THE ROLE OF AGRICULTURE IN JOB CREATION FOR NATIONAL DEVELOPMENT IN NIGERIA

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Abstract - *This paper , the role of Agriculture in job opportunity for national development in Nigeria is aim to determine if agriculture really create job opportunity and how it affect the Gross Domestic Product as a part of national development in Nigeria .Data was collected from abstract of Central Bank of Nigeria . Regression analysis is use to analyse the data. Result of the analysis show that there is strong positive correlation between the Gross Domestic Product and Agriculture sectors and also that 99.9% of the variation in Gross Domestic Product is explained by the relationship among the Agricultural sector..From the Analysis of Variance it was discovered that the overall regression is significant and that Agriculture have impact on creation of job opportunity and economic development . I thereby recommend that federal government should focus on policies that will favour mass upliftment of the rural area without discouraging the big time farmers. The researchers have come to realize that the promotion of agriculture at the grassroots would inevitably accelerate the development of cottage industries, and therefore provide the much required linkages to industrialization, having taken for granted availability of food sufficient for local consumption. Conclusively, this paper have been able to point out that the agricultural sector contributes meaningfully to national development which have a multiplier effect on human capital development, because it is often said that a 'hungry man is an angry man'.*

Keywords: Agricultural, Employment and National Development.

1. INTRODUCTION

Agriculture is the predominant activity in most of the zones in Nigeria, percentage of persons working in agriculture ranges between 24.4 and 85.1 percent across zones in Nigeria. With respect to states, the activity ranges between 2.4 and 91.7 per cent, majority of states having over 50 percent, (CBN,2000).Increases in agricultural output brought about by increase in land and labour productivity, make food cheaper; benefit both rural and urban poor people who spend much of their income on food. Under the right conditions, increase in agricultural productivity causes the incomes of both small and large farmers to increase and generate employment opportunities [1][3]The foundation of these potential was laid by agricultural sector that effectively and efficiently played its traditional role. But in an economy like Nigeria, the agricultural sector had suffered setbacks attributed to widespread poverty and food insecurity. In the Nigerian economy and many developing countries, agriculture is practiced at subsistence level. Almost all rural dwellers depend on income from agricultural output for

survival. About 70% of the total labour force is employed by the agricultural sector, therefore, agricultural transformation means a lot in reducing Unemployment and aiding national growth. Invariably, every increase in income or per capita agricultural output enhances the incomes of the poor and reduces the number of people living on less than US$1 a day in this area, leading to increase in capital formation [2] [4] [5].

It is with this quest for recent empirical-econometric facts that motivated this study, poised with the aim of finding out how agricultural output can help to reduce, if not eliminate unemployment and enhance developmental growth. It is equally aimed at providing policy information for the government

Those of us who preach the gospel of agriculture with evangelical zeal find the text compelling and Convincing. We are regularly possessed by the spirit only to look around and see out colleagues, in other sectors, in country management, or even our senior management doubting, yawning or subtly edging towards the door. We face the implicit query, "If agriculture can do such great things, why have they not yet happened?" [1] [6] [8] , the liberalization of the 1990s and greater openness to trade has lead to a reduction in the economic potential of the rural sector: cheap imported Chinese plastic buckets out compete the locally produced pottery. On the other hand, it does mean cheaper (imported) supplies. With rapid global technical change and increasingly integrated markets, prices fall faster than yields rise. So, rural incomes fall despite increased productivity if they are net producers. The integration of rural with urban areas means that healthy young people move out of agriculture, head to town, leaving behind the old, the sick and the dependent. It is often the men who move to urban areas, leaving women in charge of the farm. This has resulted in the increased sophistication of agricultural markets (and value chains) which excludes traditional smallholders, who are poorly equipped to meet the demanding product specifications and timeliness of delivery required by expanding supermarkets [7] The natural resource base on which agriculture depends is poor and deteriorating. Productivity growth is therefore increasingly more difficult to achieve. Finally, multiplier effects occur when a change in spending causes a disproportionate change in aggregate demand. Thus an increase in spending produces an increase in national income and consumption greater than the initial amount spent. But as GDP rises and the share of agriculture typically decreases, the question is how important these multiplier effects are, especially when significant levels of poverty remain in rural areas, which is the case in middle

income countries. The disappointment with agriculture led many donor organizations to turn away from agriculture, looking instead to areas that would increase the well-being of poor people, such as health and education. Pressure to focus more on reducing poverty, besides increasing agricultural productivity [9] [10] However, since the beginning of the new century, there seems to be a renewed interest in agriculture. A review of major policy documents, including the well-publicized Such report and the Kofi Annan report, show that agriculture is back on the agenda again. The most influential report, however, has been the World Development Report 2008 of the World Bank

2. AGRICULTURE AND NATIONAL DEVELOPMENT

Agriculture still remains the mainstay of Nigeria's economy. It may not be an over statement to assert the significant contributions agriculture have made to the national economy. The importance of agriculture is clearly seen in the New Agricultural Policy of 2004, which seeks to attain self-sustaining growth in all the sub-sectors and the transformation of the socio-economic development of the nation. The policy also recognized agriculture as a vital sector that could achieve the poverty reduction goals of the government. Agriculture provides food security and farm products for domestic consumption and raw materials for local industries and international markets. Increasing production above subsistence levels facilitate the growth of the non- farm economy [6] .

By stimulating growth of industries and widening employment opportunities, agriculture provides increased income outlets for various segments of the population. And increase in income leads to capital formation leading to the growth of non farm sector. It contributes to foreign exchange earnings through export of farm produce which accelerate the development of other sectors of the economy and ensure favorable balance of payment and trade. The industrial expansion which is a bye- product of capital formation acts as catalyst for establishing more industries and accelerating jobs for the population in both agricultural and non agricultural sectors. This scenario encourages the establishment of allied industries such as banks, insurance and service sectors. On the whole, all these will have a multiplier effect in terms of achieving greater integration and linkages in the various sectors of the economy. Invariably, it will lead to further employment and income generation opportunities for the masses, thereby reducing the extent of unemployment and enhancing living standards of the citizens.

The new agricultural policy is aimed at achieving the following broad objectives:

- Attainment of food security in basic food commodities.

- Increase in production of agricultural raw materials to meet the growth of an expanding industrial sector, increase in production and processing of exportable commodities to increase their foreign

exchange capacity and further diversify the country's export base and sources of foreign exchange.

- Modernization of agricultural production, processing, storage and distribution through the infusion of improved technologies and management so that agriculture can be more responsive to the demands of other sectors of the Nigerian economy.

- Creation of more agricultural and rural employment opportunities to increase the income of farmers and rural dwellers and to absorb productively an increasing labour force in the nation.

- Protection and improvement of agricultural land resources and preservation of the environment for sustainable agricultural production.

- The release of Nigeria's National Economic Empowerment and Development Strategy (NEEDS) provides an ideal platform for the international community to support Nigeria's efforts to revitalize agriculture as an engine for reducing poverty and employment creation.

3. METHODOLOGY AND ANALYSIS OF DATA

Regression Analysis

Let $\beta = (\beta_0, \beta_1, \beta_2, \beta_3)$

Then;
$$Y = X\beta + e_i$$

$$e_i = Y - X\beta$$

$$e^l = (Y - X\beta)^l$$

$$e^l e = (Y - X\beta)^l (Y - X\beta)$$

$$e^l e = Y^l Y - Y^l X\beta - X^l Y\beta + X^l \beta^l X\beta$$

$$e^l e = Y^l Y - 2X^l Y\beta + X^l \beta^l X\beta$$

Now, by observing that $Y^l X\beta$ is a one by one (1×1) matrix, is not identical to its transpose $X^l \sum \beta^l Y$, then;

Let $S = \sum e^2$ and also that $S = Y^l Y - 2X^l Y\beta + X^l X\beta^l \beta$

Minimize S by differentiating with respect to β, we have;
$$\frac{\partial S}{\partial \beta} = 0$$

$$\frac{\partial S}{\partial \beta} = 0 - 2X^{l}Y + 2X^{l}X\beta$$

$$-2X^{l}X\beta = -2X^{l}Y$$

Dividing both sides by -2

$$X^{l}X\beta = X^{l}Y$$

Multiply both sides by the inverse of $X^{l}X$ i.e. $(X^{l}X)^{-1}$

$$(X^{l}X)^{-1}X^{l}X\beta = (X^{l}X)^{-1}X^{l}Y$$

Recall that $A^{-1}A = I$ and $IA = A$

$$\therefore I\beta = (X^{l}X)^{-1}X^{l}Y$$

Hence; $\beta = (X^{l}X)^{-1}X^{l}Y$ ...
.... (3)

Taking the variance of both sides in equation (3);

$$V(\beta) = X^{l}(X^{l}X)^{-1}X^{l}XV(Y)$$

Recall that; $V(Y) = (X^{l}X)^{-1}\delta^{2}$

$$\therefore V(\beta) = X^{l}(X^{l}X)^{-1}X(X^{l}X)^{-1}\delta^{2}$$

$$V(\beta) = (X^{l}X)^{-1}(X^{l}X)(X^{l}X)^{-1}\delta^{2}$$

Recall that $A^{-1}A = I$ and $IA = A$

$$V(\beta) = I(X^{l}X)^{-1}\delta^{2}$$

Hence, $V(\beta) = \delta^{2}(X^{l}X)^{-1}$ ...(4)

And; $(X^{l}X)^{-1} = \dfrac{Adjo\,\mathrm{int}(X^{l}X)}{\left|X^{l}X\right|}$ ...(5)

Decomposition of Sum of Squares of ANOVA

Sources of Variation	Degree of Freedom	Sum of Squares	Mean Squares	F calculated
Regression	$k-1$	$SSR = \hat{\beta}'x'y - n\bar{Y}^{2}$	$MSR = \dfrac{SSR}{k-1}$	$F_{c} = \dfrac{MSR}{MSE}$
Residual	$n-k$	$SSE = y'y - \hat{\beta}'x'y$	$MSE = \dfrac{SSE}{n-k}$	
Total	$n-1$	$SST = SSR + SSE$		

ANOVA table can be summarized as follows:

Coefficient of Determination (R²)

A measure used in statistical model analysis to assess how well a model explains and predicts future outcomes. It is indicative of the level of explained variability in the model. The coefficient, also commonly known as R-square, is used as a guideline to measure the accuracy of the model. One use of the coefficient of determination is to test the goodness of fit of the model. It is expressed as a value between zero and one. A value of one indicates a perfect fit, and therefore, a very reliable model for future forecasts. A value of zero, on the other hand, would indicate that the model fails to accurately model the dataset.   The coefficient of determination always takes value between zero and one

Table 1: Nigeria's Selected Macro-Economic Indicator Used (₦ Million)

S/N	YEAR	GDP	AGS
1	1981	205222.1	57989.7
2	1982	199685.3	59450.8
3	1983	185598.1	59009.6
4	1984	183563	55918.2
5	1985	201036.3	65748.4
6	1986	205971.4	72135.2
7	1987	204806.5	69608.1
8	1988	219875.6	76753.72
9	1989	236729.6	80878.04
10	1990	267550	84344.61
11	1991	265379.1	87503.53
12	1992	271365.5	89345.43
13	1993	274833.3	90596.51
14	1994	275450.6	92832.95
15	1995	281407.4	96220.67
16	1996	293745.4	100216.2
17	1997	302022.5	104514
18	1998	310890.1	108814.1
19	1999	312183.5	114570.7
20	2000	329178.7	117945.1
21	2001	356994.3	122522.3
22	2002	433203.5	190133.4

23	2003	477533	203409.9
24	2004	527576	216208.5
25	2005	561931.4	231463.6
26	2006	595821.6	248599
27	2007	634251.1	266477.2
28	2008	672202.6	283175.4
29	2009	718977.3	299823.9
30	2010	775525.7	316728.7

SOURCE: CENTRAL BANK OF NIGERIA BI-ANNUAL STATISTICS BULLETIN. BULLETIN OF DECEMBER 2010,VOLUME 20.

4. DATA ANALYSIS

AGS =Agricultural Sector

GDP= Gross Domestic Product

Table 2   Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.997[a]	.993	.993	14928.11355

a. Predictors: (Constant), YEARS, AGRICULTURAL PRODUCT

The R-squared in table 2 is a statistical measure that shows how close the data to the fitted regression line. The value of the R(0.997) implies strong positive correlation between the GDP and explanatory variables. It shows that 99.9% of the variation in GDP is explained by the relationship among the explanatory variables(Agricultural sector). And the R-square adjusted which is used to test the adequacy of the model, is 99.3%.

Table 2   Model Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regressio	890279431006.	2	445139715503	1997.	.000[b]
	Residual	6016911504.	27	222848574.23		
	Total	896296342511	29			

a. Predictors: (Constant), YEARS, AGRICULTURAL PRODUCT

b.   Predictors: (Constant), YEARS, AGRICULTURAL PRODUCT

Hypothesis for F-test

H_0: Agriculture does not have impact on economic development

H_1: Agriculture have impact on economic development

Test Statistic : Pvalue = 0.000

α =0.05

Decision Rule : Reject H_0 if **Pvalue = 0.000 <** α =0.05

Decision : Reject H_0

Conclusion :   Agriculture have impact on economic development

From the Analysis of Variance table above, the p-value is less than 0.05 there H_0 is rejected. This implies that the overall regression is significant and conclude that Agriculture have impact on economic development

5. CONCLUSIONS

The result from the test of the hypothesis shows that all variables were important determinant of agricultural output in Nigeria within the period under investigation, that is, all the variables put together were significant in determining variations in the dependent variable.

From the result, The R-squared in table 2 is a statistical measure that shows how close the data to the fitted regression line. The value of the R(0.997) implies strong positive correlation between the GDP and explanatory variables. It shows that 99.9% of the variation in GDP is explained by the relationship among the explanatory variables(Agricultural sector). And the R-square adjusted which is used to test the adequacy of the model, is 99.3%. .From the Analysis of Variance table , the p-value is less than 0.05 there H_0 is rejected. This implies that the overall regression is significant and conclude that Agriculture have impact on economic development.

But the government capital expenditure on agriculture did not conform to a priori sign specification, positive sign was expected but the regression result indicates a negative sign for the observed data on yearly basis; the constraint factors that could be responsible for this include:

This implies that as the budgetary capital allocation to agriculture increases, less is been felt by the sector. This can be attributed to the following:

- Embezzlement by the public officer holders, in most cases, such budgetary allocations are grossly embezzled by the politicians or those entrusted with such responsibility.

- In most cases, the primary intention of government determines the direction of the sector allocation, instead of addressing unemployment and poverty; the targets were mainly to score cheap political

point. Government spends huge money in procuring capital facilities and infrastructures but their distribution are usually based on political patronage with beneficiaries being members of the ruling party at the expense of the actual farmers.

- Inefficient agricultural development planning, controlling, monitoring and coordination, lack of political will and rapid changes in government, which had made good policies to be abandoned by successors in order to create impression of working for the masses.

There is an African saying "*that once the problem of food is addressed in the life of a poor fellow, the poverty level has been substantially solved.*" The researchers hold the view that there is a direct relationship between the level of poverty in Nigeria and the development of agriculture. This goes without saying that any policy thrust that addresses poverty, would inevitably focus on agriculture, by increasing rural opportunities that could generate agricultural-induced development. Hence, the development of agriculture is antidote poverty reduction.

The focus of policies recommended is to favour mass upliftment of the rural poor without discouraging the big time farmers. The researchers have come to realize that the promotion of agriculture at the grassroots would inevitably accelerate the development of cottage industries, and therefore provide the much required linkages to industrialization, having taken for granted availability of food sufficient for local consumption. Conclusively, this paper have been able to point out that the agricultural sector contributes meaningfully to national development via poverty alleviation and food security which have a multiplier effect on human capital development, because it is often said that a 'hungry man is an angry man'.

RECOMMENDATIONS

Having investigated empirically the effectiveness of agricultural in Job creation and national development in Nigeria; it will be necessary to offer the following recommendations based on the empirical findings:

- Establishment of agricultural fund to finance and facilitate medium scale agricultural production. Credit should be granted to farmers who are ready and willing to embark on medium scale farming to enhance employment, production for local consumption and for export, leading to increase in income and capital formation among the farmers.

- Harmonization of agricultural research institutions, it is widely accepted that research and technology are the vehicles on which agricultural development move forward. A thorough analysis of the objectives, roles and activities of each institute should be made with a view to streamlining their operations for better and effective performance.

- To sustain the pace of agricultural output, government needs to review, its incentives to banks in granting credit to farmers. The focus of the conventional financial institutions should be on enhancing large-scale farming. A package of incentives such as reducing the tax rate should therefore be worked out for both the financial institutions and the farmers. The incentive to the financial institutions goes beyond agricultural insurance and guarantee schemes and sectoral allocation. It must include concrete policies on taxation, interest rate, liquidity and security of funds.

- Government should see to the development of rural infrastructures, which will encourage more people, especially the youths to remain in the rural communities and engage in agriculture. This will in turn increase agricultural productivity. It would improve the level of retention of skills in the rural areas, and stem the preponderant rural-urban drift.

- The procurement of fertilizers and other farm in-puts should be supplied to registered farmers through the banks to ensure that these in-puts get to the real beneficiaries and to realize the agricultural goals of food security in Nigeria.

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