

Towards Fixing the Broken Value Chain of Agricultural Productivity in Nigeria

Tanko Saidu¹ & Sufyan A Tafa²

Department of Economics,
Sokoto State University, Sokoto, Nigeria¹ & Sokoto State University, Sokoto, Nigeria²

Abstract: *Between 1960 and 1972, Agriculture was the mainstay of Nigerian economy; providing about 90% of government revenues, 93% of labor employment and about 96% of export earnings. The discovery of oil and its growing commercialization from 1974 to date led to the neglect of agriculture to a point that Nigeria has to import food items from abroad. The crash of oil price and the continuing discovery of alternative energy provide a strong signal for oil exporting countries that oil has no future. It is against this background that Nigeria declares its readiness to revive the glories of agriculture in the country. This study therefore assesses the contemporary challenges facing agricultural development effort in Nigeria. In the past, many studies have limited their scope on the aspect of mechanize farming, training farmers and lacked of capital as the major stumbling blocks in the sector. This study takes on the broader aspect through the supply side problems and demand side problems. On the supply side; these problems include the low participation of investors in the sector, the lack of adequate capital, poor production methods and poor storage facilities. On the demand side; there are no adequate industries in Nigeria which uses farm produce as raw materials, and most Nigerian consumers preferred foreign agricultural commodities. The lesson is that until there is market for farm produce in Nigeria before the supply of agricultural commodities would improve.*
Keywords: *Agricultural Productivity, Supply, Demand*

1.1: Introduction

The continuing decline of oil prices globally today is indeed a strong signal that the glory of oil for oil producing countries has no future. As a result, many oil exporting countries have began looking

inward for other alternatives especially in countries that relied heavily on oil as their major sources of revenue (Oni & K.C.2008). Nigeria is one of the countries where oil provides more than 90% of government revenues and about 99% of export earnings. But in recent times; the leaderships of the country have demonstrated keen interest for economic diversification and placing agricultural sector development at the pinnacle. Although there have been commitments in the past by the previous administrations to address the obstacles facing agricultural productivity in Nigeria; but those problems instead of reducing; they were multiplying and growing exponentially year after years. As oil prices continued declining, and the continuing discoveries of renewable energy as substitute have compelled Nigeria to go back to its early occupation which is farming (Christopher, 2010). The problems of agriculture in Nigeria are many but the primary obstacles had their roots during the Oil boom period in the late seventies; but prior to that, agricultural sector was the mainstay of Nigerian economy, it was the biggest employer of labor, tax revuegenerator and export earnings for Nigerian government (Dantama and Sanda, 2007).

It is also important to recognize that the problems of Agriculture in Nigeria during the last four decades are not the same with the contemporary obstacles. Such discoveries were made known in recent research articles under the authorships of many academicians and agricultural research institutes of Nigeria (AGRIN, 2015). There are lots of broken value chains or disconnects of agricultural developmental components which have been retarding the government's effort to revive the pass glories of agriculture in Nigeria. These problems are indeed more complicated than the orthodox. Today in Nigeria, the first problem is on how to send farmers back to farm and consider

farming as business. Next is the problem of capital for financing large-scale farming. Thirdly is the problem of using modern production methods. The problem of poor storage facilities especially for perishable farm produces such tomatoes, onion and the like. Also, the poor market or the very weak demand for domestic farm produce, poor industrialization and consumer preference for processed goods which are usually imported from foreign countries are contemporary problems which must be address.

2.1: Literature Review

In recent times, many researchers have conducted many studies particularly for Nigeria's agricultural sector development. To a larger extent, most of their findings are in agreement with facts but which are less relevant to the technical problems facing the sector in a broader picture. This is because the fundamental characters of problems facing agricultural development in Nigeria are on the supply value chain and on the demand side which is principally the poor market condition for agricultural commodities. Joseph et al (2013) investigated the contemporary problems facing agricultural productivity in Nigeria. The main theme of their study is that lacked of capital and poor mechanize farming are the major obstacles retarding the development of agriculture in Nigeria. Abdalla (2010), Adesina et al (2012) and Olayide (2014) have all in their studies converged in support of the idea that lacked of capital is the biggest problem facing agricultural development in Nigeria. Joshua and Lara (2014) argued in their studies that the Nigerian government has not been serious practically in supporting the developmental projects meant for agricultural sector.

Placid & Njoku, (2010) argued in their article that the danger signals regarding agriculture in Nigeria should be clear. The first danger signal is that the productivity of agriculture has not grown but has declined in some sectors: consequently Nigeria has been unable to feed its population. The second danger signal is that the population is growing rapidly at the rate of about 3 percent which surpasses the rate of growth of food production.

3.1: Methodology

The paper employed demand and supply model and the economic theory of dependency to describe the

The third is that our foreign exchange earnings are declining such that we cannot afford to supplement local food production with imports. The three factors have combined to cause acute food scarcity which is currently felt more in spiraling food prices than in non-availability of food. This is why currently; the average salary earner spends an unduly large proportion of the monthly take-home pay on food alone. They finally made such prediction that 'if agricultural productivity does not increase considerably in the next decade, and our foreign exchange earning capacity continues to decline as it has done in the past two decades, while the population continues to grow at the current rate, then Nigeria will face a situation of absolute food scarcity'. The giant of Africa may be forced to go cap-in-hand begging for food aid. The prospect of this occurring necessitates that action should be taken to transform Nigerian agriculture fast as we make efforts to reduce our population growth rate.

2.2: Gap in the Literature

It is evident that most of the perspectives presented in many articles regarding the obstacles facing Nigeria's agricultural development have not been adequately scientific. In most cases, they are concentrating on lacked of capital or poor mechanize farming. Yes these are indeed some of the problems but not all of the problems. In my own view, the development of agriculture in Nigeria has to be done simultaneously from the supply side and the demand side of agricultural commodities. Most of the research articles are focusing on the supply side while ignoring demand. The demand side model for agricultural commodities in Nigeria includes the market availability of such products. Many Nigerians today preferred foreign rice; how do we expect rice production in large scale where there is no market for domestic rice. On the supply side, there are long list of problems. This study is aim at addressing the general public that Nigeria cannot revive its agriculture sector productivity to a desired level; until both problems on the demand and supply sides of agricultural commodities in Nigeria are tackling.

functional supply and demand for agricultural commodities as well as the interdependence of agricultural components value chain for Nigeria's

context. Our variables of choice for analysis are shown in table 1.1. Detail information for substantiations were obtained from different secondary sources in Nigeria. These included the agricultural development institute (ADI), Central bank of Nigeria economic reports. Newspaper's

featured articles, publication of National Bureau of Statistics among others. In addition to these, a hypothetical model was form in support of the argument. The table below shows the list of variables employed for the hypothetical illustrations:

Table 1.1: Supply Side Variables for Agricultural Commodities in Nigeria

Variables	Label	Proxy
Incentive for Farming	<i>Incfm</i>	Investors
Availability of Capital	<i>Avc</i>	Scale of Production
Production Pattern	<i>Ptm</i>	Production function
Storage Facilities	<i>Stf</i>	Savings

Table: 1.2 Demand Side Variables for Agricultural Commodities in Nigeria

Variables	Label	Proxy
Industrial Consumption	<i>Idc</i>	Industrial Demand for raw materials
Household Preference	<i>Hp</i>	Household Consumption
Foreign Demand	<i>Fd</i>	Export Opportunities
Commodity Prices	<i>P</i>	Price Level

3.2: Model Specifications

The researcher employed demand and supply model to describe the linear functionality of supply as well as demand for agricultural development in Nigeria. The supply development is dependent on

four variable factors while the demand development model is dependent on four different variable factors. Each of such models is outlined and explained below:

Supply functional Model

(1.1)

$$AGD_{Supply}(f) = \beta_0 + \beta_1 Ainv + \beta_2 Avc + \beta_3 prodf + \beta_4 Gstf + e$$

The linear function above is a hypothetical supply development model for agricultural sector in Nigeria. Where AGD_{Supply} refers to agricultural development from the supply perspective. The supply model explanatory variables includes ‘ *Ainv* ’ i.e. availability of investors, ‘ *Avc* ’ for

availability of capital, ‘ *prodf* ’ production function and ‘ *Gstf* ’ good storage facilities. Each of these explanatory variables on the other hand depends on other factors. These are shown and explained below:

$$(1.1.1) Ainv(f) = \beta_0 + \beta_1 MarketCondition + e$$

Availability of investors in agriculture depends on the market condition for agricultural commodities. This is true of any market for any product.

Investors are first of all interested in understanding the market condition for a commodity before investing

$$(1.1.2) Avc(f) = \beta_0 + \beta_1 int r + \beta_2 psavings + e$$

Availability of capital determines start up as well as the size of a venture; but the question of sourcing the capital is of paramount importance.

Investors tend to borrow enough funds from lending institutions if interest rate is cheaper. Savings on the other hand is another means of

raising capital. Farmers as investors can only produce agricultural commodities in large

quantities if they have enough capital which is on one hand dependent on interest rate or savings.

$$(1.1.3) \text{Prodf}(f) = \beta_0 + \beta_1 \text{equipmt} + \beta_2 \text{skills} + e$$

The traditional economic theory of production has always emphasized on the important combination of quality inputs and quantity as the principal determinants of output at a desired level. The model above described the role of equipments or

machineries and skills as the determinants of production. On farming activities; modern equipments are required as well as advance skills for mechanized farming.

$$(1.1.4) \text{Gstf}(f) = \beta_0 + \beta_1 \text{investmentStr} + e$$

The linear function above indicates that good storage facilities depend on investment in storage. Storage as a factor plays an important role in preservation. With regard to the supply of agricultural commodities, the quality of storage

facilities determined the amount of such commodities in waste between the farm and the market as well as their quantities in the market.

Demand Functional Model

(2.1)

$$Mkc(f) = \beta_0 + \beta_1 \text{compr} + \beta_2 \text{Industc} + \beta_3 \text{houshdc} + \beta_4 \text{foreignDmne} + e$$

From the model above; it shows that market condition indicators for agricultural commodities on the demand side includes commodity prices, industrial demand for raw materials, household preference and export opportunities. However, the

idiosyncrasy of these indicators depends on other factors. The table shows in condense summary the number of exogenous factors which establishes the good or bad condition for market condition indicators.

Table: 1.3:Market Condition indicators Determinants for Agricultural Commodities

Variables	Determinants
Industrial Consumption	f industrial demand ¹ , f availability of industries ² , f infrastructure ³
Household Preference	f quality ¹ , f price ² , f income ³ , f employment ⁴
Foreign Demand	f scarcity ¹ , f relative quality ² , f relative price ³ ,
Commodity Prices	f cost of production ¹ , f availability or scarcity of commodities ²

Hypothetical Model for Interdependency

(3.1)

$$\text{Supply}_{\Delta} AGD_i \sum_{i=1}^n (X_i - \bar{X} \theta \lim_{x \rightarrow \infty})^2 \frac{1}{n} = \text{Demand}_{\Delta} AGD_i \sum_{i=1}^n (X_i - \bar{X} \theta \lim_{x \rightarrow \infty})^2 \frac{1}{n}$$

The model above shows the desired equilibrium level of supply components and demand components of agricultural productivity in the art of resuscitation effort for Nigeria's context. The lesson is that while effort is made towards improving the quantum of agricultural productivity on the supply side; also, there must be similar effort for the development of demand forces. For example; the industrial demand for agricultural raw materials depends on the availability of industries

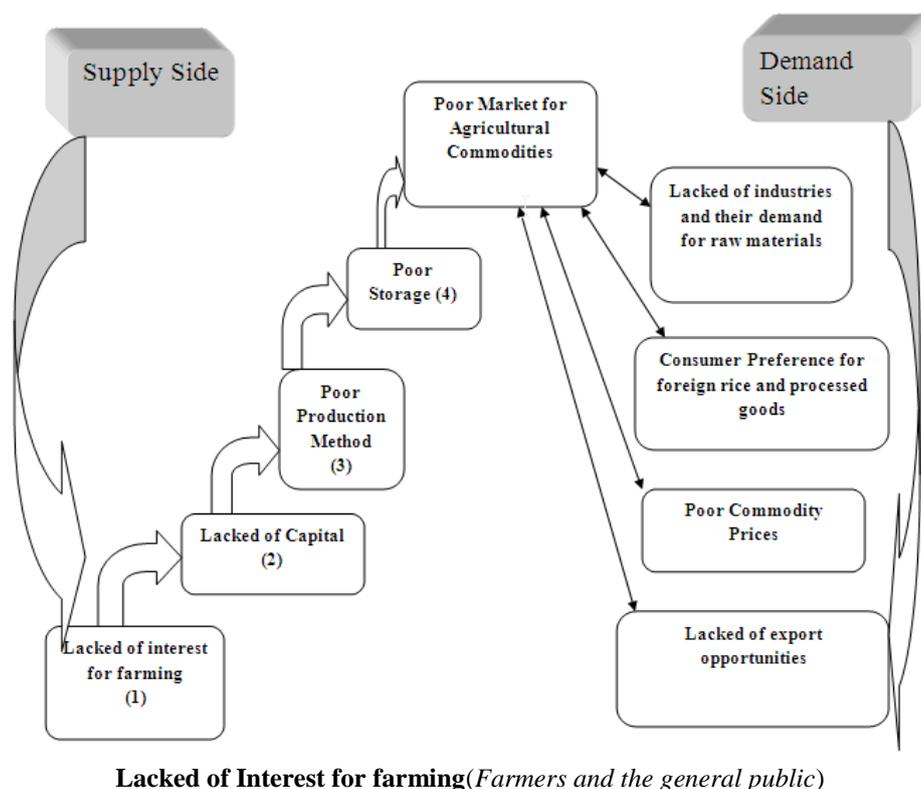
that used raw materials for production transformation. Household preference within the Nigerian context, Nigerians prefers foreign goods. To make it brief; Nigeria the revitalization of agriculture in Nigeria can only achieve if simultaneous investment is made on both the supply and demand components. Good result might be achieve in the short run as Nigeria does for improving only the supply side but in the long run, the

4.1: Discussion

This section present the principal obstacles identified for Nigeria with regard to agricultural development Nigeria. These problems however are presented and discussed in sequential order. On the supply side components; it started with approach needed to apply for inviting farmers back to farming. Secondly is the issue of inadequate capital for large scale production. The third problem is on how to convert the traditional production method to advance or mechanize farming. The fourth problem is poor storage facilities and finally is on how to improve market behaviors.

At the heart of the problem is the broken value chain on the supply side while on the demand side is the question of weak consumer preference for agricultural produce in Nigeria. The lacked of adequate industries that use farm produce as raw materials, and the poor commodity prices for such agricultural produce. The lesson is that even if the broken value chain on the supply side is fixe, there has to be a demand for the commodities in supply. These problems are present in flowcharts as well as the discussion on the next page.

Flowcharts for Broken Value Chain on Demand and Supply for Agricultural Development in Nigeria



Lacked of Interest for farming(Farmers and the general public)

It is perhaps needless to argue that today in Nigeria; the popular impression in regards to farming is that if you are a farmer, you are automatically a poor man. This impression seems to be true because most of the farmers are into farming for survival. They are producing below subsistence level in which they cannot even feed themselves. In a materialistic society like Nigeria where the yardstick for measuring success is material wealth; many farmers were force to abandon farming because of such impression and

because they want to go into business that can simultaneously fetch them money and societal respect. The lacked of interest and willingness to go into farming and runs it as business is one of the leading problems among the contemporary problems of agricultural development in Nigeria.

Capital Challenges

Another contemporary problem which has been contributing negatively to the development or

resuscitation of agriculture in Nigeria is the lacked of adequate capital. Capital is one of the most important components of factors of production. It determines the purchase of quality equipments, start up as well as the size of any venture of interest. In the case of farming, farmers in Nigeria have been crying for the lack of adequate capital. The bank of agriculture (BOA) in Nigeria has not been playing its role of providing credit facilities for farmers partly because of the fear that half of their farms produce might got spoiled between the farm and the market. In another argument, the rates of interest charges are too high or costly for borrowing. This problem has been contributing to the inability of farmers to produce above subsistence level in Nigeria.

Production Challenges

In economic theories, the traditional production function models have always emphasized that the quantity and quality of output depends on the quality and quantity of inputs. Agricultural production methods in Nigeria today has not grown to a level of mechanize farming. The traditional land tenure system is still practice quite large, the lack of high yield seed varieties entrenched this notion. Under production challenges; it will be inadequate to ignore the impact of flood disaster which has been occurring and reoccurring in different parts of Nigeria and especially in areas of water banks where farming activities are suitable. In recent times; the incidence of flood disaster had led to the loss of over 50% of farm produce in Nigeria (ADB, 2014). The lacked of modern skills in handling farm produce, from livestock to planting are also counted under the problems of production challenges.

Storage Challenges

Poor storage facilities or the lacked of modern storage facilities is one of the problems of agricultural development in Nigeria. If farmers choose to produce rice which is non perishables; most Nigerian rice consumers preferred foreign rice. If they choose to produce perishable goods such as tomatoes, onion, yam and potatoes; half of such commodities got perish between the farm and the market. This has led to the loss of large amount of agricultural output in Nigeria and the second

round effect of this is translated into the loss of capital, food shortages, food insecurity and price fluctuation. This indeed is another obstacle that has been retarding the development of agriculture in Nigeria.

Market Challenges

Market challenge is technically refers to the presence of forces which create disequilibrium between supply and demand in connection to dynamism of price. In Nigeria today, there is no incentive for farmers to produce in large quantities because of the absence of industries. Usually, the industries use raw materials in production processes. Most of the active industries in Nigeria today are construction companies. The industries that use agricultural commodities such as food and beverages have reduced significantly because of the poor infrastructure and the lack of electricity. As a result, the cost of production remains too high and in the few decades; Nigeria has witnessed mass exodus of both local and foreign industrial companies to other countries where cost of production is relatively cheaper. This has directly contributed to the weak demand of raw materials from farmers. It has also contributed to the reduction of farming in the country as a result of weak demand. No rational farmer will produce agricultural commodities in large quantities knowing that the market condition is poor.

5.1: Conclusion, Recommendation and Summary

The paper concludes that the contemporary problems of agriculture in Nigeria are both on the supply side and demand side of agricultural commodities. In other words, there are broken value chains or disconnects among the components required for agricultural development. These problems includes (i) the lack of incentive for farming (ii) the problems of capital shortages (iii) the continuing use of traditional production method and (v) poor storage facilities. On the demand side, the poor market condition for agricultural commodities discourages agricultural production in large scale or quantities.

5.1.1 Recommendations

The Lacked of Incentive for Farming

The first problem is on how to convince investors in agriculture to go back to farm. This important task can only be achieved if the following measures are put in place:

- Introduction of marketing board by the government to be the buyer of agricultural commodities directly from farmers
- Government should subsidized the price of agricultural commodities for wholesalers
- Price ceiling should be introduce for varieties of commodity prices

The Lacked of Capital

Investors in agriculture in Nigeria are facing serious problem with regarding to raising their required capital to exploit their full potentials. It is yet again the responsibility of government to ameliorate such barrier. The following suggestions are recommended:

- Government must ensure that the Banks of agriculture (BOA) in Nigeria are alive to their responsibilities
- There should interest free loan for farmers with longer maturity
- Any other incentive that can boost productivity should be provided

Production Challenges

Most Nigerian farmers today are still strangers to mechanized farming. This suggests that there is need for training and workshops for farmers as well as the support with material equipments that are of high prices. This is because the advantages of mechanized farming save time and reduce cost of production; thereby improving commodity revenues and profit within a short period of time.

The Need to Provide Farmers with Modern Storage Facilities

References:

Abdalla (2010) 'An overview of agricultural policies in Nigeria': *journal of eulogy and science*: (3), p3, 12 :n/ISSN 3461, 2379

This is of paramount importance because with good storage facilities, producers of perishable goods can be able to preserve their commodities for a long time as well as for minimizing loss especially for perishable goods. This also adds value for food security in times of disaster.

Creating Favorable Market Demand

Nigeria needs to provide the enabling environment for industries that use farm produce as raw materials. The industrial sector usually consumes more than 50% of farm produce as raw materials. If there is no industrial demand for agricultural output, it reduces production significantly. The households in Nigeria usually preferred foreign rice and process goods. This indeed has added to the weak demand for agricultural produce and on the other hand increases importation of food items.

5.1.2: Summary

The paper investigated the contemporary challenges which have been retarding the efforts of revitalizing agricultural productivity in Nigeria in a broader picture. The researcher's central argument is that over the years or decades, both government and researchers have been concentrating on the problems of agriculture in Nigeria on the supply side especially in the area of training and provision of capital while ignoring the demand side components. Farmers are themselves business people and they can only produce in large quantities in there is market for their products. The researcher concluded with recommendations that there is the need to provide enabling environment for industrial sector which usually consume more than 50% of farm produce as raw materials. Moreover, the current consumer preferences for farm produce are in favor of foreign rice and other processed goods such as tomatoes pest and a long list of others. This must also be address in order to provide an elevated demand for local farm produce. If there is market for local agricultural commodities, the supply side problems can be address within a short period of time.

Adesinaetal (2012) 'Problems of agricultural policies in Nigeria': *Journal of agric science*: ISSN, 1123, 1234

Agricultural Research Institute of Nigeria 'AGRIN' (2015) :the effort and result of agricultural development policies in Nigeria.

Anazodo, U.G.N (1982). "Mechanization of Family Farms in Nigeria: *Quantitative Analysis of the Problems and Prospects, Comparative Study of Selected Villages*", *AMA* Vol. 13, No. 3

Central Bank of Nigeria (CBN)
Annual economic reports for Nigerian economy:

www.cbn.org.ng/2014/economic/repo

[rt](#)

Christopher, E et al (2010). "Agricultural Financing Policies and Rural Development in Nigeria", *paper presented at the 84th Annual Conference of the Agricultural Economics Society, Edinburgh*

Economic Commission for Africa (2007). "Africa Review Report on Agriculture and Rural Development", *Fifth Meeting of the Africa Committee on Sustainable Development, Addis Ababa 22-25 October*

Joseph A. Ken G. (2013) "The contemporary problems facing agricultural productivity in Nigeria": Conference paper

Joshua and Lara (2014) 'Policy rhetoric and Practice by the Nigerian Government': *Conference paper, ATBU, 2014*

Olayide (2014) 'Policy Conflicts of agricultural policies in Nigeria': working paper

Olayide, S. et al (1981). *Elements of Rural Economics*, Ibadan: University Press

Oni, K.C. (2008). "Transforming Agricultural Potentials to Wealth in Northern Nigeria". *Invited Paper Presented at the Northern Nigerian*

Economic and Investment Summit (NEIS), Abuja, October, 2008.

Placid C. Njoku,(2010)**Nigerian agriculture and the challenges of the 21st century**