Impact of Inclusive Growth Determinants on Agricultural Output in Nigeria

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Abstract

The study examines the effect of inclusive growth determinants on agricultural output in Nigeria employing macroeconomic variables which include agricultural GDP, per capita income, unemployment and poverty rates. Government expenditure on education, labour force and government expenditure on health were used as control variables. The properties of the time series data (spanning 1981 to 2013) were tested using the Augmented Dickey Fuller (ADF) unit root test and Johansen co-integration tests. Also the error correction model (ECM) technique of analysis was applied to the model. The ECM results reveal that agricultural output (AGDP) increases as unemployment and poverty rates fall and when per capita income rises. This suggests that agriculture as a sector is a viable means of achieving the much desired inclusive growth. Serious attention should be paid to growing the agricultural sector by all stakeholders (government, private initiatives, research institutions and even individuals). Growing the agricultural sector of the nation more than ever before will reduce poverty rate and unemployment as well as increase per capita income.

Keywords: Inclusive growth, Agriculture, Poverty rate, Unemployment and Per capita income

Introduction

Equity in the distribution of a country's earnings, resources and opportunities is of great importance in the development of any economy, particularly in developing countries such as Nigeria, where the poverty rate was 33.1% as at 2012/2013 (World Bank 2014). This poverty level can be attributed to inequitable distribution of income. Although the Nigerian economy seems to have grown during the period under review, the problems of inequitable distribution of income, unemployment and poverty remain unsolved. This brings to mind the concept of inclusive growth and sustainable development.

According to Lanchovichina and Lundstrom (2009), inclusive growth involves long-term structural transformation for economic diversification, including creative destruction of jobs and firms, and requires growth to be broad-based across sectors, inclusive of the large part of the country's labour force in order to achieve reduction in the level of unemployment in the economy. According to the African Development Bank (2012), inclusive growth refers to economic growth which results in a wider access to sustainable socio-economic opportunities for the majority of people while protecting the vulnerable (the poor) all being done in an environment of fairness, equality and political plurality. Inclusive growth is broad-based across sectors and promotes productive employment which will benefit even the neglected few in the society. In other words, inclusive growth emphasizes reduction of poverty, unemployment and inequitable distribution of income. This implies that for a country to achieve inclusive growth, there should be improvement in employment, pattern of income distribution should be such that will favour everybody in the society and there should be reduction in the level of poverty in the economy.

The Sustainable Development Goals (SDGs) are a universal set of targets set by the United Nations (UN) which contains objectives that can also improve inclusive growth. According to Wikipedia (2015), the very first goal of the SDGs is to end poverty in all its forms and poverty reduction is one of the factors of inclusive growth. The tenth goal focuses on reducing inequality within and among countries (Wikipedia, 2015).

The fact that the problem of poverty, unemployment, and inequitable distribution of income still exist at a high rate is perhaps one of the most serious criticisms of the level of economic growth in Nigeria. As at 2010, the poverty rate in Nigeria was 69%, the unemployment rate was 21.1%, and the Gini index which shows income inequality was 48.8% (World Bank 2012).

Agriculture has been identified as one of the sectors that can facilitate inclusive growth because it has the potential to provide employment for a large percentage of the labour force and thus reduce unemployment and poverty and can employ people of different levels, both the rich and the poor, hence facilitating equity in income distribution. According to the National Bureau of Statistics (2010), the participation of Nigeria in agriculture is facing a declining trend. In the 1960s, agriculture contributed 61% of the total GDP of Nigeria but this declined to about 33.7% in the 1990s. In 2013, the contribution fell to about 23.3% and 19.65% in 2014 (National Bureau of Statistics, 2015). This shows that agriculture, which is a sector that can generate employment to facilitate poverty reduction and equity in income distribution.

The study then raises the question: what is the nexus between inclusive growth determinants and the agricultural output in Nigeria? This question was examined by looking at the trend of agricultural contribution to GDP in relation to inclusive growth determinants (poverty rate, unemployment and income inequality).

Inclusive growth needs to be given utmost attention in order to achieve sustainable growth in the productivity of the agricultural sector, since the more the proportion of the population of a country that participate in the growth process and the benefits that come from growth, the more the economy will be productive. In developing countries, there is limited level of attaining inclusive growth; only the very privileged dominate employment. However, if there were investment in sectors that provide mass employment (such as the agricultural sector), growth would be more inclusive in such economies.

This study is vital because it emphasizes the important role agriculture can play in achieving inclusive growth in Nigeria and, by extension, the SDGs. Further, this study shows the relationship between the agriculture sector's productivity and determinants of inclusive growth, and highlights how the redistribution of income, creation of jobs and a reduction

in the number of the poor can enhance the productivity of the agricultural sector.

Literature Review

Inclusive growth is a broad concept that connotes growth in terms of the pace and pattern of growth. It is commonly taken to include three factors: (i) improvement in the level of employment, (ii) reduction in the poverty level, and (iii) equity in the distribution of income. The concept of inclusive growth has been viewed variously by different scholars most of which viewed it in relation with either equity, poverty or employment.

In terms of poverty, some of the definitions of inclusive growth are interchangeable with definitions of pro-poor growth. For instance, Habito (2009) defines inclusive growth as GDP growth that leads to significant poverty reduction, which is no different from how Grosse et al. (2008) defined 'weak absolute pro-poor growth'. Whereas Habito (2009) considered the multidimensional nature of poverty, examining non-income factors affecting the poverty elasticity of growth, the concept of inclusiveness adopted was nonetheless restricted to poverty. In this perspective, Rauniyar and Kanbur (2010) noted that, if inclusiveness is understood as being captured by poverty, then inclusive growth is indistinguishable from pro-poor growth which is defined as growth associated with poverty reduction.

In terms of redistribution of income, a definition of inclusive growth based on a conceptualization of inclusiveness as increasing equity in the distribution of income, as adopted by Rauniyar and Kanbur (2010), is tantamount to 'relative pro-poor growth', as defined by Grosse (2008). Elaborating on their definition, Rauniyar and Kanbur (2010) pointed out that inclusiveness reflects income inequality reduction and that this can be more or less pro-poor, depending on which income levels are most positively affected, and accordingly argue that the focus of policy for poverty reduction must be growth that increases the lowest of incomes.

In terms of employment, Lanchovichina and Lundstrom (2009) postulated that the long-term approach inherent in inclusive growth requires a focus on productive employment, particularly raising the pace of growth by utilizing more fully parts of the labour force trapped in low-productivity activities or completely excluded from the growth process. Inclusive growth thereby includes both growth in employment and the

distribution of such growth. The concept of productive employment as a fundamental factor of inclusive growth was emphasized by Bhalla (2007).

According to the African Development Bank (2011), improved agricultural productivity is one of the various broad and mutually reinforcing pillars underpinning the concept of inclusive growth. Various investigations have been carried out by scholars to establish the link between investment in the agriculture sector and inclusive growth, however these works vary in focus and dimension.

Briones (2013) argued that the development of the rural economy is a key factor for achieving inclusive growth; one that creates jobs, draws the majority into the economic and social mainstream, and continuously reduces mass poverty. Garner and Campos (2014) explained that the strategy of inclusive growth has strong appeal in agriculture, where a successful strategy for inclusive growth can precipitate a structural transformation that increases productivity, incomes, and food security in rural areas. According to Kida (2011), there are three key roles agriculture can play in promoting inclusive growth: stimulating economic growth, reducing poverty, and creating employment.

Materials and Methods

The theoretical framework adopted in this study is that of the Solow-Swan model (1957) to express the aggregate growth function. This is an exogenous growth model which attempts to explain long-run economic growth by looking at capital accumulation, labour or population growth and increases in productivity, commonly referred to as technological progress.

The Solow-Swan model is usually of a Cobb-Douglas type of function given as:

$$Y(t) = K(t)^{\alpha}(A(t)L(t)^{1-\alpha} \quad (1)$$

In the model specification for the study, agricultural output is the dependent variable proxied by agricultural gross domestic product (AGDP). The independent variables are: inclusive growth determinants (unemployment rate, poverty rate and income inequality) and human capital variables (government expenditure: on education (GXPE) and health (GXPH) and labour force (LF)). Income inequality is usually measured with

the Gini index and the Lorenz curve, but the major limitations of these measures of inequality are that both neither indicate the number of people who fall below the poverty line nor the extent of impoverishment (Anyanwu, 1997), and the scarcity of time series data for Nigeria. Hence, per capita income (PCI) is employed as measure of income inequality. The human capital variables were used as control variables in the models.

Three different models were to determine the impact of inclusive growth determinants on agricultural output in Nigeria. Implicitly the models are:

$$AGDP = f(UNE, GXPE, GXPH, LF) \quad (2)$$

$$AGDP = f(PVR, GXPE, GXPH, LF) \quad (3)$$

$$AGDP = f(PCI, GXPE, GXPH, LF) \quad (4)$$

In explicit form, we have:

$$\ln AGDP = a_0 + a_1 UNE + a_2 \ln GXPE + a_3 \ln GXPH + a_4 LF + \mu \quad (5)$$

$$\ln AGDP = b_0 + b_1 PVR + b_2 \ln GXPE + b_3 \ln GXPH + b_4 LF + \mu \quad (6)$$

$$\ln AGDP = c_0 + c_1 PCI + c_2 \ln GXPE + c_3 \ln GXPH + c_4 LF + \mu \quad (7)$$

where:

$AGDP$ = agricultural gross domestic product
PCI = per-capita income
UNE = unemployment rate
PVR = poverty rate
$GXPE$ = government expenditure on education
$GXPH$ = government expenditure on health
LF = labour force
a_i, b_i and c_i = coefficients of the variables
μ = error term

Agricultural output: This refers to the total productivity of the agricultural sector in Nigeria. It is measured as the total contribution of the agricultural sector to the gross domestic product (GDP) of Nigeria (in billion naira).

Poverty rate: This refers to the number of people living below $1per day as a percentage of the total population. It is expected to reduce agricultural output. Therefore, we expect this variable to have a negative relationship with agricultural output (dependent variable). So, $\partial AGDP / \partial PVR < 0$

Unemployment rate: This refers to the number of people not engaged in productive activities. This is measured as a percentage of the total population. The variable is expected to have a negative relationship with agricultural output (dependent variable). So, $\partial AGDP / \partial UNE < 0$

Per capita income: This refers to the share of national income to the population of a country. It is measured as the ratio of the Nigerian national income to the population of Nigeria (in million naira per annum). It is expected to increase agricultural output. Therefore, we expect this variable to have a positive relationship with agricultural output (dependent variable). So, $\partial AGDP / \partial PCI > 0$

Government expenditure on education: This refers to the share of government expenditure that goes into education (in billion naira).

Government expenditure on health: This refers to the share of government expenditure that goes into health services (in billion naira).

Labour force: This is the total ratio of the population which is capable of being employed in useful labour. It is measured as a percentage of the total population.

The model required secondary data and these were extracted from the CBN bulletin and the World Bank database and cover the period 1981-2013.

The Augmented Dickey Fuller (ADF) unit root test statistics were employed to examine the time series properties of the data while the co-integration approach was adopted to gain useful insight into testing for a causal relationship. The study also employed the error correction model technique to achieve its objective.

Results and Discussion

The Trend

The trends for agricultural output (proxied by agricultural GDP) and unemployment rate from 1981 to 2013 are shown in Figure 1. From the graph, it can be observed that there is no consistency in the flow of the two trends, although they move in the same direction. Both the dependent variable (AGDP) and unemployment increased over time, although there was instability in unemployment. From 1987 to 1995, unemployment followed a downward trend, increasing only marginally from 1995 to 1999 when it increased remarkably. It reduced again during 2000 but increased continuously after 2007.

Figure 1: Agricultural GDP and unemployment rate in Nigeria (1981-2013)
Source: Author's computation (2016)

The trends for agricultural output (AGDP) and poverty rate in Nigeria from 1981 to 2013 is presented in Figure. 2. It can be observed that similar to the trend for unemployment, there is no consistency in the direction of both the dependent variable (AGDP) and poverty rate.

Figure 3 shows both the trends for AGDP and per capita income in Nigeria from 1981 to 2013. The graph shows that there is consistency in the direction of both the dependent variable (AGDP) and per capita income.

This means that over time, as per capita income increases, agricultural output also increases.

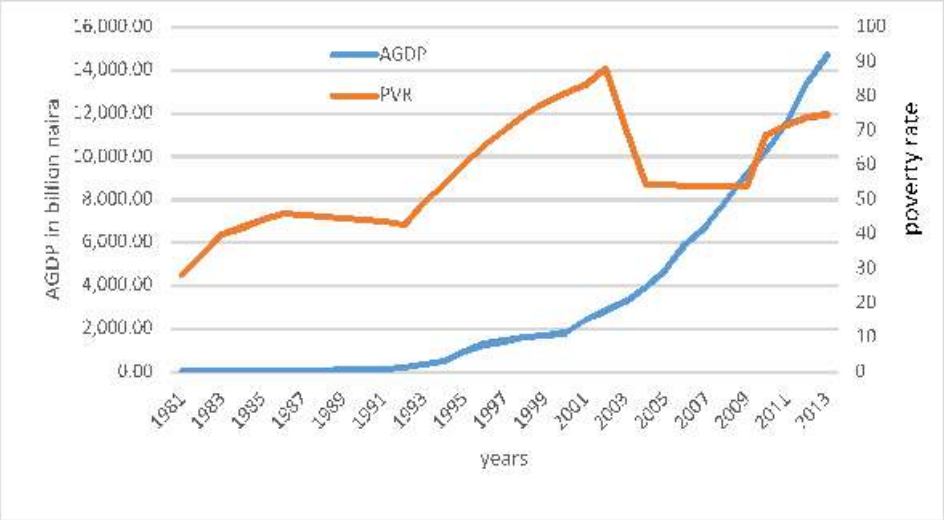

Figure 2: Agricultural GDP and poverty rate in Nigeria 1981-2013

Source: Author's computation (2016)

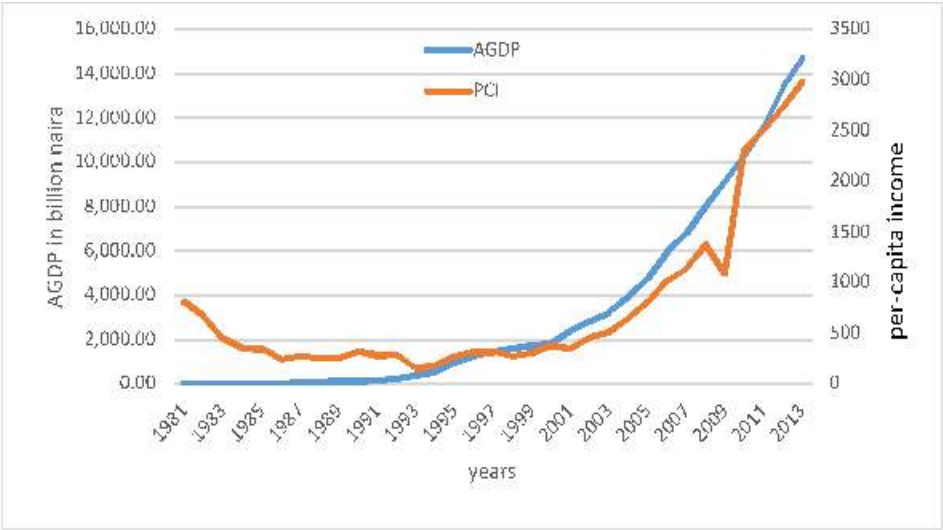

Figure 3: Agricultural GDP and per-capita income in Nigeria 1981-2013

Source: Author's computation (2016)

Time series properties of the data

The Augmented Dickey Fuller (ADF) stationary test was employed to examine the stationary status of the data. Table 1 presents the summary of the results for the Augmented Dickey Fuller test for the variables to be employed in our error correction model. The results show that the variables are stationary at first difference. Both AGDP and poverty rate are stationary at 5% level of significance, while per capita income, unemployment, labour force, government expenditure on education and health are stationary at 1% level of significance.

Table 1: Unit Root Test result (with Constant and Trend)

Variables	Test Statistics	Significance	Integration
Agricultural GDP	-2.980448	Yes**	I(1)
Per-capita income	-5.214366	Yes***	I(1)
Unemployment rate	-6.513742	Yes***	I(1)
Poverty rate	-3.549682	Yes**	I(1)
GXP Education	-5.057488	Yes***	I(1)
GXP Health	-6.537716	Yes***	I(1)
Labour force	-5.687093	Yes***	I(1)

Source: Author's computation (2016).

Notes: ADF Test Criteria Values: 1% (-3.661) and5% (-2.960),

***, and** * represents 1% and 5% level of significance respectively.

Long-Run Equilibrium Relationships

Two variables are said to be co-integrated if they have a long-run equilibrium relationship between them. If two variables, dependent and independent are individually non stationary but their residual (combination) is stationary, those variables are co-integrated (Gujarati, 2004). To establish the long-run equilibrium relationships between the dependent and independent variables in the present study, the Johansen co-integration test was used.

The trace statistics and maximum Eigenvalue statistics employed by the Johansen co-integration tests (From Table 2) indicate that 3 co-integrating equations exist among the variables. This implies that the variables in the present study, comprising agricultural output, government

expenditure on health and education, unemployment rate, and labour force, are co-integrated.

Table 2: Johansen Co-integration Test for agricultural output and unemployment

Date: 04/22/16 Time: 12:05
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: LAGDP LLF LGXPE LGXPH LPCI PVR UNE
Lags interval (in first differences): 1 to 1
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.883425	187.9230	125.6154	0.0000
At most 1 *	0.775094	121.2971	95.75366	0.0003
At most 2 *	0.670136	75.04291	69.81889	0.0180
At most 3	0.457628	40.66162	47.85613	0.1997
At most 4	0.380578	21.69571	29.79707	0.3157
At most 5	0.192273	6.847671	15.49471	0.5954
At most 6	0.007334	0.228198	3.841466	0.6329

Trace test indicates 3 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's computation (2016).

The error correction term is negative and is statistically significant at 10% in the model (Table 3). It shows that 0.14% of the disequilibrium and deviations in the previous year will be corrected in the current year. This result indicates that there is a negative and significant relationship between the one-period lagged value of the unemployment rate and agricultural gross domestic product (AGDP) in the current year. This implies that a fall in the unemployment rate in the one period lagged value will raise AGDP by 0.013.

From Table 4, the trace statistics and Maximum Eigenvalue statistics employed by the Johansen co-integration tests indicate that there exist co-integrating equations among the variables. This implies that the variables (agricultural output, government expenditure on health and education, poverty rate and labour force) are co-integrated.

Table 3: Impact of Unemployment on Agricultural Output

Dependent Variable: D(LAGDP)
Method: Least Squares
Date: 04/22/16 Time: 12:21
Sample (adjusted): 1984 2013
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.100729	0.063279	1.591831	0.1251
D(LGXPE)	0.072338	0.033258	2.175057	0.0402
LGXPE(-3)	-0.071664	0.024523	-2.922297	0.0077
LLF(-2)	8.53×10^{-9}	2.75×10^{-9}	3.099754	0.0051
UNE(-1)	-0.013682	0.006889	-1.986204	0.0591
UNE(-2)	0.013154	0.007124	1.846546	0.0777
ECM(-1)	-0.135803	0.077417	-1.754183	0.0927

R-squared	0.558119	Mean dependent var	0.210715
Adjusted R-squared	0.442845	S.D. dependent var	0.140811
S.E. of regression	0.105105	Akaike info criterion	-1.466745
Sum squared resid	0.254084	Schwarz criterion	-1.139799
Log likelihood	29.00118	Hannan-Quinn criter.	-1.362152
F-statistic	4.841696	Durbin-Watson stat	1.598829
Prob(F-statistic)	0.002485		

Source: Author's computation (2016).

Table 4: Johansen Co-integration Test for Agricultural Output and Poverty

Date: 04/22/16 Time: 12:37
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: LAGDP LLF LGXPH LGXPE PVR
Lags interval (in first differences): 1 to 1

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.733358	76.90553	69.81889	0.0122

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
At most 1	0.434212	35.92820	47.85613	0.4000
At most 2	0.357926	18.27257	29.79707	0.5460
At most 3	0.111011	4.537953	15.49471	0.8557
At most 4	0.028307	0.890181	3.841466	0.3454

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

Source: Authors computation (2016).

The error correction term is negative and statistically significant at 5% in the model (Table 5). It shows that 0.29 percent of the disequilibrium and deviations in the previous year will be corrected in the current year. This result indicates that there is a negative and significant relationship between the two-period lagged value of the poverty rate and agricultural gross domestic product AGDP in the current year. This implies that a fall in the poverty rate in the two period lagged value will raise AGDP by 0.004.

From Table 6, the trace statistics and Maximum Eigenvalue statistics employed by the Johansen co-integration tests indicate that two cointegrating equations exist among the variables. This implies that the variables are co-integrated.

The error correction term is negative and statistically significant at 10%in the model (Table 7). This shows that 0.27 percent of the disequilibrium and deviations in the previous year will be corrected in the current year. This result indicates that there is a positive and significant relationship between the one period lagged value of per capita income and agricultural gross domestic product AGDP in the current year. This implies that a rise in per capita income in the one period lagged value will raise AGDP by 0.0005.

Table 5: Impact of poverty on agricultural output in Nigeria

Dependent Variable: D(LAGDP)
Method: Least Squares
Date: 04/22/16 Time: 12:40
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.458028	0.112005	4.089367	0.0005
D(LGXPH)	-0.000534	0.000942	-0.566724	0.5769
D(LGXPE)	0.100825	0.039516	2.551500	0.0186
D(LLF)	-6.07×10^{-9}	4.48×10^{-9}	-1.354046	0.1901
D(PVR)	-0.003488	0.004766	-0.731903	0.4723
D(LGXPE(-1))	-0.035459	0.033570	-1.056262	0.3028
LLF(-1)	-1.02×10^{-8}	5.82×10^{-9}	-1.756372	0.0936
LLF(-2)	1.16×10^{-8}	5.84×10^{-9}	1.990377	0.0597
PVR(-2)	-0.004716	0.002447	-1.927555	0.0675
ECM(-1)	-0.291401	0.118297	-2.463292	0.0225

R-squared	0.439756	Mean dependent var	0.209039
Adjusted R-squared	0.199651	S.D. dependent var	0.138759
S.E. of regression	0.124137	Akaike info criterion	-1.079173
Sum squared resid	0.323607	Schwarz criterion	-0.616597
Log likelihood	26.72718	Hannan-Quinn criter.	-0.928385
F-statistic	1.831515	Durbin-Watson stat	1.089145
Prob(F-statistic)	0.121578		

Source: Author's computation (2016).

Table 6: Johansen co-integration test for agricultural output and per-capita income

Date: 04/25/16 Time: 12:24
Sample (adjusted): 1983 2013
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: LAGDP LLF LGXPH LGXPE PCI
Lags interval (in first differences): 1 to 1
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.865175	122.8953	69.81889	0.0000
At most 1 *	0.661943	60.77829	47.85613	0.0020

At most 2	0.460831	27.15751	29.79707	0.0978
At most 3	0.223482	8.007970	15.49471	0.4646
At most 4	0.005371	0.166965	3.841466	0.6828

Trace test indicates 2 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's computation (2016).

Table 7: Impact Per-capita income on agricultural output in Nigeria

Dependent Variable: D(LAGDP)
Method: Least Squares
Date: 04/25/16 Time: 12:13
Sample (adjusted): 1984 2013
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.185163	0.091174	2.030867	0.0604
D(LGXPH)	-0.004500	0.002773	-1.623025	0.1254
D(LGXPE)	0.119893	0.047836	2.506341	0.0242
D(LLF)	-1.02×10^{-8}	4.56×10^{-9}	-2.243386	0.0404
D(PCI)	7.03×10^{-5}	0.000103	0.681319	0.5061
D(LGXPH(-1))	-0.007154	0.003990	-1.793176	0.0931
D(LGXPH(-2))	-0.006555	0.004301	-1.524141	0.1483
LGXPE(-2)	0.036570	0.034727	1.053064	0.3090
LGXPE(-3)	-0.086572	0.031497	-2.748548	0.0149
LLF(-1)	-8.69×10^{-9}	7.54×10^{-9}	-1.152624	0.2671
LLF(-2)	1.87×10^{-8}	6.42×10^{-9}	2.905027	0.0109
LLF(-3)	-6.26×10^{-9}	4.53×10^{-9}	-1.380972	0.1875
PCI(-1)	0.000512	0.000266	1.924281	0.0735
PCI(-3)	-0.000405	0.000232	-1.746871	0.1011
ECM(-1)	-0.271320	0.140902	-1.925597	0.0733

R-squared	0.695127	Mean dependent var	0.210715
Adjusted R-squared	0.410578	S.D. dependent var	0.140811
S.E. of regression	0.108106	Akaike info criterion	-1.304557
Sum squared resid	0.175303	Schwarz criterion	-0.603958
Log likelihood	34.56836	Hannan-Quinn criter.	-1.080429
F-statistic	2.442912	Durbin-Watson stat	1.801699
Prob(F-statistic)	0.048599		

Source: Author's computation (2016).

Conclusion and Recommendations

The study has established that unemployment and poverty rate have a negative impact on agricultural output, which implies that achieving growth in agricultural output (AGDP) necessitates the fall of both unemployment rate (UNE) and poverty rate (PVR). Also, it showed that there exists a positive relationship between per capita income (PCI) and agricultural output (AGDP), therefore to improve agricultural output in Nigeria, there is a need to increase the per capita income of the country.

Investment in mass employment sectors (such as the agriculture sector) is required to raise the standard of living of the people and this is possible when there is full utilization of manpower by providing larger and better job opportunities in both rural and urban areas.

To foster improvement in agricultural productivity (which is inclusive in nature) and ensure sustainable development, the study recommends that the government of Nigeria should focus on increasing the share of government spending that goes into agriculture, thus channeling more funds into the sector. Furthermore, government should diversify into sectors that require large amounts of labour (such as agriculture) in order to reduce the unemployment rate in the country as this will also lead to reduction of the poverty rate.

Moreover, government should also endeavour to improve the quality of human capital in Nigeria. This can be achieved by providing adequate health and education facilities.

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