ABUAD Journal of Social and Management Sciences (AJSMS),
Vol. 4, No. 2, 2023, pages 195-207 https://doi.org/10.53982/ajsms.2023.0402.02-j

Published by the College of Social and Management Sciences (SMS), Afe Babalola University, Ado-Ekiti (ABUAD), Nigeria.
E-mail: ajsms@abuad.edu.ng

ISSN: 2714-3740

Agricultural Productivity and Poverty Alleviation in Nigeria

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Abstract

The study is designed to examine the relationship between agricultural productivity and poverty alleviation in Nigeria from 1981 to 2020. To achieve this objective, secondary data were collected on the relevant variables namely per capita income, which was used as a proxy for poverty, agricultural output, agricultural loans to individuals, and the real gross domestic product. The data used were sourced from the Central Bank of Nigeria (CBN) statistical bulletin and the World Bank database. The study adopted the Philips Perron test in testing for stationarity and the variables had a mixed order of integration. Auto Regressive Distributed Lag Model (ARDL) was adopted in carrying out the analyses after cointegration was established using the ARDL bounds test. The result of the study showed that an increase in agricultural output improved per capita income, which reduced the level of poverty. The model was also found to have no autocorrelation implying that the findings of the study are suitable for predictions and forecast. The study concluded that poverty can be alleviated through the improvement of the agricultural sector. The study also recommended among other things that the government should embark on policies that can strengthen the agricultural sector in Nigeria.

Keywords: Agriculture, Productivity, Poverty, Poverty Alleviation, Nigeria, #SDG1.

1.0. Introduction

The situation of poverty in Africa is severe. African nations typically fall at the bottom of any list measuring small size economic activity such as income per capita or gross domestic product (GDP) per capita, despite a wealth of natural resources. Record shows that 22 out of 24 nations identified as having 'Low Human

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Development' in the United Nations (UN) Human Development Index were in Sub-Saharan Africa (UNDP, 2009). Again, it was discovered that 33 out of 46 nations in the UN list of the least developed countries were in Africa while 9 were in Asia, 1 in the Caribbean and 3 in the Pacific (UNDP, 2021). Underdevelopment in most cases brings about poverty. In many African countries, GDP per capita is very low. This explains why most Africans have inadequate level of income and consumption resulting in insufficient basic necessities of life such as healthcare, housing, adequate clothing, adequate nutrition and other necessities.

Nigeria is one of the leading third world nations in which a good proportion of the world's poorest citizens live (Millennium Summit, 2000; Adebayo, 2018). The poor citizens in Nigeria are faced with the problems of high child mortality, malnutrition, poor physical health, inadequate shelter, food insecurity, poor access to potable water and many others. According to the National Bureau of Statistics (NBS), about one hundred and thirty (130) million Nigerians are poor (NBS, 2022). This followed another depressing disclosure by the World Bank, which claimed that the population of Nigerians in poverty has increased considerably. Particularly, the NBS noted that the number of Nigerians living in extreme poverty was at 50% in 2019 (NBS, 2019). The report also noted that poverty rates remained high in Nigeria, particularly in rural areas. The trend in Nigeria showed there was a decline in the incidence of poverty from 46.3% in 1985 to 42% in 1992. This was largely attributed to the significant recovery of the economy, which led to higher incomes, higher household's expenditure and real gains to a large part of the population (Adawo, 2011; World Bank, 1996). Today, sadly, the incidence of poverty is on the increase.

Agricultural productivity has been seen as a measure of alleviating poverty in the world, especially in developing nations. Many studies have linked agricultural productivity to poverty alleviation (Mellor, 1999; Obiakor, Wahid, Olufemi & Timothy, 2022; Schultz, 1979). As a result, the UNDP (2012) observes that agriculture must be part of world economic growth, poverty reduction, and environmental sustainability. The importance of the agricultural sector in reducing poverty and serving as an engine of growth was demonstrated during the Green Revolution in Asia, specifically in India and China. A study by the International Food Policy Research Institute (IFPRI) revealed that enhancing higher agricultural growth will be key in alleviating poverty, encouraging overall economic growth and attaining the first Millennium Development Goal (MDG) of halving the number of poor people (Diao, Hazell, Resnick, and Thurlow, 2007). The MDGs have since been replaced by the Sustainable Development Goals (SGDs).One of the goals of the SDGs is to achieve zero hunger by 2030.

Available evidence suggests that poverty has been a major problem in Nigeria (NBS, 2022; World Bank, 2013). Successive governments have made several efforts towards poverty reduction and agriculture has been seen as a

measure that can be used to alleviate poverty. The efforts put forward by the Nigerian government towards the improvement of the agricultural sector have led to the increase in agricultural productivity in some cases. Nevertheless, the NBS report still shows that the poverty rate in Nigeria is high. If the efforts of the government of Nigeria have led to an increase in agricultural productivity and yet the rate of poverty is still high, then something may be fundamentally wrong either with the way agriculture is practised in Nigeria or with the poverty alleviation strategies of governments.

2.1. Literature review

Obiakor et al (2022) opined that the provision of food and eradication of poverty are benefits of agriculture. Expenditure on agriculture would not simply reduce poverty unless agricultural output is increased. In terms of yearly allocation to agriculture as a proportion of the total budget, Oluwa and Oluwa (2013) noted that the highest percentage allocation between 1985 and 2005 occurred in 1999 (3.40%). The least allocation during the same period was 0.5% in 1985 and 2003. While the percentages of budgetary allocation to agriculture have improved in recent years, they still pale in comparison to the recommendations of 25% by the Food and Agriculture Organization (FAO) and 10% by the African Union (AU). Perhaps this explains the low agricultural productivity Nigeria has recorded over the years.

Cervantes-Godoy and Dewbre (2010) in their research titled *the Economic Importance of Agriculture for Poverty Reduction* measured poverty and the success in reducing poverty using agriculture. They used a list of countries that could be judged based on their success in reducing their national poverty. They began by defining a way by which countries could be ranked according to their progress in reducing poverty. The poverty line was used as a measure of poverty in their study. They used the threshold of USD 2.00 a day in their analysis. The USD 2.00 a day line corresponds to the median poverty line for all developing countries (Chen and Ravallion, 2009).

Their analysis attributed to per worker growth in agricultural GDP the major share of progress in reducing poverty in these countries. Using regression analysis, they examined the relationship between poverty rates, agricultural GDP per agricultural worker, non-agricultural GDP per worker, and remittances per capita, using panel data. The poverty variable was the percent of the population living under the USD 2.00 per day poverty line. The analysis was carried out using STATA. The results of this multiple regression show an inverse and statistically significant relationship between poverty and each one of the three indicators: agricultural GDP per worker, non-agriculture, and remittances per capita. The aim of the regressions was simply to examine the historical relationship between poverty rates and these indicators, and therefore could provide a definitive basis for claims

of causality. Also during the course of the research, it was discovered that public expenditures on agricultural research in the selected countries were increasing generally and significantly faster than in the OECD region.

Udofia and Essang (2015) in their work titled *Agricultural Expenditure and Poverty Alleviation in Nigeria* empirically examined the impact of an increase in agricultural expenditure on the reduction of poverty in Nigeria. They collected time series data on 10 variables namely agricultural output, poverty incidence, agricultural import value, reduction in unemployment, government expenditure on education, government expenditure on agriculture, agricultural export value, electricity consumption per capita, agricultural credit facility and population.

They employed the use of the ordinary least square (OLS) with poverty as the dependent variable and the remaining nine variables as the independent variables. The results showed that there was a negative relationship between poverty and agricultural output. This indicates that, an increase in agricultural productivity will lead to a fall in poverty and vice versa. They recommended that there should be an increase in the allocation of credit to the agricultural sector since they discovered that agricultural output was weak and not significant in poverty reduction.

Komain and Brahmasrene (2007) in their work titled *The Relationship between Government Expenditure and Economic Growth in Thailand* used time series data on government expenditure and economic growth and found that there was a unidirectional causality running from government expenditure to economic growth without feedbacks, employing the Granger causality test. This implies a fall in the level of poverty because whenever there is an increase in economic growth, poverty declines (Christiaensen, Demery and Paternostro, 2003).

John and Dankawu (2018) examined the effect of agriculture on poverty reduction in Nigeria from 1981 to 2014. The study utilized the Principal Component Analysis and Vector Error Correction Model in carrying out the analysis. Secondary data on the variables of interest were gathered and the result showed that agricultural productivity had a lasting impact on poverty in Nigeria. The finding of the study agreed with Madi, Gong and Tozo (2020) who investigated the effect of agricultural productivity on the economic growth and poverty alleviation among ECOWAS countries. They concluded by saying that agriculture could be a pro-growth and a counter-poverty tool.

Furthermore, Etuk and Ayuk (2021) examined the roles of agricultural commercialization and poverty reduction in Nigeria. Secondary data were gathered and the study analyzed the data using Foster, Greer and Thorbecke (FGT) and Stata Version 14.0 and found that agricultural commercialization had a positive impact on poverty reduction in Nigeria.

2.2. Theoretical Framework

Christiansen, et al (2003) established a theoretical framework that explains the role of agriculture in alleviating poverty through its effect on the economic growth of a nation. They started their analysis with equation (1).

Let Pi be any (decomposable) measure of poverty and Yi per capita gross domestic product (GDP) in country 'i'. The proportionate change in poverty in a country 'i' can then be defined to be identical to the GDP elasticity of poverty (identified as the proportionate change in poverty divided by the proportionate change in per capita GDP), multiplied by the proportionate change in per capita GDP (Yi):

$$\frac{d\rho_i}{\rho_i} = \left(\frac{d\rho_i}{\rho_i}\frac{Y_i}{dY_i}\right)\frac{dY_i}{Y_i} \qquad (1)$$

They referred to the first multiplicative term in (1) as the participating effect and the second multiplicative term as the growth effect. Not all growth processes produce the same amount of overall growth or an equal amount of poverty alleviation (World Bank, 2002). Christiaensen, et al (2003) identified that the growth and the participation effect may not be the same across sectors. In order to accommodate such changes equation (1) was re-written as a weighted sum of the contributions to poverty reduction of both the agricultural and non-agricultural sectors:

$$\frac{d\rho_i}{\rho_i} = q\left(\frac{d\rho_i}{\rho_i}\frac{Y_{ai}}{dY_{ai}}\right)\frac{dY_{ai}}{Y_{ai}} + (1-q)\left(\frac{d\rho_i}{\rho_i}\frac{Y_{ni}}{dY_{ni}}\right)\frac{dY_{ni}}{Y_{ni}} \qquad (2)$$

With 'a' denoting agriculture, 'n' non-agriculture, and 'q' any constant (1<q<0). A meaningful choice for 'q' is $q=(Y_{ai}/Y_i)=S_{ai}$ the share of agriculture in total GDP in country 'i'. It follows that (1-q) equals $(Y_{ni}/Y_i)=S_{ni}$, the share of non-agriculture in total GDP in country 'i' and (2) becomes:

$$\frac{d\rho_i}{\rho_i} = \left(\frac{d\rho_i}{\rho_i}\frac{Y_{ai}}{dY_{ai}}\right)s_{ai}\frac{dY_{ai}}{Y_{ai}} + \left(\frac{d\rho_i}{\rho_i}\frac{Y_{ni}}{dY_{ni}}\right)s_{ni}\frac{dY_{ni}}{Y_{ni}} \qquad (3)$$

Using lower cases to represent rates of change for Pi and Yi gives:

$$pi = E_{ai}S_{ai}yai + E_{ni}S_{ni}y_{ni}$$

where y_{ki} is the growth rate per capita GDP in sector k=a,n, E_{ki} the elasticity of total poverty with respect to per capita GDP in sector k, and ski the share of sector k in total GDP.

From equation (4) it is clear that the influence of a sector (e.g. agriculture) on poverty depends on how its pace of growth performs compared with the other sector (non-agriculture). In addition, a large literature exists, showing that an increase in the agricultural sector will cause changes in other sectors leading to a higher non-agricultural growth. While the reverse interaction might also hold, the literature suggests that these effects are smaller. The growth effect of a sector will therefore have two effects:

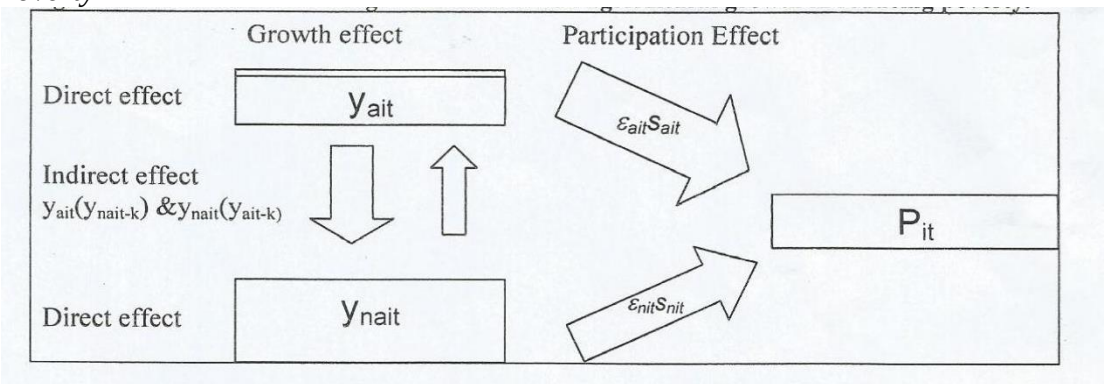
i) The direct effect (or the size y_a)

ii) The indirect effect, this being additional changes in poverty as a result of the induced changes in the growth performance of the other sector (the effect of y_a on y_n).

Furthermore, an increase in the pace of per capita agricultural growth (y_a) will have a more marked effect on poverty than an identical increase in the rate of non-agricultural growth (y_n) if $E_nS_n<E_aS_a$. The participation effect therefore has two elements: an elasticity component and a share component. Even though agriculture is the largest sector in the economy of most developing countries, the share of non-agriculture (services and industry combined) in the overall economy is usually larger than the share of agriculture. Whether the participation effect of agriculture (E_aS_a) outweighs the participation effect of non-agriculture (E_nS_n) would depend on whether E_a is sufficiently larger than E_n. Finally, they noted that when $E_n=E_a$, equation (4) collapses to equation(1) and the source of growth no longer matters in determining the poverty effect of growth (Ravallion and Datt, 1996).

In sum, they identified from their simple framework two elements each of the growth and the participation effects. The growth effect has a direct and an indirect; and the participation effect has elasticity and a share component. Figure 2.1 shows the relative role of the agricultural and non-agricultural growth in reducing poverty.

Figure 2.1: *The Relative Role of Agricultural and Non-Agricultural Growth in Reducing Poverty*



Source: World Bank Policy Research Working Paper (2006)

2.3. Some Agricultural Policies and programmes in Nigeria

In a quest to improve the GDP of the country and improve the agricultural productivity of Nigeria, the successive Nigerian governments have embarked on several agricultural policies and programmes. Some of these programmes are briefly discussed below.

The River Basin Development Authorities (RBDAs)

The RBDAs were established in 1973 to serve some important purposes. These include:

i. providing water to people in rural areas to enable them increase their agricultural productivity;

ii. increasing the sizes of the farmlands available to rural farmers by clearing farmlands using government tractors hired at a reduced cost;

iii. constructing feeder roads to aid the transportation of farm implements and farm produce;

iv. constructing fish ponds to boost fish farming; and

v. providing irrigation facilities (Igbokwe, 2009).

Lower and Upper Benue River and Rural Development Authority, Lake Chad Basin and Rural Development Authority, Niger River Basin and Rural Development and Development Authorities were some of the River Basin Rural Development Authorities.

The RBDAs had certain problems that led to its failure. Some of the problems as identified by Igbokwe (2009) in Agber, et al (2013) were but not limited to the fact that some of the authorities grew out of proportion and the operation of some suffered from intensive political interference. He also opined that funds were wasted to streamline sizes and functions of RBDAs through the disposal of their non-water asset.

Operation Feed the Nation (OFN)

This policy was established in 1976 to achieve certain goals. Some of these goals were to

i. create awareness among the citizens of Nigeria that the population of the country was growing faster than the food production;

ii. convince the citizens that farming was a great way to make a living;

iii. cut down the demand of some food items and increase the supply and consumption of certain food items;

iv. encourage domestic food production by traditionally non-food producing sectors of the economy; and

v. encourage self-sufficiency and national self-reliance in food production, among others (Agber et al, 2013).

In order to achieve these goals, the government established a price support system for agricultural products and agro-service centers. The use of weed, diseases and pest control was also encouraged alongside the use of fertilizers and improved seeds. As the name implied, the policy was meant to feed the nation through the desire of the government to ensure that the food items produced in the country were cheaper than the imported ones. The policy did not succeed due to some problems such as some of the farmers did not have adequate experience because they were young in the farming business and the absence of readily available markets for the sale of the agricultural products (Agber et al, 2013).

Green Revolution

The policy began in 1980 and was like an extension of the OFN. The policy was aimed at providing subsidy on agricultural inputs such as fertilizers, improved seeds, and implements. The farmers were encouraged to produce livestock and cash crops in large quantities. Although, the policy had good aims, it did not realize its objectives. Some of the reasons for the failure of the programme were the delay and administrative bottlenecks involved in the implementation of the projects in the policy. The programme also lacked proper monitoring and evaluation (Iwuchukwu and Igbokwe, 2012).

National Special Programme for Food Security (NSPFS)

The programme officially started in 2003. Some of the aims of the programme were to strengthen extension service delivery, promote simple farm technologies, contribute to the attainment of food security, and support alleviation of rural poverty in Nigeria, among others. Some of the problems of the programme were the inadequate use of the credit facilities given to the farmers, the failure on the part of those that benefited from the programme to pay back the loan they collected, poor storage facilities and high cost of inputs (Iwuchukwu and Igbokwe, 2012).

There were other agricultural programmes like the National Fadama Development Project established in 1992, the Directorate of Food, Roads and Rural Infrastructure established in 1986, and the Agricultural Development Projects, among others.

3.0 Methodology

3.1. *The data*

The research made use of time series data on all the identified variables namely per capita income, agricultural output, real gross domestic product and agricultural loans to individuals spanning 1981-2020. The choice of this period was informed by the lockdown imposed on the people of Nigeria due to the Covid-19. This increased people's poverty as jobs were lost and some businesses crumbled. As a result, many people turned to agriculture as a means of making a living. The link between agriculture and poverty reduction appeared pronounced during this era. The data for the study were obtained from the Central Bank of Nigeria (CBN) statistical bulletin and the World Bank

3.2. *Model Specification*

The Auto Regressive Distributed Lag Model (ARDL) was used because of its flexibility in accommodating variables integrated of mixed orders. The model is specified as:

PI= F (AP, RGDP, AL)

$$\Delta lnPI_t = \alpha_0 + \beta_1 \sum^{k}_{m=1} \Delta lnAP_{t-j} + \beta_2 \sum^{k}_{n=1} \Delta lnAL_{t-c} + \beta_3 \sum^{k}_{q=1} \Delta lnRGDP_{t-d} + \beta_4 \sum^{k}_{p=1} \Delta lnPI_{t-h} + \beta_5 Ect + \mu_t$$

Where PI is Per capital income, α is the constant intercept, β_i(where i= 1,2,3,4,5,6,7,8) are the coefficients of the variables, AP is Agricultural output, RGDP is Real Gross Domestic Product, AL is agricultural loan to individuals, Ect is the error correction term and μ is Error term and t= time. Δ is the difference operator

The PI is measured per head but all other variables are measured in billions (N billion)

3.3. *Unit Root Test*

A series can only be stationary if its mean and variance are constant over time and the value of covariance between two time periods depends only on the distance between the two time periods and not on the actual time at which covariance is computed (Gujarati, 1995). The Philips Perron test was employed in this study.

3.4. *Cointergration Framework*

Cointegration shows the verification of a long run relationship amongst the variables in the model. This shows the need to verify the long run relationships of

variables in the model. The ARDL bound test was employed in this study to test for cointegration.

4.0 Presentation of Results and Discussion

Table 1: *Unit root results*

Variables	Adj-Test Statistic	5% level of Significance	Results	Remarks
PI	-3.189152	-2.941145	I(1)	Stationary
AL	-4.427083	-2.941145	I(1)	Stationary
AP	-5.336270	-2.938987	I(0)	Stationary
RGDP	-7.980665	-2.941145	I(1)	Stationary

Source: Authors' computation

Table 1 shows the result of the Philips Perron test that shows that the variables are stationary in mixed order. The paper proceeds to the presentation of the results of the ARDL bounds test for cointegration.

Table 2: *Cointegration results*

F-Statistic	Level of Significance	I(0)	I(1)	Decision
13.63815	1%	3.65	4.66	cointegration
	5%	2.79	3.67	cointegration
	10%	2.37	3.2	Cointegrated

Source: Authors' computation

The result of the ARDL bounds test indicated cointegration of the variables at 5% level of significance indicating that AP, AL, RGDP and PI have a long run relationship. The error correction term for the model (CointEq(-1)*) was -0.429338 and had a probability of 0.000 indicating that the speed at which a disequilibrium in the short run will adjust back to equilibrium in the long run is 43%. The probability rate being less than 5% indicates that the error correction term is statistically significant.

Table 3: *Result of the ARDL Model*

Variables	Coefficient	Standard Error	T-Statistic	P-Value
C	81.48512	93.83049	0.868429	0.3945
AP	1.72E-05	4.44E-06	3.874457	0.0008
AL	0.000185	2.23E-05	8.279364	0.0000
RGDP	0.000968	0.000614	1.577097	0.1290
(CointEq(-1)*)	-0.429338			0.000
R-Square Value	0.899023			

Source: Authors' computation

The long run result of the ARDL model indicates that the AP, AL, RGDP have a positive relationship with PI. This means that they move in the same direction. An increase in any of the independent variables (AP, AL, RGDP) will increase the dependent variable (PI). A 1% increase in the agricultural productivity increased per capita income by 172%, a 1% increase in agricultural loan increased per capita income by 0.02% while a 1% increase in RGDP increased per capita income by 0.010% for the period under consideration. The probability values of

the independent variables were seen to be statistically significant because they were less than 5% except for RGDP, which is statistically insignificant. The model has a positive but statistically insignificant constant intercept.

The implication of this result is that, agricultural productivity, agricultural loans to individual and the gross domestic product have the tendency to improve the per capita income of Nigeria. An increase in the per capita income indicates a fall in the rate of poverty in Nigeria. The adjusted R-squared value is 0.899023 indicating that the independent variables explain 89.9% of the dependent variable.

Table 4: *Results of the autocorrelation test*

F-statistic	1.410046	Prob. F(4,18)	0.2707
Obs*R-squared	8.589048	Prob. Chi-Square(4)	0.0722

Source: Authors' computation

Since the probability values are above 5%, the study concludes that there is no autocorrelation in the model. This means the error terms of the different periods are not correlated. The study therefore accepts the null hypothesis that says that there is no autocorrelation in the model.

Conclusion and Recommendations

The relationship that exists between agricultural productivity and poverty has drawn the attention of writers to this area. The works of some of these writers were reviewed in this study. From the empirical result, it was discovered that agricultural productivity had a positive relationship with the level of per capita income in Nigeria from the period of 1981 to 2020. The positive relationship shows that agriculture has a potential of alleviating poverty. Again, if the government and Nigerians continue to neglect agriculture, the level of poverty may continue to increase because the reliance on oil is not sufficient to reduce poverty. Oil is an exhaustible material and the prices may fall at any given time. Therefore, the government should make deliberate efforts towards improving the agricultural sector by increasing expenditure on agriculture, and ensuring that there is a proper agency that will help to prevent practices that may hinder the growth of the agricultural sector. The study therefore recommends that policies and programmes that improve agricultural productivity (such as the distribution of free fertilizers, pesticides, improved seeds and agricultural loans and grants) should be taken seriously to curb the problem of poverty in Nigeria.

References

Adawo, M. A. (2011). Poverty Reduction in Nigeria: A Necessary Agenda. *Research Journal of Economic Theory*, 3(1).14-19.

Adebayo, B. (2018). Nigeria Overtakes India in Extreme Poverty Ranking. *CNN World*, June 26. https://edition.cnn.com/2018/06/26/africa/nigeria-

overtakes-india-extreme-poverty-intl/index.html#:~:text=Nigeria%20has%20overtaken%20India%20as,less%20than%20%241.90%20a%20day.&text=A%20recent%20rise%20in%20oil,spur%20the%20country's%20economic%20recovery.

Agber T., Iortima P. I. & Mbur, E. N. (2013). Lessons from Implementation of Nigeria's Past National Agricultural Programmes for the Transformation Agenda. *American Journal of Research*, 2(1), 238-258.

Cervantes-Godoy, D. & Dewbre, J. (2010). Global Forum on Agriculture, 29-30 November: Policies for Agricultural Development, Poverty Reduction and Food Security. https://one.oecd.org/document/TAD/CA/APM/WP(2010)42/FINAL/En/pdf

Diao, X. Hazell, P. Resnick, D. & Thurlow, J. (2007). *The Role of Agriculture in Development: Implications for Sub-Saharan Africa.* Washington DC: International Food Policy Research Institute.

Godoy, D. & Dewbre, J. (2010). *Economic Importance of Agriculture for Poverty Reduction*. Organization for Economic Co-operation and Development (OECD) Food, Agriculture and Fisheries Working Papers, 23. OECD. Doi: 10.1787/5kmmv9s20944-en

Gujarati, D. N. (1995). *Basic Economic*. Singapore. New Delhi: McGraw Hill Companies Inc.

Iwuchukwu, J. C. & Igbokwe, E. M. (2012). Lessons from Agricultural Policies and Programmes in Nigeria. *Journal of Law and Globalization*, 5(1), 11-17.

John, M. & Dankawu, M. (2018). Effect of Agriculture on Poverty Reduction in Nigeria: A Multifaceted Approach using Principle Component Analysis. *Journal of Humanities and Social Sciences*, 23(6), 35-43.

Komain, J. & Brahmasrene, T. (2007). The Relationship between Government Expenditure and Economic Growth in Thailand. *Journal of Economics and Economic Education Research,* 8(1), 93-103.

Ligon, E & Sadoulet, E. (2007). *Estimating the Effects of Aggregate Agricultural Growth on the Distribution of Expenditures*. Background for the World Development Report 2008, World Bank.

Madi, M. S. A., Gong, J., & Tozo, K. W. (2020). Impact of Agricultural Productivity on Economic Growth and Poverty Alleviation in ECOWAS Countries: An Empirical Analysis. *Journal of Scientific Reports*, 2(1), 97-125.

Mellor, J. (1999). *Faster, More Equitable Growth – The Relation between Growth in Agriculture and Poverty Reduction*. Washington, D.C.: United States Agency for International Development

Millennium Summit Held 6th-8th September 2000 in New York.

National Bureau of Statistics (2019). Annual Abstract of Statistics 2019.

National Bureau of Statistics (2022). Annual Abstract of Statistics 2022.

Obiakor, R. T. Wahid, D. O. Olufemi, S. O. & Timothy, A. A. (2022). Agriculture, Food Security and Poverty Reduction in Nigeria: Cointegration and Granger causality approach. *Economic Development, Technological Change and Growth*, 18(1), 1-16

Oluwa, O. W. & Oluwa, O. (2013). Policy Interventions and Public Expenditure Reform for Pro-poor Agricultural Development in Nigeria. *African Journal of Agricultural Research*, 9(4), 487-500.

Ravallion, M. & Datt G. (1996). How Important to India's Poor is the Sectoral Composition of Economic Growth? *The World Bank Economic Review*, 10(1), 1-25.

Udofia, L. & Essang, N. (2015). Agricultural Expenditure and Poverty Alleviation in Nigeria. *European Journal of Business and Management*, 19057(21), 35-41.

United Nations Development Programme (2009), Human Development Index Database.

United Nations Development Programme (2021). UN List of Least Developed Countries.