

GOVERNMENT EXPENDITURE ON SERVICE DELIVERY AND AGRICULTURAL PRODUCTION IN NIGERIA

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Abstract

This study examined the impact of government expenditure on services on agriculture in Nigeria. A generalized model was specified and estimated for data covering the period 1970 to 2006. Validity test was also conducted for the estimated results. The results of the findings are not encouraging considering the resources expended in the provision of economic and social services. This therefore suggests the imperative for a new policy on the pattern of public expenditure especially on economic and social services.

Introduction

Agriculture is generally acknowledged as playing a crucial role in an economy as, among others, it promotes economic development through increase in the availability of food and release of labour for industries. It has the potential to expand the size of domestic market for manufactures and industrial goods. It can also raise the level of savings and capital formation and earn foreign exchange from export. In the case of Nigeria the sector played additional roles of generating development capital, revenue for the government and providing employment especially in the rural areas. The country received its principal stimulus for growth from agriculture in the 1960s and early 1970s. (Anyanwu, Oyefusi, Oaikhenan and Dimowo, 1997; Eriemo, 1997; Tomori, 1979; Central Bank of Nigeria, 2000; Eyo, 1997).

With an increasingly market-oriented agricultural sector as the most important productive sector in a rural economy, a highly qualified service sector that generates a broad impact on agricultural productivity and development outcomes is imperative. This makes it crucial for government to increase spending in providing social services generally and in the rural areas in particular being the centre of agricultural activities and the domicile of much of a country's population. There is the contention that rural areas in Nigeria are experiencing changes in terms of availability of social services and hence, there is improvement in rural living. This development which can have implications for agricultural production has not received attention. This study examines the issue and is structured as follows: Sections 2 and 3 consist of service delivery in Nigeria and trend in government expenditure on services respectively. While section 4 is the model and empirical analysis, section 5 summarises and concludes the study.

Service Delivery in Nigeria

This section comprises two sub-sections. These are arrangements and policies/ strategies for service delivery.

a) Arrangements for Service Delivery

The existing arrangements in Nigeria considered here are especially with regards to some services which have a bearing on living condition. They include health, education, water and sanitation services.

Constitutional arrangements make health care a shared responsibility of the three tiers of government in the country. The local governments are in charge of the primary level with emphasis on preventive medicare, while state governments are responsible for the secondary level with focus on curative medicare and first referral hospitals. Tertiary health care which emphasises referral medicare through teaching and specialised hospitals is under the purview of the Federal government. There are also private providers of health care services; these include non-profit organisations like religious bodies; traditional and modern practitioners.

Education is on the concurrent legislative list of the nation's Constitution hence, it is a shared responsibility of the Federal and State governments. Policy-wise, the local government councils have been dragged in from 1991 to the extent that they engage in the building and maintenance of primary school facilities under their jurisdiction. The Federal Government was hitherto responsible for the funding of tertiary education but presently, virtually all the 36 states also fund such institutions established by them. A new development has seen the emergence of privately-owned tertiary institutions. Secondary education is mainly a state responsibility, the Federal Government however veered into the establishment and funding of Federal secondary schools. Primary education is currently administered and regulated by a National Primary Education Commission (NPEC) through the state primary education boards with strong Federal and local government representation. Just like health, private individuals, including religious organisations and local communities also provide educational services.

The provision of water is also a shared responsibility among the three tiers of government. Issues regarding water development, hydrological investigations and the establishment of chemical and bacteriological laboratories for water examination were clearly stated in all four National Development Plans. The provision and distribution of safe water is usually carried out by States' Water Boards. Sanitation is mainly a responsibility of local governments sometimes with support from the state.

b) Policies/Strategies for Service Delivery

Policies and strategies have the overriding objective of improving the well-being of the people via the provision of the basic needs of life. At the very foundation of the above objective is the pursuit of a strong, virile and broad-based economy with adequate capacity to absorb externally generated shocks. Policies and strategies cover various facets of public service delivery including economic and social and community services.

Economic services here include agriculture and natural resources management, roads and public transportation, among others. As observed earlier, agriculture has the highest potential for achieving a broad-based economic growth, but its performance in Nigeria has been unimpressive hence the expressed desire to re-position it for more effective performance. The basic objective of government in this regard has therefore remained the substantial turn-around of the sector to adequately play its proper role in food supply, employment creation, poverty reduction, raw materials supply to industry, and diversification of the economy. Various governments have made effort over the last two decades to provide environment conducive to farmers to enhance their productivity. A number of programmes/projects have been launched to facilitate agricultural development. (Monye-Emina, 2009).

As for health, one of the social and community services, policy issues therein have been emphasised. This is with respect to the design of a comprehensive health policy relating to manpower development, provision of adequate health care services based on the Basic Health Services Scheme (BHSS), disease control, and efficient utilisation of health resources, medical research, health planning and management (Aregbeyeu, 2004). The major vehicle for achieving the health policy objectives is the development of Primary Healthcare Programme. The National Primary Health Care Development Agency was established in 1992 and directed to work in close collaboration with local government authorities to ensure smooth delivery of services. The role of primary health care was also emphasised in the 1994-1996 rolling plan.

In education, the government packaged a set of objectives for the education system, which include eradication of illiteracy by 2010, increase in adult literacy rate from 57% to 70% by 2003, and more importantly, the acquisition of science and technology education and its effective application. Some of the measures designed to achieve the objectives include; implementation of the Universal Basic Education (UBE) scheme, encouraging private sector participation in education, monitoring and evaluation of the entire system of education, providing enabling environment for teaching/learning comparable to that of the developed countries. These measures are expected to re-position the education system to adequately play its role as a fundamental instrument for accelerating national development.

With regards to potable water and sanitation, in order to improve on the situation, the government set a goal of universal accessibility to safe drinking water and adequate sanitation for all Nigerians by 2025, as well as the optimum utilisation of water resources to enhance and sustain economic growth. More specifically, government desires to construct 18,000 water points per year in the rural areas, which is expected to increase availability of rural water supply from its 30 percent in 1999 to over 50 percent of the population by 2003. The Federal Ministry of Water Resources in collaboration with States' water agencies, the National Water Resources Institute, UNICEF, the European Commission and the World Bank is in the process of designing a National Rural Water Supply and Sanitation Program (NRWSSP) in consonance with the objective of the National Water Supply and Sanitation Policy. To achieve the objective of adequate water and sanitation, the National Water Supply and Sanitation Policy (NWSSP) was launched with the overall goal of the consolidating, increasing and sustaining universal access to adequate quantities of affordable and safe water by the year 2015; as well as consolidate, increase and sustain universal access to hygienic sanitation facilities by the year 2020. (ESMAP, 2005).

On transport infrastructure, especially as it affects roads, the federal government had proposed to establish a network of roads that would make a larger part of the country accessible. This was to be achieved by rehabilitating 20,000 km of roads, dualising 1,230 km of roads, and constructing 1,300 km of new roads before the end of 2003. In addition, the private sector would be encouraged to construct and maintain roads, and consultants engaged to monitor quality of road projects. With respect to rural roads, the objectives for all the tiers of governments are to improve road access for rural communities and improve management of the network in a sustainable manner. There are two components to the project. The first component is the upgrading, rehabilitation and maintenance of transport infrastructure component. The rural transport infrastructure component of the project will support the upgrading, rehabilitation and maintenance of rural roads. The second component is the institutional strengthening, reforms and capacity building component. This component will focus on supporting project implementation by providing the necessary goods, materials and equipment and by ensuring the existence of the appropriate project management capacity and skills at both the federal and the state levels.

The policy goal for water transportation is to enhance its use as a major means of transportation. To this end, the major rivers are to be made navigable all year round by dredging them. The other inland water- ways would be developed to increase the overall water carrying capacity in the country. In the area of seaports, the goal is to make Nigeria the centre of maritime activities in the West African sub-region. This would be achieved by encouraging more private sector involvement in maritime activities, rehabilitation and reactivation of port facilities, provision of more deep-sea capacity ports, and the reform of procedures at seaports.

Trend in Government Expenditure on Services

Generally, government expenditure as an essential tool of macroeconomic management plays a crucial role in an economy. It serves as an instrument for allocating resources, stabilisation, and distribution as well as influencing the course of development and its outcomes. The role of government expenditure in the economy can also be appreciated in terms of real benefits and real costs. For the former in particular, it goes to the end consumers of the outcome of the expenditure manifesting in addition to and improvement in welfare when juxtaposed with the real cost of resources withdrawn from other sources. (Anyanwu, et al, 1997).

Government expenditure in Nigeria is distinguished between capital and recurrent. Expenditures in the two sub-divisions are further categorised into, administration, economic services, social and community services and transfers. Expenditure on agriculture and natural resources and transport and communications come under economic services while education and health are under social and community services. In this study, attention on trend in government expenditure is concentrated on economic and social and community services as these are the areas where they are most likely to impact on rural living with implication for agriculture.

Aggregate government expenditure, over the years in Nigeria, has risen on the average. Indeed, as observed in table 1 below, total government expenditure as a percentage of GDP has grown continuously, on the average, over the period under consideration except for the 1996-1999 period. In the subsequent period however it increased by the highest magnitude so far. This trend is largely as a result of various socio-political and economic factors among which are constitutional developments, assumption of greater spending responsibilities for social and economic development, series of development plans/programmes and decentralisation of the public sector. Other contributing factors include depreciation in the exchange rate, high inflation rate and the need to meet some obligations such as external debt. Earnings from crude oil no doubt facilitated and supported this development. (Olaloku, Adejugbe, Tomori, Ukpong, Fapohunda, Ubogu, Umo, 1979, Central Bank of Nigeria, 2000).

However expenditure on economic and social services as a percentage of total government spending has witnessed fluctuating fortune, rising and falling. In the 1996-1999 and 2000-2006 periods it recorded its lowest and highest proportion of total expenditure respectively. As a proportion of GDP, government expenditure in this respect is rather low; below 10%.

Table 1: Trend in Government Expenditure

Period	(1) Expenditure on Econs. and Social Services (% Growth Rate)	(2) 1 as % of Total Expenditure	(3) Total Expenditure as % of GDP	(4) 1 as % of GDP
1971 – 1975	103.2	15.8	3.2	0.8
1976 – 1979	187.2	32.0	8.8	3.6
1980 – 1985	12.6	22.3	16.3	4.2
1986 – 1989	44.7	13.5	34.7	4.1
1990 – 1995	20.5	23.1	49.5	9.9
1996 – 1999	66.6	7.9	48.7	9.5
2000 – 2006	7.5	38.2	56.6	6.6

Source: Authors’ Calculation Based on Data from Central Bank of Nigeria’s Statistical Bulletin and Annual Report and Statement of Accounts.

4 The Model and Empirical Analysis

This section comprises two sub-sections; the model and empirical analysis.

a) The Model

In order to determine the impact of government expenditure on service delivery on agricultural production in Nigeria, a model of agricultural production is specified. The model depicts a relationship between real agriculture output and government expenditure on economic and social services. The model is given in log-linear form as:

$$\ln RQAG = A + a \ln AGEX + b \ln HEX + c \ln EDEX + d \ln TEX + e \ln PLC + U_t \text{ ----} \\ \text{-----}(1)$$

Where, RQAG = Real agriculture output,

A = autonomous real agriculture output, AGEX = government expenditure on agriculture,

HEX = government expenditure on health, EDEX = government expenditure on education, TEX = government expenditure on transport and communication, PLC = price level changes, proxied by the inflation rate, a, b, c, d and e, are parameters to be estimated. The ‘a priori’ expectations are; a > 0, b > 0, c > 0, d > 0, e > 0.

Economic theory provides the basis of expectations about the relationship between the endogenous and exogenous variables as specified in the model above. Government expenditure on economic and social services is expected to positively impact on macroeconomic performance via the multiplier effect. In this instance, government expenditure for the purpose of providing and in some cases, expanding rural service delivery, exerts a positive impact on agriculture in Nigeria. This is recognising the fact that much of the output of agriculture come from the rural areas and that it is the dominant economic activity therein. The study notes that there are factors other than government expenditure on these services which explain activities in the agricultural sector.

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These are abstracted for convenience. The inflation rate is included in the model because farmers like other economic agents, respond to price level movements. This is also in consonance with the position of economic theory that some moderate inflation is desirable as price incentive to farmers. However, excessive rise in price level can discourage production due to depressed demand arising from the consequent increased cost of living.

b) Empirical Analysis

Data used in the estimation of the above model covered the period 1971 to 2006 and were obtained from the Central Bank of Nigeria's Statistical Bulletin and Annual Report and Statement of Accounts. The model was estimated and the results of the empirical work are presented below.

$$\ln RQAG = 4.08 + 0.003 \ln AGEX + 0.14 \ln HEX - 0.02 \ln EDEX - 0.08 \ln TEX + 0.05 \ln INF + 0.004 \ln AGRL$$

$$\begin{array}{cccccc} (35.47^*) & (0.68) & (2.83^*) & (-0.58) & (-2.78^*) & (2.17^*) & (6.45^*) \\ R^2 = 0.97 & \text{Adjusted } R^2 = 0.96 & & F = 136.70^* & & D.W. = 1.70 & \end{array}$$

t values are in parentheses under the coefficients; * Significant at 5% level

The results of the empirical work above provide some insight on the impact of government expenditure on economic and social services on agricultural production in Nigeria. First, the general statistics, R^2 , F, and D.W. are within acceptable range. The coefficient of determination shows that the exogenous variables explain about 97% of systematic variation in the endogenous variable. The F statistics is statistically significant at 5% level thus, complementing the R^2 estimate in affirming the existence of a linear relationship between the endogenous and exogenous variables. The estimate of the D.W. statistics shows the absence of serial correlation.

The estimates of the parameters however yielded mixed and surprising results. While the estimates of the other parameters reported positive signs as expected, those of expenditure on education and transport and communication have negative signs. Also, all the estimates are statistically significant at 5% level except expenditure on agriculture and education. Previous level of agricultural output very marginally impacted positively on current level of output by less than 1% for a 100% increase in the former. The implication of this is that farmers take very little consideration of their previous level of output in making decisions about the current. Price level changes also impacted positively and marginally on agricultural sector output. Government expenditure on health and agriculture on one hand, again impacted positively but weakly on output of agriculture but while the former passed the significance test, the latter did not make it. Expenditure on education and transport and communication on the other hand negatively impacted on agriculture. The results for these set of variables are rather not very encouraging. One reason may be due to the fact that not all the resources earmarked for expenditure in these areas may have been so used. In

other words, incidences of diversion of resources and misappropriation that characterised much of the public sector in Nigeria may have been responsible for these poor results.

The predictive power of the model was examined in view of the implications for policy making purpose. The summary statistics are presented in table 2 below.

Table 2: Summary Statistics (Goodness of Fit Test)

Tests	Statistics
MAE	0.32
RMSE	0.09
TIC	0.11

Note: MAE = Mean Absolute Error, RMSE = Root Mean Square Error, TIC = Theil's Inequality Coefficient.

An inspection of the summary statistics used here shows that they are all significantly less than unity for the estimated equation. These results confirm the predictive power of the specified and estimated model.

Summary and Conclusion

This study examined the implications of government expenditure on economic and social services for agricultural production in Nigeria. Agriculture remains a crucial sector in the nation's economy. It once provided the principal stimulus for growth but has since degenerated to the extent that it constitutes a drag on the other sectors. In order to reverse this trend, there have been conscious efforts by the government in the country to improve on service delivery. In other words, various governments have made efforts over the years to among others, provide the environment and incentives conducive to farmers, sensitise them through promotional and awareness activities, and provide infrastructure that would enhance their productivity. The basic objective of government from all indication in this regard, remains the substantial turn-around of living condition, especially in the rural area where much of agricultural activities take place. This is to enable agriculture to adequately play its proper role in food supply, employment creation, poverty reduction, raw materials supply to industry, and diversification of the economy. Government action has been in the form of increased expenditure on economic and social services.

The finding from empirical investigation however does not give an encouraging result when juxtaposed against resources claimed to have been expended in provision of infrastructures for rural dwellers. The imperative may have to be a new policy in the pattern of public expenditure on economic and social services especially for rural renewal.

References

- Anyanwu, J. C..H. Oaikhenan, A. Oyefusi and F. Dimowo, (1997). *Structure of Nigerian economy;1960-1997*, Onitsha, Joanne educational Publishers.
- Aregbeyeu J.B.O, (2004). Health Policy and Performance, in Bello-Iman I.B. & Obadan M.I. eds., *Democratic governance and development management in Nigeria's Fourth Republic (1999-2003)* Centre for Local Government and Rural development Studies, Ibadan.
- Central Bank of Nigeria, (2000). *The changing structure of the Nigerian economy and implications for development*, Lagos, Realm Communications.
- Energy Sector Management Assistance Program (ESMAP), (2005). Technical paper on Nigeria: Expanding access to rural infrastructure issues and options for rural electrification, Water Supply and Telecommunications, 091.
- Eriemo, N. O., (1997). Economic deregulation and agricultural development: some reflections on Delta State, *The Nigerian journal of economic and management studies*, 2(1 and 2).
- Eyo, E. E.,(1997). Implication of Pricing for national food Security, *Central bank of Nigeria; Bullion*, 21(2).
- Monye-Emina, A. (2009). Agricultural revival strategies: An appraisal of the Nigerian experience, *Journal of social and economic development*,11(1), Jan-June.
- Olaloku, F.A.,A. Adejugbe, S. Tomori, I.I. Ukpong, E.R. Fapohunda, R.E.Ubogu, J.Umo (1979). *Structure of the Nigerian economy*, Lagos, Macmillan Press and University of Lagos Press.
- Tomori, S., (1979). Agriculture, forestry and fishing, in F. A. Olaloku et al {Ed.}, *Structure of the Nigerian economy*, Lagos, Macmillan and University of