

AGRICULTURAL SECTOR VALUE CHAIN CONTRIBUTIONS AND NIGERIA'S ECONOMIC GROWTH

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ABSTRACT

This study examined the relationship between agricultural sector value chain contribution and economic growth in Nigeria for the time span of 1981-2019, with the help of time series data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. Unit Root test was used to test for the stationarity of the series, whereas the Co-integration test was used to test for the long run relationship among the variables of the study. However, Vector Error Correction Mechanism was used to evaluate the short run and long run dynamics of the study and Granger Causality test was employed to establish the direction of pass among the variables under consideration employed in the analysis. The variables employed in the analysis are gross domestic product (GDP) as a dependent variable) while independent variables include value chain in Crop Production (CRP), value chain in Live Stock production (LSP) and value chain in fishery Production (FSP). The results of our unit root test showed that all the variables were stationary at first difference. Cointegration result indicated the existence of a long-run relationship of the variables in the study and this necessitated the application of Vector Error Correction Mechanism; which revealed that value chain in crop production, live stock production and fishery production are positive and statistically significant to gross domestic product in Nigeria. Therefore, based on the above findings, the study recommends that government should create secured and enabling environment for commercial farming which will encourage both local and foreign investors to invest in agriculture in the country.

Keywords: Value Chain, Agricultural Sector, Economic Growth, Autoregressive Distributed Lag Model.

INTRODUCTION

Background to the study

The role of agriculture in reforming both the social and economic framework of an economy cannot be over-accentuated. It is a source of food and raw materials for the industrial sector. It is also essential for the expansion of employment opportunity, for reduction of poverty and improvement of income contribution, for speeding up industrialization and easing the pressure on balance of payment. That is why the growth and development of every nation depends to a large extent, on the growth and development of agricultural sector value chain (Oguwuike, 2018).

Agricultural sector contributes to the development of an economy in four major ways-product contribution, factor contribution, market contribution and foreign exchange contribution. In realization of this, the Nigerian government has formulated various policies and programmes aimed at strengthening the sector in order to continue to perform its roles. In (Ehui and Tsigas, 2009) opined that Nigeria has a highly diversified agro-ecological condition, which makes it possible for the production of a wide range of agricultural products. Hence, agriculture constitutes one of the most important sectors of the economy. Nigeria as a vast agricultural country, is endowed with substantial natural resources which include: 68 million hectares of arable land, fresh water resources covering about 12.6 million hectares, 960 km of coastline and an ecological diversity which enables the country to produce a wide variety of crops, livestock, forestry and fishery products (Iganiga and Unemhlin, 2011). However, value Chain (VC) involves the sequential linkages through which raw materials and resources are transformed into products for the market. It is a set of linked activities that work to add value to a product; it consists of actors and actions that make a product better while linking commodity producers to processors and markets. A value chain encompasses the flow of products, knowledge and information, finance, payments, and the social capital needed to organize producers and communities. The value chain notion allows integration of the various players in agriculture production, processing and marketing. It defines the various roles of players while at the same time, scope and purpose of partnerships that can be established.

Agricultural value chain is a set of linked activities that work to add value to agricultural products. It consists of actors and actions that improve a product while linking commodity producers to processors and markets. This value chains work best when their actors cooperate to produce higher-quality products and generate more income for all participants along the chain. According to (World Bank, 2014), this value chain in agricultural sector has been of great help in generating gainful employment, a source of basic food supply with which the nation can feed its teeming population, a regenerative source of foreign exchange earnings, means of providing the nation's industries with local raw materials, and as a reliable source of government revenue (Olabanji et al., 2017).

Statement of the problem

Despite Nigeria's rich agricultural resource endowment, the agricultural sector has been growing at a very low rate. Productivity is low and basically stagnant. Farming systems, which are mostly small in scale, are still predominantly subsistence-based and for the most part depend on the vagaries of the weather. Many agricultural policies have also been ineffective, either because they have been misguided (Ahungwa, 2015), or because their impacts have been swamped by macro policies affecting inflation, exchange rates, and the cost of capital.

Nigeria has a total land area of 77.7 per cent which is 910.8 thousand square kilometres. Comprising 37.3 per cent of arable land, where 7.4 per cent is for permanent crop and 9.0 per cent is under forest (World Bank, 2015). This represents 32 million hectares cultivated while not getting the right value for those hectares. For the last 4 to 5 years the Nigerian agriculture sector's contribution to GDP has hovered between 22 to 25 per cent, but in 2017 it hit an all-time low of 21 per cent contribution to GDP. Therefore, the arable land is underutilized.

Nigeria's agriculture is diverse, presenting various opportunities. It includes four sub-sectors, namely; crop, livestock, fishery and forestry. The crop sub-sector accounts for about

90.0 per cent of agricultural production in Nigeria, followed by the livestock sub-sector which contributes about 7.0 per cent. Fishing activities contribute about 2.0 per cent and forestry activities account for about 1.0 per cent. However, the majority of the farming populations are small-holders with less than 2 hectares under cropping, yet accounting for over 90 per cent of agricultural economic in the country. They still rely mainly on rain-fed farming, characterized by low use of modern/improved farm inputs (seeds, fertilizer, pesticides, etc.) and poor access to credit. Consequently, yields are still very low. Thus, Nigeria remains a food-deficit country blessed as it is with abundant agro-ecological resources and diversity. High import dependency persists.

Food and livestock import grew by 65.25 per cent from N676. 91 billion in 2013 to N1,118.61 billion in 2014, which constituted 15.47 per cent of total imports in 2014 (NBS, 2015). That is, in Nigeria, food import increased from 10.3% to 30.6% in 2011 and declined to 22.7% in 2012 and fluctuated within the period of 2013 to 2017, but maintained steady decline by declining from 16.3% in 2017 to 9.9% in 2019. However, it showed a quantum leap of 14.6% in 2020 (CBN, 2020). Food and Agricultural Organization of the United Nations (FAO) has estimated Nigeria's cereal import (mostly rice and wheat) for 2015 at over 7.5 million tonnes and, Nigeria is said to be the largest rice importer in Africa (Evbuomwan & Okoye, 2017).

The difficulties faced by agricultural sector have led to decline in contribution of the sector to the Nigerian economy. As a result, good number of citizens has issue with hunger and starvation due to relegation of agriculture to the background. That is, Nigeria has continued to witness double digit inflation since 2016. Infact, statistical evidence shows that inflation rate has increased from 9.01% in 2015 to 15% in 2016 and staggered for the period of 2017, 2018 and increased again from 11.40% in 2019 to 16% in 2021. Again, the poverty rate in Nigeria for those with less than 5.50% per day fluctuated between 94.70% and 92% in 2018 (CBN, 2021).

Value addition in agricultural sector in Nigeria has remained insignificant with no connection to finance source, marketing and distribution networks and technological linkages. These shortcomings have continually affected negatively investment in agricultural sub sector thereby contributing marginally to the country's economic growth. All these challenges have undesirable effect in Nigeria balance of payment, unemployment, living standard as well as purchasing power of the people. It is against this background that the study interrogates the contribution of agricultural sector economic value chain to economic growth in Nigeria.

On the basis of the challenges and inability of agriculture to help reposition the economy over the years in spite of all efforts, it is the intention of the researcher to empirically ascertain the situation with the motive of proffering lasting solution.

Research questions

In other to evaluate the contribution of agricultural sector value chain contributions and Nigeria's economic growth, the following research questions are formulated:

- i. To what extent does value chain in crop production impact on Nigeria's economic growth?
- ii. Does value chain in fishery production have any significant impact on economic growth in Nigeria?
- iii. Is there any significant impact of value chain in livestock production on Nigeria's economic growth?

iv. Is there any significant pass through between economic growth and agricultural value chain?

Objectives of the study

The broad objective of this study is to assess the contribution of agricultural sector value chain to Nigeria's economic growth. Specifically, the study investigates the following objectives:

- i. Evaluate the extent in which value chain in crop production impacts on GDP growth in Nigeria.
- ii. Determine whether value chain in fishery production has any significant contribution to the growth of Nigeria's economy.
- iii. Ascertain the extent of impact of value chain in livestock production on economic growth in Nigeria.
- iv. To determine the direction of pass through between economic growth and agricultural value chain variables.

Research hypotheses

- i. Value chain in crop production does not have significant impact on economic growth in Nigeria.
- ii. Value chain in Fishery production does not have any significant effect on economic growth in Nigeria.
- iii. There is no significant impact existing between value chain in livestock production and economic growth in Nigeria.
- iv. There is no significant causal relationship between economic growth and agricultural value chain in Nigeria.

THEORETICAL REVIEW

Endogenous Growth Theory

This theory states that for any country to experience economic growth, investment in human capital, innovation and knowledge are inevitable. The theory emphasize why it's very important for both the public and private sector to motivate people to be innovative. This theory believes that diversifying an economy properly in other non-oil sector is likely to influence the economic growth via the following three ways; performance of the agricultural sector, manufacturing sector and solid mineral (Oguwuike, 2018)

Input-economic theory

The theories explain the inter-relationship that exist between industries in an economy as input in one industry is regarded as an economic of another industry. The development of the theory was focused towards evaluating and measuring the relationship that exist between the major sectors of an economy. The theory proposed that all sectors of an economy are mutually dependent on one another as the economic produced from one sector makes up the input of another sector in the same economy (Poonyth, 2001). For instance, the economic from the agricultural sector say maize, is seen as a raw material input for the manufacturing

sector of cornflakes, flour, starch etc. recognizing and harnessing the role interdependence of different sectors, play as provided by input economic theory is essential for greater economic growth.

Rostow's Stages of Economic Growth Theory

In this theory, historically approaches economic and development process through five stages which are: traditional society; precondition for takeoff or transition stage; take off itself drive to maturity and age of high mass consumption. According to Rostow, the take off stage is most essential figure in the life of a society when growth becomes its normal condition. The significance and essence of the traditional society makes a positive progress and a multiple interest gets built into the society structure with agriculture playing an important role at this stage. It was the source of income of the state and the nobles. It is evident from the theory that agriculture is a force. In the first three stages of economic growth and development (traditional society, preconditions for takeoff and takeoff stages), the agricultural economic strongly attracts industrial and economic structure from which nation's economic growth and development can take off. Thus, agricultural productive activities are more centred, focus and more implemented in the less developed economies where there is pressing need for rural transformation, income redistribution, poverty reduction and socio-economic growth and development.

Empirical Literature

In (Oguwu, 2018) examined the effect of agricultural economic on economic growth of Nigeria using crop production, livestock, fishery and forestry on economic growth in Nigeria. Secondary data on GDP, crop production, livestock, fishery and forestry was obtained from the CBN statistical bulletin. The econometrics methods of ordinary least square, Cointegration, error correction mechanism were used for the analysis. The outcome of the ADF unit root test show that the variables (GDP, crop production, livestock, fishery and forestry) were stationary (Undp, 2012). Also the co-integration result showed that there exists co integration amongst the variables in the model. The coefficient of fishing is positively signed but statistically not significant at 5 percent level with GDP. The coefficient of livestock is positively signed and statistically significant at 5 percent level with GDP. The coefficient of forestry is negatively signed but statistically significant at 5 percent at level with GDP. Based on these results, this study recommends the following: Nigerian government should put good structures in place that allows better and higher agricultural economics.

In (Ahungwu, 2014) studied the trend analysis of the impact of agriculture to GDP between 1960 and 2012, covering a period of 53 years using time series data. The structure shows that the agricultural sector has a superior lead over other sectors between 1960 and 1975 although there was a decline in the agricultural sector's share GDP. The study revealed a fluctuation between the industrial sectors from 1967 to 1989 period. The regression analysis reveals a positive and significant relationship between the agricultural sector and GDP with the sector accounting 66.4 percent of the variation in the economy. It also reveals the dominance in the agricultural sector relative to other sectors of the economy.

In an empirical study on the contribution of agricultural sector on the economic growth of Nigeria, by (Bekun, 2015) covering the period of 33 year (1981 to 2013), Augmented Dickey-Fuller (ADF) test and Johansen Cointegration test were conducted. Gross domestic product (GDP) per capita was used as the dependent valuable while agricultural

economic and oil rent were the explanatory variables. The study shows the pivotal and important role agricultural sector could play to the economic growth of Nigeria if given full attention.

In (Omorogbe et al., 2014), in their study “The Role of Agriculture in the Economic Development of Nigeria” says Nigeria is on its way to modern development and branding itself as the “giant of Africa”. They view that the country needs to prove its potential by raising its standards to a level with other fast developing economies of the world. The vision 20-20-20 program this country is currently pursuing a major step to achieve this goal and according to its seven point agenda (Pooyth, 2001), it is focusing on developing agricultural as an important strategic move. Their paper uses trend analysis in terms of a historical and current perspective and various descriptive methods to analyze the development of Nigeria through each decade since its independence in 1960 and examines the factors that have had an impact on its agricultural productivity. This will aid in describing and predicting the performance of the agricultural sector in Nigeria and as a result, the overall economic development of the country in the coming decade. Their research proves that an in-depth research on the development of the agricultural sector is essential to the progress of the country. Also, it is important to find out what has not worked previously and why, before taking any steps to develop the agriculture or the economy.

In (Yakubu and Akanegbu, 2015) said Nigeria is endowed with lots of natural and human resources with large expanse of fertile land and estimated to be the most populous country in the Sub-Saharan Africa. And it has different sectors such as agriculture, solid minerals, sport and entertainment, tourism etc. yet, the citizens live in abject poverty subsisting on less than \$2 a day as a result of several factors which includes inappropriate domestic policies and an unfavourable external economic environment. The country discovered oil in 1959 over fifty years ago at Oloibiri in today’s Bayelsa State, but over 70% of the country’s earnings come from (Noko, 2015) oil paying little or no attention to other sectors of the economy and that is why Nigeria is said to be suffering from what is known as the “Dutch Disease”. The broad objective of this paper is to make policymakers realize the importance and contribution of agriculture to the Nigerian economy and also to stress the need to harness and diversify other sectors of the economy so as to increase the country’s GDP and to improve the standard of living of the citizens because economic diversification is vital to Nigeria’s long-term economic growth.

Gap in Literature

The study reviewed a plethora of studies in this field of study and found that there exists consistency of variables that contribute to economic growth. But, this study tends disaggregated value addition variables of agricultural output to find out how each of them contributes to the growth of Nigerian economy.

METHODOLOGY

The research design constitutes the blue print for the collection, measurement, and analysis of data. Since this study explores cause and effect relationships where causes already exist and cannot be manipulated, we therefore adopt Ex Post Facto Research Design. The variables used for the analysis are gross domestic product (GDP), Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP). For the analysis of the model, ordinary least square (OLS) multiple regressions is used in the analysis. Thus, the series of the variables were subjected to unit root test; for the stationarity of the data so as to avoid

spurious results. In broad terms, the model is equally subjected to co integration test, Vector Error Correction Model and granger causality test; for long run relationships and direction of causation respectively among the variables- for efficient and effective policy formulations.

Model Specification

In this study, hypotheses have been stated with the view of examining the relationship existing between agricultural sector value chain and economic in Nigeria. In capturing the study, these variables are used as proxy:

$$GDP = F(CRP, LSP, FSP)$$

Where; GDP = Gross Domestic Product; CRP = Crop Production

LSP = Live Stock production; FSP = Fishery Production

In a linear function, it is represented as thus:

$$GDP = b_0 + b_1CRP + b_2LSP + b_3 FSP + U_t$$

Where b_0 = Constant term; b_1 = Regression coefficient of CRP;

b_2 = Regression coefficient of LSP; b_3 = Regression coefficient of FSP; U_t = Error Term

Data Discussion

In the specified estimated model, it is stated that Gross domestic product (GDP) is a function of Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP). Thus, these variables are discussed below;

(i). Gross Domestic Product (GDP): This is the total monetary value of goods and services produced within a country usually a year. With this, the standard of living of the populace in the country can be determined. It is all the goods and services produced in country in a year which is measured in monetary terms. It is concerned with domestic production and does not, include net income from abroad.

ii). Crop Production (CRP): Crop production is a common agricultural practice followed by worldwide farmers to grow and produce crops to use as food and fiber. This practice includes all the feed sources that are required to maintain and produce crops.

iii). Live Stock production (LSP): Livestock is commonly defined as domesticated animals raised in an agricultural setting to produce labor and commodities such as meat, eggs, milk, fur, leather, and wool. The term is sometimes used to refer solely to those that are bred for consumption, while other times it refers only to farmed ruminants, such as cattle, sheep and goats.

iv). Fishery Production (FSP): Fishery can mean either the enterprise of raising or harvesting fish and other aquatic life or more commonly, the site where such enterprise takes place (a.k.a. fishing ground). Commercial fisheries include wild fisheries and fish farms, both in freshwater bodies.

Estimation Procedure

The tests that were conducted are as follows:

Unit Root Test: The unit root test is a test carried out to show whether a time series data is stationary or non-stationary. Three different models with varying deterministic components are considered while performing the tests which are, one, model with an intercept which assumes that there are no linear trends in the data such that the first differenced series has zero mean. Two, model with a linear trend which includes a trend stationary variable to take account of unknown exogenous growth and three, a model which

includes neither a trend nor a constant. However, the most popular one is Augmented Dickey-Fuller (ADF) test statistics which is compared with the critical values at 5% level of significance. A situation whereby the ADF test statistics is greater than the critical values with consideration on absolute values, the data at the tested order is said to be stationary. Consequently, conducting the tests with and devoid of a deterministic trend (t) for all the series and comparing P-Values with the critical values at 5% significance level, we observed that every series is stationary at first difference, and that leads us to test for the long run association amongst them.

Co-integration Test: Co-integration test is used to test for long run relationship among economic variables. In (Engle and Granger, 1987) state that if several variables are all $I(0)$ series, their linear combination may be co-integrated, that is, their linear combination may be stationary. This means that the variables exhibit long-run relationship. The economic interpretation of co-integration is that if two (or more) series are linked to form an equilibrium relationship spanning the long run, then even though the series themselves may contain stochastic trends (that is, be non-stationary), they will nevertheless move closely together over time and the difference between them is constant (that is, stationary). Thus, the concept of co-integration mimics the existence of a long-run equilibrium to which an economic system converges over time. In determining the existence of long run relationship, we compared the P-Values with the critical values at 5% significance level, and discovered the existence of long run association amongst the variables, by P-Values being smaller than that of critical values at 5% level of significance, then, the researcher proceed to test for speed of adjustment from short to long-run equilibrium state using **VECM**.

Vector Error Correction Model (VECM): The purpose of vector error correction model is to indicate the speed of adjustment from the short run equilibrium to the long run equilibrium state. If co-integration exists, it suggests that the model is best specified in the first difference of its variables with one period lag of the residual {ECM (-1)} as an additional regressor. The advantage of using vector error correction models (VECM) is that it incorporates the variables at both side levels and first difference and thus ECM captures the short-run disequilibrium situations as well as the long-run equilibrium adjustment between variables.. The main reason for the popularity of co-integration analysis is that it provides a formal background for testing and estimating short and long run relationships among economic variables.

Granger-Causality Test: The granger causality was first proposed in 1969 by Clive Granger. It is a statistical hypothesis test that is used in determining if one time series can be useful in forecasting another. When a time series X granger causes a time series Y, the patterns in X are precisely sequential in Y after some time lag. Therefore, the past values of X can be useful in predicting the future value of Y, the granger test is framed in terms of predictability.

RESULTS

Unit Root Test

In order to test for the presence or absence of unit root in the data used for the empirical analysis, Augmented Dickey-Fuller (ADF) test was employed and the test result is as presented below (Table 1) (Table 2).

Table 1

AUGMENTED DICKEY-FULLER(ADF) UNIT ROOT TEST (AT LEVEL) TREND AND INTERCEPT			
Variables Prob.	ADF Statistic	5% Critical Value	Prob.
LGDP 0.9103	-0.332567	-2.943427	0.9103
LCRP 0.3096	-1.943615	-2.941145	0.3096
LLSP 0.1263	-2.491766	-3.951125	0.1263
LFSP 0.8770	-0.503895	-2.963972	0.8770

Source: Researcher's Compilation from Eview 9

Table 2 AUGMENTED DICKEY-FULLER(ADF) UNIT ROOT TEST (AT FIRST DIFFERENCE) TREND AND INTERCEPT			
Variables Prob.	ADF Statistic	5% Critical Value	Prob.
LGDP 0.9103	-3.371976	-2.943427	0.0186
LCRP 0.3096	-4.190273	-2.941145	0.0022
LLSP 0.1263	-3.246824	-3.943427	0.0251
LFSP 0.8770	-4.802648	-2.943427	0.0004

Source: Researcher's Compilation from Eview 9

From the table 1 and 2 above, it is discovered that none of the variables was stationary at level as their respective probability values (0.9103, 0.3096, 0.1263 and 0.8770) were greater than 0.05 at 5% level of significance. But at first differencing, all the variables (GDP, LCRP, LLSP, and LFSP) became stationary as their respective probability values (0.0186, 0.0022, 0.0251 and 0.0004) became greater than their 0.05 at 5% level of significance. This indicates that all the variables were stationary and integrated of order 1, I (1).

Cointegration Test

Cointegration is used to test for long run relationship between the variables considered. For this purpose, the Johansen cointegration test was adopted. In Johansen's

Method, the eigen value statistic is used to determine whether cointegrated variables exist. Cointegration is said to exist if the values of computed statistics are significantly different from zero or if the trace statistics is greater in absolute value than the critical value at 5 percent level of significance. The model with lag 1 was chosen with the linear deterministic test assumption and the result is presented below. Johansen cointegration test for the series include GDP, CRP, LSP and FSP (Table 3) (Table 4).

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.554387	52.02631	47.85613	0.0193
At most 1	0.357147	22.11901	29.79707	0.2919
At most 2	0.137649	5.770936	15.49471	0.7224
At most 3	0.007848	0.291511	3.841466	0.5893

Trace test indicates one cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Source: Researcher's Compilation from Eview(See Appendix II)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.554387	29.90730	27.58434	0.0247
At most 1	0.357147	16.34807	21.13162	0.2052
At most 2	0.137649	5.479425	14.26460	0.6805
At most 3	0.007848	0.291511	3.841466	0.5893

From the result above (table 3), the Johansen cointegration indicated one cointegrating equation. Under the Johansen Cointegration Test, it could be said that there is a cointegrated vector. Cointegration is said to exist if the value of computed statistics is greater than 5% critical value. From the trace statistics, one of the absolute values of the variables were greater than 5% critical value. In other words, the null hypothesis of no cointegration among the variables is rejected since one of the equations at 5% was statistically significant. The test result shows the existence of a long-run equilibrium relationship among the variables.

Vector Error Correction Model (VECM)

It has been pointed out earlier that the vector error correction model (VECM) is meant to tie the short-run dynamics of the cointegrating equations to their long-run static

dispositions in order to maintain equilibrium. In order to capture the short run fluctuation, the Vector Error Correction Model (VECM) was employed and the result is presented below (Table 5).

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.036693	0.016359	2.242983	0.0336
D(GDP(-1))	0.380454	0.169894	2.23936	0.0339
D(LCRP(-1))	7.97E-06	1.13E-05	0.70419	0.0176
D(LFSP(-1))	0.008194	0.033117	0.247433	0.0065
D(LLSP(-1))	0.00943	0.063615	0.148232	0.0233
VECM(-1)	-0.002526	0.003822	3.660867	0.0145

R-squared = 0.673438 F-statistic = 11.721814 Durbin-Watson = 1.899055

SOURCE: Researcher's Compilation from Eview

From the above table (5), VECM system equation is consistent by being fractional, negative and significant. It suggests that the VECM could correct any deviations from longrun equilibrium relationship between GDP and the explanatory variables. The coefficient indicates a speedy adjustment of -0.002526 per annum. This implies that following short-run disequilibrium, 2.526% of the adjustment to the long-run takes places within one year. The above result shows that the R2 is 0.673438, which implies that the model explains about 67.3438% of the total variations in gross domestic product (GDP) are explained by the independent variables Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP) during the period of the study. While the remaining 32.65% variations are as a result of other explanatory variables that are not captured in the model.

The result also shows that value chain in Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP) are not just statistically significant as their respective probability values (0.0176, 0.0065 and 0.0233) are less than 0.05 at 5% level of significance, but they are positively related to gross domestic product (GDP).

Test of Hypotheses

Decision Rule: If the chosen level of significance (0.05) at 5% level of significance is greater than the p-value, the null hypothesis is rejected, otherwise, will be accepted. This is applicable to all the hypotheses in this research work.

Hypothesis One

Value chain in crop production does not have significant impact on economic growth in Nigeria.

In testing for this hypothesis, we use VECM system equation. Comparing p-value from VECM system equation with (0.05) at 5% level of significance, it is observed that the level of significance (0.05) at 5%, is greater than its p-value (0.0176). Hence, the null hypothesis of no significant effect existing between crop production and economic growth in Nigeria is thereby rejected, while accepting the alternative on the ground that crop production significantly impacts economic growth in Nigeria within the periods under study.

Hypothesis Two

Value chain in Fishery production does not have any significant effect on economic growth in Nigeria.

In testing for this hypothesis, we use VECM system equation. Comparing p-value from VECM system equation with (0.05) at 5% level of significance, it is observed that the level of significance (0.05) at 5%, is greater than its p-value (0.0065). Hence, the null hypothesis of no significant effect existing between fishery production and economic growth in Nigeria is thereby rejected while accepting the alternative on the notion that fishery production significantly affects economic growth in Nigeria within the periods under study.

Hypothesis Three

There is no significant impact existing between value chain in livestock production and economic growth in Nigeria.

In testing for this hypothesis, we equally use VECM system equation. Comparing p-value from VECM system equation with (0.05) at 5% level of significance, it is observed that the level of significance (0.05) at 5%, is greater than its p-value (0.0233). Hence, the null hypothesis of no significant impact existing between livestock production and economic growth in Nigeria is thereby rejected while accepting the alternative on the notion that livestock production significantly impacts on economic growth in Nigeria within the periods under study.

DISCUSSION OF RESULTS

This section is devoted for the discussion of the results estimated through the application of econometric techniques used in the investigation. Its objective is to unravel the condition, quality and importance of the results estimated. Like other studies, this research would contribute to pool of knowledge in literature at this stage. As crucial as this stage is, the process begins with the illustration of the relationship between the variables. The discussion of results is accordance with the objectives of the study, as shown below.

Empirical Result of Objective One

Objective one focuses on examining the extent in which value chain in crop production impacts on economic growth in Nigeria for the period 1981-219. To realize this objective, the results estimated via the application of the Vector Error Correction Mechanism were employed in the examination of the extent in which value chain in crop production impacts on economic growth in the economy. From the estimated result, the coefficient of value chain in crop production estimated in VECM system equation is 0.380454 and its p-value of 0.0339. The results indicated that value chain in crop production at 5 percent level of significance, significantly and positively impacted on economic growth in the economy for the period under study (Omorogiuwa, 2014). Hence, the study estimated that 1% increase in value chain of crop production would increase economic growth in Nigeria by 0.380454%. The positive sign of the coefficient of the variable satisfactorily met the a priori expectation

of the study. In theory, the result is in accordance with the theory of endogenous growth, which maintains that for any country to experience economic growth, investment in human capital, innovation and knowledge are inevitable. Over the years, agriculture was neglected reassigned by high dependent in oil revenue while triggered increase in fiscal operation of government thereby raising a large army of food. The food supply is grossly low to sustain its demand, have the high imports.

Empirical Result of Objective Two

The objective two dwells on determining whether value chain in fishery production has any significant effect on economic growth in Nigeria for the period ranging from 1981 to 2019. This objective is achieved by employing the Vector Error Correction Mechanism to evaluate the significant effect of value chain in fishery production in the economy. From the results estimated, the coefficient of value chain in fishery production is 0.008194 and its p-value is 0.0065. The results imply that value chain in fishery production has a positive and significant impact on economic growth in Nigeria. Thus, the study averagely estimated that 1% rise in value chain for fishery production will bring about 0.08% in economic growth in Nigeria's economy. The positive sign possessed by the coefficient of variable met a priori expectation of the study. Given the adverse and little fish production and high demand for it, it is essential to bridge the gap through imports.

Empirical Result of Objective Three

Objective three is geared towards finding if significant impact exists between value chain in livestock production and economic growth in Nigeria from 1981 to 2019. To achieve this objective, the estimation results obtained via the application of the Vector Error Correction Mechanism were employed to examine the significant impact of value chain in livestock production on economic growth in the economy of Nigeria. From the results, the coefficient of value chain in livestock production is 0.009430 and its associated p-value is 0.0233. This result indicates that value chain in livestock production positively and significantly impacted on economic growth in the economy of Nigeria. Thus, the study averagely estimated that 1% rise in value chain of livestock production will improve economic growth by 0.009430% in Nigeria's economy. In theory, the result is in accordance with the theory of endogenous growth, which maintains that for any country to experience growth in economic, investment in human capital, innovation and knowledge are inevitable.

Implications of the Study

From the VECM result, we observed that the coefficient of Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP) are 7.972306, 0.008194 and 0.009430; and their τ -statistics are 2.704190, 3.247433 and 1.148232. Also, their respective p-values are (0.0176, 0.0065 and 0.0233) which showed they are statistically significant. Hence, these results imply that 1% increase in crop production, live stock production and fishery production, on the average, will led to about 7.972306%, 0.008194% and 0.009430% increase in economic growth in Nigeria.

This sign is consistent with the postulation of endogenous growth theory which emphasizes that diversifying an economy properly in other non-oil sector is likely to influence the economic growth via the following three ways; performance of the agricultural sector, manufacturing sector and solid mineral.

SUMMARY

The result of this investigation indicates that all the variables employed in the model such as crop production, live stock production and fishery production are statistically significant to gross domestic product in Nigeria.

The result of the Cointegration test shows that there is a sustainable long-run relationship (i.e. steady-stated path) between gross domestic product (GDP) and the explanatory variables: (Crop Production (CRP), Live Stock production (LSP) and fishery Production (FSP) during the period of the study.

The unit root test results showed that none of the variables was stationary at level while at first difference; all the variables were all stationary. Hence, the result of the regression can be fully relied on to make policy analysis and recommendations.

The entire regression plane was statistically significant; this means that the joint influence of the explanatory variables (Crop Production (CRP), Live Stock Production (LSP) and Fishery Production (FSP) on the dependent variable gross domestic product (GDP) is statistically significant.

The result of the coefficient of multiple determination showed that 67.3438% of the variations in the gross domestic product (GDP) are explained by the variations of the explanatory variables namely; Crop Production (CRP), Live Stock Production (LSP) and Fishery Production (FSP) while the remaining 32.6562% is explained by variables not included in the model.

RECOMMENDATIONS

In the light of the researcher's findings, the following recommendations are presented;

- i). Nigerian government should create secured and enabling environment for commercial farming which will encourage both local and foreign investors to invest in agriculture in the country.

- ii). Nigeria government should increase budgetary allocation to the agricultural sector and ensure effective utilization of the funds/budgets that translates into improved and increased economic annually.

- iii). Long term agricultural development plans/projects that are realistic should be created and executed. There should be continuity of projects, policies and schemes which are created and implemented to outlive government tenure

CONCLUSION

This study represents an attempt to empirically examine the agricultural sector economic and economic growth in Nigeria. The study empirically examined the effect and contribution of agricultural economics to economic growth in Nigeria; and the need to harness the abundance of agricultural resources and potentials the country is endowed with for optimum growth and development of the economy.

The study therefore concludes that since value chain in crop production, live stock production and fishery production have been identified as positively contributing to GDP through easy access to credit, increase in market networks both local and foreign and technological linkages w government intervention is germane. In order to improve farmer's access to credit, modern approaches to agribusiness, finance need to be embraced hence the need to develop more agricultural value chains to cover the array of crops, livestock, and fishery and forestry possibilities in Nigeria. In recent times financial institutions are more

interested in financing various actors along the value chain. Emphasis is more on cash flow rather than collateral. Risk mitigating factors such as ware house receipts system, commodity exchange development, crop insurance and guarantee funds are useful. Also, farmers have to be financially literate. The need for adequate infrastructure to drive agricultural growth cannot be left out. Therefore, adequate rural road network for quick evacuation of inputs and economic, power for processing and storage including cold chain to increase value addition and improve shelf life and irrigation facilities to assure year round production and income, are the main focus. Thus, it could be concluded that a well harnessed agricultural economic or production will lead to optimum growth and development of the economy. Therefore, Nigerian government must look beyond crude oil and pay better attention to agricultural production to engender growth and development of the economy.

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