

Sectoral Reforms and the Challenge of Food Security: A Perspective from the Nigerian Economy

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Abstract

Change is generally acknowledged as the only permanent phenomenon of the human society. Sectorial reforms become inevitable in order to brace up with such inevitable societal dynamics. The agricultural sector holds the key to the realization of the quest for sustainable development in any given country. This study examined the extent to which reforms in the agricultural sector are squaring up with the challenge of food security in Nigeria. Data was obtained from secondary sources which range from –journals, magazines, periodicals, newspapers, the internet, etc. The Industrial Impact Hypothesis (Shultz, 1953) was adopted as the theoretical frame work just as content analysis constituted the mode of analysis. Results from the study revealed that agricultural reforms are rising to the challenge of food security. However, such reforms need be matched with more actions and implementation to achieve the desired results. It has therefore, been recommended that more should be done in the areas of funding, mechanization and adequate training and exposure of both farmers and those saddled with every stage of the implementation process.

Keywords: *Sectorial reforms, Agriculture, Food security, Challenges, Change*

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Background to the Study

There is no doubt that food constitutes the most basic of all human needs. This fact has caught the attention of world leaders which prompted the 1996 World Food Summit in November held in Rome. As would be expected, “all heads of government or their representatives at the summit pledged their support and commitment to achieving global food security and alleviation of hunger with the ultimate aim of halving the population of undernourished persons by the year 2015” (FAO, 1996). Despite the unprecedented effort by international institutions, the population of the undernourished still remains a global issue as about 795 million people are still undernourished globally based on the 2015 assessment of the Food and Agricultural Organization (FAO). FAO (2015), observed that, “this figure represents 167 million and 216 million reductions in the last decade since 1990 respectively.” It needs be underscored that, “although the total population of the food insuring people in Asia, outweighed that of Africa, 18 out of 23 nations where undernourishment is prevalent are from Africa” (Ogbonna, Nomuva, & Aoyagi, 2013).

Available statistics from NBS/CBN (2006), shows that, “Nigeria is an agrarian country with about 70% of her over 140 million people engaged in agricultural production”. Furthermore, Usman (2006), reveals that “the sector provides subsistence for two-thirds (2/3) of Nigerians who are low income earners”. The northern part produces “cereals like, sorghum, maize, millet, groundnut, cowpea, and cotton, the Middle Belt and South have potentials to produce root crops like plantain as well as maize” (Abdullahi, 2003). The country is also involved in the production of livestock, fisheries, forestry and wildlife. “Rainfall is generally adequate and fairly well distributed throughout the country” (Ukpong, 1995). Out of the 98.321 million hectares of land available in the country about 75.30% may be regarded as arable land, which 10% is under forest reserves and the remaining 14.70% is assumed to be made up of permanent pastures, built up areas and uncultivable waste” (Olajide, 1980).

The agricultural sector has remained an important sector in the Nigerian economy; however, the sector's contribution to Gross domestic product has been on the decline in recent years. To turn the situation for the better, the federal government had embarked on and implemented several agricultural policies and programmes. These include- the farm settlement scheme, National Accelerated Food Production (NAFPP), Agricultural Development projects (ADPs), River Basin Development Authorities (RBDAs), National Seed Service (NSS), National Centre for Agricultural Mechanization (NCAM), etc. There were also other economic reforms like the National Economic Empowerment and Development Strategy (NEEDS) program, to mention but a few. In spite of these programs, this sector has not regained its enviable position as the mainstay of the nation's economy.

Statement of the Problem

According to Aigbokhan (2001), “prior to the oil boom in the 1950s and 1960s, the agricultural sector accounted for over 63% and 54% of Gross Domestic Product respectively. Empirical support for this assertion is found in the results of the study by

Jelilov and Ozden (2017) to the effect that, “agricultural output in Nigeria contributed 2.247 percent variation in GDP from 1981 to 2014”. The study also observed that the sector suffered neglect in the hey-days of the oil boom in the 1970s and suggested ways of improvement. Thus, it is disheartening to observe the declining trend in the agricultural sectors' share of GDP in Nigeria in recent years. However, while it may be heartwarming to note the introduction of programmes and reforms to revamp the sector, the extent to which such reforms have succeeded towards attaining this feat, is a matter of concern to most researchers and calls for investigation. This study seeks to assess the extent to which sectoral reforms have succeeded in addressing the issue of the declining trend in agriculture to the gross domestic product in Nigeria.

Objectives of the Study

The broad objective of this study is to assess the effect of sectoral reforms on the performance of the Nigerian Agricultural sector. Specifically, the study seeks to:

1. Ascertain the extent to which reforms in the agricultural sector have enhanced physical food availability in Nigeria.
2. Assess how much reforms in the agricultural sector have ensured accessibility to food (prices) in the country.
3. Determine how sectoral reforms have led to improvement on nutrition among the citizens.

Research Questions

Three questions will be answered in the course of this investigation. They include:

1. To what extent have reforms in the agriculture enhanced the sector's contribution to physical food availability?
2. Have reforms in the agricultural sector enhanced the accessibility (prices) of agricultural (food) products.
3. How have sectoral reforms in agriculture improved the nutrition of Nigerians?

Concepts: Agricultural Sector: Agriculture includes farming in all branches and among other things, the cultivation and tillage of soil, dairying, the production, cultivation, growing and harvesting of any agricultural and horticultural commodities, the raising of livestock or poultry and any practices performed by a farmer on a farm as an incident to or in conjunction with such farming operations, but does not include the manufacturing or processing of sugar, coconuts, abaca, tobacco, pineapple or other farm products. Agriculture, agricultural enterprise or agricultural activity means,

the cultivation of the soil, planting of crops, growing of fruits trees, including the harvesting of such farm products, and other farm activities and practices performed by a farmer in conjunction with such farming operations done by persons whether natural or juridical (Comprehensive Agrarian Reform Law of 1998, Philippines).

Rubenstein (2003), defines agriculture as, “the deliberate effort to modify a portion of earth's surface through the cultivation of crops and the raising of livestock for sustenance or economic gain”. The definition of agricultural sector (also referred to as the agricultural economic system) used in this study runs thus:

farm production which includes all farm crops, processing of both in-state and out-of-state production which includes food and tobacco products, wineries, textiles (including natural fiber textiles, but excluding all apparel and textile-based consumer products), distribution which includes transportation and wholesale and retail sale of farm and processed products (including the basic value of food sold through restaurants but excluding all restaurant markup and restaurant activity itself); and input activities which include all in-state production of goods and services for the farm and for the processing and distribution of activities described above, (Leones, Gerald and George, (1994).

The above definition obviously extends beyond the farm based definition of agriculture to a system- wide definition.

Agricultural Productivity: It is commonly agreed that productivity is the ability of a production system to produce more economically and efficiently. In this vein, agricultural productivity can be defined as a measure of efficiency in an agricultural production system which employs land, labour, capital and other related resources. “Agricultural productivity is measured as the ratio of agricultural outputs to agricultural inputs” (Dharmasiri, n.d).

Agricultural productivity is not a synonymy of fertility. It is generally used to express the power of agriculture in a particular region to produce crops without regard to whether that of power is due to the bounty of nature or the efforts of man. Dewett (1966) explains agricultural productivity as “Productivity expresses the varying relationship between agricultural output and one of the major inputs, like land or labour or capital, other complimentary factors remaining the same...”

Food security: It is generally recognized that food security, and therefore food insecurity is a multi-dimensional phenomenon. According to Heidhues and Von Braun (2004), “the lack of a commonly accepted, comprehensive measure for food security on an international scale has been identified as one of the roadblocks on the way of to the eradication of hunger and malnutrition”. A suite of indicators is therefore needed to cover different dimensions of food security: availability, access, utilization and stability”. The issue of food security really came to the fore in the 1970s and at the 1974 World Food Conference in Rome the first explicit acknowledgement was made that this issue concerned the whole of mankind:

Every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to maintain their physical and mental faculties. Accordingly, the eradication of hunger is a common objective of all the countries of the international community, especially of the developed countries and others in a position to help. (United Nations, 1975).

This conference led to the approach whereby food security was defined as, “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (United Nations, 1975).

In a similar development, the World Food Summit (1996) asserts that, “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. The definition also identified four dimensions of food security which include- physical availability of food, economic and physical access to food, food utilization and stability.

Sectoral Reforms: 'Reform' is used to describe many changes from minor adjustments to management arrangements to fundamental changes in ownership, governance and management arrangements. Building capacity to deliver services and reduction capacity to correct fiscal imbalances are both described to correct fiscal imbalances are both described as 'reform' in the official reports that accompany the changes. Genuine reform may be viewed in terms of change that either produces a measureable improvement in services or a noticeable change in the relationship between institutions of the state and the citizens. An administrative reform is a conscious, well-considered change that is carried out in a public sector organization or system for the purposes of improving its structure, operation or the quality of its workforce. In the views of Caiden (1968), “Reform is based on the simple idea that man should not wait for changes to take place naturally but should seek to speed, by artificial means, improvements in the world order.”

Nutrition: A circular English dictionary defines nutrition as, “The branch of science that deals with (especially human) nutrients and nutrition” (New Shorter 1955). However, a mid-twentieth century definition in the UK government manual is, “The science of nutrition entails the study of all processes of growth, maintenance and repair of the living body which depend upon the intake of food” (1993, Ministry of Agric). Forty years later, the term shifted to, the study of all processes of growth, maintenance and repair of living body which depend upon the digestions of food and the study of that food-followed by definitions of 'food and of 'diet'(Min. of Agric.).

The term 'diet' and 'nutrition' are often used interchangeably. However, they have different meanings as explained in the Taber's Medical Dictionary. While “Diet is defined as what you can eat and drink, 'nutrition' refers to the internal processing of foods and beverages, such as ingestion, digestion, absorption, assimilation, distribution, and elimination (i.e, metabolism).

Sun and Akiyama (2017) conducted a study titled, “An empirical study on Sustainable Agriculture Land Use Right Transfer in the Heine River Basin. The study examined the long-term viability of Agriculture land use transfer (ALURT) in China with data from documents of ALURT contracts, statistical data of ALURT performance and conducted

interviews with its users. The main finding was that the centralized institutional structure of ALURT in Heine River Basin (HRB) compromises its long-term viability. In particular, the power imbalance under the regulation of the intermediate agency, which causes the dissatisfaction of the participants, is threatening the application of the ALURT policy in the long-run. The study recommended the redefinition of the role of the intermediate agency in ALURT, to better serve the sustainable development of agriculture in HRB.

In a related development, Uche (2011), studied the impact of agricultural policies on Nigerian economy. The study covered the key issues on Nigerian agricultural policies especially as it concerned the formulation and implementation of agricultural policies and programmes as well as the achievements in the agricultural sector in Nigeria. The study contends that government's agricultural policies over the years have only recorded partial success going by the fact that the country still faces problems of food security, malnutrition and hunger, low earnings from agricultural as the GDP from the sector keeps declining. Data was collected from both primary and secondary sources and analysis was by simple percentages. It was recommended that the implementation strategies should be broadened to surmount some implementation challenges which affect the achievement of goals and objectives of agricultural policies.

Theoretical Framework

The Industrial Impact Hypothesis (Schultz, 1953) formulated the industrial impact model based on the implications of the Fisher-Clark structural transformation model for the transformation of the agricultural sector. The model comes in three statements:

1. Economic development occurs in a specific locational matrix...
2. These location matrices are primarily industrial-urban in composition.....
3. The existing economic organization works best at or near the center of a particular matrix of economic development and it also works best in those parts of agriculture which are situated favorably in relation to such center.

In formulation the hypothesis, Schultz was particularly concerned with the failure of agricultural production and price policy to remove the substantial regional disparities in the rate and level of development in American Agriculture. Schultz presented a rationale for the industrial impact of hypothesis in terms of more efficient functioning of factor and product markets in areas of rapid urban industrial development than in areas where the urban economy had not made a transition to the industrial stage.

The policy implications of the Schultz industrial impact hypothesis appear to be most relevant for the less developed regions of the more highly industrialized countries. In these areas, agricultural development can be accelerated by either increased industrial decentralization or migration of surplus agricultural workers to more distant urban-industrial centres. Such policies appear to have less scope in many of the less developed countries where:

- a. A major problem is that of achieving a satisfactory rate of economic growth in the non-farm economy rather than the geographical distribution of economic activity.

- b. The technological prerequisites for rapid agricultural output growth in the face of a constant or declining agricultural labour force are frequently not available (Schultz, 1964).
- c. The 'pathological' growth of urban centres resulting from population pressure in rural areas frequently runs ahead of growth in the demand for non-farm workers (Hoselitz, 1953).

Research Methodology

This study is a descriptive analysis of the effect of sectoral reforms on the performance of the agricultural sector in Nigeria. It employs the mode of content analysis to synthesize data obtained from secondary sources. This is carried out in conjunction with the theoretical framework. The analysis runs in the following sequence:

Research Question One (1): To what extent have reforms in agriculture enhanced food availability?

Precisely, the various administration in Nigeria embarked on various reforms over the years to enhance the performance of the agricultural sector. Some of them include:

1. Mandatory sectoral allocation to agriculture: commercial and merchant banks were mandated to extend a minimum of 6% of their loan portfolio to agriculture which was later increased to 12%.
2. Rural banking scheme was launched in 1977 while agricultural credit scheme was established in 1977.
3. Agricultural commodity marketing and pricing policy: Six commodity boards were established in 1977.
4. Land use policy was formulated by the Federal government in 1978 vesting ownership of all lands to government.
5. Input supply and distribution policy was promulgated to ensure adequate and orderly supply of agricultural inputs notably fertilizers, agrochemicals, etc.
6. Agricultural mechanization policy
7. Agricultural research policy, etc.

Some of the effects of these policy changes are reflected in the sectors contribution to GDP. For instance, agriculture contributed 42% of Nigeria's GDP in 2008 (National Bureau of Statistics). However, “despite having grown at an annual rate of 6.8% from 2002 to 2006, 2.8% higher than the sector's annual growth between 1997 and 2001, food security remains a major concern due to the subsistence nature of the country's agriculture” (Nwafor, 2008). This notwithstanding, “many of the strategies used to improve agricultural growth in the past have failed because the programmes and policies were not sufficiently based on in-debt studies and realistic pilot surveys” (Adebayo, 2004).

This would be attributed to lack of public participation in the design, formulation, implementation and evaluation of policies as well as limited implementation capacity within the sectoral ministries and a poor understanding of the details and specifics of policies by implementers (Adebayo et al, 2009)

The table below (1) shows the growth trend in agricultural real GDP between 1981 and 2005

Table 1: Growth rate of real GDP-Agriculture

Year	Index of real GDP agriculture	Growth rate
1981	100.00	-
1982	103.85	3.85
1983	96.20	-3.80
1984	90.59	-9.41
1985	100.13	-0.13
1986	98.44	-1.56
1987	136.35	36.45
1988	136.35	36.35
1989	105.30	5.30
1990	118.43	18.43
1991	122.71	22.71
1992	128.07	28.07
1993	132.39	32.39
1994	127.60	27.66
1995	131.19	31.19
1996	137.68	37.68
1997	143.18	43.18
1998	143.76	43.16
1999	143.33	43.76
2000	141.37	41.37
2001	159.08	59.08
2002	163.39	63.39
2003	165.13	65.13
2004	69.52	30.48
2005	71.79	28.21

Source: CBN Statistical Bulletin (1995, 2008)

Over the last 4 decades, the yield of most key crops has declined, in particular, cassava, cocoa, beans and wheat- a reflection of low utilization of improved seedlings, agro chemicals and poor adoption of technology. The yield of rice on the other hand has increased steadily, resulting from government's increased support for rice production, by providing subsidized agro chemicals and credit facilities through various intervention fund (Fugile & Rada, 2013).

In contrast to agriculture yield, agricultural land usage in Nigeria has increased across key crops like cassava, cocoa, beans rice paddy and wheat. This has been primarily driven by an increase in the population engaged in farming, although production remains at subsistence level. "In the long run, use of technology and better inputs are expected to play

an increasing role in raising agriculture productivity” (FAO, 2017) thereby reducing the growth of agricultural land usage.

In Nigeria, across most key crops, the rate of consumption has outstripped production. The deficit has been met largely by importation, making the country a net importer, a trend evident since 1975.

On the average, between 2011 and 2015, NGN 1.4 trillion has been spent on food imports with wheat, milk, rice, sugar and malt extract, constituting the bulk of Nigeria's food import bill. Consequently, Nigeria is vulnerable to changes in the global agro-commodity prices, with significant impact on inflation and foreign reserves (NBS, 2013, 2015).

A recent study (Obayelu, Okoruwa and Oni, 2017) which examined rural and urban households' consumption in Nigeria, indicates that the urban populace consumes more processed food than rural population. “With increasing rural-urban migration and rising discretionary incomes, the consumption of agro-processed products is expected to increase” (FAO, 2017).

Research Question Two (2): Have reform in the agricultural sector enhanced the access to food by the average Nigerian? Evidence from the NBS (2013) which reveals high prices for food items resulting from the vulnerability of Nigeria and its citizens to changes in the global agro-commodity prices with its attendant significant impact on inflation is a clear indication of the limited access to food as prices continue to soar. Thus, the reforms have not attained the desired objective of affordable prices for food commodities in the country.

Research Question three (3): How have reforms in Agriculture enhanced the nutrition of Nigerians?

A study by Ojo and Adebayo (2012) examined food security in Nigeria----an overview. In a comprehensive review of Nigeria's agricultural policy, the paper noted that much still needs to be done if the crisis in the sector will not escalate. The paper inferred that Nigeria needs to come up with food policy which it still lacked. It is necessary to highlight the observation of Idachaba (2009) who stated that, “Nigeria, blessed as it is, with abundant agro-ecological resources and diversity, has become one of the largest food importers in Sub-Saharan Africa. While agricultural policies are targeted at an expanded food production, food policy has its set goal consideration for minimum multinational standards that will guarantee food security. However, “while expansive agricultural policy is being pushed, there is also the need for a national food policy which seeks to assure all citizens access to food supply that is reasonably priced, relatively safe, adequate in quantity and nutrition” (Claffey and Striker, 1982; Nyaugito, 1999). Presently, Nigeria has no food policy. To put the matter in perspective, a food policy that shows for example, the relationship of good diet with good living as well as casual link inappropriate or insufficient diet, major and common debilitating diseases.

The study by Adebayo (2002) on food security status in Nigeria: Pre and Post economic deregulation review, submitted that, “while food supplies improved considerably after deregulation especially in the immediate post deregulation period, the ability of the citizens to access this food deteriorated significantly and the food security position worsened”.

Table 2: Indices of Food Consumption in Nigeria (Caloric Intake) Selected periods 1970-1996

Period	Per Capita Caloric Intake	Intake as % of minimum Requirement
1970-74	1896.0	84.27
1975-79	1761.0	78.27
1980-84	1680.4	74.68
1985-89	2023.6	89.94
1990-92	2200.0	97.78
1995-96	1955.5	86.91

N.B: Recommended average daily requirement of intake of caloric = 2250 kcal/capwt.

Sources: Compiled/Computed from: (i) Abayomi, Y.O (1997) (ii) CBN (2008)

Data on table 3 above clearly reveals the deficiency in the intake essential nutrients. Added to that is the observation by Adebayo (2002), to the effect that, “the food security situation in Nigeria has worsened”. Since the country still depends on importation of good measure of its food requirements, good food and nutrition still remains a mirage.

The study by Jelilov and Vzden (2017), using ordinary least square regression technic to analyze its data revealed that,

while there is a positive and significant relationship between GDP and agricultural output in Nigeria which contributed 2.247 percent variation in gross domestic product from 1981 to 2014, the sector suffered neglect in the hey-days of the 1970 oil boom. It suggested ways of improvement.

According to Aigbokhan (2001), “prior to the oil boom in the 1950s and 1960s, the agricultural sector accounted for over 63% and 54% of PGD respectively”. A more recent study by Babatunde, Adejobi and Falkyode (2010) on income and calorie intake among faring Households in Rural Nigeria: results of Parametric and Non-Parametric Analysis found that Calorie intake does not increase substantially with increase income. It presents a table on intake according to income quartiles as follows:

Table 4: Calorie Intake According to Income Quartiles

	All Households	Income Quartiles				Mean (standard deviation)
		First	Second	Third	Fourth	
Total income	naira/AE	30245.7 (23416.4)	13862.7 (16231.1)	23877.2 (11271.9)	36826.9 (27681.3)	464416 (10887.2)
Calorie intake	Kcal/day/AE	2427.5 (704.0)	1943.7 (494.6)	2386.5 (759.4)	2480.3 (654.1)	2899.5 (513.3)
Prevalence of undernourishment	(%)	60.9	96.4	67.3	52.7	27.3
Depth of calorie intake deficiency	(%) ^a	22.2	25.7	22.5	21.5	10.3
Dietary quality	(Kcal/day/AE) ^b	436.9 (126.7)	349.9 (89.8)	429.6 (136.6)	446.4 (118.2)	521.9 (95.9)
Dietary diversity	(number) ^c	(1.63)	(1.17)	(1.71)	(1.50)	(1.01)

Source: Computed from survey data by Badatunde, Adejobi&Falkayode (2010)

Key: ^a refers to only food insecure households

^b the calorie supply that comes from fruits, vegetables and animal products.

^c is the number of food groups out of seven, eaten by households over 7-days period.

Data on table 4 above clearly reveals the deficiency in the intake of essential nutrients in Nigeria. Added to that is the observation by Adebayo (2002), to the effect that, “the food security situation in Nigeria has worsened”. Since the country still depends on importation of a good measure of its food requirements, food and nutrition still remain a major challenge.

Findings

The following findings have been recorded consequent upon the analyses in course of the study:

1. Subsequent administrations in Nigeria had introduced several reforms to revamp the agricultural sector: some of them include-land use policy, supply and distribution policy, agricultural research, the policy of mechanization of agriculture, Banking reforms etc. These policy reforms culminated in the sector's contribution of an impressive 42% of the nation's GDP in 2008.
2. Despite recording an annual growth rate of 6.8% between 2002 and 2006 (2.8%) higher than the sector's annual growth rate for the period 1997-2001, food security still remains a major concern due to the subsistence nature of the country's agriculture.
3. Many of the strategies aimed at improving agricultural growth in the past failed as the programmes and policies were not sufficiently based on in-debt studies and realistic pilot surveys. This may be attributable to lack of public participation in the design, formulation, implementation and evaluation of policies.

4. The urban populace consumes more processed foods than the rural population. With increase in rural-urban migration, this situation will show an upward trend *ceteris paribus*.
5. Nigeria and its citizens are vulnerable to fluctuations in the global agro-commodity prices with its attendant significant impact on inflation which is a clear evidence of limited access to food. Thus, reforms are yet to attain the objective of affordable prices for food.
6. Agricultural land have increased following reforms and food production (cassava, cocoa, beans, rice paddy, wheat etc)have increased. However, this is not significant in view of the increasing population. Consumption of major staples has outstripped production.
7. The various reforms in the sector are yet to achieve adequate nutrition for the citizenry.

Conclusion

Subsequent administrations in Nigeria have initiated programmes and policies aimed at revamping the nation's ailing agricultural sector. However, while it may be unfair to conclude that these policy reforms have not recorded any successes, it is clear that the desired results are far from being realized. It is worthy of note that the reforms resulted to increased output particularly in respect of major staples like cassava, yams, wheat, rice, etc. The ever-increasing trend in population has rendered such success insignificant. This is to suggest that reforms in the area of mechanization should be revisited. The nation is yet to show evidence of a clear cut food policy as this is an area that requires special attention to enhance nutrition (a vital component of sustainable development).

Suggestions

Against the above backdrop, this paper makes bold to real out the following suggestions:

1. The Federal government should come up with a clear cut food policy that will be robust enough to address the nutritional needs of the populace.
2. The reform on mechanization should be revisited as this is the only way to generate food supplies that can square up with the obvious challenge of increasing population.
3. The policies should be formulated taking cognizance of the vulnerability of fluctuations in the global agro-commodity prices.
4. Policy reforms in the area of infrastructural development must be given priority to stem the tide of rural-urban migration.
5. Research should be encouraged to ascertain areas of improvement in the agricultural sector.

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