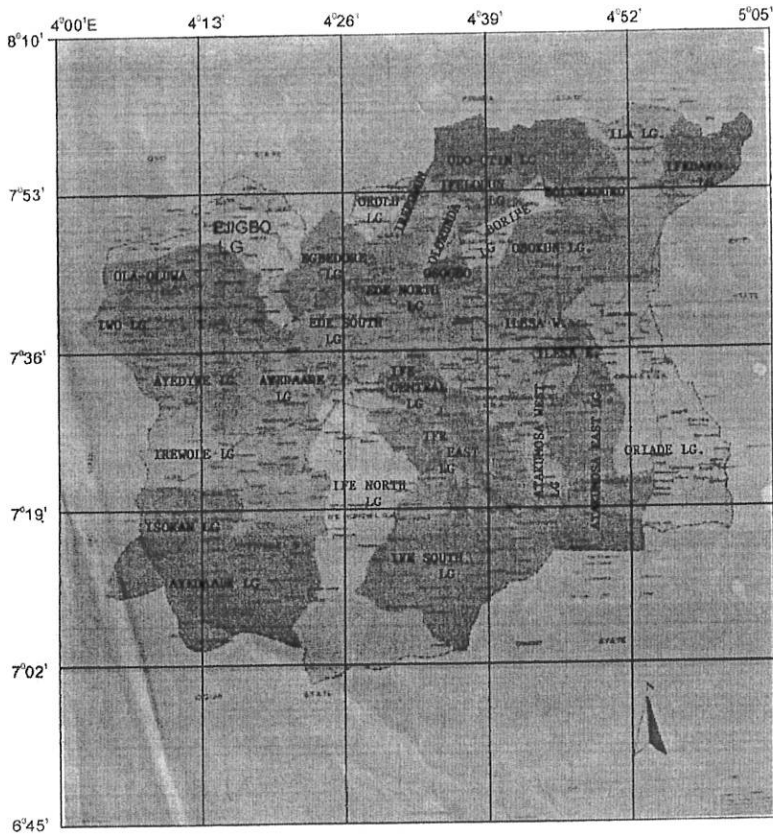
Access to information: Policy to enhance availability of information and knowledge for farmers, agribusiness and policymakers through implementation of an ICT Framework by Developing agricultural information systems; standards and institutional mechanisms for content generation, policy support, stakeholder dialogue, innovation and learning Focus on disseminating information designed to help farmers make best choices with respect to input costs, equipment leases, agronomic practices and crop prices.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Study Area

Osun State is one of the six states of the South West Nigeria an inland State in the South Western Nigeria. It is bounded in the north by Kwara State, in the East partly by Ekiti State and partly by Ondo State the south by Ogun State and in the west by Oyo State. It is created from the old Oyo State in August 1991. Osun is divided into three federal senatorial districts, each of which is composed of two administrative zones. The state consists of thirty (30) local government areas. it covers an area of approximately 14,875 sq km, there are two seasons. The rainy season from April to October and the dry season from November to March. The state is covered by secondary forest in the northern part, the derived savannah mosaic predominates. Forest vegetation could be found along River valleys and streams found across the state. The economy of Osun State is Agro based with farming being the predominant occupation of the people. Other agricultural crops that can be grown in Osun State are: maize, yam, cassava, millet, rice, plantain and cocoa. Osun State is blessed with vast mineral resources. These include gold, clay, limestone, kaolin and granite. It also has many agricultural resources. Osun has a population of about 3,423, 535 inhabitants, and representing 2.45% of Nigeria's total population according to 2006 national census. Osun has 1,740,619 male and 1,682,916 female.



Map of Osun state showing the 30 local government Areas

3.2 Sampling technique.

Multi-stage sampling technique was adopted in this study. At the first stage, purposive sampling technique was used to select three (3) local Governments that deals majorly with cocoa. The local Government selected were;

1. Atakunmosa West Local Government
2. Atakunmosa East Local Government
- 3, Obokun Local Government

From these three (3) local Governments, three (3) communities each was selected, making a total of nine (9) communities which was used for this work. The nine communities that was used for this work are:

(1) Atakunmosa West Local Government

I.Okeosin

II.Isedoikoyi

III.Iaala

(2.) Atakunmosa East Local Government

I.Ilota

II.Iwikun

III.Ipole

(3.) Obokun Local Government

I.Ikinyinwa

II.Obokun

III.Iponda

Simple random sampling technique was used to select Ten (10) farmers in each community and the names of these farmers were gotten from the ADP sampling frame gotten from the ADP in the state. A total of ninety (90) respondents were used for this study.

3.3 Data collection

Data was collected through well-structured questionnaire. Secondary data was also collected from literatures and the ADP.

3.4 Analytical tools

Descriptive statistics such as the frequency distribution like mean, median and mode, standard deviation and Percentages will be used to analyze objective 1, 3, 5 and 6. Objective 1 is the socio-economic characteristics of the farmers such as the Age, educational status, size of the farmer's farm, farmers family size, marital status, farming experience. Objective 3 is to determine the cropping pattern used. Objective 5 is to determine the source of inputs that is looking at where the farmers get their input from whether it is from the cooperative, individual or government and will be analyzed using descriptive statistics while objective 6 will be looking at the impact of cocoa policies. to know if the farmers were aware of these cocoa policies and if they are able to access these policies. Percentages and likert scale was used to analyze objective 6 and likert scale is represented thus; "SA-Strongly Agreed, A-Agreed, U-Undecided, D-Disagreed, SD-Strongly Disagreed. SA-5, A-4, U-3, D-2 and SD-1; the mean is calculated below as:

Likert scale- $(5+4+3+2+1)/5=3$ Key: $<3.0 =$ Disagreed, $>3.0 =$ Agreed."

Gross Margin and Net income will be used to analyze Objective 4 which is the profitability of cocoa that is looking at the cost and returns of cocoa production

Regression analysis will be used to analyze objective 2 which is to determine the factors affecting cocoa production in the study area.

Linear function:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + e_i$$

Semi -log function.

$$Y = a + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + b_6 \log X_6 + b_7 \log X_7 + e_i.$$

Double-log function:

$$\ln Y = a + b_1 \ln X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + e_i$$

Exponential function:

$$\ln Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + e_i$$

Where,

Y = Output of cocoa in (kg)

X₁ = Access to Credit (1=Yes, 0=No)

X₂ = Farm land (ha)

X₃ = Level of Education (Years)

X₄ = Amount spent on labour (Naira)

X₅ = Farming Experience (Years)

X₆ = Chemical inputs (Litres)

X₇ = Age of Farmers (Years)

X₁.....X₇ = the coefficient to the estimated

e_i = Error

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Socio-Economic Characteristics of Respondents

Table 2 below, shows the socio characteristics of the farmers such as the sex, Age, religion, Educational status, size of the plot, marital status, Household size and farming Experience.

From the Table 2 below, sex distribution of the respondents, majority of the respondents were males with 78.9% while the females had 21%. It shows that cocoa farming in the study area is carried out mostly by males. The reason why majority of the respondents are males is that cocoa farming is tedious and it requires lot of hard work.

The table 2 below, shows that majority of the respondents are between the ages of 31-40 with 34.4% which is the active age of the farmers to work in the farms and also because they are young and still have the strength to work on the farm while the least of the ages of the farmers is between 61-70 with 11.1% because they are old and do not have the strength to work on the farm. Cocoa farming is labour intensive and requires a lot of hard work from the nursery preparation to the transplanting and to the harvesting of the pods, it requires the farmers to be in their active age to be able to carry out all this operations in the farm.

The table 2 below, also shows the religion of the farmers, Christianity with 38.9% and Islam with 56.7%, this shows that most of the respondents in the study area which is Osun State practice Islam because Osun State is mostly dominated by Muslims.

Education promotes the rate of adoption of innovation by farmers and it's a vital tool as it helps them to react sharply and constructively to changes in their environment (Sevier *et al*, 2003)

Farmers with higher level of education are more likely to be efficient in the use of resources than their counterparts with little or no formal education.

Results from table 2 below, shows that respondents with no formal education had the highest percentage with 43.3%, followed by those with primary school leaving certificate with 37.8%. Those respondents with secondary school leaving certificate were the least with 18.7%. It shows that the majority of the farmers have no formal education with 43.3% which thereby hinders ease of adoption of new ideas and innovation and their level of knowledge on the best management practices that can make cocoa production more profitable. Results from table 2 below, shows the area of land cultivated as follows, respondents who cultivated 1-5 hectares had percentage of 77.8% and those who cultivated between 6-10 hectares had 22.2%. The results which shows that land which is known as one of the limiting inputs in agriculture due to population growth is largely scarce as most respondents with 77.8% cultivate between 1-5 hectares of land.

The study shows the distribution of cocoa farmers according to marital status in the study area. Cocoa production was engaged in by all categories of people, married, singles and divorced. From the table 2 below, it is clearly shown that most cocoa farmers with 82.2% were married, this is in line with a prior expectation that households engage in enterprises that have profitable returns for the upkeep of their families (Anugwo S.C, 2012). Personal interview revealed that many families were able to train their children by depending on the proceeds from output of cocoa. 15% and 2.2% of the respondents were singles and divorces respectively in the study area and make up the class intervals with the least percentage.

The table 2 below also shows the household size of respondents in the study area. The class interval of 4-6 with 74.4% had the highest percentage, followed by a close range of 7-9 with

15.6%. The class interval of 10-12 with 1.1% had the least percentage. This connotes that in the study area, majority of the farmers' household ranges between 4-6 persons per household with 74.4%, this helps the farmers, because the farmers can use his household members in the farm thereby reducing the cost spent on hired labour. The table 2 below also shows the years of farming experience of the farmers. Majority of the farmers had the class range of 11-20 years with 45.6% which shows that most of the farmers have been into cocoa production for a very long period of time. It also shows the least class interval of 31-40 years with 7.7

Table 2: Socio- economic Characteristics of Respondents

Variable	Frequency	Percentage	Mean
Sex			
Male	71	78.9	1.21
Female	19	21.1	
Total	90	100	
Age			
18-30	21	23.4	2.3
31-40	31	34.4	
41-60	28	31.1	
61-70	10	11.1	
Total	90	100	
Religion			
Christianity	35	38.9	1.66
Islamic	51	56.7	
Non	4	4.4	
Total	90	100	
Educational status			
No formal education	39	43.3	
Primary school	34	37.8	
Secondary school	17	18.9	
Total	90	100	
Plot size			
1-5	70	77.8	1.22
6-10	20	22.2	
Total	90	100	
Marital status			
Married	74	82.2	
Single	14	15.6	
Divorced	2	2.2	
Total	90	100	
Household size			
1-3	8	8.9	2.0889
4-6	67	74.4	
7-9	14	15.6	
10-12	1	1.1	
Total	90	100	
Farming Experience			
1-10	41	45.6	1.8111
11-20	32	35.6	
21-30	10	11.1	
31-40	7	7.7	
Total	90	100	

Source: Field study, 2018

4.2 Factors Affecting Cocoa Production in The Study Area

Table 3 below, shows the factors affecting cocoa production in Osun State. The Linear function was chosen as the lead equation because of the number of significant variables. The R^2 value of 0.938 which indicates 93.8% variation in the factors affecting cocoa production for the explanatory variables, it shows that the model has explanatory power on the factors affecting cocoa production.

Size of plot was significant at 1% level, this implies that the greater the farm size the greater the productivity and will lead to increased farm input and increased profit.

The amount spent on labour (0.180) was significant at 10% which shows that the amount spent on labour goes a long way to affect productivity of cocoa such as maintenance of cocoa farms in terms of weeding, pruning, harvesting of cocoa pods, meaning that hired labour had positive impact on cocoa production

Table 3: Determining Factors Affecting Level of Cocoa Production Using Regression Analysis

Variables	Linear
Constant	-0.176
Age	0.027 (0.359)
Size of the plot	0.812 (14.031)***
Educational level	0.030 (0.923)
Amount spent on labours	0.180 (3.146)***
Farming experience	-0.030 (-0.416)
Pesticides Used	-0.005 (-0.150)
Access to credit	0.009 (0.302)
R²	0.938
Adjusted R²	0.932
F-Ratio	(175.745)***

Source: Field survey, 2018. Figures in parenthesis are the t-ratios; *** indicate at 1.0% significant, ** indicate at 5.0% significant and * at 10.0% significant

4.3: Cropping Pattern Used

Table 4 below, shows the cropping pattern of the respondents, inter cropping had the highest percentage with 88.9% followed by sole cropping with 11.1%. This connotes that majority of the respondents use inter cropping pattern for cocoa farming. Inter cropping is a system of farming that involves the planting of two or more plants simultaneously on the same field, so that they grow together.

Table 4: Cropping Pattern of Respondents

Variable	Frequency	Percentage	Mean
Inter cropping	80	88.9	1.24
Sole cropping	10	11.1	
Total	90	100	

Source: Field Study, 2018

4.4 Sources of Inputs

Results from table 5 below shows that most of the respondents sourced their cocoa inputs from CRIN and they had the highest percentage with 67.9% while those who sourced theirs from Individual farms had a percentage of 3.8%. Respondents who got theirs from the state government and agro dealers were 6.6% and 21.7% respectively. From the result in table 6 above, it shows that the majority of the farmers got their inputs from CRIN with percentage of 67.9% because Cocoa Research Institute of Nigeria which has its headquarters in Ibadan, Oyo State which is not far from Osun State and deals with permanent crops such as cocoa, cashew, kola, coffee and tea and has the improved varieties of cocoa seedlings which is sold to the farmers at subsidized prices

Table 5: Sources of Inputs of Respondents

	Frequency	Percentage
CRIN	72	67.9
Individual	4	3.8
State government	7	6.6
Agro dealers	23	21.7

(Multiple response) Source: Field survey, 2018

4.5 Profitability of Cocoa Farmers under the new cocoa policy

Table 6, shows the gross margin analysis of the farmers to know if cocoa farming is profitable or not. Total revenue was gotten by multiplying the quantity of cocoa gotten from the farmer's farm

and multiplying it with the price of the cocoa that was sold and the value of total revenue is N85,423,500 with the mean value of 949,150.

Total variable cost was N17,039,700 with the mean of 188850. Total variable cost is the cost that the farmer spends to maintain his farm such as: cost of planting materials, cost of labour (family and hired labour) cost of pesticides, cost of herbicides and cost of farm implements.

Gross margin is the profit that the farmer get from his farm and it is calculated by subtracting total revenue from total variable cost. The value of gross margin was N68,383,800 with the mean of 76030000 which means that an individual farmer earns N760,300.00. Gross margin is calculated as follows;

$$\text{Gross margin} = \text{Total Revenue (TR)} - \text{Total variable cost (TVC)}$$

Table 6: Profitability of Cocoa Farmers under the new cocoa policy

Variables	Cost	Standard deviation	Mean
Cost of planting materials	1,213,000	8619.260	13,477.78
Cost of labours	2,748,000	20880.721	30,533.33
Cost of fertilizer	2,480,500	30211.690	27,561.11
Cost of pesticides	7,041,200	46389.805	77,755.56
Cost of herbicides	103,000	3266.483	1,144.44
Cost of farm implements	3,454,000	18016.583	38,377.78
Total Variable cost	17,039,700	97751.173896	188,850.00
Total Revenue	85,423,500	575296.428	949,150
Gross Margin/ha	68,383,800		760,300.00

Source: Field survey, 2018

4.6: New Cocoa Policies and Their Impact on Production

4.6.1: Soil Fertility Policy

The result from table 7 below, shows intercropping with 72.8%, shifting cultivation with 3.3%, crop rotation with 3.3% and sole cropping with 20.6%. Intercropping is the planting of two or more crops on a piece of land. Cocoa is grown alongside with citrus such as orange, the orange helps to serve as another source of income for the cocoa farmer. Intercropping of cocoa alongside with orange helps to serve as shade cover for the young cocoa.

From the results in table 7, it shows the type of fertilizers used by the farmers, organic fertilizer with 67.4%, inorganic fertilizer with 13% and both organic and inorganic fertilizer with 19.6%. Majority of the farmers use organic fertilizer which is the leaves that falls down from the tress that is planted with cocoa, when the leaves falls down, it will decay and turn into fertilizer for the cocoa plant.

The result from table 7 below, also shows that the majority of the farmers are involved in weeding of the cocoa plant which thereby helps to prevent competition of the nutrient with the cocoa plant and also prevent the use of herbicides which has a negative impact on the plant.

Results from table 7, shows the soil conservation practices that were introduced to the farmers by the extension agents, majority of the farmers with a percentage 47.9% use mulching and mulching is done at the early stage of cocoa farming by using leaves to cover the seedlings to prevent them from being damaged by heat and later these leaves decay and serve as manure. Mulching helps to increase the organic content of the soil, nutrients and reduce compaction.

Table 7: Distribution of Respondents on Soil Fertility Impact on Cocoa Production

	Frequency	Percentage
Cropping pattern		
Intercropping	65	72.8
Shifting cultivation	3	3.3
Crop rotation	3	3.3
Sole cropping	19	20.6
Type of Fertilizer		
Organic	60	67.4
Inorganic	18	13.0
Both organic , inorganic	12	19.6
Regular weeding		
Yes	77	85.6
No	13	14.4
Soil conservation practice		
Fertilizer	29	30.2
Mulching	46	47.9
Trees	17	17.7
Cocoa waste	4	4.2

(Multiple responses) Source: Field source, 2018

4.6.2: Access to Input Policy

From the result in table 8 below, most of the farmers make use of improved seedlings with a percentage of 77.8%, the improved seedling can be gotten from CRIN and helps to increase productivity also the prices of the improved seedling are sold at subsidized rate.

The result from table 8 below, also shows that the majority of the farmers are aware of the Presidential Fertilizer Initiative with a percentage of 77.8%.

Results also from table 8, shows that most of the farmers do not access fertilizer from the Presidential Fertilizer Initiative because they are not available for purchase and most of the farmers make use of the organic fertilizer than inorganic fertilizer.

From the result below in table 8, it shows where the farmers get their inputs from. Farmers who got their's from CRIN had 79.3%, individual farms with 5.4%, state government with 3.3% and

Agro dealers with 12%. Majority of the farmers got their inputs from CRIN because Cocoa Research Institute of Nigeria is not far from Osun State and its headquarter is in Ibadan which is not far from Osun State that deals with permanent crops such as cocoa, cashew, kola, coffee and tea and also has the improved varieties of cocoa and also sells it at subsidized prices.

Table 8: Distribution of Respondents on Access to Input Policy on Cocoa Production

	Frequency	Percentage
Improved seedling		
Yes	70	77.8
No	20	22.2
Improved seedling subsidize		
Yes	64	71.1
No	26	28.9
Awareness of fertilizer initiative		
Yes	70	77.8
No	20	22.2
How much do you buy the fertilizer initiative		
Don't purchase	35	38.9
5000	5	5.6
5500	20	22.2
6000	30	33.3
Presidential Fertilizer initiative more4 cheaper		
Yes	67	74.4
No	10	11.2
Not aware	13	14.4
Where do you get seedling from		
CRIN	71	79.3
Individual	5	5.4
Agro dealers	11	12
State government	3	3.3
Different objective that these policy has introduced		
Good Agricultural practices	48	53.3
Improve yield	2	46.7
Diversification	2	2.2

(Multiple responses) Source: Field survey, 2018

4.6.3: Access to Pest and Diseases

From the result in table 9 below, most of the farmers make use of the fungicides to kill pests and diseases. Farmers' use of fungicides had a percentage of 87.8%, while their use of natural methods had a percentage of 12.2% and ICPM with 30.8%, Good agricultural practices also had 69.2%. Majority of the farmers learnt that the new way of handling pests and diseases is through good agricultural practices such as pruning which helps to reduce pest infestation and also leads to greater yield

Table 9: Distribution of Respondents on Access to Pest and Diseases Policy on Cocoa Production

Variable	Frequency	Percentage
Ways of handling pest and disease		
Fungicides	79	87.8
Natural method	11	12.2
New ways of handling disease has this policy introduced		
ICPM	28	30.8
Good Agricultural Practices	63	69.2

Source: Field survey, 2018. (Multiple responses)

4.6.4: Access to Credit

The result from table 10, shows majority of the farmers do not receive credit from the government with 80%. Anchor Borrowers Program was implemented by the president Buhari's regime with the aim of helping farmers with credit facilities in order to increase their production, the result shows that most of the farmers were aware of the Anchor Borrowers Program with a percentage of 78.9%.

Table 10: Distribution of Respondents on Access to Credit Policy on Cocoa Production

Questions	Frequency	Percentage
Do government provide you with any form of credit		
Yes	13	20
No	77	80
Are you aware of the Anchor borrowers program		
Yes	71	78.9
No	19	21.10
Do you have access to Anchor Borrowers program		
Yes	30	33.3
No	60	66.7
Do you get loan from the government		
Yes	18	20
No	72	80
Where do you get fund for your production activities		
Cooperatives	44	39.6
Savings	65	58.6
Others	2	1.8

Source: Field survey, 2018. (Multiple responses)

The result from table 11 below, shows how the farmers got land for cocoa production. Farmers who got their plot of land through inheritance had a percentage of 66.3%, purchase of land had a percentage of 26.3%, Gift of land with 7.4%. Majority of the farmers got their land through inheritance with 66.3% and most of the farmers had the opinion that land bought is at reduced rate with 56.7%

Table 11: Distribution of Respondents on Access to Land Policy in Cocoa Production

	Frequency	Percentage
How do you get your land		
Inheritance	63	66.3
Purchase	25	26.3
Gift	7	7.4
Where do you buy your land		
Dont buy land	55	61.1
State government	4	4.4
Individuals	31	34.4
The land bought is at reduced rate		
Dont buy land	34	37.8
Yes	51	56.7
No	5	5.6

Source: Field survey, 2018

4.6.5: Effect of Policy on Production

The result from table 12 below, shows that cocoa policy is helping to diversify cocoa plantation with 95.6% through the type of cropping pattern that the respondents use which is intercropping which is the planting of trees along side with the cocoa plants thereby serving as another means of income for the farmers before the plant starts to produce pods.

Table 12 also shows that the policy is helping to enhance agricultural productivity with 88.9% through that the farmers have access to information through the practice of good agricultural practices such as pruning that helps to reduce pest infestation and also leads to higher production

Table 12 also shows it has impacted positively in supply of raw material with 73.3%

The result from table 12 below, also shows that it has helped in domestic and poverty reduction with 81.1% that the framers have been able to make profit through cocoa farming

The result from table 12, also shows that it has helped in domestic savings through that the cocoa farming is profitable

Table 12: Distribution of Respondents on Effect of Policy on Cocoa Production

Question	Frequency	Percentage
These policy is it helping you to diversify your cocoa plantation		
Yes	86	95.6
No	4	4.4
These policy helping you to enhance Agricultural productivity		
Yes	80	88.9
No	10	11.1
These Agricultural policy have they impacted positively in terms of:		
Food supply of raw material		
Yes	66	73.3
No	24	26.7
Domestic and poverty reduction		
Yes	73	81.1
No	17	18.9
Domestic savings		
Yes	75	83.3
No	15	16.7

Source: Field survey, 2018

4.7: Solutions In Overcoming Challenges In Implementing The New Presidential Initiative On Cocoa Production

Effective monitoring of the policy at the implementation stage with a percentage of 43%, Adequate involvement of the farmers in policy management, formulation and implementation with 32.3%, Microcredit and agricultural programs in rural areas with 19% and Adequate funding with 5.7%.Majority had the opinion that there should be an effective monitoring of the policy at the implementation stage by the Government. Government should not just make policy

but they should monitor the policy right from the implementation stage and make sure that the policies get to the farmers.

Table 13: Distribution of Respondents on The Solutions In Overcoming Challenges In Implementing The New Presidential Initiative On Cocoa Production

Question	Frequency	Percentage
Effective monitoring of the policy at the implementation stage	68	43
Adequate involvement of farmers in policy management, formulation and implementation	51	32.3
Micro credits and Agricultural programs in rural areas	30	19
Adequate funding	9	5.7

(Multiple responses) Source: Field survey, 2018

4.8: Impact of Cocoa Policies on Production

From the results in table 14, the respondents had the opinion which is Agreed that is if government provide the farmers with all cocoa policies such as soil fertility policy, access to input, access to credit, access to land policy that they will be a significant improvement in production followed by the opinion which Agreed that weak institutional support on the part of the implementing agencies contributes to the failure in achieving these policies, when the government do not have strong institutional support that monitors the policies that are been implemented. When implementing agencies fall short in their duties, policy failure is likely to occur (Uche, 2011)

In the third rank, had the opinion of Agreed that corruption and weak implementation strategies limit the effective implementation of these policies, when there is corruption on the part of

implementing agencies, thereby not allowing the policies to get to the farmers. it is in conformity with (Uche, 2011)

In fourth rank, the respondents had the opinion Agreed that poor awareness of low management capacity of farmers limit the new agricultural policy. When extension agents do not teach the farmers the new management capacity followed by the view Agreed that the new presidential initiative is making adequate provisions for the marketing of cocoa produce at the head of international markets

In the Sixth rank, respondents had the opinion of Agreed that the farmers have access to input subsidy such as seedlings

In the Seventh rank, respondents had the opinion Disagreed that there is no equality and fairness in the distribution of fertilizers and other farming infrastructures among the farmers. Most of the farmers do not have access to the presidential fertilizer initiative because it is not available followed by the view which Disagreed that funds are not evenly distributed for cocoa, most of the farmers do not have access to anchor borrower's program implemented by the government to give funds to the farmer

Table 14: Perception Questions of Respondents on Impact of Cocoa Policies on Production

S/ N	Perception questions	SA	A	U	D	SD	Respo ndents	Total score s	Mea n	Remark s	Ran king
1	If government provide you with all these cocoa policies, will there be significant improvement	56	33	1	0	0	90	415	4.61	Agreed	1 st
2	Do you think weak institutional support on the part of implementing agencies contributes to the failure of achieving these policies	45	41	1	1	2	90	396	4.4	Agreed	2 nd
3	Do you think that corruption and weak implementation strategies limit the effective implementation of these policies	58	14	6	5	7	90	381	4.2	Agreed	3 rd
4	Do you think that poor awareness of low management capacity of farmers limit the new agricultural policies	43	28	8	8	3	90	370	4.11	Agreed	4 th
5	Do you think that the new presidential initiative is making adequate provisions for the marketing of cocoa produce at the head of international markets	16	48	14	9	3	90	335	3.72	Agreed	5 th
6	Access to input subsidy	18	26	13	32	1	90	298	3.31	Agreed	6 th
7	Do you think that there is equality and fairness in the distribution of fertilizers and other farming infrastructures among the farmers	8	17	2	57	6	90	234	2.6	Disagre ed	7 th
8	Are the funds evenly distributed for cocoa production	9	18	9	31	23	90	229	2.5	Disagre ed	8 th
9	View on if the beneficiaries of presidential initiatives are on cocoa farmers or other areas of Agriculture	4	22	12	24	28	90	220	2.44	Disagre ed	9 th
10	Are the micro credit evenly distributed to the farmers	4	21	5	24	36	90	203	2.25	Disagre ed	10 th

Source: Field survey, 2018

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENEDATIONS

This study was carried out to examine the determinant of cocoa production under the new cocoa policies in Osun state. Three (3) local governments were chosen and Nine (9) communities were used. The objectives are: to determine the socio economics characteristics of the farmers, to determine the factors affecting cocoa production in the study area, to determine the cropping patterns used determine the sources of input, to determine the profitability of cocoa production under the new policies, to determine the new policies and their impact of cocoa policies on production. (Ninety) 90 respondents were used to get data for the analysis and a well-structured questionnaire was used. Descriptive statics, Gross margin and Regression Analysis and likert scale were used to analyze the data gotten the field. The result showed that majority of the cocoa farmers are male with (78.9%), Majority of the age of the farmers are between 31-40 (34.4%), Majority of farmers are Islamic in religion with (56.7%), Majority have primary school leaving certificate with (37.8%). Majority have their plot size to be around 1-5 hectares (77.8%) with farming experience from 1-10 years (45.6%). Farm size, Educational level and Amount spent on labourers are the factors that affect cocoa production and it was done using regression analysis. Intercropping is mostly practiced with (88.9%) because it less cost effective the farmers get profit from cocoa production with total revenue of (949150) with gross margin of (760300). Multiple responses was used to analyze where the framers get their sources of input with CRIN (67.9%). The cocoa policies are soil fertility, majority of the farmers are involved in intercropping which provides another source of income for the farmers before the cocoa plant

start producing, The result also shows the soil conservation practices that is introduced to the farmers by the extension agent, majority of the farmers had the response of Mulching with 47.9%, mulching is done at the early stage of cocoa farming

Access to input, most of the farmers make use of improved seedling with 77.8%. The result also shows that the majority of the farmers are aware of the presidential fertilizer initiative with 77.8%. The result also shows that most of the farmers do not buy the presidential fertilizer initiative because they are not available to be purchased

Access to pest and diseases, most of the farmers make use of the fungicides to kill pest and diseases, use of fungicides with 87.8% and use of natural method with frequency of 11 and 12.2%. Multiple responses was used to analyze new ways of handling disease, which the policy has introduced to the farmers. Majority of the farmers learnt that the new way of handling pest and disease is through Good agricultural practices such as pruning which helps to reduce pest infestation and also lead to greater yield

Access to credit, majority of the farmers do not receive credit from the government with 80%. Most of the farmers are aware of the Anchor borrowers program with 78.9% through television or radio but majority of the farmers do not have access to the anchor borrower program with 66.7%

Access to land, the farmers get their land through inheritance with 66.3%, farmers had the opinion that land bought is at reduced rate with frequency 51 and 56.7%.

RECOMMENDATIONS

1. Government and Non-Governmental Organizations involved in the formulation of policies should make sure that there is effective monitoring of the policy at implementation stage
2. Non-Governmental Organizations should provide micro-credits and agricultural programs in rural areas for the farmers to enhance production of Agricultural produce.
3. Non-Governmental Organizations should increase extension services and programs by the extension agents in order to increase production

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APPENDIX

DETERMINANT OF COCOA PRODUCTION IN OSUN STATE UNDER THE NEW COCOA POLICIES

My name is ONYEKWELU CHIOMA STELLA, a final year student from FEDERAL UNIVERSITY OYE EKITI in the department of Agricultural economics and extension. Am currently undergoing my final year project and my research topic is DETERMINANT OF COCOA PRODUCTION IN OSUN STATE UNDER THE NEW COCOA POLICIES .The project aims to review these cocoa policies which under the new Agricultural policy which is developed by the government and how these policies can help to improve cocoa production thereby making cocoa framing more lucrative and reducing the rate of unemployment.

Please I will like you to help me fill my questionnaire. Thanks for your cooperation and God bless you

A: Socio economic characteristics of the farmer

1. Local government area _____
2. Age of the farmers (a) 18-30 ____ (b) 31-40 ____ (c) 41-60 ____ (d) 61 and above ____
3. What religion (a) Christianity ____ (b) Islamic ____ (c) none ____
4. Educational status (a) No formal Education ____ (b) Primary school leaving ____ (c) Tertiary Education ____
5. Size of the plot (a) 1-5 hectares ____ (b) 6-10 hectares ____ (c) 10 and above ____
6. Marital status (a) Married ____ (b) Single ____ (c) divorce ____
7. Gender (a) Male ____ (b) female ____
8. What is your total household size? ____
9. Is your farm for personal consumption or for market consumption? (a) Yes ____ (b) No ____
10. How many years of farming experience (a) 10 years ____ (b) 20 years ____ (c) 30 years ____
11. What type of labour do you use for your farming? (a) Family labour ____ (b) Hired labour ____ (c) combination of hired and family labour ____

B: Major factor affecting cocoa production

12. Does disease and pest affect your production (a) Yes___ (b) No ___

13. How do you handle disease and pest in your farm a) use of fungicides___ b) use of natural method (c) Use of herbicides___ (d) Use of Pesticides ___

14. What is the major factor that affects your cocoa production? (a) Pest and diseases___ (b) lack of improved varieties ___ (c) lack of credits ___ (d) lack of inputs such as seeds, fertilizer and implements___ (e) lack of information ___ (f) Lack of land ___

C: To determine the cropping pattern used

15. Which type of cropping pattern did you use in your production a) mixed cropping___ (b) intercropping___

16. The cropping pattern used is it favorable (a) Yes ___ (b) No ___

17. The cropping pattern used is it less cost effective? (a) Yes ___ (b) No ___

D: is cocoa production profitable

18. What is the size of your plot? ___

19. Do you get enough yield after harvesting from your plot? (a) Yes ___ (b) No ___

20. Is your cocoa production profitable? (a) Yes ___ (b) No ___

21. What is your source of planting materials (seeds/seedling)? ___ (A) ADP___ (B) CRIN (C) Government ___ (D) Previous farms planting material

22. How much do you spend securing your planting material ___ (in Naira)

23. What is your source of farm labour (A) Family members only___ (B) Family member Plus hired labour___ (C) Hired labour only___

24. How much did you on labourers used in your farm___ (In naira)

25. What type of fertilizer do you use in your farm? (A) Organic Fertilizer (Specify) ___ (B) Inorganic Fertilizer___

26. What is the quantity of Fertilizer used (in Kg) (A) Quantity in Kg ___

27. How much did you spend in acquiring these fertilizers? ___ (in Naira)

28. Do you use herbicides in your farm? (A) Yes ___ (B) No___

29. What type of herbicide do you use? ___

30. If yes, state the quantity in kilogram or litre? Herbicide Qty (in kg or litre) ___

31. How much do you spend in procuring the herbicide used ___ (In Naira?)
32. Do you use Pesticides in your farm? (A) Yes ___ (B) No ___
33. What type of pesticides do you use? ___
34. If yes, state the quantity in kilogram or litre? Pesticides Qty (in kg or litre) ___
35. How much did you use in procuring pesticides used? ___ (In Naira)
36. What type of implements do you use on your farm? _____
37. How much did you spend acquiring these implements? _____ (In Naira)
38. What was the quantity in kilogram of cocoa you produced from your farm? ___ (In Naira)
39. How much did you make as profit on your farm in the last planting season? ___ (In Naira)
40. What was the price per Kilogram of cocoa output? ___

E: Sources of input

41. Where do you get your seedlings from a) Government institutions such as CRIN ___ b) Individual ___ (c) State Government ___ (d) Agro dealers ___

F: the impact of cocoa polices on production

42. What soil conservation practices did extension agent introduce to you? ___
43. Which type of cropping pattern do you use in your farm? (a) Intercropping ___ (b) mixed cropping ___ (c) shifting cultivation ___ (d) crop rotation ___ (e) sole cropping
44. How effective are these conservation practices?
45. Which type of fertilizer do you use? (a) Organic fertilizer ___ (b) inorganic fertilizer ___
46. Do you do regular weeding in your farm? (a) Yes ___ (b) No ___
47. What is the spacing of your plant (a) Yes ___ (b) No ___
48. Do you use improved seedling for planting? (a) Yes ___ (b) No ___
49. The improved seedling is at affordable price? (a) Yes ___ (b) No ___
50. The improved seedling is at subsidized price? (a) Yes ___ (b) No ___
51. Are you aware of the Presidential Fertilizer initiative? (a) Yes ___ (b) No ___
52. How much do you buy the presidential fertilizer initiative? _____ (In Naira)

53. Are you a registered member of any cooperative society? (a) Yes___ (b) No___
54. The presidential fertilizer initiative is at much cheaper rate than the previous fertilizer? (a) Yes ___ (b) No
55. Where do you get the presidential fertilizer initiative? (a) Agro dealers___ (b) State government ____.
56. Where do u get your seedlings from a) government institutions such as CRIN___ b) Individual___ (c) Agro dealers' ___ (d) state government ____
57. What different objective have this policy introduced to you as cocoa farmer which is different from what you have been having before?
58. How do you handle disease and pest in your farm a) use of fungicides___ b) use of natural method ____
59. The agro chemicals used on farm where did u get them from? ____
60. Was it at subsidized price? (a) Yes___ (b) No___
61. What new ways of handling diseased have this policy introduced to you?
62. Where do you get fund for your production activities (a) Cooperatives___ (b) Savings___ (c) Bank of Agriculture___ (d) others_ __
63. Do you get loan or assistance from the government? (a) Yes ___ (b) No___
64. Do government provide you with any form of credit? (a) Yes ___ (b) No___
65. Are you aware of the Anchor borrowers program? (a) Yes ___ (b) No___
66. Are you a registered member of any cooperative society? (a) Yes ___ (b) No
67. Are you able to have access to the Anchor borrowers program? (a) Yes ___ (b) No
68. How much loan do you collect? ____
69. How many hectares is your land? ____
70. How do you get your land? (a) Inheritance ___ (b) Purchase ___(c) Gift___ (d) Rent___ (e) Others___
71. Where do you buy your land? (a) State government___ (b) individuals___
72. The land bought is at reduced rate? (a) Yes ___ (b) No
73. Do you have access to information? (a) Yes___ (b) No___

74. Do you undergo training by the extension agent? (a) Yes ___ (b) No ___
75. How many times do extension agent visit you quarterly in a year? ___
76. These policy is it helping you to diversify your cocoa plantation? (a) Yes ___ (b) No ___
77. These policy is it helping you to enhance agricultural productivity? (a) Yes ___ (b) No ___
78. These policy has it helped improve your cocoa production generally? (a) Yes ___ (b) No ___
79. These policy are they making significant impact on your production of cocoa? ___
80. These Agricultural policy have they impacted positively in terms of:
- Food supply of raw materials (a) Yes ___ (b) No ___
 - Domestic and poverty reduction (a) yes ___ (b) No ___
 - Domestic savings (a) yes ___ (b) No ___
81. These policies did it consider major/all problems in
- Soil fertility (a) yes ___ (b) No ___
 - Access to input (seeds/seedlings, fertilizer policies) (a) yes ___ (b) No ___
 - Pest and disease policies (a) yes ___ (b) No ___
 - Access to finance policy (a) yes ___ (b) No ___
 - Access to land (a) yes ___ (b) No ___
82. What is your view on the evaluation of impact of the new presidential initiative on the growth and development of cocoa production in Osun state? ___
83. What do you think are the solutions in overcoming these challenges in implementing the new presidential initiative on cocoa production? (a) effective monitoring of policy at the implementation stage ___ (b) adequate involvement of farmers in policy management, formulation and implementation ___ (c) provision of micro credits and agricultural programs in the rural areas ___
- (d) Adequate funding of cocoa farmers ___

S/N	Questions	Strongly Agreed	Agreed	Undecided	Disagree	Strongly disagree
84	Does these cocoa policies have impact on your production					
85	Do you have access to these cocoa policies					
86	Do you think that if government provide you with all these cocoa policies that they will be a significant improvement In your production					
87	Do you have access to input subsidy such as seedlings and fertilizer					
88	What is your view on the funding of cocoa production from the financial policies in Nigeria					
89	What is your view on the distribution of micro credit to cocoa farmers, are they evenly distributed					
90	What is your view on if the					

	beneficiaries of the presidential initiative are on cocoa farmers or those in other area of agriculture					
91	Do you think that there are equality and fairness in the distribution of fertilizers and other farming infrastructures among the farmers in the rural Local government areas in Osun state					
92	Do you think that that the new presidential initiative is making adequate provisions for marketing of cocoa produce both at the head of international markets					
93	Do you think weak institutional support on the part of implementing agencies contributes to the failure in					