

ANNUAL BUDGETARY ALLOCATION TO AGRICULTURE, RURAL INCOME DISTRIBUTION AND AGRICULTURAL GROWTH AND DEVELOPMENT

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ABSTRACT

Nigeria agriculture has retarded from inconsistent policy and programme implementation. The paper looked at the country budgetary allocation to agricultural between 1985 and 2005 and compared the per cent allocation with the recommendations of the multilateral institutions. Nigeria allocated 2 to 5% of her annual budget to agriculture as against 10 to 25% agreed by the African Union. The mean and variance of budgetary allocation were ₦14,043.12 million and ₦421,057,420.20 million respectively. Rural income inequality reduced between 1996 and 2004 when percentage allocation moved from 0.9 to 3.0. The paper conceptualized Comprehensive Approach to Planning Model; a flow of complete set of inputs that will lead to efficient planning, policy and programme implementation for consistent sectoral growth and development. The model recognized the national budget to be a real vehicle through which plan is implemented. Nigeria must apply complete human and material inputs to have consistent planning and implementation for economic prosperity towards sustainable development of the agricultural sector.

Keywords: Annual budget, agriculture, rural income, input, development

INTRODUCTION

For developing countries, agriculture is the largest sector in terms of its share in gross domestic product (GDP) and employment. More importantly, majority of the world's poor lives in the rural areas and depends upon agriculture for their livelihood. Agriculture is therefore critical both for economic development and poverty reduction. The agricultural sector continues to play a crucial role for development, especially in low-income countries where the sector is large both in terms of aggregate income and total labour force (Dethier & Effenberger, 2011). It follows that in developing countries spending on agriculture is one of the most important government instruments for promoting economic growth and alleviating poverty in rural areas (Fan & Saurkar, 2006).

According to Wilson & Tyrchniewicz (1995) 'agriculture is the dominant use of land in the great plains region. Use of land for this purpose can affect the environmental sustainability of the natural resource base which in turn has implications for the economic viability of farming. Together, these considerations raise important questions about the sustainability of agriculture

and the implementation of policy prescriptions, including budgetary reforms, for both environmental protection and economic development'. In Nigeria, the issue of sustainability of agriculture is somehow relegated to the background as budgetary allocation to the sector is insufficient to fight environmental degradation, erosion of farm lands and desert encroachment particularly from the northern part of the country when compared with budgetary commitments to other sectors like Defense, the National Assembly and over-bearing Government Re-current Expenditure.

Recently, flood gates from Cameroun were opened and this affected several states in the middle belt and south east of Nigeria. This raise the question of sustainability of agricultural lands in the face of floods and other natural disasters. Although it is a matter of policy on the part of successive governments to maintain the integrity of the ecosystem as well as the conservation of agricultural resources such as arable land and forest, there is need for the review of budgetary allocation to agriculture towards achieving this. Another threat to sustainable development of agriculture in Nigeria is the rate of urban development which obviously is rising at alarming rate. Land is a limited resources and it is shared between agriculture and urbanization. Once agricultural land is allocated for urban development, the sustainability of such trade-off on food productivity and biodiversity is in doubt as the country will have to rely on importation of stable for which it has comparative advantage to produce. To mitigate this, budgetary provisions may be required to open up new areas for agricultural production to sustain the sector's contribution to domestic productivity.

World Bank (1999) reports that 'Viet Nam agricultural sector provides approximately one-quarter of the country's GDP, generates more than a third of its exports (in value terms) and employs over two-thirds of its labour force'. This further reinforces the argument of importance of agricultural sector particularly in low income countries and transition economies whose primary source of foreign exchange earnings is from agricultural produce exportation to other countries. This however may be true for most developing countries particularly those in Sub-Sahara Africa without much natural capital that can generate needed foreign exchange earnings. Even, for countries with natural capital like Nigeria, the development of agricultural sector is critical to overall structural balance of the economy since the sector provides nexus for growth in other sectors of the economy. A key aspect of improving the quality of public finance is the efficiency with which inputs, mostly in the form of public spending, are transformed into desired social outcomes (Ebejer & Mandl, 2009). This explains the importance of agricultural spending in acting as a catalyst for rural development and poverty reduction. The annual budgetary allocation represents one of the key inputs while the overall development of the rural sector represent the outcome. Public spending has been a developmental tool in all economies and current developmental models in most developing countries are centered on agriculture and food security for sustainable comprehensive development of urban and rural sectors (Segura, 2010). Such models demand adequate agricultural funding in a long-term perspective.

There have been many studies on the relationship between government expenditure and economic growth (Elias 1985; Fan, Hazell & Thorat 2000; Fan, Zhang & Zhang, 2006). Some of these studies look specifically at the link between government spending and agricultural growth and poverty reduction. The studies show the positive growth and poverty reduction effects from public spending in agriculture. Despite this, Fan and Saurkar (2006) report that the share of public spending allocated to agriculture for 44 developing countries declined from 11 per cent to under 7 per cent in 2002. This is faster rate of decline

than that shown by the share of agriculture in GDP, which fell from 15.1 to 11.3 per cent for all developing countries over the same period. In Africa, over the same period, agriculture's share of total government spending fell from 6.4 to 4.5 per cent. This is in contrast to the Maputo Declaration of the African Union Conference (2003) when the Heads of States of the Assembly of the African Union committed their support to the Comprehensive Africa Agriculture Development Programme (CAADP) and pledged to raise spending on agriculture to minimum of 10 per cent of the budget within the next five years, by 2008. Also, at the second ordinary assembly of the African Union in Maputo in July 2003, African Heads of States and Governments endorsed the 'Maputo Declaration on Agriculture and Food Security in Africa'.

This declaration came upon the recognition of the pivotal role of agriculture in the quest for good life and wealth creation, as one good way of addressing poverty and its attendant consequences (FMARD, 2010). The declaration contained several important decisions regarding agriculture, which included the commitment to the allocation of at least 10 per cent of national budgetary resources to agriculture and rural development policy implementation within five years. Though this fell short of the 25 per cent recommendation of Food and Agricultural Organization (FMARD, 2010), only six countries without Nigeria (Fan & Saurkar, 2006) have achieved the target of allocating at least 10 per cent of their national budgets to agriculture; they are Niger, Ethiopia, Burkina Faso, Chad, Mali, and Malawi of 20.00, 16.80, 13.70, 12.00, 11.00 and 11.00 per cents respectively. Nigeria is presently repositioning agriculture in the global best practices and budgetary allocation to agriculture has been enhanced from 3 to 7 per cent of total budget in 2008 compared with other countries like Ukraine 35 per cent in 2005 and Kenya 26 per cent in 2002 that are higher. Adequate agricultural financial provision will support expenditure in research, training and extension that are identified by Eicher (1989) as agricultural development sustainable institutions.

Public Expenditure Management is a new approach in budgeting and was advanced by the multilateral institutions covering aggregate fiscal discipline, allocative efficiency and operational efficiency. These principles require a comprehensive approach to budgeting that goes beyond the traditional annual budget cycle. In view of this, Medium Term Expenditure Framework –MTEF- was arrived at which is a multi year approach to budgeting, typically covering a 3 – year period which attempts to strengthen the link between planning, policy making and budgets (International Budget Project, 2001).

Comprehensiveness in MTEF implies providing data that cover several years. At minimum, budget should include information on estimated levels of expenditure and revenue in the immediately preceding the budget years and the actual levels for the year or two years prior to this to provide benchmark for assessing budget proposals. It also requires the presentation of projected fiscal policy trends over time, specifically in the two or three years following the budget year. This activities covers every aspect of development as highlighted by DFID (2004) for sustainable development. These are ecological, economical and socio-political areas recognizing production, externalities and equity within and between generations. Government often build capacities to adapt and change as externalities and internal conditions change during planning and budgeting.

The resurgence of analytical attention on the policy environment for agricultural development owes largely to the evidenced failure of the perennial focus on technology environment to yield desired results in developing countries. An instance is the

failure of green revolution technologies to significantly contribute to food security in Africa as it did in Asia and other parts of the world (Ayoola, 2001). Within this context, the role of public expenditure budget as an instrument of agricultural policy becomes visible; which is an aspect of the on-going debate on the nexus between governance and sustainable economic development. The aim of this is to meet the needs of the present without compromising the ability of the future generations to meet their own needs (IISD, 2012).

The need for sustained agricultural financing as a component of sustained development is key in Africa. The conference of the African Union (AU) and New Partnership For African Developments (NEPAD) considered the outcome of the AU/NEPAD Experts Consultative Workshop held on the Agricultural Expenditure Tracking System within the context of the Maputo Declaration on the commitment of Member States to allocate at least 10 per cent of their budgets to agriculture and rural development and the Abuja AU Assembly decision on the need for a definition of the core areas for the 10% budget allocation using an internationally accepted system that allows comparison across African countries. This is to engender sustainability of agricultural development in Africa, a long-term maintenance of agricultural finance responsibility, responsible resource allocation and use to ensure an enduring growth and development of the economy. The conference then adopted actual expenditure tracking system, crop, livestock, fisheries and forestry sectors covering research to be the core areas for budgetary allocation, peer review of agriculture expenditure tracking feedback through questionnaire completion at the AU Commission, the use of sufficient budgetary resources for rural development, and the development of national and regional infrastructure to facilitate trade of agricultural goods. By this, the African Countries leadership attempted to follow the efforts of the European Union (EU) on agricultural and rural development but fell short of it. For more than 40 years, the Common Agricultural Policy has been the European Union's most important common policy and as such, the sector has consumed large part of the EU's budget and they finance their agriculture through European Agricultural Guarantee Fund (EAGF) and Agricultural Fund for Rural Development (EAFRD) for financing farming activities and rural development (European Commission, 2007). It is therefore desirable to present a review of budgetary allocation in Nigeria to have a glimpse of the inconsistency and the level of income distribution in the rural area for the same period and proffer a workable model for efficient transformation of budgetary allocation to rural output growth and improved income.

LITERATURE REVIEW

The issue of budgetary allocation has its root in planning. The concept of planning therefore will serve as a springboard for laying a thorough review of literature in this area. According to Obadan (2004), planning can be conceptualized as an organized process of preparing a set of decisions in view of a projected course of action geared towards an end. Planning is necessary to achieve budgetary objectives as national budget remains a formidable tool in planning across nations of the world particularly countries where government sector seems to play a dominant role in the economy and overall development. World-wide, efforts have been on sustainable development which recognizes societal requirements and limitations (IISD, 2012) in meeting the present and future socio-economic needs of the people. Towards this end, planning and budgeting tools are used to achieve set targets in collaborative efforts exemplified by the African countries for the sustainability of regional development (African Union Conference, 2003).

According to Akande, Falokun, Taiwo, Ogunwale & Adeoye (2009) ‘National budgets play a prominent role in modern economic management. They are used for allocating resources and planning as well as forecasting revenue inflow and expenditure. Increasingly, national budgets are becoming a pivot instrument of economic management.’ The importance of National budgets is not only in its presentation to the populace but rather in the structure, patterns, inter-sectoral links as well as the allocation to sectors in accordance to national priority of the government. Basically, agricultural allocation has a way of bringing desired effect in other sectors such as industry through inter-sectoral linkages in the economy. (Dethier & Effenberger, 2011) assert that ‘between 1980 and 2004, the agricultural sector grew at an average rate of 2.6 per cent worldwide, with two-thirds of this growth contributed by Asian economies’. Agricultural yields in Asia increased at an average rate of 2.8 per cent between 1961 and 2004, an outcome largely explained by the adoption of high-yielding varieties and the intensive use of fertilizer. Also, ‘in Sub-Saharan Africa, the average rate of agricultural growth was 3 per cent over the same period but growth per capita of the agricultural population (a broad measure of agricultural income) was 0.9 per cent’. This disaggregated growth per capita of the agricultural population indicates the ineffective impact of poor allocation of budgetary resources to agricultural sector, making the sector to lag behind her Asian peer. The information on per capita agricultural income is important for effective measure of performance, planning, budgeting and their implementation.

METHODOLOGY

The study area is Nigeria (country map is as shown in Figure 1; lying on Longitudes 4⁰ to 12⁰ and Latitudes 4⁰ to 12⁰ North of the Equator in West Africa). Secondary data of the country’s national budgets and budgetary allocation to agriculture obtained from the Central Bank Statistical Bulletin for the years 1985 – 2005 were used. We reviewed the budgetary allocation and compared it with the AU and FAO (Food and Agricultural Organization) recommended per cents budgetary allocation. Descriptive statistics: mean, variance, and percentage were used to analyze the data. The level of income distribution in the rural area was then established with consumption data obtained from National Bureau of Statistics using Generalize Entropy (GE) for 1980 to 2004. A conceptual framework was



Source: http://en.wikipedia.org/wiki/States_of_Nigeria (2012)

Figure 1. Map of Nigeria

developed for consistent planning and policy implementation which will lead to agricultural growth and development. The GE measure of inequality as demonstrated by Cowell (2000 & 2006), Vanderpuye-Orgle (2002) and Mussard, Seyte & Terraza (2003) is given as follows:

$$GE = \sum_{i=1}^k f(y_i) \left[\left(\frac{y_i}{\mu} \right)^c - 1 \right] \quad \text{if } c \neq 0, 1 \quad \dots\dots\dots (1)$$

$$= \sum_{i=1}^k f(y_i) \left(\frac{y_i}{\mu} \right) \log \left(\frac{y_i}{\mu} \right) \quad \text{if } c = 1 \quad \dots\dots\dots (2)$$

$$= \sum_{i=1}^k f(y_i) \log \left(\frac{y_i}{\mu} \right) \quad \text{if } c = 0 \quad \dots\dots\dots (3)$$

where,

c = Theil index; y_i

μ = the average value of the whole population

y_i = value of the welfare index in the given dimension i

$f(y_i)$ = the population share of the dimension i in the total population

k = the number of dimensions

The mean logarithm deviation of equation (3), when $C = 0$, is sensitive to incomes at the bottom of the distribution, while the index would be responsive across all ranges of the distribution if $c = 1$ (Theil Index) and if $c \neq 0, 1$ it would be sensitive to changes that occur at the middle part of the distribution and the analysis is based on this (at $C = 0.5$) as the middle class do appreciate in size upon economic growth in terms of improved employment and output.

RESULTS AND DISCUSSION

Table 1 shows the percentage of budgetary allocation into agriculture between 1985 and 2005. The highest percentage allocation of 3.40 per cent was in 1999 while the least of 0.5 per cent was in 1985 and 2003. On the overall, the years 1999 and above had higher percentages of budgetary allocation to agriculture than the years before. This implies that Nigeria did not meet the FAO and AU recommendations of 25 and 10 per cents respectively. Perhaps this is partly responsible for the low performance of agriculture and high poverty level in the rural areas since the country's agriculture is rural based.

The mean of the budget distribution between 1985 and 2005 is ₦14,043,120,000.00 and the standard deviation is ₦20,519,683,730.00 as shown in Table 2. The budgetary annual growth rate was negative in 1986, 1987, 1991, 2000 and 2002 of the values -9, -57, -66, -20, -85, -72 and -31 per cents respectively while it was positive for other years. The inadequate budgetary allocation to agricultural sector is best explained with the use of various graphs generated with E-View7 Econometrics package as shown in figure 2.

Table 1: Proportion of the Nigeria's annual budget in agriculture: 1985 – 2005

Year	Total Budget (₦' m)	Allocation to Agriculture (₦' m)	% Allocation to Agriculture	FAO Per cent Recommendation	AU Per cent Recommendation
1985	198,901.00	1,018.10	0.50	25.00	10.00
1986	33,245.40	925.40	2.70	25.00	10.00
1987	53,114.30	394.30	0.70	25.00	10.00
1988	71,753.90	650.00	0.90	25.00	10.00
1989	97,254.00	1,062.60	1.00	25.00	10.00
1990	129,164.00	1,966.60	1.50	25.00	10.00
1991	109,008.40	672.30	0.60	25.00	10.00
1992	156,107.10	924.50	0.50	25.00	10.00
1993	394,104.90	2,835.30	0.70	25.00	10.00
1994	371,900.00	3,719.10	1.00	25.00	10.00
1995	515,488.90	6,927.70	1.30	25.00	10.00
1996	594,260.50	5,574.00	0.90	25.00	10.00
1997	794,330.00	7,929.60	0.90	25.00	10.00
1998	1,176,289.30	1,184.40	1.00	25.00	10.00
1999	1,140,911.00	38,259.80	3.40	25.00	10.00
2000	1,190,597.20	10,596.40	0.50	25.00	10.00
2001	2,632,171.70	64,943.90	2.50	25.00	10.00
2002	3,770,106.50	44,803.80	1.20	25.00	10.00
2003	3,056,965.00	16,045.20	0.50	25.00	10.00
2004	1,971,752.50	59,773.40	3.00	25.00	10.00
2005	4,662,483.70	90,798.20	1.90	25.00	10.00

Source: CBN Statistical Bulletin (2005)

Table 2: Growth rate of Nigeria's annual budgetary allocation to agriculture: 1985 – 2005

Year	Allocation to Agriculture (₦' m)	Growth Rate (%)
1985	1,018.10	
1986	925.40	-9.11
1987	394.30	-57.39
1988	650.00	64.84
1989	1,062.60	63.47
1990	1,966.60	85.07
1991	672.30	-65.81
1992	924.50	37.51
1993	2,835.30	206.60
1994	3,719.10	31.18
1995	6,927.70	86.25
1996	5,574.00	-19.54
1997	7,929.60	42.26
1998	1,184.40	-85.06
1999	38,259.80	3130.31
2000	10,596.40	-72.30
2001	64,943.90	512.80
2002	44,803.80	-31.01
2003	16,045.20	64.18
2004	59,773.40	272.50
2005	90,798.20	51.90
TOTAL	361,004.12	-
MEAN	14,043.12	-
VARIANCE	421,057,420.40	-

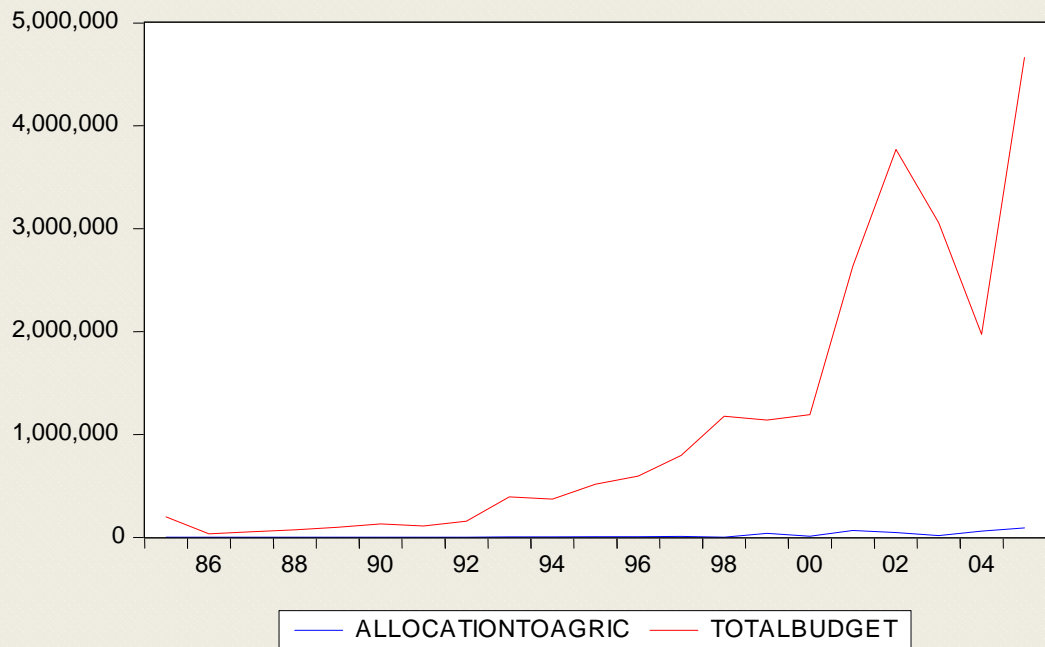


Figure 2. Trends of total and budgetary allocation to agriculture in Nigeria

From the graph above, Figure 2, the line graph on top represents the total budget of Nigeria between 1985 and 2005 while the near-flat line graph depicts the budgetary allocation to agricultural sector within the same time period. It is obvious from the graph that although total budget shows a positive trend as the slope seems to be positive until 2002 when a sharp drop in total allocation was observed, the slope of agricultural budget remains unnecessarily constant and asymptotic over the same period. Similarly, using a pie chart to illustrate this colossal allocation to Agricultural sector over the years will make a vivid statement on inadequate allocation to the sector.

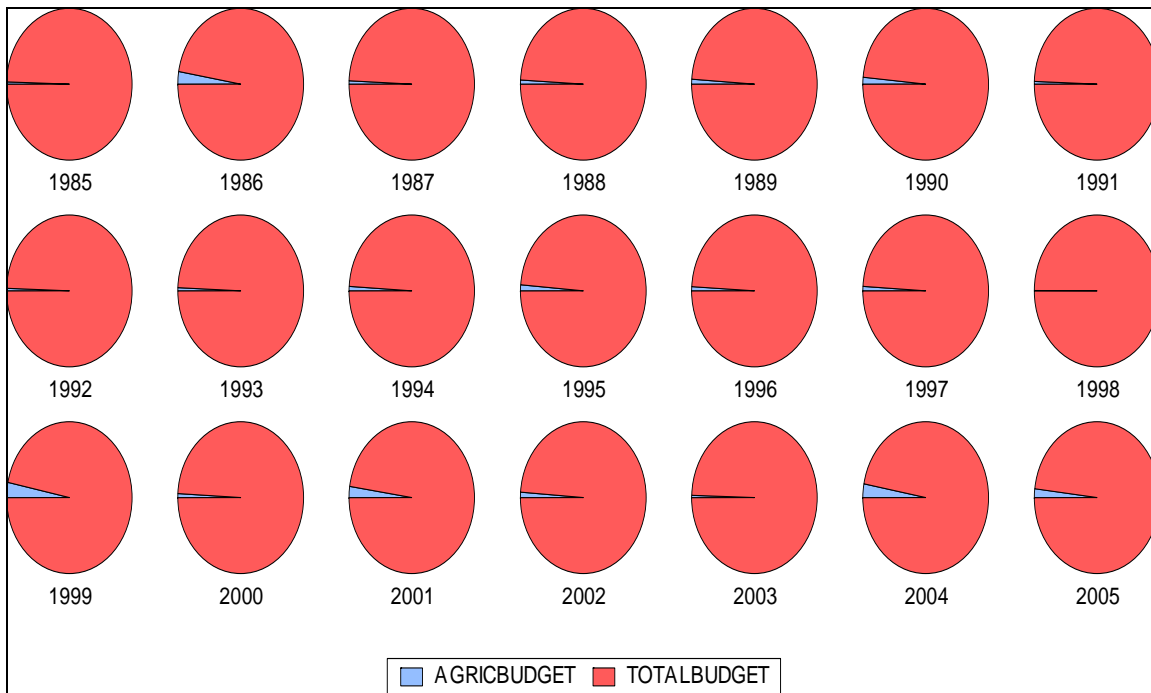


Figure 3. Pie chart showing Nigeria agricultural budget to total budget: 1985 - 2005

From the above pie charts, figure 3, representing total budget and agricultural budgetary allocations over the years, it is definitely obvious that agricultural budget is noticeable in 1986, 1999, 2001, and 2004. This shows inconsistency in government's commitment to agricultural development over the years considered; a situation that does not encourage economic development. For sustainable development, financing of the agricultural sector should be consistent and sustained over a long period and un-ending. Relating the pie charts to table 2, the alarming positive growth rate of budgetary allocation to agriculture was in 1999 with 3,130.31% from 1998 to 1999. Also, per cent growth rate was 64 and 272 in 2004 and 2005 respectively. This shows improved commitment but below the international expectation judging from per cent allocation to the agricultural sector as shown in table 1.

Looking intently at tables 1 above and 3 below, there is a match between percentage of budget allocation to agriculture and the level of income distribution. From table 1, in 1985, 1992, 1996 and 2004, per cent allocation to agriculture was 0.5, 0.5, 0.9 and 3.0 respectively. This allocation is assumed to have translated to improved income distribution as inequality in the rural sector was 0.30, 0.45, 0.32 and 0.26 for the same years as shown in table 3. Between 1985 and 1992, inequality was aggravated but declined through 1996 to 2004. This somehow implies that if Nigeria had met the AU recommendation, rural income distribution probably would have been far better than that of the 2004 level and this could have positive impact on economic development.

Table 3: Rural Income Inequality in Nigeria

Year	Generalize Entropy (C = 0.50)
1985	0.302
1992	0.450
1996	0.317
2004	0.260

C = Sensitive to all parts of the distribution.

COMPREHENSIVE APPROACH TO PLANNING (CAP)

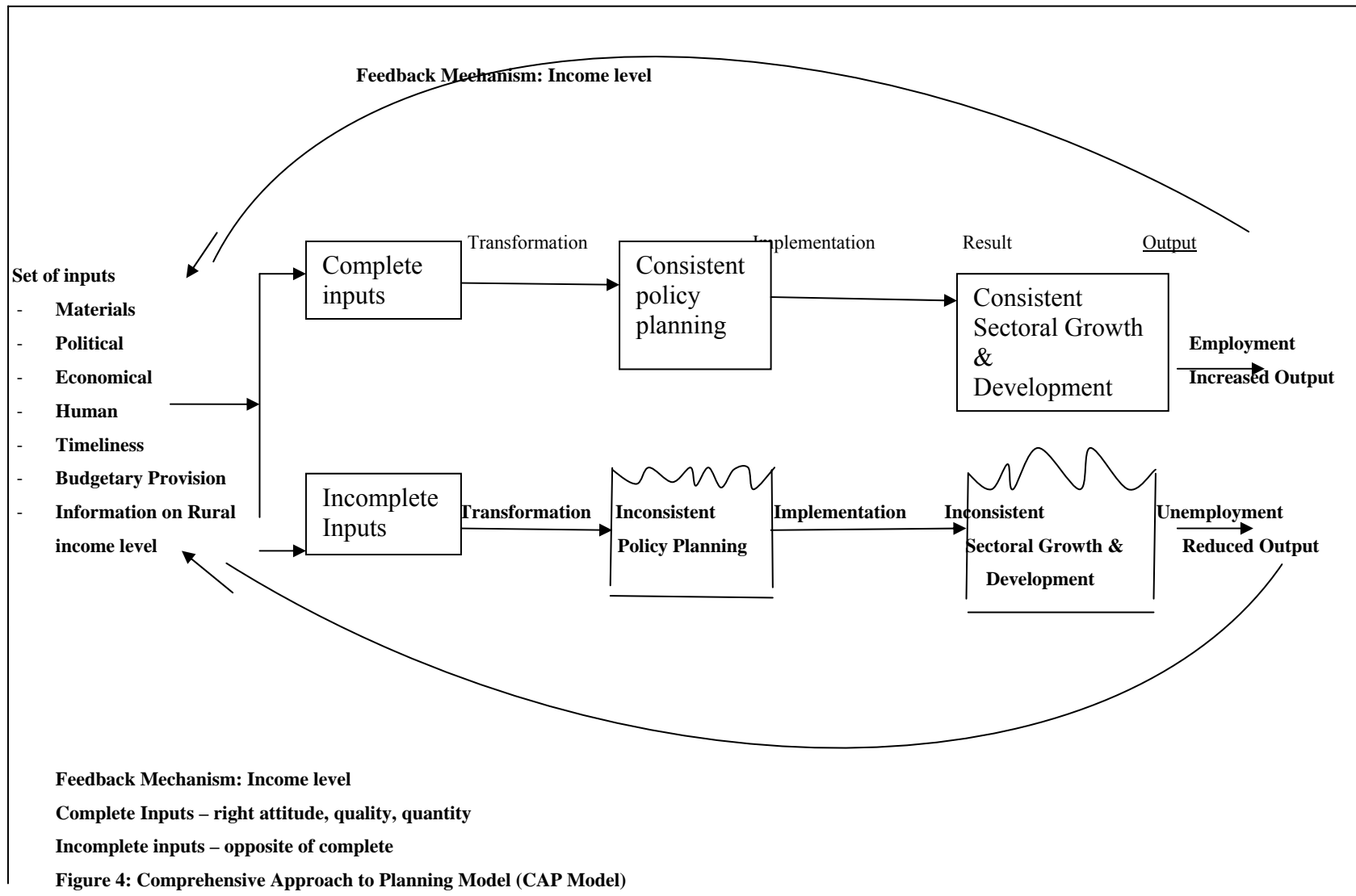
The CAP solution to inadequate budgetary allocation and inconsistency in planning as it is for agricultural sector in Nigeria embraces the input-output principles. The inputs are the materials, human and information resources that should be in place and transformed into the desired plan, policy and implementation as shown in Figure 4. The inputs must be complete in terms of quantity, quality and right attitudes of the human resource component. Consistency in inputs combination and upon implementation through transformation results into consistent growth and development with steady increase in output and employment in the sector, thus meeting the challenge of raising rural productivity and individual income. A feedback mechanism is allowed that will provide information on the level of income in the rural area as every successful effort for agricultural growth and development must transform to higher income level of the farmers and other rural people. Segura (2010) reports that agriculture provides formal and informal employment and is a sustainable avenue for income level improvement among the poor. The income level feedback should be the basis of information at the inputs end. Once there is positive growth in income level, other inputs like political will, human resources, research, timeliness, adequate budget can further be stepped up, combined and transformed consistently into plan wide consistent policy that will engender growth and development thereby enhancing economic development for both the present and future generation.

Budget is a vital input for the transformation of other inputs at every stage. Once any of the inputs is lacking or inadequate, the set of inputs combination is rendered incomplete in terms of quantity and quality and upon transformation, there arise inconsistent plan, policy and inconsistent implementation, represented by roughness and contours of lower pathway in figure 4. The outcome of which is inconsistent growth and development with reduced unemployment, output and negative income growth as consequences. With these negative outcomes, the feedback mechanism will expose the situation and remedy could be provided at the input points. This CAP Model solution has the capacity to mitigate against internal and external shocks as all the inputs are adequate and shock can only reduce the level of any of the input resources available. DFID (2004) reports that agricultural sustainability has to do with system capacity to buffer shocks and stress and carry-on with its activities

towards development. Another advantage is the emphasis on income level of the rural sector and budget as veritable inputs for agricultural growth and development. Information that has been guiding policy formulation, planning and their implementation in Nigeria have been inadequate and are perhaps devoid of information on the level of income distribution in the rural sector and where available is not taken into consideration due to factors like leaders-know-all attitude and top-bottom approach to developmental programmes. This model will ensure an enduring growth and development of the rural and urban sectors.

CONCLUSION

Nigeria budgetary allocation to agriculture has been inconsistent which has partly contributed to slow and inconsistent planning and policy implementation in spite of the sector being main focus of every government administration. Between 1985 and 2005, the per cent budgetary allocation has varied from 0.5 in 1985 and 1992 to 3.4 in 1999. These allocations fall short of the 10 per cent recommendation of the African Union and too far from 25 per cent recommendation of the Food and Agricultural Organization. The years 1999 to 2005 had the highest per cents allocation to agriculture than the years 1985 to 1998. Per cent growth rate was negative in 1986, 1987, 1991, 1996, 1998, 2000 and 2002 while there was positive growth rate in 1988, 1989, 1990, 1992 -1995, 1999, 2001, 2003 – 2005 with highest per cent growth rate of 3130.31 in 1999. The mean and variance of total budget allocated to agriculture for the 26 year period of 1985 – 2005 were ₦14,043.12 and ₦421,057,420.40 in million naira respectively. Since Nigeria agriculture is rural based, the budgetary allocation perhaps translated to improved income distribution in the rural area as inequality reduced between 1996 and 2004, the period of higher allocation. Rural income inequality was 0.45, 0.32 and 0.26 in 1992, 1996 and 2004 respectively. Adequate agricultural financing by government will promote the development and growth of agriculture, ensure food security and sustainability and assist in establishing a stable bio-based economy which provides an alternative to conventional energy that aids energy security which is vital for the development of low-income developing countries (Benjamin, 2012). If the government budgetary allocation to agricultural sector increase as advocated in this study, it will improve the bio-based energy utilization (essentially green energy) as against the fuel wood, charcoal and animal dung which increase the rate of environmental pollution and largely unsustainable in the global environment. Furthermore, an increase in sectoral allocation to agriculture will make funds available to counter the effects of environmental degradation and other natural disasters like flooding which is the bane of Nigeria ecological system over the years. Also, for consistency and better performance of planning, policy and programme implementation, Comprehensive Approach to Planning Model is recommended which embraces application of complete set of inputs with adequate budget as vehicular input for transformation of all the inputs and a feedback mechanism. The non-availability or inadequacy of any inputs will lead to inconsistent planning and policy formulation and implementation. The feedback mechanism provides information on rural income level which will serve as basis for re-enforcement at the input end. This framework, if adopted, has the capacity for consistent planning and programme implementation which are essential components of any sustainable development approach.



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