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The development of Agricultural input markets in Nigeria

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Declaration

I hereby declare that this thesis entitled ‘The development of Agricultural Input Market in Nigeria is an original work written by me under the supervision and guardianship of Ing. Tomas Doucha, doc. CSc department of economic development, Faculty of Tropical AgricSciences as a partial fulfillment of the requirement for the award of Master’s degree in International Economic Development at the Czech University of Life Sciences Prague.

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Abstract

Since the discovery of oil in commercial quantity in Nigeria, the agricultural sector has suffered a tremendous setback leading to policies and reforms implementation targeting growth and development in the sector by subsidizing inputs such as fertilizer to boost productivity and increasing food security and economic growth. On that note this review work aimed at analyzing some of the factors affecting input market development in Nigeria despite different policies and programs targeted towards improving the sector. Major findings about the Nigerian input market indicates that small farmers are vulnerable as access to inputs such as fertilizer is limited and the seed market receives very low patronage due the traditional system of obtaining seeds by the rural farmer. There are indications which shows that the situation has not improved to a large extend as commercial farmers have access to inputs compare to the peasant farmers who form a larger part of the Nigerian agricultural sector. The role of subsidies and weak government policies has not help the situation either. The newly introduced fertilizer voucher program was effective from the beginning but later shows decline due to late delivery and other bureaucratic process involve. Farmers in different part of the country are meant to pay different prices of the same product in the market due to the dilapidated state of the available infrastructure in the country.

The general conclusion will be that, the input markets in Nigeria is still fragmented and underdevelopment due to the long existing practice of corruption, mismanagement, weak policy and many managerial issues related to marketing and distribution but the new focus on agriculture as a means for economic growth and the liberalization of the fertilizer sector is determine to improve the situation.

Keywords: input markets, fertilizer, seeds, subsidies, demand and supply, market forces, policies, programs

Shrnutí

Od dob objevení nigerijských ložisek ropy dostatečně rozsáhlých pro obchodní účely se zemědělský sektor potýkal s jistými nezdary, což vedlo k zavedení reforem a postupů zaměřených na růst a vývoj odvětví prostřednictvím dotování vstupních zdrojů, jako jsou například hnojiva pro zesílení produkce, a skrze zvýšení bezpečnosti potravin a podpory ekonomického růstu. V rámci tématu je tato práce zaměřená na analyzování některých faktorů negativně ovlivňujících vývoj vstupního trhu v Nigérii, k němuž dochází i navzdory odlišným strategiím a programům cíleným na rozvoj daného sektoru. Rozsáhlá zkoumání nigerijského vstupního trhu prokazují zranitelnost drobných zemědělců vzhledem k omezenému přístupu ke vstupním zdrojům, jako jsou hnojiva a k tomu, že trhu s osivem se nedostává přílišné podpory především kvůli tradičním způsobům získávání osiva vesnickými farmáři. Existují ukazatele prokazující, že se situace zlepšila jen částečně, jakož i fakt, že komerční zemědělci mají na rozdíl od drobných sedláků, kteří tvoří většinu nigerijského zemědělského sektoru, volný přístup ke vstupním zdrojům. Role dotací a nepřilíš vhodných politických taktik rovněž neměla zrovna pozitivní dopad na situaci. Nově zavedený program hnojivových poukazů se zprvu uchytil, nicméně později se objevily problémy v podobě zpožděného dodávání a dalších chyb v byrokratickém procesu s tím spojeném. Od farmářů v odlišných částech země se očekává, že budou platit různě vysoké částky za totéž zboží na trhu a to kvůli bídnému stavu dostupné dopravní infrastruktury. V obecném shrnutí lze říci, že vstupní trh v Nigérii je stále roztržštěn a nedostatečně rozvinut, což má za vinu hlavně letitá existence vysoké úrovně korupce, špatné hospodaření, chabá politika a mnoho menších zádrhelů v marketingu a distribuci. Nicméně nový přístup k zemědělství jako k prostředku pro ekonomický růst a uvolnění sektoru s hnojivem má nepopíratelnou naději na úspěch ve věci zlepšování aktuální situace.

Klíčová slova: vstupní trh, hnojivo, osivo, dotace, poptávka a nabídka, tržní síly, strategie, programy

Abbreviation

ADPs – Agricultural Development Projects

BULOG – Badan Urosan Logistics

BLP – Better Life Program for Rural Women

CAN – Calcium Ammonium Nitrate

DAP – Diammonium Phosphate

DIFRRI – Directorate for Food, Road and Rural Infrastructure

ECO – Economic Commission for Africa

FAO – Food and Agricultural Organization

FEAP - Family Support Program (FSP)/ Family Economic Advancement Program

FMSP – Federal Market Stabilization Program

FMARD – Federal Ministry of Agriculture and Rural Development

FPDD – Fertilizer Procurement and Distribution Division

FSFC – Federal Superphosphate Fertilizer Company of Nigeria

FEPSAN – Fertilizer Suppliers Association of Nigeria

FFD – Federal Fertilizer Department

FVP – Fertilizer Voucher Program

GR – Green Revolution

IITA – International Institute of Tropical Agriculture

IARCs – International Agricultural Research Centers

ICRISAT – International Crops Research Institute for Semi-Arid Tropics

IMF – International Monetary Fund

KASCO – Kano Agricultural Supply Company

M99 – Masagana 1999 Program

NAFCON – National Fertilizer Company of Nigeria

NALDA - National Agricultural Land Development Authority

NAFPP - National Accelerated Food Production Program

NARIs – National Agricultural Research Institutes

NGOs – Non-governmental Organizations

NPK – Nitrogen Phosphorus and Potassium

NASC – National Agricultural Seed Center

NFDP - National Fadama Development Project

NEEDS - National Economic Empowerment and Development Strategy

NSPFS - National, Special Program on Food Security

NSS – National Seed Service

NC – North Central

NE – North West

NW – North West

OFN – Operation Feed the Nation

RBDAs - River Basin Development Authorities

RTEP - Root and Tuber Expansion Program

SAP – Structural Adjustment Program

SE – South East

SSA – Sub-Saharan Africa

SSP – Super

SS – South-South

SW – South West

UN – United Nations

USAID – United States Agency for International Development

VAT – Value Added Tax

WARDA – West Africa Rice Development Association

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1. Introduction

Nigeria is known for its rich endowment in agricultural and other mineral resources such as oil and gas, yet the country has no well developed input markets to cater for the needs of its large farming population. Despite the fact that agriculture has the potential of playing a vital role in the economic growth of Nigeria, the country is yet to create a system that will promote development in agricultural input business.

Poverty reduction and economic growth in Nigeria could be achieved by increasing agricultural productivity through input markets development. In the past, agriculture used to be a strong pillar of the Nigerian economy contributing about 80% of its total GDP. This sector has performed immensely as one of the country's source of employment, income generation and foreign exchange earner. The major role of agriculture as a source of livelihood to millions of Nigerians spells-out the contribution of this sector to food security. Despite the shift of attention by the government after the discovery of oil in commercial quantity in the early 1950s, agriculture still account for about 40% of Nigeria's total GDP and stills provide employment to a large portion of the population. The sector is largely controlled by small farmers mainly subsistence farmers. In many developing countries, agriculture is seen as the most effective way of poverty reduction, food security and economic growth.

Today agriculture is the leading issue in development policy frame work in Nigeria after several years of neglects. Nevertheless, there has been some improvement since the return of democracy in 1999 and the main reason for this improvement lies on increase in hectares of land under cultivation (Vision 20:2020 Report 2009). The little contribution of the sector to the economy of Nigeria cannot be overlooked because any negligence of the agricultural sector could lead to huge implications and escalation of poverty especially in the rural regions where agriculture is their main source of income food and. A share population of the urban poor also depends on agriculture for their livelihood.

Since 70% of the Nigerian population derives their livelihood on agriculture, it is imperative that much attention should be given to this sector in order to increase food security and reduce the level of poverty in the country. Comprehensive agricultural development program was created in 2003 with the aim of eliminating hunger and

reducing poverty in Africa in general which many African leaders pledge to implement but failed including Nigeria due to weak policies supporting agriculture in the country (NEPAD 2012).

Nigeria has pursued a comprehensive and substantial reform in the agricultural sector since 1970s, aiming at boosting productivity, reducing poverty and increasing food security. But the impact of all of these reforms is yet to make any positive change as poverty and food shortages is still experience in the majority rural dwellers similar to the situation in early 1970s.

Promoting science-based agriculture in Nigeria's majority small farmers requires the need for easy access to input such as improve seeds, fertilizer and agrochemical. Recent development shows that not only do farmers find it difficult to obtain inputs but they pay high prices as prices of fertilizer that was sold for ₦1,500/50 kg in year 2000 is now sold for ₦5,000 and above in some part of the country. Product adulteration has also been at the rise and improve seeds are not available at the farm gate. It is of great importance and critical that the input supply system in Nigeria be improved.

The poor performance of the Nigerian agriculture sector could also be characterized by so many factors ranging from low mechanization to small scale farming, outdated land tenure system, lack of access to credit, inefficiency in fertilizer procurement and distribution, inadequate irrigation system, poor storage facilities and limited access to markets. These and many more have contributed in withholding growth in the Nigerian agricultural sector. The following were among the programs launched by the government in order to revive the agricultural sector.

National Accelerated Food Production Program (NAFPP)

Agricultural Development Projects (ADP)

Operation Feed the Nation (OFN)

River Basin Development Authorities (RBDAs).

Green Revolution (GR)

Directorate for Food Roads and Rural Infrastructure (DFRRI)

Better Life Program (BLP) For Rural Women

National Agricultural Land Development Authority (NALDA)

Family Support Program (FSP)/ Family Economic Advancement Program (FEAP)

National Fadama Development Project (NFDP)

National Economic Empowerment and Development Strategy (NEEDS).

National, Special Program on Food Security (NSPFS)

Root and Tuber Expansion Program (RTEP)

Fertilizer Voucher Program (FVP)

1.1 Aims and objectives

The objective of this thesis is;

To analyze the Nigerian agricultural inputs markets and identify the problems militating against growth in the market.

To review and assess the effectiveness of government policies towards improving the Nigerian input markets.

To review and assess the role of government subsidies in supporting the development of input markets in Nigeria.

1.2 Methodology

The methodology applied on this research is mainly desk review, focused on academic publications, scientific journals, projects, and government archives and stakeholders reports.

All the information was collected qualitatively to determine production, marketing and consumption of fertilizer by farmers in Nigeria.

They were all analyzed based on the theory of demand and supply to determine the factors affecting the supply and distribution of inputs in Nigeria.

2. Literature review

Several literatures on input market in Nigeria are focused mainly on inputs such as fertilizer, seed and pesticides. Most of the literatures paid much attention on subsidies, policies on subsidies and the problems associated with it. Subsidies aimed at increasing agricultural productivity through the sale of inputs at a lower price to ensure its availability to farmers on time. But the main issue with subsidies is the difficulties in controlling its cost. That has been the case with subsidy in Nigeria where huge amount is injected into subsidizing inputs for farmers but the impact has always been low due to malpractices involved in the process. Dorward 2009 argued that low input prices could sometimes lead to misuse of inputs or the adaptation of input-intensive compared to economically efficient or labor-intensive method of production.

The Asian Green Revolution and its success have been attributed to the role played by inputs subsidies. This success has been widely discussed and documented in many literatures. For example, the popular Masagana Program in Philippines (M99) and the Badan Urusan Logistik (BULOG) in Indonesia were all key aspects of the Green Revolution's success, because of its focus on market-mediated and small farmers strategy.

As a process of agricultural development, inputs subsidy was introduced in Nigeria between 1977 and 1996. The main focus was fertilizer and seed procurement and distribution to farmers nationwide. This particular issue became a major point of many policy reforms in agriculture in the mid 80s when the adaptation of the Structural Adjustment Program was widely implemented in different developing countries. The Green Revolution and the Structural Adjustment Program were successfully implemented in Nigeria as a way of increasing productivity in agriculture and food security but due to weak policy and mismanagement in the overall system, these programs lasted just but a few years with no any positive changes in the situation.

2.1 Agricultural transformation: Growth overview

As stated earlier, between 1977 and 1996 the then administration in Nigeria in a view to transform the agricultural sector, implemented an annual fertilizer procurement and distribution program across the country. These programs were successful implemented but couldn't function properly to meet the demand for inputs by farmers especially fertilizer which is widely used by small and commercial farmers in the country. In 1997 the government without any proper transitional plans on ground decided to liberalize the fertilizer sector. This action affected fertilizer usage in the country as consumption dropped from 1.2 million tons in 1992 to 56,706 metric tons in 1997 (FMARD 2012).

Precisely two years later (1999) subsidy was reintroduced at 25% rate till 2010 under the new program called Fertilizer Market Stabilization Program. However evidence from this new action shows that only 11% of the subsidized products reach the final user compare to the 30% that was reaching them before then.

2.2 Policies and programs on Input in Nigeria: Policy overview

The first comprehensive agricultural policy in Nigeria was formulated and implemented in 1985 to operate for a period on fifteen years, focusing on macroeconomic, agriculture and service support policies. Under the macroeconomic policy, key issues regarding price, trade, exchange rate and agricultural land policies were the main focus. Specific policies of the agricultural policy deals with food production, subsidy policies and input supply. Related issues of agricultural technology, credit, insurance, marketing and research policies were all part of the service support policy.

These policies were formulated to reinforce the contribution of agriculture to food security, foreign exchange and employment in the Nigerian economy.

2.3 The Nigerian Fertilizer policy overview

Before 1976, the federal government and other state agencies were responsible for the purchase and distribution of fertilizer nationwide until the establishment of the Fertilizer Procurement and Distribution Division (FPDD) within the federal ministry of agriculture as the main centre for the purchase and distribution of fertilizer to various zones in the country.

In 1976 and 1988, the Federal Superphosphate Fertilizer Company Limited (FSFC) and National Fertilizer Company of Nigeria (NAFCON) were established as a strategy to boost domestic production volume in order to meet up with local demand for fertilizer in the country. Another landmark was the installation of several fertilizer blending plants in different parts of the country through public – private partnership.

Between 1976 and 1995, the federal government through federal – state partnership also created channels of transportation in which imported and domestically manufactured fertilizer will be distributed to local farmers throughout the country. But as demand and consumption of fertilizer products increases, the inability of the public sector to handle the procurement and distribution began to appear in leakage, lost in transits, late and non-delivery of products to specified depots, artificial scarcity and unsustainable burden on subsidy.

After a long battle with scarcity and extortion in the system, the federal government later realized that efficiency and sustainability in input supply can only be achieved through partnership. Hence the reforming of the fertilizer industry began in 1994. In 1996 the fertilizer liberalization policy was adopted as a measure to salvage the situation and to improve productivity, encourage transparency and improve marketing efficiency in the fertilizer market chain. Knowing that the system has been marred by inefficiency and mismanagement, the federal government withdrew from procurement and distribution of fertilizer products in 1997 meanwhile import tariff on fertilizer was also cut down from 10% in 1996 to 5% in 1997 and zero percent in 2000, value added tax (VAT) and excise duties were also abolished, all was done to ensure that the supply of fertilizer in the country meets the demand. However, this reform process was not supported by human capital and institutional development which are the key areas in agricultural development.

This action had a negative impact on fertilizer consumption in the country as consumption of fertilizer dropped from 500,000 nutrients tons in 1994 to 100,000 nutrients tons in 1999 (IFDC 2004).

Following the concept of partnership, some states in Nigeria later collaborated with other private sector for the production, procurement, distribution and marketing of fertilizer in Nigeria. Some of the states were able to established blending plants to meet local demands while states like Oyo purchased fertilizer from private producers and importers at market rate and sale them to farmers at subsidized prices. Nigeria is yet to establish a focus on the agricultural planning that will create an avenue for agricultural input business in the country. This is the case with many African countries and other developing countries where less priority is given to the agricultural sector as a whole (ECO 2012).

2.4 Seed Policy overview

The national policy on seed was formulated and implemented in 1992 to give guidelines on the development of seed in Nigeria. The National Seed Service under the Federal Ministry of Agricultural and Rural development was the then overall body responsible for the development, monitoring and implementation of quality control in the system. To ensure transparency and lessened government involvement, the National Agricultural Seed Decree of 1992 was enacted to render legal support to the agency and to regulate on key issues regarding production, distribution, marketing and quality control. The seed policy in Nigeria is quite similar to that of many countries in Africa and other developing countries in different part of the world. The Nigerian seed market is a bit organized and can be compared to that of India. India's seed program is considered among the best in Asia. It is believed that Nigeria could have a comparable result with India.

The national seed policy is based on international and regional standards which makes way for public sector withdrawal to ensure private sector participation. Despite that, the public and private sector's responsibility is not clearly defined. The situation has improved as the National Seed Service has a limited role which is centered on seed technology training for producers, quality control and coordination of breeder seed production. Agricultural research institution is responsible for the production of breeder seed while the private sector and the National Seed Service department under the federal ministry of agriculture

and rural development handles the production of foundation seed. Meanwhile certified seed is completely in the hands of the private sector that use contract farmers in the process.

As of 2000 there was no crop protection products manufacturing plants in Nigeria. What the government was and is still doing is to encourage the establishment of more of such plants because the marketing of crop protection products such as Agro-chemical in Nigeria is completely unorganized and lacks legislative supervision. The government through import assistance is ensuring the timely supply of these products to the needed farmers. The liberalization policy has allowed unprofessional practice in the sector leading to severe consequences in both human health and the environment. The pricing and marketing of crop protection product is directed by the agricultural development projects (ADPs).

3. Results and Discussions

3.1 Agricultural Input market assessment in Nigeria

Agricultural input market in Nigeria is fragmented and underdeveloped with no adequate support in human capital formation and institutional capacity development. Nigeria in the early 1990s again introduced input market reform but because this reform did not support human capital formation and institutional development, the country was affected negatively as the use of inputs dropped especially in fertilizer consumption where consumption dropped from 500,000 nutrients tons in 1993 to 100,000 nutrients tons in 2000. This decline in fertilizer use remained unchanged for a long period of time leading to low productivity. This could also be attributed to the closing down of NAFCON and FSFC the two major producers of fertilizer in the country then. Other inputs such as seeds and agro-chemical were affected by this policy too. Although the use of improved seeds and pesticides applies to few farmers, mainly large-scale farmers because rural farmers acquire their seeds in a traditional way where seeds are chosen and store separately after harvest to be use for the next season plantation.

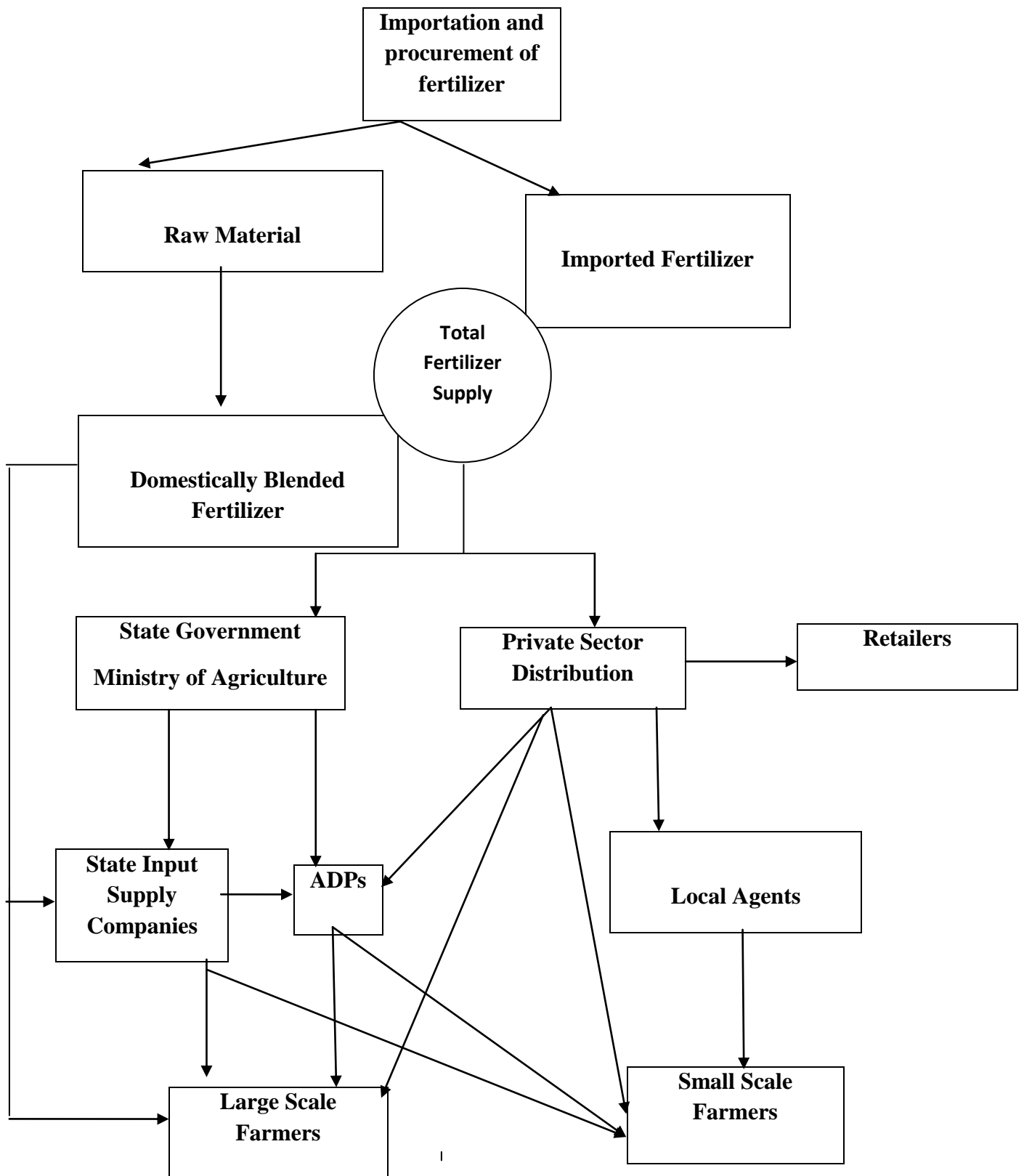


Figure 1 Fertilizer Market structure in Nigeria Source: IFDC, IITA, WARDA Report 2004

Figure 1 above clearly described the current situation in the production, procurement, distribution and marketing in the fertilizer marketing chain in Nigeria. As at 2000, there were about ten fertilizer companies dominating the market, some were engaged in importation of the finished products while others were in the business of importing raw materials for blending. Few were handling both fertilizer importation and raw material importation too.

The figure described the flow of fertilizer from top to the final users at the bottom. Large scale farmers enjoy full access to fertilizer compare to small scale farmers. This is as a result of the poor nature of the road network in the rural region that makes transportation difficult for dealers. Another considerable factor could be as a result of limited man power in fertilizer distribution chain in Nigeria that made the rural dwellers to be left out in fertilizer distribution.

Table 1 Domestic fertilizer companies operating in Nigeria as at 2000

Blending Companies	Location
Akkad Group of companies	Lagos and Kano
Golden Fertilizer	Lagos
Rim Merchant Bank	Lagos
Vita Pharm	Lagos
BUA Nigeria Limited	Lagos
Fertilizer and Chemicals	Kano
Dan Hydro	Kano
Dantata	Kano
Chemimex	Kaduna
Morris Nigeria Limited	Minna
Muka Nigeria Limited	Sango

Source: IFDC, IITA and WARDA 2004

During this period under review, the onetime giants in domestic fertilizer production the National Fertilizer Company of Nigeria (NAFCON) and the Federal Superphosphate Fertilizer Company limited (FSFC) were all out of service due to lack of maintenance and mismanagement. Although NAFCON came back to operation after few years of closure,

but was able to operate and produce at 60% of its total capacity within six months of reconstruction. Later in 2009 as the situation worsens, the federal government decided to sell NAFCON to NATORE Chemical Industry a private company. That action also affected fertilizer consumption in Nigeria but today NOTARE Chemical Industry is in full operation and it is one of the largest domestic fertilizer companies in Nigeria and the only Urea producing company in Sub-Saharan Africa (IFDC 2009).

During that time under review also were nineteen blending plants. Six were owned by private companies while thirteen were owned by state government. Some of these plants were also affected by the closure of NAFCON as few among them went out of operation since they were depending on NAFCON for raw materials. This action reflects the public-private partnership that existed in the fertilizer industry in Nigeria as both parties depend on each other for full operation. Those whose major activity was raw material supply to NAFCON could not continue to operate.

Table 2 Fertilizer blending plants in Nigeria

Blending Plants	Location
Agro Nutrients and Chemical Company	Kano State
KASCO Blending Plant	Kano State
Gaskiya Fertilizer Company	Kano State
Sasisa Fertilizer Company	Kano State
Bauchi Blending Plant	Bauchi State
Crystal Fertilizer Blending Plant	Niger State
Morris Blending Plant	Niger State
Zungeru Fertilizer Company	Niger State
F&C Blending Plant	Kaduna State
Gombe Blending Plant	Gombe State
Edo State Blending Plant	Edo State
Funtua Blending Plant	Katsina State
Borno Blending Plant	Borno State
SCENTUM AI Fertilizer	Enugu State
Kebbi Blending Plant	Kebbi State
Adamawa Blending Plant	Adamawa State
NAFCON Plant	River State
Sokoto Blending Plant	Sokoto State
Zamfara Blending Plant	Zamfara State

Source: FEPSAN 2012, IFDC, IITA and WARDA 2000

For every fertilizer either produced by the fertilizer companies or imported via public or private companies, all find their way into the Nigerian market through public or private sector marketing channels. The government method of distribution is through state input

supply agencies and ADPs or farm service centers while the private sector in the other hand reach out to both the large and small-scale farmers via their network of distributors and retailers across the country and sometimes through ADPs and FSC belonging to the state. But few among the large-scale farmers obtain fertilizers and seeds directly from the public or private sector store houses.

Table 3 Fertilizer production units, product range, capacity and locations in Nigeria

S/N	FERTILIZER PROD. UNIT	RANGE	INSTALLED CAPACITY	LOCATION
1.	Federal Super phosphate Fertilizer Company (FSFC)**	SSP	100,000	Kaduna State
2.	National Fertilizer Company of Nigeria (NAFCON) **	Ammonia Urea NPK	200,000 550,000 250,000	Onne, Port-Harcourt
3.	Fertilizers & Chemicals Co	NPK Grades	200,000	Kaduna State
4.	Morris Nigeria Ltd.	NPK Grades	200,000	Minna, Niger State
5.	Agro-Nutrients & Chemicals Co. Ltd.	NPK Products	300,000	Kano State
6.	Kano Agricultural Supply Company (KASCO)	NPK	100,000	Kano State
7.	Golden Fertilizer Company Ltd.	NPK	200,000	Lagos State
8.	Zungeru Fertilizer Company*	NA	20,000	Niger State
9.	Funtua Fertilizer Company*	NA	100,000	Katsina State
10.	Bauchi Fertilizer Company*	NPK	121,000	Bauchi State
11.	Gombe Fertilizer Company*	NPK	96,000	Gombe State
12.	Borno Fertilizer company*	NA	120,000	Borno State
13.	Edo Blending Plant*	NA	40,000	Edo State
14.	Zamfara Blending Plant	NPK	84,000	Gusau, Zamfara State
15.	Samrock Blending Plant*	NA	30,000	Sokoto State
16.	Kebbi Blending Plant*	NA	NA	Kebbi State
17.	Adamawa Blending Plant*	NA	NA	Yola,

				Adamawa State
18.	Crystal Fertilizer Blending Plan*	NA	100,000	Kagara
19.	Scentum Al fertilizers*	NA	NA	Enugu State
20.	Gaskiya Fertilizer Co	NPK	54,000	Kano State
21.	Sasisa Fertilizer Co	-do-	20,000	Kano State
22.	Morgan Int. Ltd.	-do-	60,000	Lagos State
23.	Jimco Nig. Ltd.*	-do-	NA	Lagos State
24.	Yobe Fertilizer Co*	NA	NA	Damaturu, Yobe State
25.	Pacesetter Organic Fertilizer Co. Ltd.*	Organic Fertilizer	NA	Ibadan, Oyo State
26.	Cybernetics Nig. Ltd.*	Micro Nutrients	NA	Kaduna State
27.	Albarka Agro Allied & Chemical Nig. Ltd*	NA	NA	Kano State
28.	Aweba (Nassarawa) Fertilizer Co.*	NA	NA	Nasarrawa State
29.	Plateau Fertilizer & chemicals Co.*	NA	NA	Jos/ Bocos Plateau State
30.	Ebonyi State Fertilizer & Chemicals Co.*	NA	NA	Abakaliki
31.	West African Fertilizer Co.*	NA	NA	Okpella
32.	Bauchi Kaolin Industry*	NA	NA	Bauchi State
	TOTAL		2,945,000	

Source: FFD and IFDC Reports

* Some details about their production figures or brand are not available

** Manufacturing plants, currently not in production.

The above table shows that as at 2007 there were 32 domestic fertilizer companies and blending plants in Nigeria, they were owned both by public and private companies. But at that time the two major public fertilizer companies were out of production. There is no real number to suggest how many fertilizer companies are still functioning. This also forms part of the limitations encountered at the time of this review.

Table 4 Fertilizer importation and export 2001 - 2010

S/No	Item	Element	Year	Units	Value
1	Fertilizer	Import value	2001	1000 USD	12,418.00
2	Fertilizer	Import value	2002	1000 USD	49,169.00
3	Fertilizer	Import value	2003	1000 USD	29,056.00
4	Fertilizer	Import value	2004	1000 USD	100,000.00
5	Fertilizer	Import value	2005	1000 USD	150,000.00
6	Fertilizer	Import value	2006	1000 USD	213,050.00
7	Fertilizer	Import value	2007	1000 USD	281,918.00
8	Fertilizer	Import value	2008	1000 USD	159,452.00
9	Fertilizer	Import value	2009	1000 USD	107,697.00
10	Fertilizer	Export value	2009	1000 USD	2,563.00
11	Fertilizer	Import value	2010	1000 USD	111,045.00
12	Fertilizer	Export value	2010	1000 USD	724.00
	TOTAL	Import Value Export Value			1,213,805.00 3,287.00

Source: FOASTAT 2011

From the above table, the total number of import exceeded the total number of export indicating that Nigerian fertilizer sector is barely functioning. There is high dependence rate on import to meet local demand which is risky looking at the number of farmers that are in the agricultural sector. The main reason behind this, is closure of NAFCON and FSFC which use to supply not only Nigerian farmers but others across Africa too. This is a proof that the fertilizer industry in Nigeria needs development to enable it function properly.

Table 5 Fertilizer Consumption 2001 - 2007

S/No	Item	Element	Year	Units	Value
1	Total fertilizer	Consumption	2001	Tones	221,000
2	Total fertilizer	Consumption	2002	Tones	402,223
3	Total fertilizer	Consumption	2003	Tones	118,181
4	Total fertilizer	Consumption	2004	Tones	162,420
5	Total fertilizer	Consumption	2005	Tones	539,390
6	Total fertilizer	Consumption	2006	Tones	428,519
7	Total fertilizer	Consumption	2007	Tones	34,250
8	Total fertilizer	Consumption	2008	Tones	-
9	Total fertilizer	Consumption	2009	Tones	-
10	Total fertilizer	Consumption	2010	Tones	-
	TOTAL				1,905,983

Source: FAOSTAT 2009

Available records from the table above indicates a total consumption in tones for seven years from 2001 – 2007 as results for the others years were not available at the time of this report.

The improper functioning of the input market has increased the cost of acquiring inputs as farmers are meant to pay high and different prices of the same product in different region of the country. The table below shows the discrepancies in fertilizer prices in Nigeria.

Table 6 Fertilizer Market Report December 2012 (price variation in the six geopolitical zones)

Type of fertilizer	Kaduna Price ₦	Kano (NW) Price ₦	Bauchi (NE) Price ₦	Benue (NC) Price ₦	Edo (SS) Price ₦	Imo (SE) Price ₦	Oyo (SW) Price ₦	Overall Average Price ₦
NPK	4,800.00	4,860.00	4,288.00	4,667.00	6,000.00	5,250.00	5,200.00	4,993.00
Urea	4,350.00	4,725.00	5,000.00	5,500.00	5,500.00	5,000.00	5,100.00	5,098.00
SSP 0-18-0	3,500.00	-	3,200.00	4,000.00			-	3,620.00
Crystallizer			1,200.00				-	1,200.00
Agrolyzer 300g	150.00		500.00				-	325.00
1kg	550.00						-	550.00
Organic/liquid ft			2,000.00				-	-

Source: FEPSAN 2012

Table 7 Price variation within the six geopolitical zones

Type of fertilizer	Kaduna Hqtrs Price ₦	Zamfara (NW) Price ₦	Taraba (NE) Price ₦	Niger (NC) Price ₦	Ebonyi (SE) Price ₦	Ekiti (SW) Price ₦	Overall Average Price ₦
NPK	4,800.00	4,860.00	4,900.00	4,667.00	5,200.00	5,750.00	4,993.00
Urea 46-0-0	4,350.00	4,550.00	5,300.00	5,000.00	5,400.00	5,750.00	5,092.00
SSP 0-18-0	3,500.00	3,100.00	4,300.00	-	-	-	3,620.00
Crystallizer	-	-	-	-	-	-	1,200.00
Agrolyzer	150	-	-	-	-	-	325.00
	550	-	-	-	-	683.00	550.00
Other organic liquid fertilizer			1,400.00				

Source: FEPSAN 2012

Table 8 Fertilizer Market Report January 2013 (price variation in the six geopolitical zones)

Type of fertilizer	Kaduna Hqtrs Price ₦	Kano (NW) Price ₦	Bauchi (NE) Price ₦	Benue (NC) Price ₦	Edo (SS) Price ₦	Imo (SE) Price ₦	Oyo (SW) Price ₦	Overall Average Price ₦
NPK	5,088.00	4,894.00	5,050.00	4,333.00	6,000.00	5,200.00	5,275.00	5,055.00
Urea 46-0-0	4,813.00	5,350.00	4,500.00	5,000.00	5,500.00	5,400.00	5,200.00	5,185.00
SSP 0-18-0	-	-	-	4,000.00	-	-		3,817.00
Crystallizer	-	-	1,200.00	-	-	-		1,200.00
Agrolyzer	150.00	-	-	-	-	-		
	550.00	-	-	-	-	-		
Organic, Liquid Ft		-	2,000.00	-	-	-		2,000.00

Source: FEPSAN 2013

Table 9 Price variation within the six geopolitical zones

Type of fertilizer	Kaduna Hqtrs Price ₦	Zamfara (NW) Price ₦	Taraba (NE) Price ₦	Niger (NC) Price ₦	Ebonyi (SE) Price ₦	Ekiti (SW) Price ₦	Overall Average Price ₦
NPK	5,088.00	4,704.00	5,333.00	4,350.00	5,2275.00	5,900.00	5,055.00
Urea 46-0-0	4,813.00	4,800.00	5,500.00	4,900.00	5,400.00	6,000.00	5,185.00
SSP0-18-0	-	3,150.00	4,300.00	-	-	-	3,817.00
Crystallizer							1,200.00
Agrolyzer	150.00					150.00	
	550.00					550.00	
Other organic liquid fertilizer							2,000.00

Source: FEPSAN 2012

The tables above show changes in the prices of fertilizer between December 2012 and January 2013. Retail prices reflect increase in all of the six geopolitical zones in the country. NPK 1.25%, Urea 1.71%, SPP 5.44%, Agrolyzer 23.09%. Only Crystallizer remained unchanged within this period under review (FEPSAN 2013). The increase of between 1 – 23 % indicates uncertainty in the fertilizer market in Nigeria and this could also be attributed to the current situation of weak price control policy, decay nature of transportation infrastructure and the lack of solid human capital development in many rural region, allowing the monopoly of the market in those areas.

3.2 The Nigerian Seed Market

The seed market in Nigeria is made up of both formal and the informal sector. The formal sector includes seed production and distribution agencies and registered private seed companies. The informal sector comprises of community based organization involved in seed production and NGO's. Main players in the sector are ADPs Agencies, National Seed Service and other governmental agencies. Three main categories of seed production are recognized by the National Seed Program in Nigeria. They are the breeder, foundation and certified seeds. Both public and private seed companies get breeder seeds supply through the National Agricultural Research Institutes (NARIs) and International Agricultural Research Center (IARCs). Other research institution such IITA, WARDA, and ICRISAT are collaborating with NARIS to develop more of breeder seeds in Nigeria (IFDC 2013). Upon production the breeder seeds are passed to the National Seed Service and private companies for the production of foundation seeds. Contract growers are contracted by both sectors to produce foundation seeds. But certified seeds are completely in the hands of the private sector.

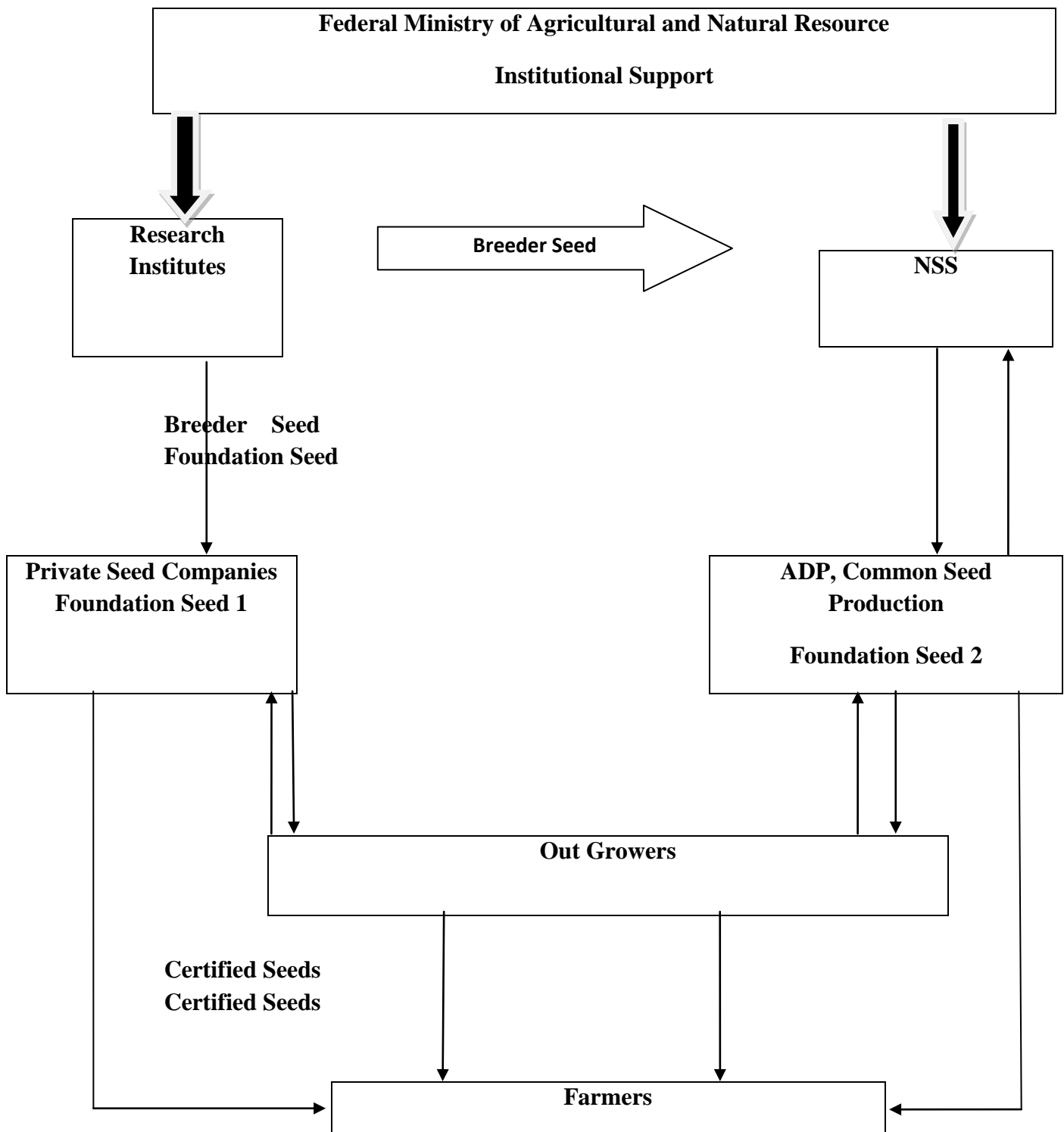


Figure 2 Seed production and distribution. Source: IFDC, IITA, WARDA Report 2004

The seed market in Nigeria is barely functioning and sometimes filled with bad quality seeds as funds allocated to the National Seed Service is not adequate enough for training and quality control purposes. Government investment on seed production is quite low

compare to that of fertilizer. There are about thirty two registered seed producers and sellers in Nigeria as shown in the table below.

Table 10 Registered Seed Companies in Nigeria

S/N	Category	Seed Company's Name	Location
1	Large	Premier Seeds Nigeria Limited	Kaduna State
2	Large	Maslaha Seeds Nigeria Limited	Zamfara State
3	Medium	Alheri Seeds Nigeria Limited	Kaduna State
4	Medium	Terratiga Seeds Limited	Kano State
5	Medium	West African Cotton Company Limited	Katsina State
6	Small	Nagari Seeds Nigeria Limited	Kaduna State
7	Small	Green Agriculture West African Ltd	Kebbi State
8	Small	Asmau Memorial Limited	Adamawa State
9	Small	Champion Seeds Limited	NA
10	Small	Girmal Agric. Company Services Limited	Adamawa State
11	Small	Dan Agro Industrial Company Ltd	Kaduna State
12	Small	Wadata Seeds	Kaduna State
13	Small	Manoma Seeds Limited	Katsina State
14	Small	Green Sands Technical Limited	Yobe State
15	Small	M'Billa Farms, Subsidiary Sabore(EPZ) Farms	Adamawa State
16	Small	Da-All Green Limited	Kaduna State
17	Small	Seed Project Company Limited	Kano State
18	Small	Maina Seed	Kano State
19	Small	Elite Seed Company Limited	Nassarawa State
20	Small	Daddo Seed/Seedlings Limited	Adamawa State
21	Small	Savannah Seed Limited	Plateau State
22	Small	Inganchi Seed Limited	Katsina State
23	Small	Jikur Seed Limited	Borno State
24	Small	Mathtech Agro Nig. Ltd	Kaduna State
25	Producer/Seller	Value Seed Limited	Kano State
26	Producer/Seller	Nyam Agric Ventures	Kaduna State
27	Producer/Seller	Tony Best Agric. Centre	Edo State
28	Producer/Seller	Ogun State Agro Service Corporation	Ogun State
29	Producer/Seller	Institute of Agric Research and Training	Oyo State
30	Producer/Seller	Salami Farms Nig.	Kaduna State

31	Producer/Seller	Delta agric. Procurement Agency	Delta State
32	Producer/Seller	Rosemary Venture	Plateau State

Source: NASC 2013

The table above indicates that only eight certified private and public companies are engaged in seed production and selling. Looking at Nigeria's population in agriculture, it is obvious that this number cannot meet the needs of both small-scale and large-scale farmers if they are to depend on improved seeds alone to boost productivity. This is a setback to many local farmers knowing that agricultural is their only source of income and food. Therefore any shortage in inputs availability could lead to low productivity and a major crisis in terms of food security.

To understand the sustainable agricultural input market in Nigeria, financial, social, economic and political business factors must be understood. Finance is the backbone of every business. Without full access to finance competitive market cannot function effectively. In Nigeria, only few banks are willing to grand loans to fertilizer importers and seed developers. The economic factors provide an insight on the strategy to use in order to increase real income of the entire society. On the other hand, social factors include improvement in the general wellbeing of the society in the area of social benefit. The political institution is expected to create laws and policies that will be favorable to every business operation.

Although the current situation in the agricultural industry in Nigeria is still under development especially in the inputs sector, but there are still opportunities to exploit since a large portion of the population is engaged in agriculture. This large number calls for high demands of agriculture inputs thus, established a ground for agriculture input markets development since increase in productivity is tight up to effective use of inputs. To revolutionize the agricultural sector in Nigeria, investment in science-based agriculture and inputs marketing and input use is the only option left for Nigeria to adopt.

3.3 The structure of agrochemical market in Nigeria

The agrochemical market is completely controlled and run by private investors but still the market is not well-organized and not properly regulated. It is control by all kinds of traders due to trade regulations that allow their existence and the weak regulations in place for their operation. Their existence has made it complicated to determine market shares and sizes. The estimate of their supply of agrochemical is estimated at about 65-70% of the overall total of agrochemicals demanded in Nigeria. This indicates that the market is still performing despite her unorganized nature. Among some of the chemicals supplied are herbicides, insecticides, fungicides, seed treatment chemicals, rodenticides and nematicides. Major companies in the business were;

- Chemical and Allied Products (ICI),
- Swiss Nigerian Chemical Company Limited (Ciba-Geigy)
- National Oil and Chemical Marketing Company (Shell)
- BASF Nigeria Limited (BASF)
- Unichem Nigeria Ltd (Bayer)
- Ibachem Nigeria Ltd (Dow Elanco)
- Nigeria Hoechst (Hoechst)
- Rhone Total (Rhone Poulenc)

For years the market has experience slow paste in growth both in size and patronage. It used to be dominated by eight large companies. Although the number has increased now but due to the nature of weak market information system in Nigeria, it is difficult to tell how many they are now because there are no available figures to ascertain their number. The structure of the market and how agrochemical is distributed is shown below.

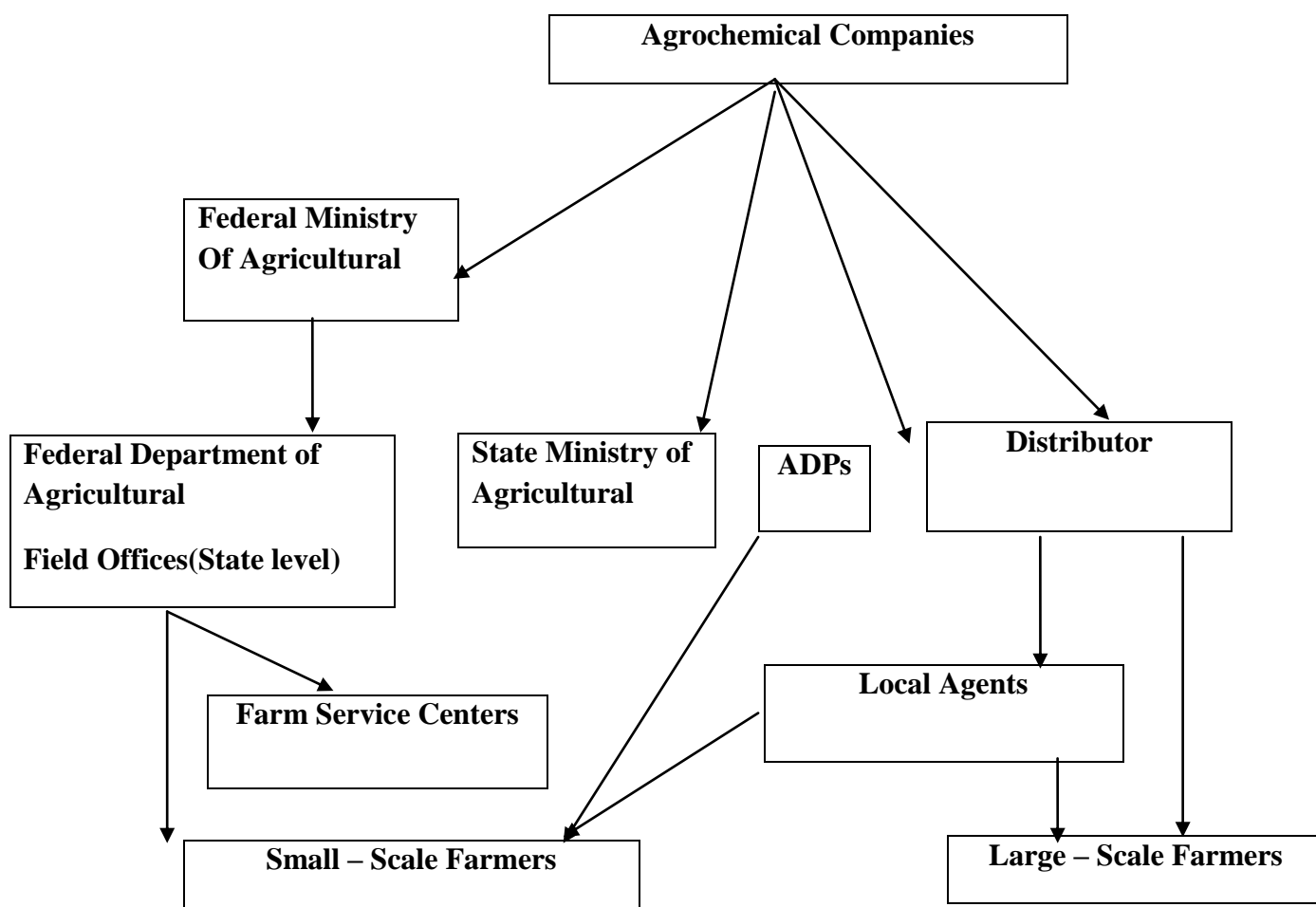


Figure 3 The Structure of Agrochemicals Market in Nigeria Source: IFDC, IITA, WARDA Report 2004

The figure above shows the flow of agrochemical from the private companies down to the final users. The federal government is supplied with the product at the national level, which it then supply to her agents at the states level and the states will in turn distribute it to their farmers directly or through farm service centers. The states are sometimes supplied directly through states ministry of agriculture, ADPs or established agrochemicals distributors. Information available indicates that large scale farmers are supplied directly by agrochemical registered agents and about 60% and above is sold to them while 40% and below is given to small-scale farmers via ADPs.

Like the seed and fertilizer market, agrochemical market in Nigeria is also having some constraints undermining growth of the market. Few among it is low demand of agrochemicals due to weak purchasing power of the local farmers, high cost of

procurement and distribution and the unorganized nature of the distribution system resulting from weak policy. There were indications of many companies leaving due to the continual deteriorating nature of the Nigerian agricultural system yet there are ample opportunities abound in the agrochemical industry yet to be tapped.

3.4 The Demand and Supply of inputs in Nigeria

The demand and supply of agriculture inputs like any other product in the market is determine by certain forces such as change in population, change in income, price, quality, economic growth, supply and changes in government policy. Changes in these factors reflect in the global macroeconomic activities in agriculture. For example; change in dietary, and income growth, technology, bio-fuels e.t.c. in the global economic context, factors such as changes in oil prices, trade, and exchange rate affects the demand and supply of agricultural inputs in the market.

The case is not different in Nigeria. Considering the fact that 70% of Nigeria's population is into agriculture in one way or the other, the conclusion on inputs demand such as fertilizer tend to be higher than the supply despite the fluctuation in the prices of fertilizer frequently. Increase in domestic prices of fuel in Nigeria always has a negative impact on prices of agricultural products and other household goods because these changes affects the cost of transportation leading to consumers paying high prices for goods and services in the country. For local farmers, especially small-scale farmers, these changes often leave them with no choice than spending larger portion of their little income in input buying.

3.5 Major issues in fertilizer

Fertilizer has been proven to be one of the most important agricultural inputs that is needed to boost agricultural productivity. The fertilizer subsidy programs introduced by the federal government of Nigeria as method of enhancing productivity have been marred by inconsistencies, ambiguities and instability (Jeminiwa 2011). These practices have raised unanswered questions in the application, impact and sustainability of the program.

Fertilizer has been subsidized in Nigeria since 1976 with about 85% rate high. The federal government through the Federal Market Stabilization Program (FMSP) purchase and sale fertilizer to the state government at a subsidize rate of 25%, and the state government and local government council also subsidized the product to ensure that it is available to the local farmers within their locality.

Among the core content of Nigeria's vision 20:2020 is improving food security by increasing agricultural productivity by 6% in 2015. Two years to the target and food importation is still at the increase. A total of USD\$3 billion was spent on food importation in 2010 which includes agricultural products like rice, wheat, and bean.

Despite a 40% contribution to the GDP in the last eight years (2001 – 2009), Nigeria's agricultural sector is still considered weak and underdeveloped. The steady contribution in past eight years is not attributed to increase in productivity rather expansion in land area cultivation (Vision 20:2020 Report 2009). Inefficiency in the agricultural sector is always characterized by poor use of inputs. The continuation in the subsidy program has not really change the long pending problem as fertilizer use is still below economic demand. Fertilizer consumption is currently estimated at 13kg/ha which is below the 200kg/ha recommended by FAO and the UN. Africa in general has the lowest fertilizer consumption in Kilogram per hectare consuming only 9kg/h compare to regions like Latin America, South Asia, and South-East Asia where fertilizer consumption stood at 86kg/h in Latin America, 104kg/h in South Asia and 142kg/h in South-East Asia (Jeminiwa 2011).

The success of the Green Revolution in many Asian countries has been attributed to the effective use of inputs which lays a solid foundation for economic growth and agricultural development in some of the Asian countries.

3.6 The study

The changes that were made in the fertilizer policy and program covered the following areas;

- Government monopoly in the procurement and distribution of fertilizer across the country
- Price control and subsidies at retail market
- Credit to farmers
- Import tariffs
- Procurement and distribution decentralization
- Market regulations

But these reforms under review proved that the continuous changes in inputs policy and the dual fertilizer market promotion have actually hindered private sector response especially when the sector was liberalized in 1997. Few among the major problem with fertilizer and seed supply in Nigeria is the persisting problem of quality, arbitrage and over invoicing by importers. But quality, high price and availability is what many local farmers are faced with. If prices of fertilizer and other inputs will be decreased and the product made available in good quality, farmers will buy more fertilizer at prevailing market prices. Affordability and lack of knowledge about the importance of fertilizer has never been a problem to many farmers in Nigeria, the primary problem is the absent of the product at the time it is needed.

3.7 Role of subsidy

For every input subsidy program to succeed, it must meet its main objectives. Input subsidies have been in use for quite a long time now in many African countries as a tool to meet farmers demand for input in order to increase agricultural productivity and reducing food insecurity. Subsidies have also been used to develop a competitive private sector for inputs supply (Hiroyuki et al 2012). But argue that, fertilizer subsidy sometimes could crowd-out the participation of private sector if not implemented properly like the case in Nigeria.

The fertilizer market structure in Nigeria and the role of subsidy programs has led to a complex fertilizer distribution scheme where private and state subsidized fertilizer is distributed concurrently. But the private sector has always been at the losing side because some farmers prefer to wait for the distributed fertilizer than buying from the private dealers.

Since mid 1970s, Nigeria has introduced reforms to revitalize her agricultural sector. Major among these reforms were in the area of subsidies. From 1976 – 2009 a total of 119,552,699,196.75 trillion Naira was spent on subsidies without any provision for private sector participation. The crowding-out of the private sector due to subsidies is what has affected the Nigeria input market till date. If the private sector were allowed to participate in the procurement and distribution of fertilizer, the situation would have been different now with a better advantage to the farmers even when subsidies are removed.

Table 11 Cost of subsidy since implementation

YEAR	COST OF SUBSIDY (₦)	REMARKS
1976	23,727,000.00	
1977	19,057,000.00	
1978	19,270,000.00	
1979	39,812,000.00	
1980	35,467,000.00	
1981	48,758,000.00	
1982	68,136,000.00	
1983	55,135,000.00	
1984	42,655,000.00	
1985	61,860,000.00	
1986	260,552,000.00	
1987	440,323,000.00	
1988	694,493,000.00	
1989	725,697,000.00	
1990	1,999,979,000.00	
1991	2,202,253,000.00	
1992	6,826,277,000.00	
1993	7,220,264,000.00	
1994	8,917,725,000.00	
1995	28,979,000,000.00	
1996	17,711,000,000.00	

1997	NIL	Subsidy withdrawn
1998	NIL	Subsidy withdrawn
1999	969,000,000.00	
2000	NIL	Subsidy withdrawn
2001	1,683,000,000.00	
2002	1,485,000,000.00	
2003	1,188,000,000,.00	
2004	2,459,160,000.00	
2005	1,750,432,212.50	
2006	3,507,200,000.00	
2007	4,855,590,994.25	
2008	14,263,875,990.00	
2009	11,000,000,000.00	

Source: FEPSAN Report 2010

3.8 The new voucher program

After a long decade of battling with failed programs on inputs development, the federal government of Nigeria in collaboration with the International Fertilizer Distribution Company (IFDC) implemented another program called the '*fertilizer voucher program*' where about 1.2 million farmers have seen benefited and another 1500 agro-dealers in fertilizer and improved seeds.

Small farmers who benefited from the program confirm the effectiveness of the voucher program because since the changes in government policy which affected the input industry, for the first time in ten years they were able to buy fertilizer at a cheaper rate. The voucher program is seen as a gateway for farmers to obtain inputs and at the same time building business opportunities that will serve as a channel of input distribution to the rural farmers. This program is considered '*Smart Subsidies*' due to the fact that they provide farmers with inputs without interrupting the commercial market.

The heavy subsidy in the fertilizer program in Nigeria created no incentive for private sector to form a distribution network or retail sales outlets. This prevented the fertilizer from reaching the small farmers who needed the product most.

3.9 The success of the voucher program

The overall assessment of the concept of the voucher program seems acceptable by many because it is working well by targeting mainly the rural poor who actually need fertilizer for their crops. But after a close study of how it operates there is still corrupt practices and mismanagement as the case with subsidy. Although, these practices are not visible enough to generalize it on the whole voucher program time shall tell as it is still new and in operation in few states in the northern part of Nigeria. Most of complains about the new voucher program is the delay in supply which is affecting the smooth running of the program and affecting mostly the rural areas.

Table 12 2009 and 2010 fertilizer voucher program in Nigeria

Description	2009	2010
Number of state participation	2	4
Number of benefited farmers	194,000	171,000
Amount of fertilizer sold via the voucher program	29,800	16,397
Purchasing power support by participating government (\$ millions)	\$7.90	\$4.40
Aggregate amount of fertilizer sales (\$ millions)	\$18.70	\$10.60

Source: IFDC 2011

The above table indicated a reduction in quantity just a year after the program was implemented which is due to the already mentioned problem of corruption, mismanagement and delay in supply. Nonetheless about 90% of the total farmers who participated in the program were able to obtain fertilizer compare to the 30% and 11% during the subsidy era. Meanwhile not all the farmers participated in the implementing states; therefore the general conclusion of the effectiveness of the program can only be linked to those who participated.

3.10 Major issue in the seed market

Compare to the fertilizer market, the formal seed market in Nigeria is less efficient, less effective and unattractive to a large number of rural farmers. The reason behind the lack of patronage by the local farmers is that, rural farmers practice the traditional method of acquiring seeds, in which part of the total harvest is selected and kept as seed to be use the next planting season. Sometime they will either obtain from their fellow farmers or at the local market where the seeds are similar and believe to be in good shape for planting.

This particular practice has been in existence among the locals for decades now. However, on the expert view, factors associated with the underdevelopment of the input market are not far from that factor affecting the seed market. For example; pricing policy, inadequate manpower, insufficient funding and lack of clarity in the role of the private sector and the public sector is what has been affecting the seed market. The need to address these issues will usher in a comprehensive development in the seed market that will educate mainly the rural dwellers on how improved seeds can help them increase their level of productivity and at the same time increase food security.

4. Key Constraints to the development of agricultural input markets in Nigeria

After a critical analysis of the input market situation in some selected African countries namely, Tanzania, Malawi, Zambia, Ghana and Kenya. It is obvious that input market conditions are almost the same in Africa compare to other continents. But the case in Nigeria seems to be different. Beside the subsidy regime that created little room for private sector participation in input market development, there are three main factors affecting this sector that need to be address.

Macro policy factors

Market development factors

Infrastructure factors

Technical factors

4.1 Macro policy factors

For every product market to develop, a well functional and enabling policy environment such as human capital, easy access to finance, market information and effective implementation of reforms and regulations. The input market in Nigeria has remained underdeveloped for decades now due to these above mentioned factors. The macroeconomic instability in the area of naira depreciation, exchange rate, inflation, and high interest rate charge by money lenders have discourage the private sector participation in making any meaningful investment in the input market development despite government' withdrawal from the control of the market.

The continuation in the Naira depreciation is a major concern to investors. The naira depreciated from 8 naira per US dollar in 1990 to about 100 naira per US dollar in 2000 and between 157 to 160 naira per US dollar in 2013. This change does not only increase domestic currency cost of inputs importation, but also discourages private importers from investing in inputs supply.

The importation of agricultural inputs is capital intensive that needs a long maturity period. Inputs delivery takes 3 – 4 months upon ordering from the global market and another 6 – 9

months period to recover the investment from farmers. This long process indicates that importers commit their resources for almost a year during importation. Therefore, any depreciation in currency after order has been placed could lead to increase in price and low demand by farmers as farmers are more sensitive to price and other factors that may affect their purchasing power.

Collateral deposit requirement by money lenders and full payment for letter of credit is another barrier under this segment because it makes importation quite complicated and risky. The risky nature of the business has forced private investors to look into products like electronics and other consumable goods with high returns on investment and low maturity period. Currency stabilization and reduction in interest rates is essential to attracting private investors into input business in Nigeria.

4.2 Market development factors

Market development factors refer to the overall factors affecting the general market environment such as;

- Uncertainty in government Policy
- Lack of human capital
- Weak or absent of government regulatory framework
- Lack of easy access to finances
- Lack of market information

4.3 Policy uncertainty

The uncertainty of government policy has been in the fore front in disrupting the general business in Nigeria especially in the agricultural sector. The uncertainty, instability and inconsistency in government policies and reforms towards agriculture in Nigeria has deterred growth, distribution and pricing policy in the inputs sector. The continual changes sidelined the private sector and their ability to partner with the federal government of Nigeria to develop and sustain the input market. Unlike the case in Kenya, where the government policies gives room for an open market in the agricultural sector to

accommodate the private investors who engage in inputs importation and distribution, the Nigerian input market still suffers with policy uncertainty.

For example, in 1997 fertilizer procurement and distribution was liberalized and subsidies were completely removed. The action encouraged private participation in the purchase and distribution of fertilizer of who were mostly traders and owners of blending plants. One year later, in 1999 a 25% subsidy on fertilizer was announced which forces dealers to sale fertilizer to state and local government councils below the price of purchase. The development became a set-back to many investors as they were operating under lost which many abundant the importation of fertilizer after disposing their stocks. This period saw a rise in fertilizer prices and shortage too as farmers couldn't get their hands on the product on time. In 2000 again subsidy was removed only to be replaced by 5% reduction in import tariff. To worsen the situation, some of the states do not comply with the federal government' decision and sometimes procure and subsidized fertilizer to be sold to their local farmers thereby crowding-out private dealers in the supply chain. State government is allowed to subsidize agricultural inputs for their farmers without the interference of the federal government. But the system has a negative effect on the input market which sometimes leads to cross-border leakage.

However, this instability in government policy has not only undermined the participation of the private sector but has also destroyed the business environment in Nigeria and agriculture in particular has been on the losing side since the discovery of oil in commercial quantity.

4.4 Shortage in human capital

The required human capital needed to establish an effective and sustainable agricultural input market in Nigeria is limited both in quality and quantity. The numbers of dealers in agri-input distribution are predominately in the urban and semi-urban centers, leaving the rural region with no dealers to supply them with the needed input at the time of need. This most times causes a delay in input application especially fertilizer which has a specific period of application if not will reduce the percentage of output.

On the other hand, the lack of managerial skills, business planning skills, forecasting demand and supply, marketing and technological knowledge on fertilizer, seed and agrochemical is generally lacking in the input market development, thereby allowing input markets to be established in the urban centers where the percentage of those involved in agriculture is low compare to the large number in the rural regions. Although the recent fertilizer voucher program is trying to reach out to the rural areas by creating distribution points to meet the large demands of the rural farmers.

A well-developed and functioning input market is made up of a dealer network that functions efficiently in the supply of inputs to farmers in both the rural and the urban centers to ensure availability and in affordable prices. Compare to Kenya with about 3000 and above inputs dealers, Nigeria has a limited number of input producers, only 32 registered seed companies and 32 fertilizer manufacturing and blending companies. Out the 32 fertilizer companies, some have no records to determine their level of operation and the capacity they produce.

Nigeria along with countries like Malawi, Zambia, Tanzania, Ethiopia and Madagascar are rated among African countries with limited inputs service creating scarcity for farmers in these countries leading to limited consumption. Huge investment on human capital development will be needed in order to revive the input market and have it perform efficiently.

4.5 Weak government regulatory framework

This study found out that quality control and input monopoly is still posing a great challenge to the input market in Nigeria. The role of government in formulating and enforcing rules and regulations concerning standards and quality measures, safety on how to use and dispose inputs and any other business ethics has been neglected, allowing the adulteration of products. In the year 2000 due to high demand of fertilizer with limited supply, many Nigerians were victims of fertilizer adulteration where sand was mixed with Urea and sold in NAFCON bags (IFDC 2001). The role of government to monitor and regulate this practice is inadequate as the same problem is still happening in few parts of the country today.

Similar countries also experience that. For example in Malawi more than 1 million liters of expired pesticides were found in many retail shops across the country ready to be sold to farmers but due the law that allow inspection these products were found and confiscated, while the situation in Nigeria was discovered by farmers after the purchase of the product.

Another common practice that is not checked is the selling of inputs in same store with food items such as rice, maize, millet and soybeans. In most part of the rural areas, fertilizer is sold in small quantity of 1 or 2 kg due to farmers' inability to purchase in large quantities this does not only posed danger to human health but sometimes leads to lost of nutrients in the fertilizer if left opened for a long time.

Enforcement of a comprehensive regulatory framework in needed if Nigeria is going to fight fertilization and agrochemical adulteration in the country. Monitoring and evaluation of inputs movement and distribution to farmer should be a continues exercise to ensure compliance with regulations in the input sector.

4.6 Lack of access to finance

Agricultural inputs business is capital intensive and requires the support of financial institutions in the area of loan with considerable interest rate. Since the instability in the agricultural input market and the frequent changes in government policies and reforms, it has become almost impossible for importers to obtain loan from the commercial banks to support input market development in Nigeria. But in 2012 about 11 banks agreed to support agricultural development in Nigeria by investing in inputs and training on modern technology to boost productivity. This action has ushered a new hope for the agricultural sector in Nigeria and called for the formation of farmers cooperatives that will serve as point of contact in obtaining inputs.

Many commercial banks are afraid of investing in inputs business due lost of huge amount of money in the past as a result of inconsistency in agricultural business environment. There are good number of commercial banks with enough liquidity to invest in agricultural development in Nigeria by granting loan to dealers and importers, but are so reluctant due to the uncertainty that exist in the agricultural sector in Nigeria. Government must find a way of inducing the commercial banks to invest in agric-input market development in Nigeria.

4.7 Lack of access to market information

Market information is crucial to market development because it direct the flow of information and ensures market transparency. The essence is to create room for market planning and reduces cost of transaction which eases distance trade. Market information system coverage in Nigeria is limited and sometimes appears in different market segment. Due to insufficient resources, the dissemination of market information in Nigeria is weak and amount to none in some situation. At the time of compiling this report, vital information about fertilizer and seed production in some companies were not available, making it difficult to ascertain the functionality of the input market in Nigeria. This poses a threat to input market development in Nigeria. Inadequate market information makes it difficult for;

- I. both the government and private institutions to future plans in order to address shortages or carryover stocks for the next business year.
- II. the private sector to meet current market requirements and shortages in different regions of the country and plan on marketing strategy that will meet farmers demand at the same time enable the maximizing of profit for their investment.

4.8 Technical factor

The agricultural sector in Nigeria provides employment to about 70% of the total population. A large number of this 70% are smallholder farmers predominantly in the rural and semi-urban areas. The lack of knowledge on the appropriate input to use is still a major concern to the smallholder farmers in the rural areas. For example in Tanzania, local farmers growing food crops were using topdressing fertilizer to grow food crop while others uses a mixture of DAP and CAN for topdressing which is not effective as it produces low yield.

Although the use of pesticides is quite limited among local farmers in Nigeria, it is common to commercial farmers not on the fact that people lack the knowledge on how to apply it but this arises on the fact that small holders farmers are not often threatened by pest and prefer to weed their crops than to apply chemicals to get rid of them. These type

of farmers need to be educated on which fertilizer to apply and on which crop. There is a need to enlighten them on how to use modern technology to such as tractor, seed dryer and weeding machines to increase productivity. Many among these farmers lack the knowledge on how this modern technology works.

4.9 Infrastructural decay

In many developing countries including Nigeria, major highways and roads linking the urban centers and the semi-urban centers are well tarred and maintain while roads leading to the rural regions are always in bad shape. This is one of the common features of the developing countries which make agricultural business difficult for many rural dwellers leading price discrepancy in inputs purchase.

The isolation of the rural region can only be eliminated when roads leading to the rural areas are well maintained. The Nigerian rural farmers do complain of paying extra on fertilizer prices compare to their counterparts in the urban and semi-urban areas. Since independence, billions of dollars has been invested in road construction in different parts of Nigeria but the result has always come out negatively due to the corrupt practices of the government officials involve caused by weak policy. On several occasions, funds will be allocated to contractors who sometimes are government official for road construction in some regions, this funds will be collected without any visible construction taking place.

In 1998 – 2003 the USAID under the Rural Road Project constructed gravel roads of about 1,175 km in four major regions in Tanzania. These roads were able to link 18 different districts to the urban centers making it easy for the local farmers to buy inputs and sell their farm products when the need arise. The case might not be the same in every part of Tanzania as the northern region is still struggling with dilapidated roads too.

In 1986 the ruling government then introduced a program under the title, Directorate of Food, Roads and Rural Infrastructure for rural development (DIFRRI). The program was meant to provide feeder roads, electricity, safe drinking water and sanitary facilities to the rural dwellers. A total of \$1.9 USD billion was budgeted and spent and banks such as The People's Bank and The Community Bank of Nigeria were established. But half way into the project, contractors abundant the contract and some made away with the funds without

erecting any structure while others were able to provide un-tarred roads and bore holes in some rural communities.

The railways which serves as a major means of transport in Europe and other developed nations, has not been in existence for several decades now in Nigeria, forcing dealers to transport inputs by road which many are afraid could lead damaging their trucks. The nature of insecurity in the rural areas also poses a threat to inputs dealers in Nigeria.

However, the major challenge that agricultural input business is facing in Nigeria could be attributed to corruption. Several programs by different administration has been implemented on the need to bring back Nigeria as a major exporter of agricultural products as it used to be in the past has failed due to corrupt practice among government officials and those in-charge of handling the situation. The input market is not the only affected area in terms of underdevelopment, the general business environment in Nigeria is facing this particular crisis too that is why reforms after reform will be made, programs after programs will be initiated yet nothing positive has come up. The market situation in agriculture has remained the same since the sector suffers negligence in the early years of oil discovery in commercial quantities and has gone from bad to worst.

4.10 Strategy for development

The step Nigeria took in 1997 to liberalize the fertilizer supply system was suppose to be a step forward in her quest to develop the input sector and enhance agricultural productivity. But all the necessary recommendations suggested by experts including the 1994 IFDC project recommendation were neglected and in some cases not implemented properly to foster growth of the input market.

Another major setback is the inability of the government to create adequate institutional capacity that will ensure the efficient running of the input market. The long time negligence of the entire agricultural sector has left the private sector with less interest and limited power to perform efficiently. The input market in Nigeria needs genuine support and government encouragement to build the needed human capital, marketing infrastructures, and supporting institutions.

The fertilizer market is not only underdeveloped but at the same time fragmented so is the general situation in the inputs market. Time and resources are needed in order to build a well-functioning input markets. However, for Nigeria to develop a well-functioning liberalized input market where private sector participation is a key factor, Nigeria must learn from countries like Kenya. The Kenyan input market has gone through a lot of reforms but today input is not a problem for the local farmers because as early as 1974, the government handed over the procurement and distribution of fertilizer to a private company and when they realize that the demand for input is more than the supply they quickly review the system and extended the responsibility to other private companies too with the government as observant only. Open market is what Nigeria needs at the moment to lure in investors so that it can overcome the current predicament in the agricultural sector development.

Sub-Saharan Africa (SSA) shares almost the same problem in the agricultural sector with some better off than others. The situation in Nigeria could be described as bad considering the country' natural resources, if any country in SSA should be well-develop both in agriculture and infrastructure, Nigeria should be one. Actions and policy measures should be targeted towards policy reform, macro policy, market development, human capital development, financial markets, regulations, technology, and market information system. Comprehensive measures should be taken on these factors holistically in order to realize a synergistic effect in developing the input sector.

Strategy for development should center more on creating a conducive macro-policy which will ensure macroeconomic stability. Depreciation in exchange rate inhibits agricultural growth and input market development thus, effective monetary and fiscal policy is needed to stabilize the value of domestic currency in order to minimize the uncertainty risk involve in input business development and domestic input production in Nigeria.

On the other hand, building a strong human capital development that will strengthen input supply chain especially in the rural area where dealers are not available. Technical training for farmers should also be the focus in terms of market development.

In 2000 the IFDC project in Nigeria affirmed that the development of a well-functioning crop market such as maize, rice, cowpea, soybean, sorghum, millet, fruits and vegetables is essential in the promotion of agricultural input market development. In line with that, easy access to finance is a gate way towards achieving that. Market information on domestic production, import, export, sales and stock of existing production plants and distribution

should be made available to encourage the monitoring and evaluation of the entire input market in system.

The campaign for the use of modern technology is essential for the local farmers since agriculture today is science based and knowledge intensive. Research institutions should be funded adequately to partner with international research centers to come up with a market structure for improved seeds and agrochemicals to support local farmers.

Considering the nature of the input markets structure in Nigeria, there is a need to address the aforementioned factors affecting the sector. The Nigerian input market needs a complete liberalization to encourage open market system where investors will participate since government cannot longer meet the demand of the people.

Many African countries including Nigeria find themselves adopting and implementing programs and policies without due consideration if the program or policy are beneficial to the people they are targeting. That is why today many African countries especially in the Sub-Saharan Africa have limited implementation of key the subsidy program introduced in the 1980s and 1990s. Common among these programs is the Structural Adjustment Program (SAP) which many African countries adopted but could not manage and sustain it due to conditions given by the World Bank and IMF the two main financial institutions handling the section. Some of the conditions were not favorable instead they created a gap that some countries are struggling today filled.

5. Conclusions

Agricultural input is believed to have a great potential in increasing farmers productivity, but adoption is somehow low especially for improved seeds. This could be as a result of frequent changes in policy over the past years. Some of the factors affecting input market development that were discussed in this paper similar in many African countries. Rural farmers are still isolated from the input market, more so demand for agricultural input is still low. Major ways to overcome the challenges facing the input market in Nigeria were also discussed and the conclusion suggest that government direct involvement in inputs supply could be disruptive than supportive.

The provision of good transportation network, communication, marketing structure and financial market can ensure an effective input markets in Nigeria. Private sector participation in the input market could be a way forward like the case of the Asian Green Revolution. The current situation in Nigeria is not associated to the absent of subsidies or other government intervention program, but due to the poor state of infrastructure and delivery systems, lack of access to credit by farmers and weak marketing structure. Farmers in Nigeria today are still paying different prices for the same product in the market. The reform program introduced years back still has not help the situation like the case in Kenya despite implementing similar policies.

Years after years the federal government of Nigeria have spent billions of Naira on agricultural inputs especially fertilizer. A fertilizer worth 3 billion was imported by the government and allocated to the state government to be distributed to farmers across the country. But this exercise did not go without hitches as inflated price were recorded in many places with politics playing a major role. Government officials could not account for the fertilizer kept under their care.

The general conclusion about the input market situation in Nigeria could be attributed to a lot of problems ranging from poor management of the entire agricultural sector to weak policy, corruption, and the dilapidated situation of the Nigerian roads.

The Nigerian population is growing so is the population of the poor and the level of hunger. At the moment Nigeria' population is growing at 3% and it is expected to reach by 340 million by the year 2030. Despite reforms, policies, programs and market liberalization, there is still less progress in the agricultural sector. Unless a drastic measure

is taken to resolve the current problem of hunger and poverty and establish strong and solid institutions to cater for the needs of the farmers and promote the use of modern technology, the situation will keep worsening.

The first step as part of the solution is supplying inputs to farmers at the right and affordable rate. Although Kelly V., et al 2003 argued that this process could not be considered as a solution to broad-base economic growth.

Considering every effort made by the Nigerian government to promote the use of input and input market development and compare it with lessons from Asia and Latin America, even Kenya, it shows that the Nigerian government have a vital role to play in inputs and input market development to meet the needs of its large number of farmers. There is a need for government to work hand-in-hand with international donor organizations in the area of rural infrastructure development, research institutes, market information and policy design.

Until government commits themselves towards providing some of these public goods, huge money spent on subsidies and other reform programs are unlikely to provide any lasting solution that will have any impact on the agricultural sector in Nigeria.

6. Recommendation

Considering the nature of the Nigerian input market and the challenges this sector is facing, the only way of developing the market to meet the needs of its local farmers as the case in Kenya and other Asian countries is to establish a public-private partnership that will work hand-in-hand in designing strategies for development.

Long term programs on agricultural development that will support growth should be backed by legislature that will allow the same program to continue to run even if there was a change in administration. What affected growth in agriculture in Nigeria is related to the frequent changes in programs by different administrations not minding the effect of these changes on the local farmers and the market.

If programs are managed badly, they could lead to chaos and inefficiency in the supply system but when managed properly they can bring the needed result of efficiency and sustainability. Therefore, it is imperative that Nigeria should draw and develop an action plan focusing on the implementation of effective and efficient input market development plan.

The main focus should be on critical issues on input delivery system by encouraging input use among local farmers by providing them with credits, technological transfer, development of output market and infrastructure, stabilization of the exchange rate and the restructuring of the financial sector. There is also the need to strengthen the institutional capacity to ensure economic growth that will promote agriculture as a tool for economic development.

Government should promote commercial agriculture that will increase productivity and expand agricultural output market to improve rural household livelihoods and reduce the level of poverty among them. Facilitating development in the value chain should focus more on meeting domestic demands by monitoring cross-border leakage that creates shortages in the country.

Nigerian farmers today apply about 10kg/ha of fertilizer compared to the 200 – 400 kg/ha applied by their counterparts in Asia and Latin America. The same is applicable to improved seeds and agrochemicals. This disparity shows the level of challenges in inputs

use in Nigeria. Report shows that almost all inputs consumption in Nigeria is imported mainly by the private sector.

Agricultural input marketing operates alongside the commodity value chain that's from producer to wholesaler – processor, retailer and the final consumer (user). The role of all stakeholders involve is to ensure that the end users are provided with best practice and product availability and in good quality.

There is one big question in the mind of those involve in agricultural development concerning the way forward in the Nigerian agricultural sector entirely. But looking at the problems and comparing them with other developing countries, this research work proposed a total liberalization and a stable political environment that will accommodate private investor, since the government cannot longer meet the demand of its large farming societies. Also lessons from successful countries in Asia and Latin America could help.

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