AGRICULTURE RESOURCE AND ECONOMIC GROWTH IN NIGERIA

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Abstract:

The paper analyses the relationship between Agricultural resource and economic growth in Nigeria. The Ordinary Least Square regression method was used to analyze the data. The results revealed a positive cause and effect relationship between gross domestic product (GDP) and agricultural output in Nigeria. Agricultural sector is estimated to contribute 34.4 percent variation in gross domestic product (GDP) between 1970 and 2010 in Nigeria. The Agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s. In order to improve agriculture, government should see that special incentives are given to farmers, provide adequate funding, and also provide infrastructural facilities such as good roads, pipe borne water and electricity.

Keywords: Agriculture Resource, Resource, Economic Growth, GDP, Nigeria

Introduction

Nigeria is generously endowed with abundant natural resources including biological and non-biological resources. The resources of the entire world should be developed to the fullest extent possible with available means as a whole can progress only by the efficient and rational use of the natural resources. Resources depend on importance attached to it. Hence, agriculture constitutes one of the most important sectors of the economy. The significance of agriculture resource in bringing about economic growth and sustainable development of a nation cannot be underestimated. Agriculture contributes to the growth of the economy, provides employment opportunities for the teaming population, export revenue earnings and eradicates poverty in the economy. Abayomi (1997) stated that stagnation in agriculture is the principal explanation for poor economic performance, while rising agricultural productivity has been the most important concomitant of successful industrialization.

Oji-Okoro (2011) is of the opinion that agriculture resource has been an important sector in the Nigerian economy in the past decades, and is still a major sector despite the oil boom; basically it provides employment opportunities for the teeming population, eradicates poverty and contributes to the growth of the economy. The pervasive influence of agriculture on Nigeria's economic and social development has also been articulated by Oluwasami (1966). A strong and efficient agricultural sector would enable a country to feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries. The agricultural sector has a multiplier effect on any nation's socio-economic and industrial fabric because of the multifunctional nature of agriculture (Ogen 2007).

Agriculture has been defined as the production of food and livestock and the purposeful tendering of plants and animals, (Ahmed, 1993). He stated further that agriculture is the mainstay of many economies and it is fundamental to the socio-economic development of a nation because it is a major element and factor in national development. In the same view**,** Okolo (2004) described agricultural sector as the most important sector of the Nigeria economy which holds a lot of potentials for the future economic development of the nation as it had done in the past. Notwithstanding the enviable position of the oil sector in the Nigerian economy over the past three decades, the agricultural sector is arguably the most important sector of the economy. Agriculture's contribution to the Gross Domestic product (GDP) has remained stable at between 30 and 42 percent, and employs 65 per cent, of the labour force in Nigeria (Emeka 2007).

Generally, the agriculture sector contributes to the development of an economy in four major ways-product contribution, factor contribution, market contribution and foreign exchange contribution (Kuznetz 1961; Mackie 1964; Abayomi 1997; Abdullahi 2002; World Bank 2007). The objective of this study therefore is to analyze the contribution of the agricultural sector to the development of Nigeria economy between 1970 and year 2010 using a econometric technique.

Statement of the Problem

The literature has reported that inspite of Nigeria's rich agricultural resource endowment, there has been a gradual decline in agriculture's contributions to the nation's economy (Manyong et al., 2005). In the 1960s, agriculture accounted for 65-70% of total exports; it fell to about 40% in the 1970s, and crashed to less than 2% in the late 1990s. The decline in the agricultural sector was largely due to rise in crude oil revenue in the early 1970s. Less than 50% of the Nigeria's cultivable agricultural land is under cultivation . Even then, smallholder and traditional farmers who use rudimentary production techniques, with resultant low yields, cultivate most of this land. The smallholder farmers are constrained by many problems including those of poor access to modern inputs and credit, poor infrastructure, inadequate access to markets, land and environmental degradation, and inadequate research and extension services. The inability to capture the financial services requirements of farmers and agribusiness owners who constitute about 70 percent of the population is inclusive (Lawal, 2011).

Low agricultural output has a negative effect on the Nigerian economy as a whole. Several factors have been identified to enhance or retard growth in the agricultural sector. These factors include education (Huffman 1949; Pudasaini 1983; Aheam et al. 1998; Weir 1999), infrastructure (Querioz and Gaultam 1992; Gopinath and Roe 1997; Yee et al. 2000 and Venk Atachalam 2003) and inflation (Johnson 1980; Bullard and Keating 1995; Andres and Hernando 1997; Gokal and Hanif 2004).

Objective of the study

The main objective of this study is to examine the impact of agricultural resource on the Nigerian economy. The scope is limited to a period between 1970 and 2010. The choice of this study period is based on the availability of data.

Research Question

What are the contribution and general impacts of agricultural resource on the Nigerian economy?

Hypothesis

H_0: Agricultural resource does not have any significant impact on the Nigerian economy.

Literature Review And Theoretical Framework

Various people have defined Agriculture in different ways but common among these definitions is the fact that it is the production of food, feed, fiber and other goods by the systematic growing and harvesting of plants and animals.

Akinboyo (2008) defines Agricture as the science of making use of the land to raise plants and animals. It is the simplification of natures food webs and the rechanneling of energy for human planting and animal consumption. Until the exploitation of oil reserves began in the 1980s, Nigeria's economy was largely dependent on agriculture. Nigeria's wide range of climate variations allows it to produce a variety of food and cash crops.

Ikala (2010) has descibe that agriculture is the profession of majority of humans. The United Nations Organization (2008) estimated that the world as a whole, over 50% of the world population is engaged in agriculture or dependent of it for a living, this is a general description of the sector. On the other hand, it includes farming, fishing, animal husbandry and forestry. Oji-Okoro (2011), stated that agricultural sector is the largest sector in the Nigerian economy with its dominant share of the GDP, employment of more than 70% of the active labour force and the generation of about 88% of non-oil foreign exchange earnings. Its share of the GDP increased from an annual average of 38% during 1992 to 1996 to 40% during 1977-2001 compared to crude oil the GDP from which declined from an annual average of 13% in 1992-1996 to 12% during 1997-2001.

Development economists have focused on how agriculture can best contribute to overall economic growth and modernization. The physiocrats laid more emphasis on agriculture in the development of an economy. In their views, the development of an economy depends on the growth of the agricultural sector. The source of national wealth is essentially agriculture. The physiocrats believe that the fate of the economy is regulated by productivity in agriculture and its surplus is diffused throughout the system in a network of transactions. The agricultural sector to the physiocrats is the only genuinely productive sector of the economy and the generator of surplus upon which all depends.

Todaro and Smith (2003), while looking at Lewis theory of development, assume that the underdeveloped economies consist of two sectors. These sectors are the traditional agricultural sector characterized by zero marginal labour productivity and the modern industrial sector. The primary focus of the model is the labour transfer and the growth of output and employment in the modern sector. Todaro and Smith (2003) argued further that, if development is to take place and become self-sustaining, it will have to include the rural area in general and the agricultural sector in particular.

Rostow (1960) as cited in Oji-okoro (2011) argued that in the process of economic development, nations pass through several stages namely: traditional stage, the precondition for take-off, the take off stage, drive to maturity and the high mass consumption stage. Agriculture played crucial roles in the first three stages (Traditional society, pre-conditions for take-off and take-off stages). The agricultural sector has the potential to be the industrial and economic springboard from which a country‟s development can take off. Indeed, more often than not, agricultural activities are usually concentrated in the less- developed rural areas where there is a critical need for rural transformation, redistribution, poverty alleviation and socio-economic development. (Stewart, 2000 welcome Address “proceeding of the 7th World sugar Farmers Conference Durban)

Tombofa (2004) reported that the state of agriculture is of paramount importance to the development process. He pointed out that agriculture provides the basis for the world’s great civilization in the past and the increase in agricultural productivity in England laid the basis for, and sustained the first industrial revolution. The agricultural sector is known to employ over 75 percent of the labour force in developing countries and provide the purchasing power over industrial goods

The of Western countries experiences on economic development was seen as requiring a rapid structural transformation of the economy focused on agricultural activities to a more complex modern industrial and services society. As a result, agriculture’s primary role is to provide food and manpower to the expanding industrial economy.

Agricultural Sector and Economic Growth in Nigeria: A Review of Empirical Literature

In any economy, successful economic development depends on open balanced interaction between various sectors over a period of time, often the process of interaction is such that some sector becomes more important than others, depending o the level and the stage of development. In Nigeria, Agriculture is an example of one key sector whose role is, and would remain crucial to development fortunes. Economic history is replete with ample evidence that agricultural revolution is a fundamental pre-condition for economic growth, especially in developing countries (Woolf and Jones, 1969; Oluwasanmi, 1966; Eicher and Witt, 1964).

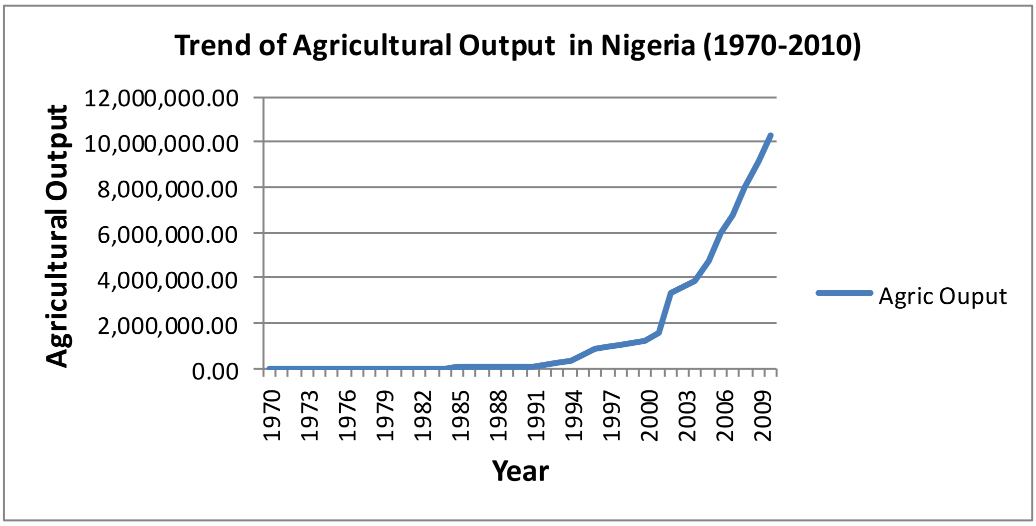
Iganiga and Unemhilin (2011) studied the effect of federal government agricultural expenditure and other determinants of agricultural output on the value of agricultural output in Nigeria. A Cobb Douglas Growth Model was specified that included commercial credits to agriculture, consumer price index, annual average rainfall, population growth rate, food importation and GDP growth rate. The study performed comprehensive analysis of data and estimated the Vector Error Correction model. Their results showed that federal government capital expenditure was found to be positively related to agricultural output.

Oji-Okoro (2011) employed multiple regression analysis to examined the contribution of agricultural sector on the Nigerian economic development. They found that a positive relationship between Gross Domestic Product (GDP) vis a vis domestic saving, government expenditure on agriculture and foreign direct investment between the period of 1986-2007. It was also revealed in the study that 81% of the variation in GDP could be explained by Domestic Savings, Government Expenditure and Foreign Direct Investment.

Using time series data, Lawal (2011) attempted to verify the amount of federal government expenditure on Agriculture in the thirty-year period 1979 – 2007. Significant statistical evidence obtained from the analysis showed that government spending does not follow a regular pattern and that the contribution of the agricultural sector to the GDP is in direct relationship with government funding to the sector. Ogwuma (1981), studied on public expenditure in Agricultural sector using econometric analysis. Based on his report, Agricultural financing in Nigeria shows positive relationship between interest rate and loananable funds on the level of Agricultural output.

The strong correlation that has been established between Nigerian's total GDP and the agriculture suggests that the prospects of the non-oil sub-sector and the overall economy are closely tied to the performance of the agricultural sector. Ukeji (2003) submits that in the 1960‟s, agriculture contributed up to 64% to the total GDP but gradually declined in the 70‟s to 48% and it continues in 1980 to 20% and 19% in 1985, this was as a result of oil glut of the 1980's.

Stylized Fact on Agricultural Output and Gross Domestic Product in Nigeria



Methodology

Data and Data Source

Secondary source of data was used in the study because of the nature of the study which was an analysis of the contribution of the agricultural sector to the national economy, taking GDP as proxy. Data that had been generated are required for this type of study. The time series data cover 40 years ranging from 1970-2010. The purpose of choosing this period is to empirically test the significance or the extent to which agricultural sector contributes to the economic growth despite several years of Government neglect and the renewal of effort towards stabilizing the sector, since 1986 to date. The data was obtained from the Central Bank of Nigeria (CBN) statistical bulletin, 2010 edition. The method of data analysis is the ordinary least square (OLS) multiple regression method. We made use of Eviews 7.0, econometric software.

Model Specification

The approach was to collate data for the agricultural sector output and GDP. In the model, economic growth which is the dependent variable is proxy by Gross Domestic Product (GDP). The independent variable is agricultural output. The statistical formulation of the model can therefore be presented as follows:

GDP = f (AgOutput)

With a linear relationship such as:

GDP = βo + $\beta 1$ AgOutput + U

Where:

GDP = Gross Domestic Product

βo = Intercept

$\beta 1$ = estimation coefficient

AgOutput = agricultural Output

U = error term

Estimation And Results

We used linear specification to explain the impact of the agricultural sector on gross domestic product in terms of goodness of fit, precision of the estimates of the slope and tolerable level of multicollinearity. The results of the regression are presented in the table below:

Table 1: Regression Results

Dependent Variable: GDPR

Method: Least Squares

Date: 09/05/12 Time: 08:44

Sample: 1970 2010

Included observations: 41

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13106.28	27745.31	0.472378	0.6393
AGOUTPUT	0.344909	0.007552	45.67056	0.0000

R-squared	0.991381	Mean dependent var	1571964.
Adjusted R-squared	0.991160	S.D. dependent var	2758148.
S.E. of regression	259327.3	Akaike info criterion	27.81712
Sum squared resid	2.62E+12	Schwarz criterion	27.90071
Log likelihood	-568.2510	Hannan-Quinn criter.	27.84756
F-statistic	4485.789	Durbin-Watson stat	1.267931
Prob(F-statistic)	0.000000		

The results of the regression show that there is a positive relationship between the dependent variable (GDP) and the independent variable (AgOutput). A unit change in agricultural output will cause 34.4 percent change in GDP. The estimated model shows F-ratio of about 4485.789 as compared with the F-table value of 3.55 with 5 percent level of significance. This implies that agricultural sector for the period of analysis has significant influence on macroeconomic output level. The explanatory power of the regression model with an adjusted R^2 of 0.99 is impressive. This indicates that 99 percent of GDP is explained by the agricultural sector. The remaining 1 percent is explained by variables outside this model. From our results the standard errors for each parameter is statistically significant. At 5% level of significance for the variable, the t-value show that there is a positive relationship between GDP and agricultural sector. The predictive model of this research is GDP = 13106.28 + 0.344909AgOutput.

Conclusion And Recommendations

On the whole, the agricultural sector contributes significantly to Nigeria's GDP. The employment base of the Nigeria economy is largely dependent on this sector. The finding showed agricultural sector contributes more than 30 percent to the economy i.e. 34.4 percent. As expected agricultural sector maximally to Nigerian economy more than 50 percent, but the low 34.4 percent is due to the neglect of agriculture when oil was discovered in a commercial quantity in the 1970s. It is well over due for the Nigerian economy to diversify. The negative perception and orientation of the average Nigerian about agriculture sector should be disabused so that these sectors can contribute optimally to GDP.

It is recommended that Government should provide funds to acquire sophisticated farm tools and increase her budgetary allocation to this sector in a consistent manner because of its importance to the national economy, hoping that with proper monitoring of fund, it would contribute more significantly to the economy of the country. An effective utilization of such funds is also advocated and all areas of wastage blocked. The peasant farmers who live in the rural areas and who are the major providers of food for the nation should be adequately catered for by making the rural areas more conducive and habitable by the provision of adequate infrastructural facilities such as good roads, pipe borne water and electricity. The provision of these facilities will no doubt impact positively on the rural farmers' productivity.

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Appendix

Table 2: Data on Gross Domestic Product (GDP) and Agricultural Output in Nigeria(1970-2010)

Year	**Agricultural Ouput**	**GDP**
1970	2,576.40	5,281.10
1971	3,033.70	6,650.90
1972	3,092.70	7,187.50
1973	3,261.20	8,630.50
1974	4,377.99	18,823.10
1975	5,872.92	21,475.24
1976	6,121.96	26,655.78
1977	7,401.64	31,520.34
1978	8,033.55	34,540.10
1979	9,213.14	41,974.70
1980	10,011.46	49,632.32
1981	13,580.32	47,619.66
1982	15,905.50	49,069.28
1983	18,837.19	53,107.38
1984	23,799.43	59,622.53
1985	26,625.21	67,908.55
1986	27,887.45	69,146.99
1987	39,204.22	105,222.84
1988	57,924.38	139,085.30
1989	69,713.00	216,797.54
1990	84,344.61	267,549.99
1991	97,464.06	312,139.74
1992	145,225.25	532,613.83
1993	231,832.67	683,869.79
1994	349,244.86	899,863.22
1995	619,806.83	1,933,211.55
1996	841,457.07	2,702,719.13
1997	953,549.37	2,801,972.58

1998	1,057,584.01	2,708,430.86
1999	1,127,693.12	3,194,014.97
2000	1,192,910.00	4,582,127.29
2001	1,594,895.53	4,725,086.00
2002	3,357,062.94	6,912,381.25
2003	3,624,579.49	8,487,031.57
2004	3,903,758.69	11,411,066.91
2005	4,773,198.38	14,572,239.12
2006	5,940,236.97	18,564,594.73
2007	6,757,867.73	20,657,317.67
2008	7,981,397.32	24,296,329.29
2009	9,186,306.05	24,794,238.66
2010	10,273,651.99	29,205,782.96

Source: Central Bank of Nigeria Statistical Bulletin, 2010 Edition