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AGRICULTURAL FINANCING AND SUSTAINABLE DEVELOPMENT TOWARDS FOOD SECURITY IN NIGERIA.

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Abstract

The study of agricultural financing and sustainable development toward food security in Nigeria examined the effect of deposit money bank loans, government expenditure on agriculture, international donor funding, and Central Bank of Nigeria (CBN) funding on agricultural financing for sustainable development toward food security in Nigeria. Employing the descriptive and correlational research design, a sample of 25 years was taken. Secondary data obtained from the CBN was analyzed using the ordinary least squares method. The study observed that there is a significant relationship between agricultural financing through deposit money bank loans, international donor funds and sustainable development toward food security in Nigeria. While (CBN) and government expenditure funds were found to have insignificant relationships with sustainable development toward food security in Nigeria. The study, therefore, recommended that the government and CBN should ensure the effective and efficient utilization of funds released to the agricultural sector and all areas of wastage should be blocked. International donor funds to farmers have been effective in contributing to food security and should be sustained, while deposit money banks should reduce the interest rate on loans which discourages borrowing. The CBN, as a regulatory body should regulate high interest rates by deposit money banks as such high rates often stifle the survival of the agricultural sector and food security.

Keywords: Agriculture, financing, sustainability, development, food security.

Introduction

Agriculture contributes immensely to the Nigerian economy in various ways, which include: the provision of food for the increasing population; supply of raw materials and input to a growing industrial sector; a major source of employment; generation of foreign exchange earnings; and provision of a market for the industrial products (Okumadewa et al, 1997). The agricultural sector has a strong rural base, hence, concern for agricultural development and food security become synonymous, with a common denominator. While most of them might seem quite obvious, let's list all the reasons why food security is important for Nigeria

Everyone has to eat; this goes without saying that we all need food to survive. If there is food security, then everyone can worry about other things rather than where to get food or how to get it. Food is considered a basic human right; every person is entitled to food, and food

security means that everyone can execute this right without too much hassle. Food security is the backbone of the economy, as long as there is food security; the economy has a chance to grow. Many people are involved in all forms of food production, and it is one of the industries that cannot fail. Good food is necessary for people's good health, as we have mentioned before, food security is when people have access to good food that keeps them healthy. When there is food security, all people get the necessary nutrition and keep their health in check.

To achieve sustainable agricultural development nation must provide adequate financing. Home and Issue Brief, (2017) On Financing Sustainable Agriculture, after more than a decade of steady decline, the UN Food and Agriculture Organization announced in September that global hunger is on the rise again. In 2016, global hunger affected 815 million people 38 million more people than the previous year and much of that increase was due to violent conflicts and climate-related shocks. The need for sustainable agriculture has never been more urgent, global demand for food has risen precipitously, even as climate change continues to upset delicate regional ecosystems, exacerbating natural disasters, pests, and diseases, and fueling increased violent conflict and human migration.

Hunger is a common element, especially within some sub-Saharan African countries, part of which made the United Nations come up with an eight-point agenda for the achievement of the Millennium Development Goals by the year 2015. The government also declared a seven-point (later reduced to five) agenda that includes self-sufficiency in food production. Nigeria as a signatory to United Nations conventions has made policies to assist farmers increase the total output of agricultural produce to earn foreign exchange and for employment, especially for the sustenance of the burgeoning population. Hunger has led to the decimation of the population in some parts of the world, especially war-torn countries, where it has been difficult to practice agriculture. Countries that have suffered natural disasters in the form of low or dearth of rainfall, storms and severe flooding have experienced food shortages, which have made those countries appeal for food aid from donor countries.

Nigeria has made several efforts to provide the needed finances to achieve the desired objectives, the literature shows much research has been carried out about contributory factors to food security. Fankun & Evbuomwan (2017), embarked on a research titled 'An Evaluation of Agricultural Financing, Policies and Initiatives for Sustainable Development in Nigeria, in the 21st Century 'The findings of the study showed that the Nigerian Government

failed to show enough commitments to agricultural activities, it was also found that commercial bank credits were too low.

Nwajiuba (2017), conducted a research on Nigeria's Agriculture and Food Security Challenges he identified inadequate access to fund, low uptake of high-quality seeds, low fertilizer uses and generally inefficient production systems lead to shortfalls. Insecure land tenure, scarcity of funds and credit, labour scarcity despite overall high unemployment and stagnant technology have crippled its further development. Umaru et al (2017), embarked on a research titled The Effectiveness of Funding Sources on Agricultural Projects in Yobe State, Nigeria the findings of the study showed that Agricultural funding has significant positive impact on the standard of living of the beneficiaries. This finding is consistent with the First-Best Resource Allocation theory of the welfare economics. The positive impact of agricultural funding is defined based on the standard of living of the beneficiaries as welfare change along the first-best optimal.

In all this none of the researchers, locally and internationally, studied the sources of financing agriculture for sustainable development toward food security in Nigeria. This has created a gap, which this study seeks to fill.

The main aim of this study is to examine sources of agricultural financing on sustainable development toward food security in Nigeria. This will be achieved through the following objectives: -

i. to examine the extent in which deposit money bank loans will help in financing agriculture for sustainable development toward food security in Nigeria.
ii. to analyze the effect of government expenditure on financing agriculture for sustainable development toward food security in Nigeria.
iii. to assess the impact of international donor funding in financing agriculture for sustainable development toward food security in Nigeria.
iv. to ascertain if there is any effect of central bank funding use in financing agriculture for sustainable development on food security in Nigeria.

Conceptual Framework

Agricultural Financing

This refers to the financial services, of provision of short, medium- and long-term loans, leasing, financial initiatives to agriculture, insurance services, production, distributions, wholesaling, processing and marketing of agricultural produce (Evbuomwan, 2014). Banks

and other financial institutions serve as intermediaries between savers and investors, they may supply part or all of the circulating media or means of payment; they may supply initiative and enterprise, as well as finance, for the creation, transformation and expansion of industrial and other ventures, such as agriculture. The fact that the financial system has been inadequate to serve the development needs of the country has been quite obvious, particularly deploring the conservatism of financial system, a situation that remains virtually unchanged over four decades after (Ojo, 2010).

Sustainable Development

Development refers to the capacity of an economy which had been static for some time, to generate and sustain an annual increase in its Gross National Income (GNI) at rate of 5% to 7% or more. Development can also be defined as the rate of growth of income per capita, meaning, the ability to expand the output at a faster rate than the growth of the population of the nation (Linus, 2009).

Goulet (1971), describes development as the improvement in the social status of people; it is absolutely participatory process leading to growth and social change. The end product of development is a developed man or woman and their material condition. To sustain, means to keep something or maintain something in existence.

In the context of this study, sustainable development can be defined as an improvement in the quality if people's lives through a stable and sustained increase in food production, supply and demand of the populace in the present generation in which natural resources based are not allow to deteriorate for future uses. Sustainable development can be measured in various ways such as measuring natural capital stock, social discount and Green accounting among others. However, for the purpose of this work, Green accounting measurement will be used, this is because it permits the computation of income for a nation by considering the economic damage and depletion in the natural resources based of an economy. It is a measure of sustainable income level that can be secured without decreasing the stock assets. Thus, it can be calculated as:

$SD = GNP\text{-}D_N$. Where GNP denotes Gross National Product, D_N denotes depreciation of monetary value of natural asset during the years.

Food Security

Food security is a flexible concept as reflected in the many attempts at definition in research and policy usage. Even a decade ago, there were about 200 definitions in published writings (Maxwell & Smith, 1992). Whenever the concept is introduced in the title of a study or its objectives, it is necessary to look closely to establish the explicit or implied definition, (Maxwell, 1996).

Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level. That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis. A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues, (ODI, 1997).

Concepts of food security

The initial focus, reflecting the global concerns of food security, was on the volume and stability of food supplies. The concept was defined in the 1974 World Food Summit as, “Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices", (United Nations, 1975). In 1983, FAO expanded this concept to include securing access by vulnerable people to available supplies, implying that attention should be balanced between the demand and supply side of the food security equation. It is defined as, "Ensuring that all people at all times have both physical and economic access to the basic food that they need (FAO, 1983).

FAO (1983), has enlarged concept of food security so as to include the following components: the ultimate objective of world food security should be to ensure that all people at all times have both physical and economic access to food they need.

Food Security should have three basic aims, ensuring production of adequate food supplies, maximizing stability in the flow of supplies, and ensuring access to available supplies on the part of those who need them.

Action will be needed on a wide front including all factors that have a bearing on the capacity of both countries and people to produce or purchase foods, while cereals will continue to be

the main focus of attention, action should cover all basic food stuff necessary for health, agriculture and rural development, food production, food reserves, the functioning of national and international cereal market. The foreign exchange needs of importing countries, trade liberalization and export earnings, the purchasing power of poorest strata of the population, financial resources and technical assistance, the flow of food aid and arrangements to meet emergency needs.

This broader concept of food security is similar to that adopted by the World Bank three years later in its position paper Poverty and Hunger: Issues and Options for Food Security in developing countries. It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low incomes, and transitory food insecurity, which involved periods of intensified pressure caused by natural disasters, economic collapse or conflict. This concept of food security is further elaborated in terms of:

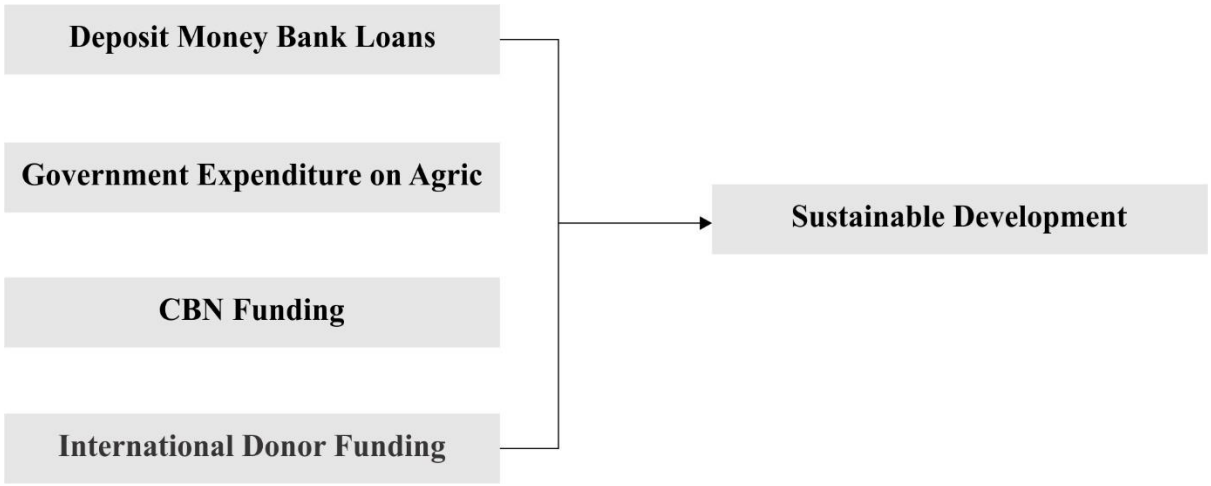


Figure 1 Conceptual framework

Source: Developed by the researcher (2019).

Theoretical Framework

Classical Theory of Development

The theory was propounded by Bill Rostows in 1950s and 1960s the process of development as a series of successive stages of economic growth; mixture of saving, investment, and foreign aid was necessary for economic development and emphasized the role of accelerated capital accumulation in economic development. The classical theorists of development like Adam Smith, David Ricardo and Karl Marx among others lived during the industrial

revolution time and were opined that available and land resources were limited questioning results of long-term population growth.

Post-Keynesian Theories of Development

The post-Keynesian theorists of development took into considerate the effect of spending on both aggregate demand and the productive capacity of the economy. One of the prominent scholars was W.W. Rastow (Brudney,1998). According to Rastow, nation passes through five stages of development and these stages are: The traditional society or primitive stage: this stage is characterized by rigid institutions, reliance on subsistence agriculture and low productivity. There is trade by barter at this stage and there is no output maximization. Precondition for take-off: this is the stage that brings about improvement in institutional climate, sustained increase in agricultural productivity. Take off into sustained development: in this stage there is an increase in savings and investment, high industrialization and positive attitude towards to change development.

Methodology

The study employed the descriptive and correlational design in examining the effects of agricultural financing and sustainable development toward food security in Nigeria. This is because a descriptive design describes the characteristics of the phenomenon without controlling the variables. Descriptive involves observing and describing the behavior of a subject without influencing it in any way. On the other hand, a correlational design is so described because it establishes relationships among two or more variables of interest in a study. This is the case in which the investigator does not intervene in any way or expose subjects to a manipulation. Instead, measurements are taken on a group of individuals or social entities, and relationships are determined among the measures.

For the purpose of this study, the population comprised of the years 1960 to 2018. These years were considered relevant as they represent the post-independence years of Nigeria's agricultural financing experience.

The years 1992 to 2020 were selected as the sample years of this study. The year 1992 was selected because in that year the Central Bank of Nigeria made an important paradigm shift in its bid to improve on the financing of agriculture in the country by establishing Community Banking as the machinery for achieving the plan.

The Ordinary Least Squares (OLS) was employed in analyzing data to explain the relationship between agricultural financing, sustainable agricultural development and food security in Nigeria. To this end, the Eviews 10 was used to run the OLS.

In order to estimate the effects of agricultural financing and sustainable development on food security in Nigeria over the years (1992 to 2017), the OLS model is functionally defined as

FS= f(DMBL, GEA, IDF, CBNF)

When this is transformed into mathematical form it becomes

FS = a0 + a1DMBL + a2GEA + a2IDF + a3CBNF

However, since functional relationships involving economic variables are not always exact as depicted by the mathematical model above, this is transformed into its econometric form, by including the error term, to give room for other variables that might not have been considered in the model, but which can have an effect on the dependent variable. Thus, the model becomes

$FS_t = a0 + a1DMBL_t + a2GEA_t + a2IDF_t + a3CBNF_t + U_t$

Again, since the variables are not all measured on the same scale, they have been further transformed into their natural logarithms, which lead to the model becoming

$Log(FS)_t = a_0 + a_1 Log (DMBL)_t + a_2 Log (GEA)_t + a_3 Log (IDF)_t + a_4 Log (CBNF)_t + U_t$

Where;

FS food security which is measured as Total food production per capita

DMBL = Deposit money banks loans to the Agric sector

GEA= Government expenditure on agriculture

IDF = International donor funds to farmers

CBNF = CBN funding to the Agric sector

f = Functional relationship

a0 = intercept or constant

a1, a2, a3, and a4 = the slopes or coefficients of the independent variables

U = error term, representing other variables not considered in the model

Log = Natural logarithm of the variables.

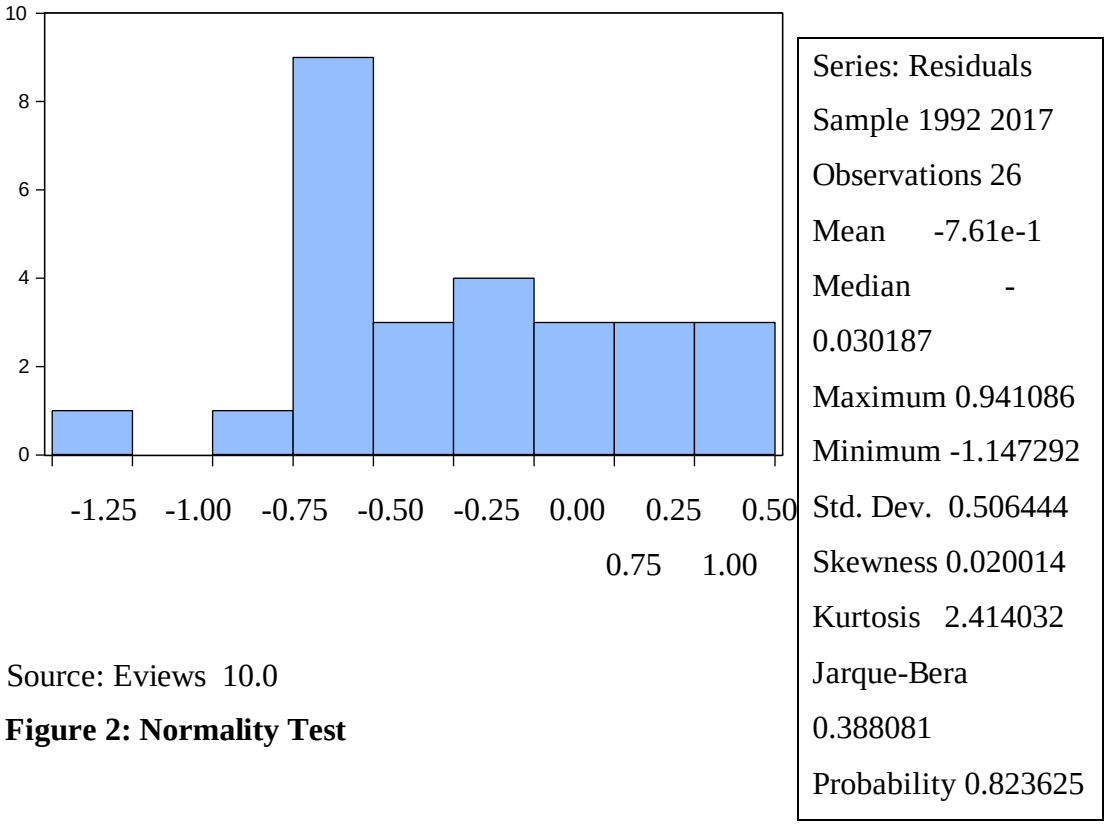
Since this study adopted the quantitative techniques in the analysis of this work. In this regard, time series method for the estimation of econometric models are employed. Such Ordinary Least Square (OLS) is applied in estimating the relationship between the dependent and independent variables selected for this study. The descriptive method would involve the

use of statistical tools, such as graphs, trends and percentages, to discuss the effects of the independent variables on the dependent variables.

Pre-diagnostic Tests

Normality Test

The data needs to follow a normal distribution in order for most analyses to work properly. Even in situations where normality is not required if normality exists it will make for a stronger assessment. There are two aspects to normality of a distribution, skewness and kurtosis, and both must be tested before normality can be established.



Source: Eviews 10.0

Figure 2: Normality Test

Figure 2 shows a Jarque-Bera test that was used to test for the normality of the data. The diagram shows that the P-value of 0.8236 is greater than 0.05 level of significance. The Skewness describes how unevenly the data is distributed with a majority of scores piled up on one side of the distribution and a few stragglers off in one tail of the distribution. Skewness is often but not always caused by outliers. In this result, it indicated that the data is positively skewed. Also, the Kurtosis describes how "peaked" or "flat" a distribution is. If too many or all of the scores are piled up on the or around the mean then the distribution is too peaked and it is not normal, vice versa for when a distribution is too flat. The value of 3 indicated that it normal. Just like the value of the Kurtosis in this study is a little higher than 3. Hence, it can be inferred that the data is normally distributed.

Unit root test

Table 3: Phillip-Perron Unit root Test

Variables	Stationarity at level		Stationarity at first difference		Level of significance 0.05
FS_t	I(0)	4.39	I(1)	-2.13*	-1.955
DMB_t	I(0)	2.24	I(1)	-4.36*	-1.955
CBN_t	I(0)	1.72	I(1)	-4.09*	-1.955
GEA_t	I(0)	-0.57	I(1)	-7.76*	-1.955
IDF_t	I(0)	5.22	I(1)	-2.43*	-1.955

Source: Eviews 10.0

Before estimating the time series regression analysis, a unit root test was performed on the data. Economic theory requires that variables be stationary (that is, the variables should have long term, or equilibrium relationship between them) before the application of standard econometric technique (Gujarati 2004). This is to avoid misleading result. Table 3 shows the result of the unit root test is performed using the Augmented Dickey-Fuller (ADF). The test result shows that the calculated values of ADF for the variables are greater than the tabulated values after the first difference. From the table for FS, -2.12 absolute value is greater than 1.995; for DMB, -4.36 absolute value is greater than 1.955; CBN absolute value of -4.09 is greater than 1.955; for GEA -7.76 is greater than 1.955 and for IDF -2.43 is greater than 1.955.

Co-integration

Since the variables for this study have been found to be non-stationary, one way of resolving this is to difference the series successively until stationary is achieved and then use the stationary series for regression analysis. According to Asteriou et al (2007), this solution is not only ideal after first differencing, but it no longer gives a unique long-run solution. If the variables do not co-integrate, then there is usually a tendency of facing the problems of spurious regression and the result becomes almost meaningless.

This study applied the Johansen and Juselius (1990) maximum likelihood testing procedure as against the Engle and Granger (1987) procedure which requires the condition of only two variables. Since all the unit root result is on integrated order of I (1), the Johnsen and Juselius method comes in handy. The Johansen-Juselius method provides a unified framework for the

estimation and testing of cointegrating relations in the context of vector error correction models. Cointegration analysis provides a powerful discriminating test for spurious correction. The Johansen-Juselius method suggests two statistics in the determination of the number of cointegrating vectors: the trace statistics and the maximum Eigen values.

Table 4: Co-integration

Date: 04/23/19 Time: 12:45

Sample (adjusted): 1994 2017

Included observations: 24 after adjustments

Trend assumption: Linear deterministic trend

Series: FS CBN DMB GEA IDF

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.734995	75.78733	69.81889	0.0154
At most 1	0.586961	43.91517	47.85613	0.1118
At most 2	0.464081	22.69405	29.79707	0.2614
At most 3	0.221868	7.723512	15.49471	0.4954
At most 4	0.068495	1.702885	3.841466	0.1919

Trace test indicates 1 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.734995	31.87216	33.87687	0.0851
At most 1	0.586961	21.22112	27.58434	0.2631
At most 2	0.464081	14.97053	21.13162	0.2910
At most 3	0.221868	6.020627	14.26460	0.6106
At most 4	0.068495	1.702885	3.841466	0.1919

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 4, shows the result of the cointegration analysis, the Trace statistics indicates that from the first hypothesis which is r=0 and r ≥ 0, the Trace result indicated that 75.78 is more than the critical value of 69.82. This means that there is at least 1 cointegrating equation.

Table 5: Regression Result and Error Correction Model

Dependent Variable: D(FS)

Method: Least Squares

Date: 04/23/19 Time: 12:48

Sample (adjusted): 1993 2017

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DMB)	-0.000567	0.000189	-3.001194	0.0073
D(GEA)	0.000364	0.000385	0.946789	0.3556
D(IDF)	0.312430	0.100139	3.119958	0.0056
D(CBN)	0.011933	0.041836	0.285225	0.7786
ECM(-1)	-0.999862	0.119277	-8.382722	0.0000
C	0.071549	0.012811	5.584957	0.0000

R-squared	0.829754	Mean dependent var	0.089687
Adjusted R-squared	0.784952	S.D. dependent var	0.079431
S.E. of regression	0.036835	Akaike info criterion	-3.559193
Sum squared resid	0.025779	Schwarz criterion	-3.266663
Log likelihood	50.48992	Hannan-Quinn criter.	-3.478058
F-statistic	18.52062	Durbin-Watson stat	1.224767
Prob(F-statistic)	0.000001		

Table 5 shows that the result of the Error Correction Model (ECM) is negative, less than unity but significant at 5% level. This result does meet the condition for the error correction coefficient which is expected to be negative, less than one and significant. The ECM is an error correction term in the result that restores back equilibrium, and validates that there exists a long run equilibrium relationship among the variables. The value of the ECM is 0.999%, meaning that the system corrects (or adjusts to) equilibrium in the following year at speed of 99.9%. This indicated that the speed at which equilibrium is achieved among the

variables is relatively high. Based on the EVIEWS 10 output shown on table 5, the result of the regression analysis for model one is interpreted as follows:

a. The value of the intercept 0.0715 is the predicted value created if all the independent variables are equal to zero.

b. Deposit Money Bank financing to Agriculture (DMB) with coefficients of (β=-0.000567, P-value=0.0073). The values indicate there is a negative and significant relationship existing between Deposit Money Bank agriculture financing and sustainable food security in Nigeria. Keeping all the other variables constant, increase in Deposit Money Bank agriculture financing, decreases the level of sustainable food security in Nigeria. The apriori expectation for this variable was not met as expected. The coefficient value is expected to be positive.

c. Federal Government total Expenditure on Agriculture (GEA) was found to be positive and insignificant to sustainable food security in Nigeria. With coefficient of (β= 0.000364, P-value=0.3556), it shows that though positive the relationship has no significant effect on food security. The apriori expectation for Government total Expenditure on Agriculture (GEA) was not met as expected. The variable is positive but not significant; indicating that government spending on agriculture to achieve sustainable food security is inadequate.

d. The coefficient value of International donor funds to farmers (IDF) which is (β=0.3124, P-value = 0.0056). The values indicate that there is a positive and significant relationship existing between International donor funds to farmers (IDF) and sustainable food Security (FS). Keeping all the other variables constant, a unit increase in the International donor funds to farmers, increases the sustainable food security (FS) in Nigeria by 31.2%. The apriori expectation for International donor funds to farmer's index was met as it is expected.

e. Central Bank of Nigeria Agricultural financing (CBN) has a positive and insignificant relationship with food security (FS) in Nigeria with coefficient and p-values of β= 0.0119, P-value = 0.7786. The coefficient value of CBN financing does meet the apriori expectation which is expected to be positive. The value indicates that a 1% increase in central bank financing to agriculture brings about an insignificant increase of 11.9% in sustainable food security in Nigeria.

f. The coefficient of determination r^2= 0.829 shows a 82.9% change in sustainable food security is as a result of the contributions of central bank agricultural financing, deposit

money bank agricultural financing, government expenditure in agriculture and international donor on agriculture. The F-(Wald test) with a value of 18.52 and p-value of 0.0000 shows that there is a strong linear dependency existing between the dependent and independent variables.

POST ANALYSIS TESTS

Table 6: Heteroskedasticity Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.593195	Prob. F(2,19)	0.5625
Obs*R-squared	1.528066	Prob. Chi-Square(2)	0.4658

From Table 6, the P-value of the 0.5625 is greater than the level of significance of 0.05. This means that there is no heteroskedasticity.

Table 7: Auto-correlation -Durbin-Watson test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.678934	Prob. F(4,21)	0.1924
Obs*R-squared	6.300001	Prob. Chi-Square(4)	0.1778
Scaled explained SS	10.20802	Prob. Chi-Square(4)	0.0371

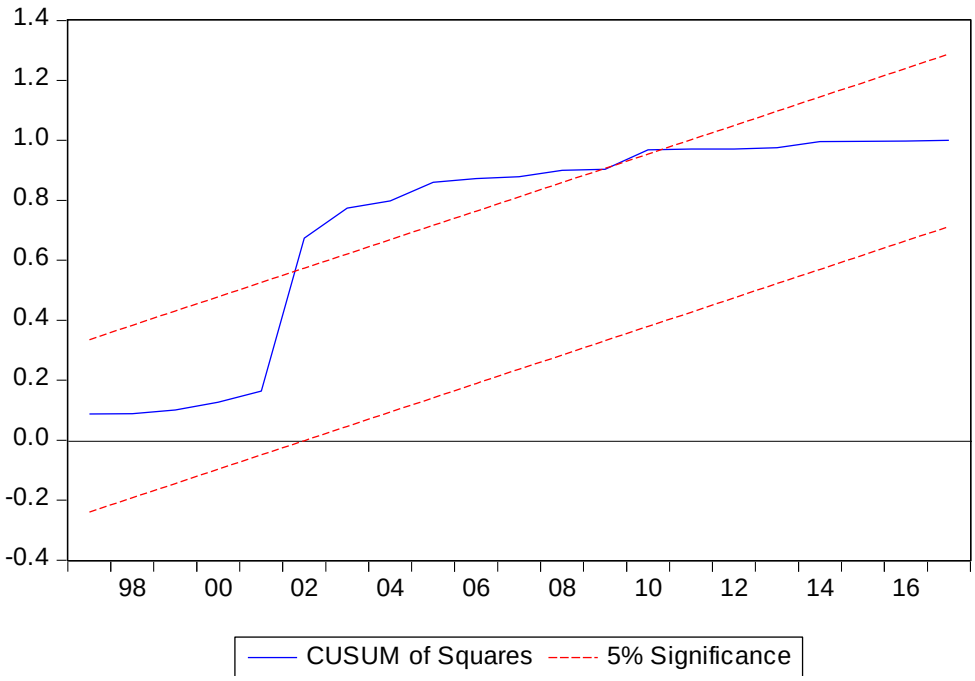
The P-value of the Breusch-Godfrey Serial Correlation LM Test is 0.1924 is greater than the level of significance of 0.05. This implies that there is no serial correlation.

Table 8: Multicollinearity test

Variance Inflation Factors
Date: 04/24/19 Time: 18:58
Sample: 1992 2017
Included observations: 26

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CBN	0.005326	1032.768	15.70781
DMB	2.12E-08	5.376082	2.946762
GEA	1.11E-06	4.621120	1.989966
IDF	0.010273	8061.873	21.26253
C	0.729321	3634.019	NA

The result from table 8 shows that Variance Inflation Factor (VIF). Since the value of the Uncentred VIF is greater than the centred VIF, it means there is no multicollinear variables in the model. Implying the absence of multicollinearity.



Source: Eviews 10.0

Figure 3: Stability Test

Figure 3 shows the CUSUM square for the test of parameter stability. The decision rule is to observe the plot line of the CUSUMSQ within the 5% critical bound. To draw inferences relative to the stability of the parameters and the model in particular. The null hypothesis of instability would be rejected when the plots of the CUSUMSQ stay within the 5% significance level, and otherwise when the plots of the CUSUMSQ move outside the 5% critical lines. From the Figure 2, it can be seen that the CUSUMSQ is not within the plots of the CUSUMSQ and does move outside the 5% critical lines. It is, therefore, concluded that the parameters in the model are unstable.

Test of Hypothesis

Hypothesis One

Ho_1: Deposit money bank loans in Nigeria do not have a significant effect on financing agriculture for sustainable development toward food security in Nigeria.

Decision Rule:

If the p value is less than the level of significance of 0.05, the null hypothesis is rejected while the alternate hypothesis is accepted. If the p value is greater than the significance level of 0.05, the null hypothesis is accepted and the alternate hypothesis is rejected. Given from the regression result in Table 5 the variable deposit money bank loan (DMB) indicated that the p-value (0.0073) is less than 0.05 level of significance. Therefore, the null hypothesis is rejected concluding that deposit money bank loan in Nigeria does help in financing agriculture for sustainable development toward food security in Nigeria.

Hypothesis Two

H_{O2}: Government expenditure on agriculture does not significantly affect the financing of agriculture for sustainable development toward food security in Nigeria.

Decision Rule:

If the p value is less than the level of significance of 0.05, the null hypothesis is rejected while the alternate hypothesis is accepted. If the p value is greater than the significance level of 0.05, the null hypothesis is accepted and the alternate hypothesis is rejected.

The result from Table 5 for the variable Government budget on agriculture (GEA) indicated that the p-value (0.3556) is greater than the 0.05 level of significance. Therefore, accept the null hypothesis, concluding that the Government budget fund does not play a role in financing agriculture for sustainable development toward food security in Nigeria.

Hypothesis Three

H_{O3}: International donor funding does not have any significant impact on agricultural financing for sustainable development toward food security in Nigeria

Decision Rule:

If the p-value is less than the level of significance of 0.05, the null hypothesis is rejected while the alternate hypothesis is accepted. If the p-value is greater than the significance level of 0.05, the null hypothesis is accepted and the alternate hypothesis is rejected.

Table 5 for the variable International donor fund (IDF) indicated that the p-value (0.0056) is less than 0.05 level of significance. Therefore, reject the null hypothesis while the alternate hypothesis is accepted, concluding that International donor fund does have significant impact on agricultural financing for sustainable development toward food security in Nigeria.

Hypothesis Four

H_{O4}: Central bank of Nigeria funding has no significant effect on agriculture financing for sustainable development on food security in Nigeria.

Decision Rule:

If the p value is less than the level of significance of 0.05, the null hypothesis is rejected while the alternate hypothesis is accepted. If the p value is greater than the significance level of 0.05, the null hypothesis is accepted and the alternate hypothesis is rejected.

Table 5 result shows that the variable Central bank of Nigeria funding (CBN) indicated that the p-value (0.7786) is greater than 0.05 level of significance. Therefore, the null hypothesis is upheld while alternate hypothesis is rejected. This means that Central bank of Nigeria funding has no significant effect on agriculture financing for sustainable development on food security in Nigeria.

Conclusion and Recommendations

Based on the findings of this research work the following conclusions are made.

Firstly, the relationship between deposit money bank and agricultural financing and sustainable development toward food security in Nigeria is said to be weak and significant. The findings revealed in table 5 that p-value is 0.0073 which is less than 0.05meaning that, deposit money bank loan in Nigeria does help in financing agriculture for sustainable development toward food security in Nigeria.

Secondly, the relationship between Federal Government Expenditure on Agriculture (GEA) and agricultural financing and sustainable development toward food security is said to be insignificant. The findings revealed in table 5 that, p-value is 0.3556 which is higher than 0.05, meaning that Federal Government Expenditure on agriculture does not play any role on agricultural financing for sustainable development toward food security in Nigeria.

Thirdly, the relationship between International donor fund and agricultural financing and sustainable development on food security is said to significant. The findings revealed in table 5 that, p-value is 0.0056 which is less than 0.05 meaning that, International donor fund does have significant impact on agricultural financing for sustainable development toward food security in Nigeria. Thus, International donor funds serve as an important tool in achieving food security.

Fourthly, the relationship between Central bank of Nigeria funding and agriculture financing for sustainable development on food security is said be insignificant. This findings revealed in table 5 that, p-value is 0.7786which is higher than 0.05 meaning that, Central bank of Nigeria funding has no significant effect on agriculture financing for sustainable development on food security in Nigeria.

The study recommends that

i. To encourage Deposit money banks loans to the agricultural sector, there is need to reduce the interest rate which discourages borrowing. It is known that low interest rate usually meant to make credit easily accessible to farmers. Thus, Government must often check and control the charging of high interest rates by overzealous banks as such high rates often stifle the survival of agricultural sector and food security.

ii. It is expected that government expenditure financing on the agricultural sector should have a positive sign and significant on food security. However, from the result, it shows that government injects huge amount in financing agricultural sector in order to achieve sustainable food security. Despite the government financing on agricultural sector, the impact is not reflected on food security. Thus, government should advocate for effective and efficient utilization of funds release to agricultural sector and all areas of wastages should be blocked.

iii. The agricultural financing establishes a long-run relationship between international donor funds to farmers and food security. This implies that international donor funds to farmers have been effective in contributing to food security. Therefore, international donor funds to farmers should be sustained.

iv. Finally, the Central Bank of Nigeria's Agricultural finance and food security had a long-run positive relationship but were insignificant. Therefore, the Central Bank of Nigeria should judiciously channel its funds and monitor how such funds are used by the farmers.

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