Exploring the Anticompetitive Practices in Fertiliser Transportation in Ghana

CUTS International

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Consumer Unity & Trust Society
D-217, Bhaskar Marg, Bani Park, Jaipur 302016, India
Ph: 91.141.228 2821, Fx: 91.141.228 2485
Email: cuts@cuts.org, Web: www.cuts-international.org

Researched and Written by:
Paulina Agyekum (PhD), P. O. Box GP 18280, Accra, Ghana
Email: ablinconsult@yahoo.co.uk

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Aronyms

AAGDS	Accelerated Agricultural Growth and Development Strategy
CRI	Crops Reseach Institute
DCR	Diagnostic Country Report
DfID	Department for International Development
EPA	Evironmental Protection Agency
FOB	Free-On-Board
FSP	Fertiliser Subsidy Programme
GDP	Gross Domestic Product
GRA	Ghana Revenue Authority
GSA	Ghana Standard Authority
GSS	Ghana Statistical Service
IFDC	International Fertiliser Development Centre
OMS	Open Market Sales
MFA	Ministry of Food and Agriculture
MoFA	Ministry of Foreign Affairs
MOP	Muriate of Potash
MTADP	Medium Term Agricultural Development Programme
NPK	Nitrogen-Phosphorus-Potassium
PFAG	Peasant Farmers Association of Ghana
PPRSD	Plant Protection and Regulatory Service Directorate
RGD	Registrar General Department
TSP	Triple Superphosphate
SRI	Soil Research Institute
VAT	Value Added Tax

Acknowledgments

"Exploring the Anticompetitive Practices in Fertiliser Transportation in Ghana" report was undertaken by the CUTS Accra Centre with the aim of exploring possible causes of high prices of subsidised fertilisers in the country. The study was carried out with the sole aim to investigate if any anticompetitive practices are prevailing at the port-handling and inland transportation of fertilisers as well as to determine the possible effects of such anticompetitive practices on the retail cost of fertilisers in Ghana.

The research study emerged from the project entitled "Competition Reforms in Key Markets for Enhancing Social and Economic Welfare in Developing Countries' (CREW Project), a project which was implemented in Ghana, India, Philippines and the Zambia, across two common sectors: 1) Staple Food and 2) Bus Transport sectors with the aim to demonstrate the benefits of competition reforms to consumers and producers. From the CREW project research findings it was revealed that the cost of subsidised fertilisers still remain high and thus some low income farmers are unable to purchase the subsidised fertilisers due to their high prices.

The diligent efforts in the form of contributions, reviews, encouragements and guidance of many have contributed to the production of this study report. The Centre is especially grateful to Dr Paulina Agyekum, the lead researcher in carrying out this study, for her incredible contribution and insights. Also, we are grateful for the valuable efforts of Abraham Zaato from the National Road Safety Commission (NRSC), Ghana for his contributions in preparation of the report.

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Executive Summary

Agriculture plays an important role in Ghana's economy. The sector accounts for 22 percent of Gross Domestic Product (GDP) and employs nearly 45 percent of the labour force. In recent years, agricultural sector share of the GDP has been growing at about 6 percent per annum and hike in commodity prices have contributed to agriculture's contribution to GDP. However, the agriculture sector continues to comprise mainly smallholder farmers using minimal inputs of improved seeds, chemical fertilisers and irrigation to cultivate small and fragmented plots of land over wide geographical areas.

This study was designed among others, to investigate if any anticompetitive practices are prevailing in port-handling and inland transportation of fertilisers and determine the possible effect of such anticompetitive practices on the retail cost of fertilisers in Ghana. Collated field and secondary data were compiled using both quantitative and qualitative methods. The data was analysed to understand the structures, systems and mechanisms of the operation of the fertiliser market and the factors that either constrain or enhance fertiliser marketing in terms of competitiveness and performance in the industry.

The findings showed that currently Ghana does not produce chemical fertilisers, although there are some deposits of rock phosphate in the country. All the fertilisers used in the country are imported. Therefore, Ghana's fertiliser supply chain begins with importers who are mostly private companies. It was found that there are no deliberate state policies that promote anticompetitive practices, however, the complex nature of registration, clearing and handling nature at the ports appear to promote inefficiencies resulting in delays in release of chemical fertilisers from the port and increase cost of transaction, which in the end, is passed on to the farmer resulting in high cost of fertilisers.

The number of firms (from importer to retailer) seems to be too small as compared to the large number of smallholder farmers across the country. The situation was found to be so because of the huge capital investment required to initiate such enterprises.

Moreover, the operations of importers, distributors and retailers along value chains was found to be highly competitive as firms and individuals along this chain have been operating independently to draw more clients (farmers) in spite of the numerous challenges confronting the sector.

The sector is, however, still in the process of developing. The same cannot be stated for the transporters who are probably involved in collusive behaviour by creating a union

and fixing the price to be charged per bag of chemical fertilisers for a particular distance. Nearly 80 percent fertiliser distributers indicated that they have access available to transport, though the major distribution challenge is high cost of transport associated with it.

An obvious but necessary condition for farmers to use fertilisers is that they should be readily available at the time when farmers want to buy and use them. About 55 percent of the fertiliser distributers and wholesalers are able to stock fertilisers even out of farming season.

Furthermore, an unfavourable fertiliser/crop price ratio is a serious constraint to input market development in Ghana. Compared to international market prices, fertiliser prices in Ghana were found to be quite high due to the small size of the market and its limited development. At the same time, output prices are lower, compared to fertiliser prices, due to inefficient markets.

Most of the farm crops cultivated are perishable produce, which are mostly sold at the farm-gate at lower price level due to high transport costs. Thus, the returns on the sale of the produce are not able to cover the cost of fertilisers and the expected profit margin and this does not motivate the farmers to use the required quantities of fertilisers.

In order to boost the competitiveness of the fertiliser markets for both suppliers and users, there is a need for some fundamental advancements in policy considering the following aspects:

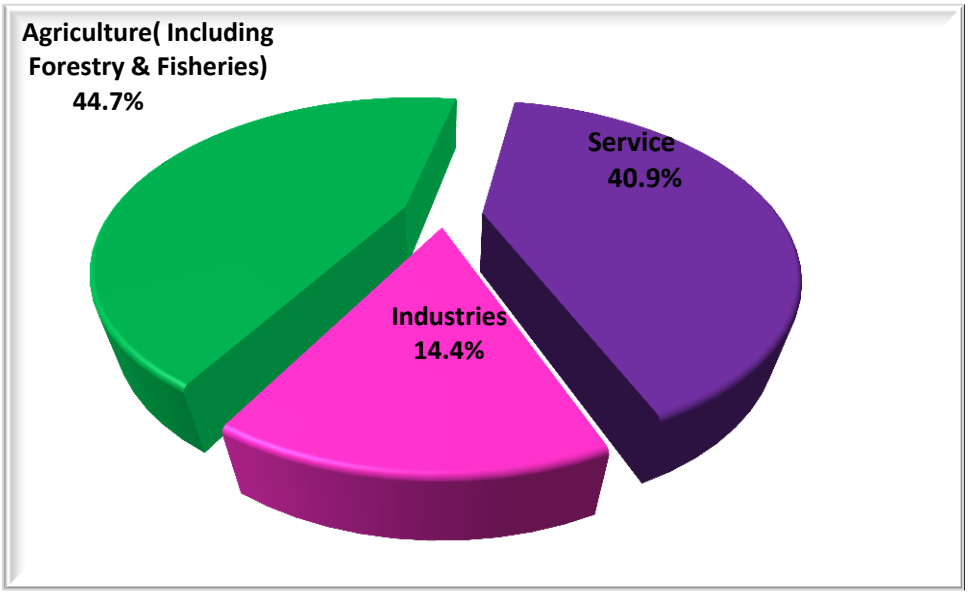
- Policy focus in fertiliser market at retail and farmer-level
- Reducing bureaucracy and discretionary controls in registration, clearing and port handling procedures to promote efficiencies
- Promoting free and effective transport system and enhanced road infrastructure to reduce cost associated to transportation
- Harmonising the activities and responsibilities of the regulatory agencies and departments in charge of the fertiliser industry in Ghana
- Stabilising the macro-economy and
- Increasing access to credit and capital

1. Introduction

Background

Agriculture plays an important role in Ghana's economy. The sector accounts for 22 percent of GDP and employs nearly 45 percent of the labour force. In recent years, agricultural share of the GDP has been growing at about 6 percent per annum and increase in commodity prices have contributed to the GDP (see Figure 1.1, Tables 1.1 and 1.2). However, the agriculture sector continues to comprise mainly smallholder farmers using minimal inputs of improved seeds, chemical fertilisers, and irrigation to cultivate small and fragmented plots of land.

Figure 1.1: Share of Total Labour Force by Sector (15 Years & above)



Source: GSS, GLSS6 with Labour Force Module, 2014

It is anticipated that in the medium to long-term, the expansion of agriculture into previously uncultivated areas will not be sustainable, and the country will need to effectively prioritise intensification and large improvements in productivity. This implies that for Ghana's agriculture sector to successfully transform, these smallholders will either need to become viable agribusinesses themselves or to be linked to commercial enterprises that support the use of modern inputs and facilitate access to markets. If not, the sector will continue to underperform with the low crop yields that currently prevail.

Table 1.1: Share of Agriculture in GDP (%)

Year	Sector			
	Agriculture	Service	Industry	GDP at Current Market Prices (GH¢Mn)
2006	30.40	48.80	20.80	18,705
2007	29.10	50.20	20.70	23,154
2008	31.00	48.60	20.40	31,235
2009	31.80	49.20	19.00	36,598
2010	29.80	51.10	19.10	46,042
2011	25.30	49.10	25.60	59,816
2012	23.00	48.40	28.60	74,959
2013	22.00	49.50	28.60	93,461

Source: GSS, 2014

Table 1.2: Growth Rates in Agricultural Sub-sectors

Year	Sub-sector					National Agriculture Real GDP Growth Rate
	Crops	Livestock	Cocoa	Fisheries	Forestry /Logging	
2007	-1.30	4.70	-8.20	-7.20	-4.10	-1.70
2008	8.60	5.10	3.20	17.40	-3.30	7.40
2009	10.20	4.40	5.00	-5.70	0.70	7.20
2010	5.00	4.60	26.60	1.50	10.10	5.30
2011	3.70	5.10	14.00	-8.70	-14.00	0.80
2012	0.80	5.20	-9.50	9.10	6.80	2.30
2013*	5.90	5.30	1.70	5.80	0.00	5.20

Source: GSS, 2014

Besides the challenges of small farm holding food production, other challenges to the agriculture sector include: diminishing arable land due to urbanisation and land degradation; weak land tenure system; declining soil fertility; limited irrigation facilities; dwindling water resources; climate variability, unimproved planting materials; low access to credit; poor marketing and distribution systems; and above all, high cost of agricultural inputs, particularly fertilisers.[1]

[1] Croppenstedt, Demeke & Meschi, 2003; Alfsen, Bye, Glomsrod & Wiig, 1997

It is a proven fact that high input usage of inorganic fertiliser has been a key component of Green Revolutions around the world.[2] Higher rate of soil fertility decline and consistent lower crop yields necessitate increased use of inorganic fertilisers in Africa.[3]

However, the high cost of inorganic fertilisers prevents particularly small-holder farmers, who are resource-constrained (predominantly within low income bracket), from using the required levels of fertilisers to boost crop production in developing countries like Ghana.

A study by Guo *et al*. (2009) suggested that high cost of fertiliser to smallholder farmers is attributed to low volumes of imports, poor infrastructure, low population densities, inadequate and costly financial services as well as high transport and marketing costs where farms are very far from the nearest port.

The Government of Ghana enacted the Plants and Fertilisers Act in 2008 to increase the use of fertilisers among farmers through the provision of government subsidies on the product. The responsibility to implement the same is assigned to a dedicated department under the Ministry of Food and Agriculture – the Plant Protection and Regulatory Services Directorate (PPRSD). This has increased the demand for fertiliers within the farming communities across the nation.

However, the use of fertilisers in Ghana is estimated at 8 kg per hectare, which represents one of the lowest rates still among countries in Sub-Saharan Africa, which already indicates that it is the lowest fertiliser consumer in the world (MOFA, 2007). Research findings from the 'Competition Reforms in Key Markets for Enhancing Social and Economic Welfare in Developing Countries (CREW)' Project Diagnostic Country Report (DCR) of 2014 also revealed that though fertilisers are subsidised by the Government of Ghana, the fertiliser market is very fragmented at the retail level, and the retail prices offered to farmers still remain high.

A number of factors have been identified, which might influence the pricing of the fertilisers at the retail level. These include: rising international prices of fertiliser inputs; fluctuating foreign exchange rate; port handling and clearance issues; internal transportation costs coupled with anticompetitive practices among the fertiliser distributers.

While some of the external factors (like the sliding exchange rate and rising international prices of fertiliser inputs) are difficult to address – it would be crucial for the Government of Ghana to identify domestic factors that have kept the price of fertilisers high. Two factors seem to emerge from the analysis-port handling and

[2] Kelly, Adesina, & Gordon, 2003; Tomich, Kilby, & Johnston, 1995; Kherallah, Delgado, Gabre-Madhin, Minot, & Johnson, 2002; Viyas, 1983; Reuler & Prins, 1993
[3] Alfsen *et al*., 1997; Xu, Burke, Jayne, & Govereh, 2009; Larson, 1993

clearance, and internal transportation costs and the presence of anticompetitive practices among the operators.

Moreover, some assessment is necessary to explore if these costs and anticompetitive practices do really exist and can be controlled, so that the cost of fertilisers to the farmers can be reduced. It is, therefore, necessary to conduct an intensive study in this sector to understand the possible anticompetitive practices, if any and operational factors resulting in high fertiliser retail prices, and the best ways to address these situations. This study explores and addresses these issues.

Objectives of the Study

The main objectives of the study are:

- To investigate whether anticompetitive practices are prevailing in port-handling and
- To determine the probable impact of such anticompetitive practices on retail cost of fertilisers in Ghana.

Scope of the Study

The study encompasses and defines the following important aspects:

- Identifying the presence of competition practices amongst fertiliser operators and handlers in Ghana
- Suggesting government actions to deal with anticompetitive practices, if any that will result in reducing the price of the fertilisers
- Understanding competition issues in customs clearing procedures and how they might affect competitive fertiliser supply chain with respect to cost of clearing, informal payment and any delay and
- Approaching to improve the distribution network of fertilisers so as to cover both farmers in the peri-urban centres and those in the remote areas.

2. Methodology of Study

The study method involved secondary review and data collation by desk studies as well as primary data collection through field studies.

Field Data Collection

The field studies were based on interviews of key-informants as well as surveys of key players in the fertiliser industry using checklist to guide and solicit the relevant information (see Table 2.1 for list of key players interviewed in the fertiliser market).

Table 2.1: List of Key Players Interviewed in the Fertiliser Industry

Name of Organisation	Key Contacts	Number of Interviewed Persons
Ministry of Food and Agriculture		2
Ghana Revenue Authority		1
Fertiliser Importers	• Yara Ghana Ltd. • Weinco Ghana Ltd. • Dizengoff Ghana Ltd. • Golden Stork • Chemico, Ltd. • Affcot Ghana Ltd. • Louis Dreyfus Commodities	2 1 2 2 2 1 2
Clearing Agents		2
Wholesalers		5
Retailers		14
Transporters		15
Farmers		50
Regulatory Institutions	Environmental Protection Agency	1
University of Ghana and University of Development Studies	Faculty of Agriculture	2
Total		**104**

Apart from eliciting general information related to the sector, the background and operations of their respective organisations, interviewees were also asked to provide their views on the state of competition in the sector, after which they were asked to endorse their opinions.

There were several weeks of field trips within the Greater Accra and Brong Ahafo Regions during the peak periods of operations of most actors in the supply and distribution of fertilisers in Ghana to obtain relevant data and information for this assignment.

Data Analysis

Collated field and secondary data were compiled using both quantitative and qualitative methods. The data was analysed to understand the structures, systems and mechanisms of the operation of the fertiliser market and the factors that either constrain or enhance fertiliser marketing in terms of competitiveness and performance in the industry. This was accomplished to acquire greater clarity and understanding the sustainability of the industry in particular.

Study Areas

The research was conducted in two out of the ten regions of Ghana i.e. Greater Accra and Brong Ahafo regions. These two regions were purposively sampled, taking into consideration the fact that all fertilisers are imported through the Tema port in the Greater Accra region and most offices of the importers were also located in Accra and Tema.

The regulatory institutions, such as Ministry of Food and Agriculture (MoFA) and Environmental Protection Agency (EPA) were also located in Greater Accra Region. The location of Brong Ahafo Region is strategic to this study as it assisted in generating issues related to transport and distribution. Besides, in both regions, all actors in the fertiliser supply chain were willing to cooperate.

3. Results and Discussions

Overview of the Fertiliser Industry in Ghana

Ghana's fertiliser industry has followed a general trend in terms of transitioning from enormous levels of interventions in the 1960s and 1970s to liberalisation of markets of the 1980s and 1990s followed more recently by moderate interventions including liberation, some tax waivers and subsidies.

Till date, all imported fertiliser products are brought into the country by less than 20 active privately registered importing companies due to huge investment capital requirements, unstable macro-economic indicators including foreign exchange rate, inflation and interest rates. The Government of Ghana is not involved in the importation of fertilisers into the country but only concerned to provide the same to farmers through some privately approved and registered fertiliser importing companies.

Two systems of fertiliser import and marketing and/or distribution exist in Ghana: Open Market Sales (OMS) and Fertiliser Subsidy Programme (FSP). In the open market sales, importers price the fertilisers, according to forces of demand and supply. This normally exists during the off-farming season or anytime the government subsidised fertiliser has finished or among importers who are not listed for the subsidy programme.

It must be stressed, however, that these importers are able to sell only when farmers do not have access to the subsidised fertiliser. This is because they are unable to compete with the lower prices of the subsidised fertilisers or where there is no subsidy programme for the year under consideration or the subsidised fertilisers had finished. The open market is highly competitive.

In July 2008, the Government of Ghana instituted and launched a country-wide subsidy programme with the hope to increase per hectare usage of fertilisers. Taxes, such as import tax, Value Added Tax (VAT) were waived on the import of fertilisers with the intention to reduce final price to be paid by the farmers.

Currently, there is no specific legislation or regulation governing the marketing of fertiliser products in the country with the exception of mandatory monitoring by MoFA and product quality certification by the EPA at the port. The product quality control is aimed at protecting farmers by ensuring that fertiliser products are not nutrient deficient, adulterated, or sold in short weight bags. However, there is no effective fertiliser product inspection and sample validation in Ghana.

Under the subsidy programme, prior to the beginning of the farming season the Government advertised for expression of interest in the newspapers for bidding to participate in the fertiliser subsidy programme. Evaluated and listed companies then meet with the Government to work out the modalities of implementation and prices. The modalities include the actual open market price and to the extent Government is willing to 'pay-off' this for farmers. The cost of transportation is also taken into consideration and absorbed by the Government and this is to ensure that the prices are equal or the same in every part of the country.

The waybill system is used to track the quantities of fertilisers sold by the various companies as subsidy is paid only on the quantities of fertilisers sold to the farmers. For farmers to be able to purchase government subsidised fertilisers, they must get a copy of farmers' passbook at the nearest District Agriculture Offices. The passbooks, which are not for sale are to enable farmers document their farm operations as well as track beneficiary of the subsidy programme as it complements a daily record system introduced at the retail end.

Unlike the open market system the prices for the sale of the approved fertilisers (mainly Nitrogen-Phosphorous-Potasium or NPK and Urea) for the subsidy programme are fixed and must be sold at the same price throughout the country. The results showed that as in the year 2015, the subsidised price for the NPK and Urea were GH¢89.00 and GH¢84.00 respectively. This forms 21 to 25 percent reduction to the open market price.

In 2015, five companies namely Yara Ghana Limited, Chemico Limited, Afcott Ghana Limited, AMG West Africa Limited, Louis Dreyfus Commodities Limited, and ETC Ghana Limited were evaluated and awarded quotas to provide subsidised fertilisers on behalf of the Government. Yara Ghana Limited – though the largest distributor but later pulled out of the 2015 programme. This might be due to delays in the payment of the subsidy by the Government though the company would not state the official position for pulling out to the general public. It must be noted that Yara Ghana Limited is the largest importer or supplier of fertilisers in the market. It supplies about 50 percent of the total quantity in the market.

Challenges with Current Structure of Implementation

- There are only few agents in the distribution of the fertilisers. Most of these agents are located in inner cities or regional capitals with little or no representation in the rural areas where majority of the smallholder farmers are located.
- Farmers are unable to buy subsidised fertilisers from the agents because of the long distance they have to travel to meet them.

- Those farmers who are able to make it to the fertiliser agents points of sales are usually unable to purchase them because of the high price. Due to this, some farmers purchase lesser the required bags per hectare. Each farmer by law is entitled to procure five bags of compound fertiliser and one bag of urea per hectare of land.
- Those farmers who are able to purchase the subsidised fertilisers tend to purchase more than they required for their farm lands and then sell the surplus at a higher price to other farmers.
- Some agents also are in the practise of purchasing the surplus subsidised fertilisers, which remain when farmers are not able to purchase. They sell these surpluses at the open market price to other farmers in order to make money.

Regulation of the Fertiliser Industry in Ghana

Currently, there is no specific legislation governing the marketing of fertiliser products in the country with the exception of mandatory monitoring by Ministry of Foreign Affairs (MoFA) and product quality certification by the Economic Partnership Agreement (EPA) at the port. The product quality control is aimed at protecting the farmers by ensuring that fertiliser products are not nutrient deficient, adulterated, or sold in unstandardised weight bags.

Furthermore, it provides a rationale for standardising pricing. This protects honest fertiliser dealers as well as reduces illegal trade practices, such as adulteration and sale of bogus products in the form of cheaper domestically produced packages.

There is no effective fertiliser product inspection and sample validation in Ghana. There are only a few inspection companies operating upon, which importers rely on for inspection and certification at the point of loading only. Though the Plant Protection and Regulatory Services Directorate (PPRSD) of MoFA have pesticide and seed inspectors they are not properly equipped to inspect sample fertiliser products.

Despite the fact that Ghana does have numerous laboratories with varying capacity to analyse fertiliser samples; there is no evidence of fertiliser dealer utilisation of such facilities. The EPA does not also effectively perform its mandate of sampling, testing and certification of fertiliser brought into the country. Even when it is done, it usually results in unnecessary delays of the ship with associated cost implications on the importer. Thus, the quality of fertiliser sold in the Ghanaian market cannot be said to be wholly guaranteed, particularly in terms of its nutrient content, the net product weight and its physical quality.

The story of adulterated fertiliser products is found only among small-scale illegal imports that come into the country by land. Nevertheless, it is important to recognise

that quality control and truth in labelling are critical to the proper development of any fertiliser market, particularly when it is becoming as diverse and dynamic as the Ghanaian market.

An International Fertiliser Development Centre (IFDC) assessment in collaboration with the MoFA has proposed a draft legislation and regulations as well as necessary investments and organisations that could help address these problems if these documents are enacted into law and implemented effectively.

Key Components of Success of the Fertiliser Industry

Some of the components of success associated with Ghana's fertiliser industry are as follows:

- Significant agriculture demand and prices
- Availability of improved and increased quality research
- Increased investment and
- Government subsidies

4. Competition in Customs Clearing Procedures:

Impact on Competitive Fertiliser Supply Chain

The fertiliser consignment goes through a port clearance procedure upon arrival at the port. This is usually undertaken by a clearing agent at no import duty charges, except in situations where the product cannot be certified by port authorities to be a fertiliser product. The clearing process appears to quite cumbersome as suggested by the importers because they have to deal with nearly seven agencies and departments before acquing the fertiliser clearance from the port.

There is lack of coordination among the agencies and the number of agencies and departments to deal with and their associated fees have also increased the cost of transactions and this cost is passed on to the farmer. This results in higher cost of operations, with related corrupt practices as well as less timely input for distribution, which does not promote effective competition. The cumbersome and overlong nature of the clearing processor often causes delay and inefficiencies in the distribution of the subsidised fertilisers.

The Government charges at the port of fertiliser imports is about 7 percent whilst port charges on losses and demurrage is about 11 percent. These constitute an average of 17 percent of the total cost of fertiliser import prices. At present, importers rarely pool their orders, and rarely do they arrange for joint handling, storage, and distribution, so this is highly competitive. However, Government regulations to inspect fertiliser on land cause delays, as does the lack of dedicated berths at the port. According to Chemico Ltd., which claims to have been fined US$100 or US$1000 in demurrage charges, it would be better for fertiliser inspection to be conducted on ships to avoid such charges.

Poor security at the port leads to high losses from the theft of fertiliser in transit and storage. Also, national regulations that require distribution by domestic transporters sometimes necessitate an additional round of loading and loading, which adds to costs and increases security problems. Poor quality warehouses and long storage periods in humid climates lead to substantial losses from fertiliser caking with resultants cost escalations for importers. Limited port capacity adds further to costs since large shipments face delays and high demurrage charges. Congestion at port makes it difficult access to containers.

Fertiliser Importation in Ghana

At present, no Ghanaian firm manufactures chemical fertilisers, although there are some deposits of rock phosphate in the country. All the chemical fertilisers used in the country are imported. Therefore, Ghana's fertiliser supply chain begins with importers who are mostly private companies. As indicated in Table 4.1, there are about 39 registered fertiliser companies in Ghana. Out of this, eight are major importers and between 35-50 are major distributors, a few of them (major distributors) also import occasionally (World Bank, 2012).

Table 4.1: Registered Fertiliser Importers in Ghana

S. No.	Name of Company	S. No.	Name of Company
1.	Accra Compost and Recycling Plant	2.	Green-Gro Ltd
3.	Afcott (Gh) Ltd.	4.	Gricpros Ghana Ltd.
5.	Agrinos Ghana Ltd.	6.	Grow Green (GH) Ltd.
7.	AMG West Africa	8.	Louis Dreyfus Commodities (GH)
9.	Bentronics Production	10.	NKO Agro-Chemical and Trading
11.	Best Environmental Technologies Ltd.	12.	Neptunus (Ghana) Company Ltd.
13.	Bioteq UEST Ltd.	14.	New Okaff Industries Ltd.
15.	Calli (GH) Company Ltd.	16.	Nkrasua Company Ltd.
17.	Chemico Ltd.	18.	Olam Ghana Ltd.
19.	Dizengoff Ghana Ltd.	20.	Owundanoti Company Ltd.
21.	Dynapharm International (GH) Ltd.	22.	SaroAgrosciences (GH) Ltd.
23.	ESM Company Ltd.	24.	Sidalco Ltd.
25.	Ecofibre Ghana Ltd.	26.	The Candel Company
27.	ETC Agro (Ghana Limited)	28.	Tropical 2000 (GH) Ltd.
29.	Farmers Hope Company Ltd.	30.	Vision Powers Ventures Ltd.
31.	Fevak Company Ltd.	32.	WA Green Ok Company
33.	Fifac Ltd.	34.	Wienco Ghana Ltd.
35.	GBI-Hanjer Ghana Ltd.	36.	Yara (GH) Ltd.
37.	GNLD International Ltd.	38.	Green-Gro Ltd.
39.	Green Fingers Agro Ltd.		

Source: Field Survey, 2015

This makes a stable exchange rate essential for stabilising import costs in local currency; also an adequate supply of foreign exchange is needed to import the product at the right time to meet demand. Ghana's high cost of finance and high freight costs associated with small shiploads also influence these high procurement costs. Importers' margins vary between 16-20 percent.

Retailers' margins are in the range of 3 to 5 percent. With such margins, trading fertiliser alone is a risky business. As a result, many retailers also sell crop protection chemicals partially because their margins are much higher. The limited profitability of fertiliser use has also led to decreased demand and consequently to adverse effects on soil fertility, productivity, food security and the environment. Under these conditions of low profitability and poor soil fertility, improving the efficacy of fertiliser use becomes very important.

Port Requirement and Clearance for Fertiliser Imports

The fertiliser consignment goes through a port clearance procedure on the arrival at the port. This is usually undertaken by a clearing agent at no import duty charges, except in situations where the product cannot be certified by port authorities to be a fertiliser product.

Port Clearing Procedure

The clearing procedures for fertilisers include the following steps:

- Application for a permit from MoFA
- Application to the pesticide division
- Customs for declaration
- Securing all documents, invoice and exemption letters
- Obtaining shipping line charges pay and taking release
- Custom examination at the terminal and release and
- Discharge of consignment from containers to trucks and exit the port gate after processing

Challenges to Port Clearing

The challenges to port requirement and system for clearance of fertiliser imports are as following:

i. Operantional constraints

Operational efficiency at the port during port clearing of fertiliser consignment is deemed to be cumbersome and time-consuming due to poor coordination across the different agencies involved. This results in higher cost in operations, with related corrupt practices as well as less timely input for distribution, which does not afford effective competition.

Specifically, the lack of coordination among inspection agencies at ports affects port handing processes is a major constraint. Inspections by various government agencies – including Customs, the PPRSD, the Ghana Standards Authority (GSA), often carried out separately means at least at four separate occasions and this adds significant delays to clearance times.

Furthermore, this generates opportunity for illicit payments. This extra burden multiplies transaction costs that are already high, thereby increasing the cost of imported fertilisers. Consequently. this makes end products less competitive in local and regional markets.

ii. Other constraints

Other constraints associated with port clearance and distribution of fertilisers are:

- Cumbersome and lengthy customs procedures in acquiring permit
- Numerous clearing agents involved in the clearing of goods at the port
- Delays in documentation processing for clearance
- Risk of divisions and break down of trucks
- Delays at the discharging point and
- Time consuming procedure for unstuffing of fertilisers from containers to trucks

Port clearing charges

According to a study by IFDC, Government charging rates for fertiliser imports at the port is about 7 percent whilst port charges on losses and demurrage is about 11 percent. These constitute an average of 17 percent of the total cost of fertiliser import prices. An overview of average port charges by fertiliser type is provided in Table 4.2. The average actual clearing charges and duration for a fertiliser consignment at the port as presented in Table 4.2.

Table 4.2: Clearing Charges and Duration

Size of Container	Clearing Charges	Duration for clearing
20ft	GH¢680.00	Within 2 months
40ft	GH¢920.00	

Demurrage charges at the port of Tema present another major clearing problem, especially during peak periods of fertiliser imports. The delays leading to demurrage charges are largely due to congestion at the undersised Tema port, which serves the entire central corridor of West Africa. According to the IFDC (2012), onerous demurrage charges due to port delays and high road transport costs in Ghana contribute to the high cost of fertiliser delivered to the farm.

Currently, importers rarely pool their orders, and rarely do they arrange for joint handling, storage, and distribution so this is highly competitive. However, Government regulations to inspect fertiliser on land cause delays, as does the lack of dedicated berths at the port. According to Chemico Ltd., which claimed to have been fined hundreds of thousands of US$ in demurrage charges it will be better for fertiliser inspection to be done on ships to avoid such charges.

Security at the port

Poor security at the port leads to high losses from the theft of fertilisers in transit and storage. Also, national regulations that require distribution by domestic transporters sometimes necessitate an additional round of loading and loading, which adds to costs and increases security problems.

Limited Warehousing capacity

Poor-quality warehouses and long storage periods in humid climates lead to substantial losses from fertiliser caking with resultants cost escalations for importers.

Limited Port Capacity

Limited port capacity adds further to costs since large shipments face delays and high demurrage charges. Congestion at port makes it difficult access to containers.

Requirements for Operating Fertiliser Business

Currently, the requirement for becoming a fertiliser importer includes the following steps**:**

1. Application to the Minister of Food and Agriculture, stating the intention of registering a Fertiliser Company/Product (s)
2. Purchase application form(s) after acceptance of initial letter
3. Submit application form(s) with the under listed documents attached:
    - Dossier
    - Certificate of registration (Registrar Generals Department)
    - Copies of laboratory analysis of the product
    - Product label
    - Product sample (if it is a new product)
4. Review of application letter and other relevant documents by the fertiliser administrator
5. Payment of recommended fees
6. Analysis of fertiliser samples in a designated laboratory to verify guaranteed levels of fertiliser nutrients and
7. Granting of fertiliser product or company registration certificate or a fertiliser dealer's licence by the Pesticides and Fertiliser Regulatory Division.

Import Requirements for Fertiliser Product(s)

Application for fertiliser import permit is required on a letter head and submitted to the nearest regional agricultural office or to PPRSD headquarters. The application should include the following:

- Name and address of importer
- Name and address of exporter
- Name of fertiliser product (s)
- Name of compounds and concentration
- Type of formulation
- Quantity of fertiliser product(s) to be imported like kg, bag, litre etc.
- Country of origin of fertiliser
- Indication of the port of entry
- Company registration number or document (Registrar General's Department)
- *Pro forma* invoice or technical document of the fertiliser product (s)

Challenges to Fertiliser Import Entry

Despite the absence of barriers to entry, market opportunity does not automatically translate into market access for many prospective fertiliser importers due to the following constraints:

i. ***High capital investment***

Investing in fertiliser trading is not attractive to all prospective investors because of the high capital outlay and limited access to credit, especially for local Ghanaian companies. This has resulted in a small concentration of businesses at the import and wholesale levels. For example, Yara, the leading fertiliser company, is one of the major importers in Ghana and has a market share of 50-60 percent of fertiliser imports (MoFA 2015).

ii. ***Limited agro-dealers***

Similarly, agro-dealers are also limited, especially in remote rural areas where the product is most needed for use, since investment in domestic distribution network is neglected.

iii. ***Registration requirements for fertiliser imports***

The process of acquiring clearance from MoFA for fertiliser import is also considered to be relatively difficult by importers. Firstly, potential business investors face high information gathering and transactions costs to obtain necessary government approvals. This does not offer effective platform for competition. Secondly, every year, an agro-dealer has to spend many weeks obtaining separate registrations. Specifically, applying for import duty exemption is very time-consuming, requiring a letter from MoFA to the Ministry of Finance and

ultimately the GRA (Internal Revenue Service) who oversees income and corporate taxes, Value Added Tax (VAT) and Ghana Revenue Authority (Customs Division). This is a key deterrent to some potential investors in product market and this indirectly affects smallholders.

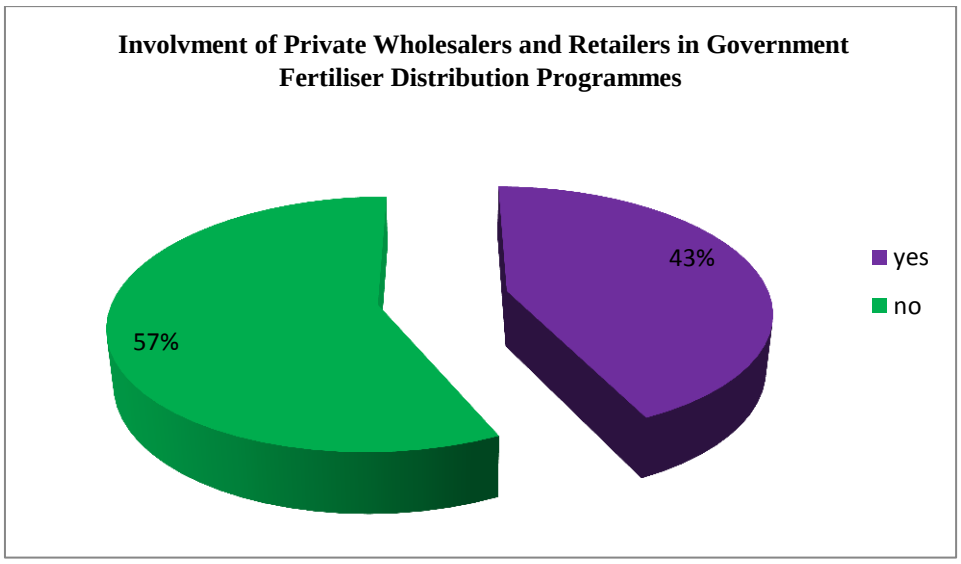
iv. ***Delays in subsidy payment***

Although well-meaning and a good tool for making fertiliser available and affordable for small farmers in Ghana, the fertiliser subsidy programme is being implemented in ways that are problematic to the private sector. Though the fertiliser subsidy system works best for importers, they tend to wait a long time for their subsidy reimbursement. Delays in subsidy challenges affects credit availability for future imports. In addition to this, the delays create significant cost to invested capital, especially from the effects of foreign exchange fluctuations.

v. ***Impacts of state fertiliser trade liberalisation***

This has, in general, not improved competition in fertiliser trading. This is because only 43 percent of private dealers are able to operate in government fertiliser programmes and 57 percent of the operators observed that it is very difficult to get into, (Figure 4.1). State enterprises also benefit from a range of benefits including subsidies, inherited warehousing space and vehicles that create unfair competition for private operators.

Figure 4.1: Private Sector Involvement in Government Subsidy Programme



Source: Author's Computation, 2015

Types of Fertilisers Used and Imported

The imports of compound fertiliers far exceed the imports of the other fertilisers in Ghana. The second most important imported products are ammonium sulphate and muriate of potash (MOP). The imports of urea, single superphosphate (SSP) and Triple Superphosphate (TSP) are marginal. Table 4.3 gives an indication of the types of fertiliser imported into the country.

Product Sourcing

All of the mineral fertiliser products used in Ghana are imported from abroad. Currently, the imported products are sourced through direct private importation primarily from Western Europe – particularly from France (HydroAgri) and to a lesser degree from Holland (Cheminex) and Ireland (Dynochem). A small proportion is imported from *Côte d'Ivoire* (Hydrochem), Russia, Belgium, Morocco, Bulgaria, Israel, and Tunisia. This is very competitive because it requires significant capital outlay with a high foreign exchange component by business entities.

Table 4.3: Registered Fertiliser Imported and Used in Ghana

S. No.	Fertiliser Product	S. No.	Fertiliser Product
1.	NPK: 15:15:15	11.	Sulphate of Potash
2.	NPK: 23:10:15	12.	Golden Finisher
3.	Urea	13.	Ground Rock Phosphate
4.	Ammonia Sulphate	14.	Muriate of Potash
5.	Potassium Nitrate	15.	Kieserite
6.	Calcium Nitrate	16.	Cocoa Master
7.	Mono Ammonium Phosphate (MAP)	17.	Di–Grow Green
8.	Diammonium Phosphate (DAP)	18.	Di–Grow Red
9.	Fertobor	19.	Boost Xtra
10.	Triple Superphosphate (TSP)		

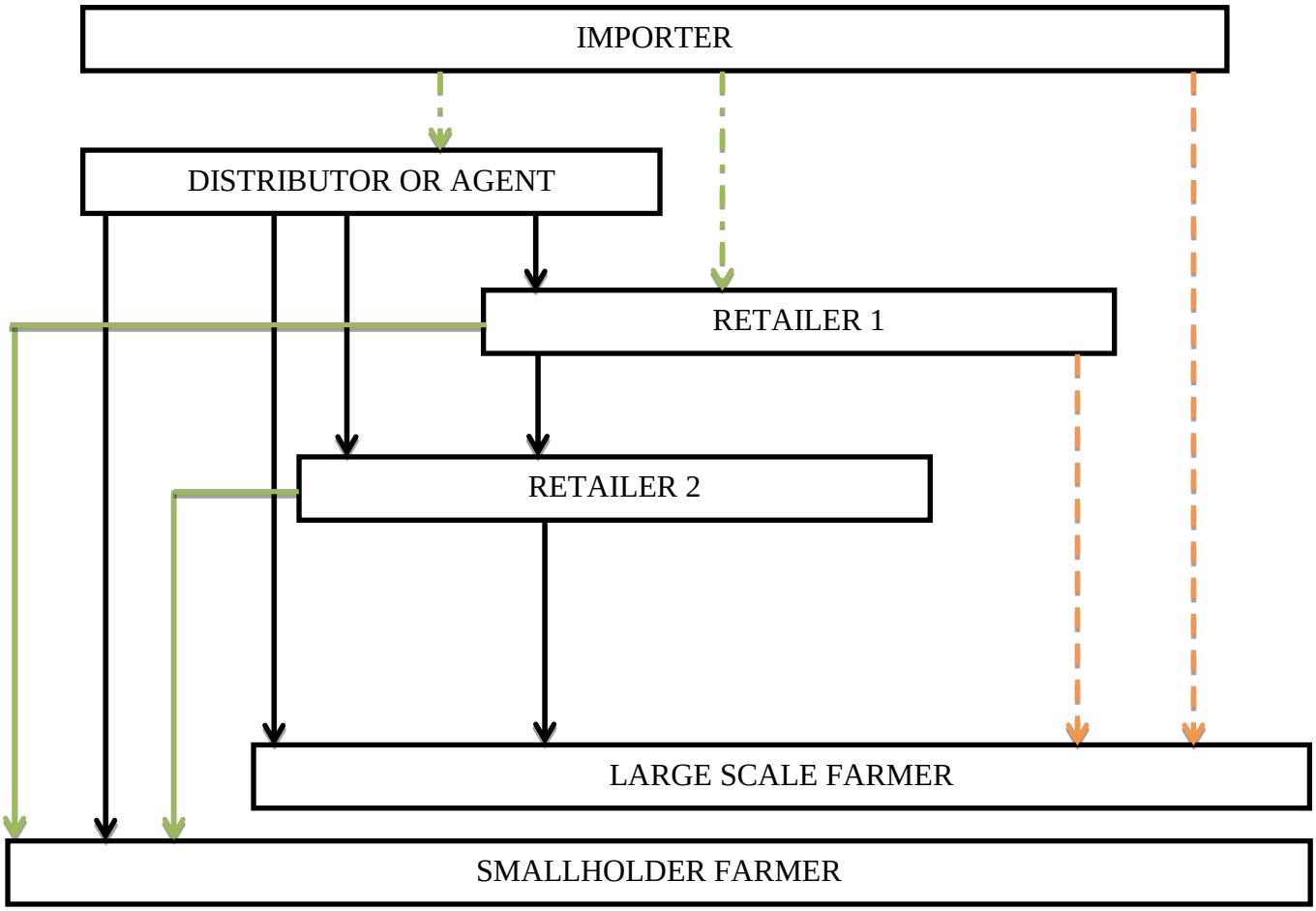
Source: GSS, 2015

Almost all fertiliser imports arrive at the Tema port about 16 miles west of the capital, Accra. Some amount also arrives at the Takoradi port about 150 miles west of Accra where large storage facilities are available. However, sea freight of imported fertiliser products to Abidjan is much lower than to Tema because Hydrochem and STEPC benefit from economies of scale of bulk transport and competitive procurement.

5. Fertiliser Distribution, Marketing and Transportation Channels

A schematic view of the distribution and marketing channels of chemical fertilisers is illustrated in Figure 5.1.

Figure 5.1: Fertiliser Distribution Network in Ghana



Because there is little suitable warehouse storage for bulk fertiliser products in the Tema port, most of the imports come in 50 kg and 25 kg labelled bags. Loose fertiliser is also bagged into 50 kg bags and transported by road to distribution depots or warehouses of respective wholesalers around the country.

Most of the importers operate distribution depots in Tema, Takoradi, Kumasi, and Tamale. The main private importers have wholesale outlets to deliver directly to end-

users, primarily in the oil palm, tobacco, and cotton subsectors and in the large rice irrigation projects.

Transport Availability for Importers

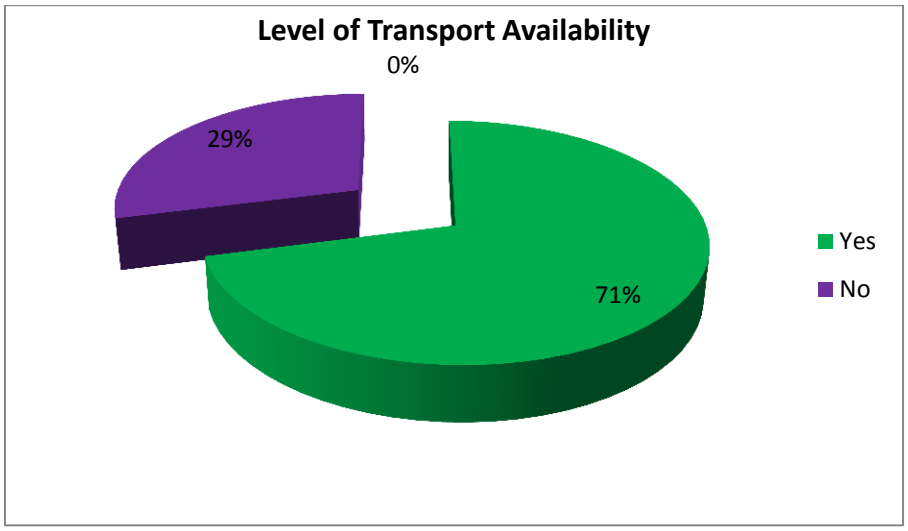
Fertiliser importers are the parties that provide trucks for transporting the items from their depot to the warehouse. Some importers have their own vehicles for ferrying fertiliser whiles others use the services of transport fleet companies and private commercial trucks usually available at the Tema port. Most, (about 80 percent), of fertiliser importers use the services of private commercial trucks available at the port to distribute fertilisers from the port.

These commercial transport operators belong to recognised transport unions who set fixed prices per unit kg of fertilisers transported over different travel distances. The union drivers are loaded through a queuing system. The advantage of using the services of transport companies and commercial truck union members is mainly to do with security and reliability since the unions are accountable for conduct of their members.

There are also freelance commercial truck operators who do not belong to any union but also apply the set transport prices of the unions. These are deemed to be of high risk to importers since they cannot easily tracked. However, some of such operators have special private arrangement with some importers based on some bonded trust developed over long-term service and they provide regular service to such importers. The operations and activities of the unions do show the element of a price fixing cartel. It should rather be possible for each truck driver to decide on how much it would charge for a particular distance since the efficiency and management skills of each driver differ.

Allowing for competition would enable each driver to offer their best prices to enable them secure more customers. The consequences of such price fixing cartel is the fact loading is done in queues implying an inefficient driver and truck tend to benefit from such arrangements. These arrangements do not promote efficiency and effective competition. The only competition is in who a distributer chooses to use over the other. Transport availability for fertiliser distribution does not seem to pose any real problems to the distributers since most fertiliser distributers indicated that they have easy access to transport (see Figure 5.2).

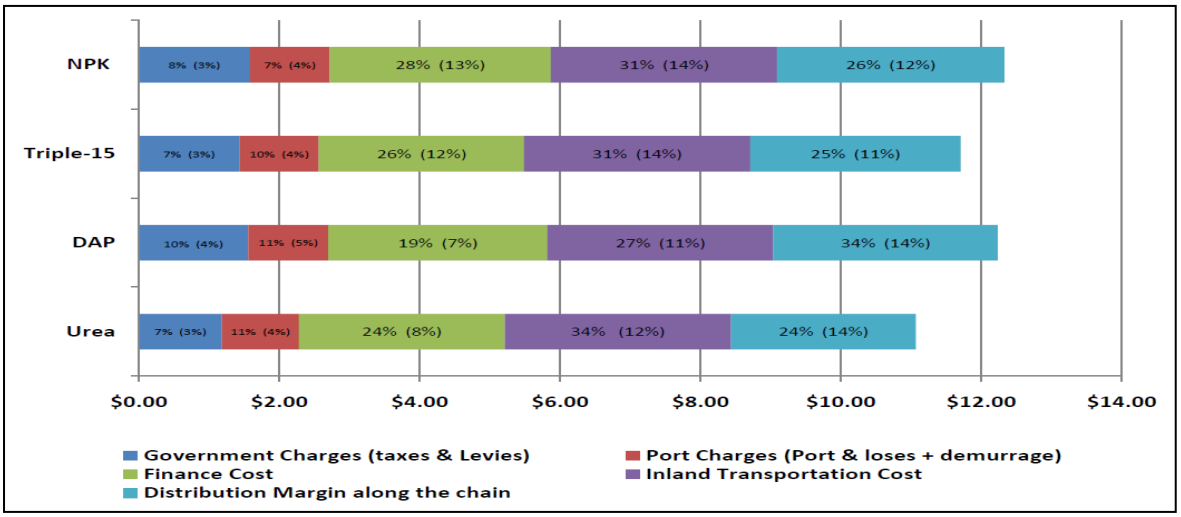
Figure 5.2: Transport Availability for Fertiliser Distribution



Transport Cost Component of Fertiliser Distribution

An IfDC study estimates an average of 34 percent of the fertiliser cost component to be the internal transport cost by the importer (see Figure 5.4).

Figure 5.3: Port Charges by Fertiliser Type

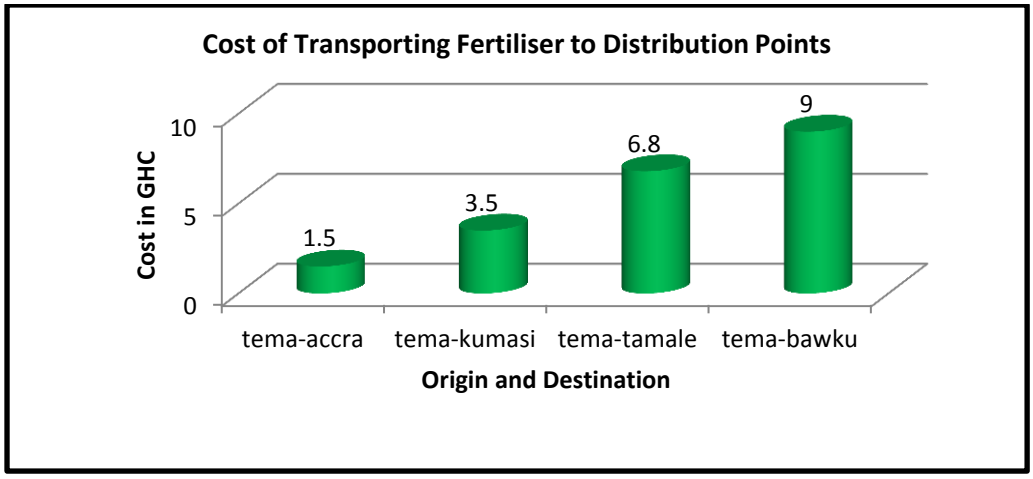


Source: www.ifdc.org

The transport cost of fertilisers is significantly influenced by the distance from port to a wholesaler (see Figure 5.4). The buyer is responsible for paying for the transportation costs. The payment is made according to the number of unit bags. There are a number of other problems that affect the fertiliser costs offered by importers.

Policy uncertainty and structural problems keep transportation in addition to handling, and port clearance costs unnecessarily high but importers indicated that they capture most of the transport subsidy on fertilisers, and that agro-dealers get very little of this the transport cost of fertilisers.

Figure 5.4: Transport Cost of Fertiliser Distribution by Importers



Transportation at Wholesale Retail and Farmer Level

The inland additional cost between the entry port to the final consumer is an essential cost component of fertiliser pricing. Because agro-dealers get very little of the transport subsidy from government transport charges are higher at the retail level than at the distributive and wholesale stage. Transport challenges are also more pronounced at the retail level than at the distribution stage by importers and wholesalers (see Figures 5.5 and 5.6). There is therefore no incentive to move fertilisers into rural areas. Most fertilisers are sold in towns, and some farmers have to travel far to acquire fertilisers, discouraging purchase and use.

Transport Cost at Fertiliser Wholesale and Retail Markets

Transport costs are very crucial to fertiliser pricing at the retail and farmer level. The transport cost at this level is mostly affected by a number of factors, such as distance, transport availability, road condition, high prices of spare parts, and the high cost of energy and communication. The average distance from a fertiliser wholesaler to a retailer and from the farm to the nearest agro dealer as indicated in Table 5.4.

A prominent fertiliser wholesale distributor in Kumasi claims that he would lose money if he covered transport costs to Upper West and Upper East Regions. Hence, he sells from his Kumasi warehouse to retail distributors who bear the transport costs to rural production zones. Fertiliser prices in more remote production zones are therefore likely to be well above the intended subsidised price levels.

Figure 5.5: Transport Challenges at Distribution Stage

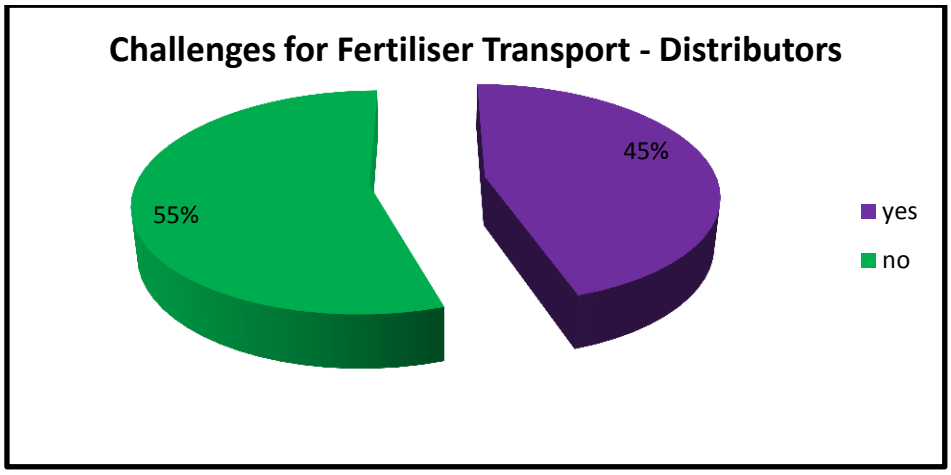
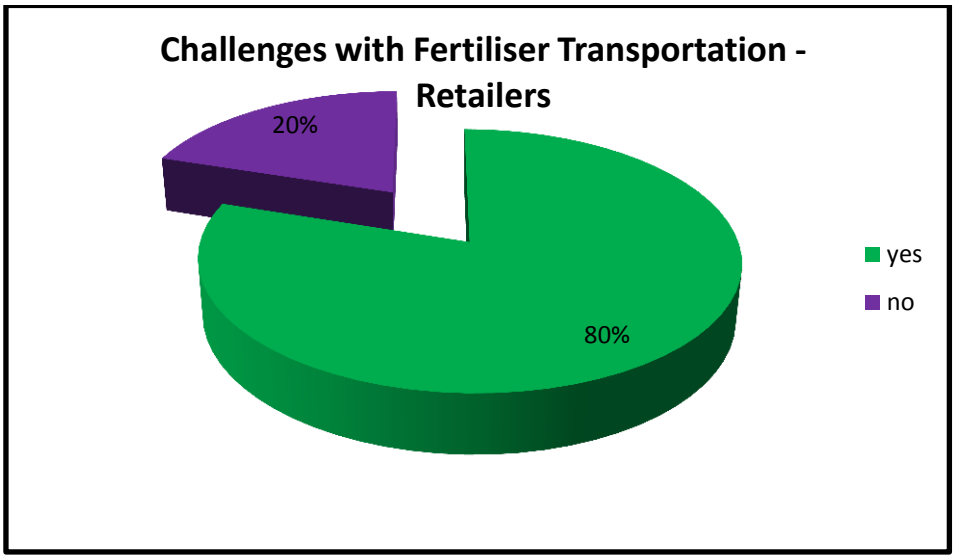


Figure 5.6: Transport Challenges at Retail Stage



Box 5.1: Retailers Perspective
"I buy my products from various suppliers. Some are high and others are fair. Because I have my own KIA truck, it is easier for me to transport them to my place but I still have to add transport cost as if I was hiring it. I usually add a profit of about GH¢10.00 depending on the product and the buyer".

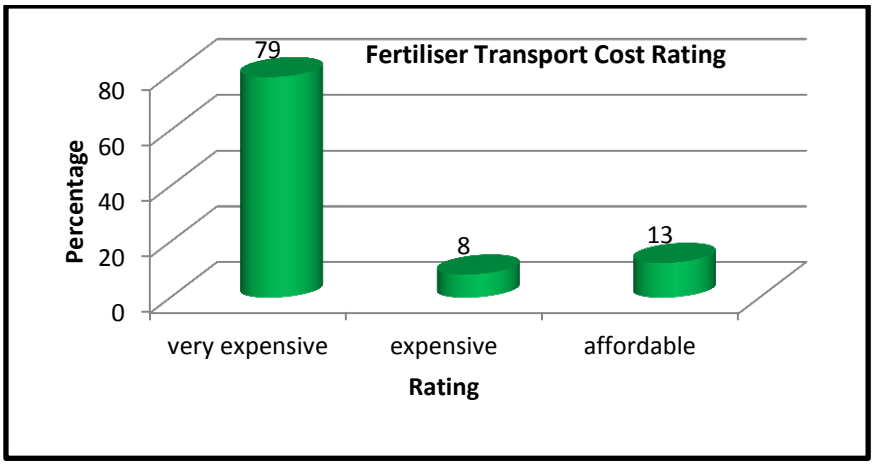
Table 5.1: Average Distance to the Nearest Fertiliser Seller

Region	Average
Ashanti	42
Brong Ahafo	84
Central	92
Eastern	80
GT Accra	34
Northern	120
Upper East	120
Upper West	197
Volta	130
Western	143

Source: Marika Krausover et al., 2010 Fertiliser Transport Constraints at Wholesale and Retail Markets

About 80 percent of retailers and farmers indicated that they have challenges with transporting fertiliser products to the point of sale or use. Nearly 79 percent also rated transport charges on fertiliser to be very expensive, only 11 percent said transport charges were affordable.

Figure 5.7: Fertiliser Transport Cost Rating



Source: Author's Computation, 2015

In some instances of limited vehicle availability or extremely poor road condition to a destination, some transporters refuse to offer regular service and retailers have to hire the vehicles at very exorbitant costs to transport the products from source to destination. Not only does this create transport cartels at such places, it also gives uncompetitive advantage to retailers who are able to afford over those who cannot.

The transport cost which is passed on to the farmer makes it too expensive for some farmers to use the product. Due to this many farmers will buy fertiliser (and other

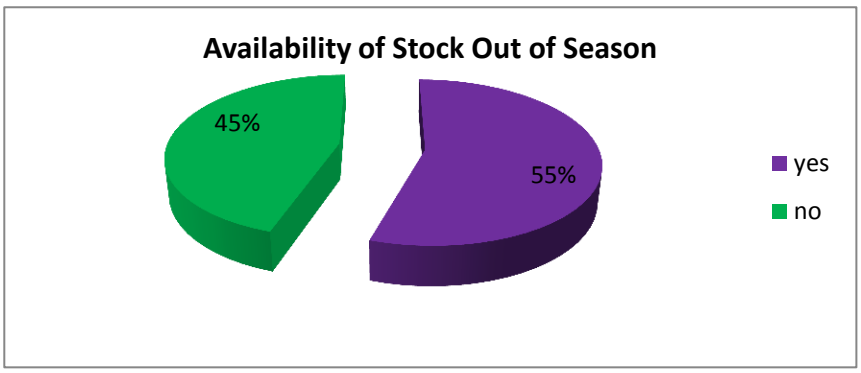
inputs) only if the shop or supply outlet is within easy walking distance or at best a cycling distance. Many small farmers cannot afford to buy a 50 kg bag of fertilisers and so it is desirable in areas where small farmers predominate that fertilisers should be sold in smaller quantities – 1, 2, 5 and 10 kg.

Box 5.2: Retailer's Opinion
"I started this business because there was no one selling fertiliser and other chemicals here. We all usually go the nearest town to buy chemicals. Initially, when I started, business was good. But now, a lot of people are selling in small quantities and others and that is affecting me now and there is nothing I can do about it".

Product Availability At Wholesale And Retail Markets

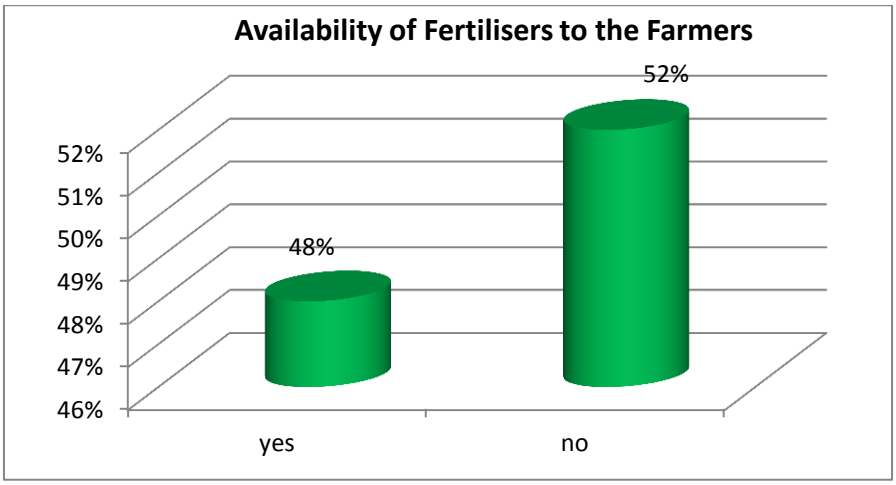
An obvious but necessary condition for farmers to use fertilisers is that they should be readily available at the time when farmers want to buy and use them. About 55 percent (see Figure 5.8) of the fertiliser distributers and wholesalers are able to stock fertiliser even out of season. Therefore, there is a very low possibility of fertiliser stock outs at the wholesale and distribution level.

Figure 5.8: Percentage Stock of Fertilisers Out of Season



However, only 45 percent of farmers said they have access to fertilisers from the retailers even in season. This implies that there are limited stocks at the point of need than available and this is attributed to a number of reasons discussed in the following sections.

Figure 5.9: Fertiliser Availability to the the Farmers



Product Quality Control

Importation of low quality fertilisers increases the transport cost per kg of fertilising nutrient and results in farmers often paying more for less quality of fertiliser applied to their crops. There is some degree of a lack of trust by farmers on the quality and truth of labelling on the recommended fertilisers. Some of them complained of the mixing of fertiliser with inert materials, such as cement, diluting and repackaging original packs or deliberately labelling containers wrongly. Many agro-input dealers who sell fertiliser retail in Ghana Re-bag, as not all farmers can afford a 50 kg bag.

Although, re-bagging of fertiliser is technically illegal it is hardly curbed through enforcement. This results in the sale of underweight fertilisers with reducing volume to farmers. This is because fertiliser quality monitoring and inspection are grossly inadequate, due to very few PPRSD staff with no travel money.

There are also allegations of fertiliser diversion into secondary markets, untargeted subsidies (with subsidised fertiliser going to users who do not need subsidies), administrative allocation of fertiliser import licences (that invites corruption), and non-transparent fertiliser allocation and distribution practices is also a factor.

6. Competition Practices amongst Fertiliser Operators and Handlers

Competitiveness of Fertiliser Trade

There are no barriers for entry and exit to the fertilisers import, wholesale and retail markets in Ghana. However, as stated earlier, huge investment capital requirements, stringent bank requirements and high interest rates at (30-40 percent per annum) deter most investors from entering. All the importers and distributors or agents interviewed for this research (Yara, Louis Dreyfus, Afcott and Chemico) indicated that so far as one has the investment capital and fulfill all the necessary registration procedures and quality checks the company or individual is allowed to operate. Observations and interviews with marketing executives of importing companies interviewed for this research indicated that the industry is highly competitive.

This is reflected in the unwillingness of companies to divulge information, especially on prices they quote for their products to a third party. As in the words of one of the marketing executives, "I am providing you with these information (prices, agents and business arrangements) because you (interviewer) has assured me (interviewee) that the information is for only research purposes". It was observed that these companies and agents are highly competing for customers and by divulging key business information to a third party may be used by their competitors to outwit them in the market.

The results of the price quotes by the companies reflect this assertion because the data on price of the various importers interviewed vary from one importer to the other. See Appendix 1 for the various prices quoted by the importers. To a large extent, fertiliser pricing in Ghana by importers follows a price leadership model; smaller importers peg their prices to the prices of the market leader (Yara). Though there is no evidence of collusive behaviour or cartel, these fertiliser marketing companies follow each other closely in prices as seen in Appendix 1.

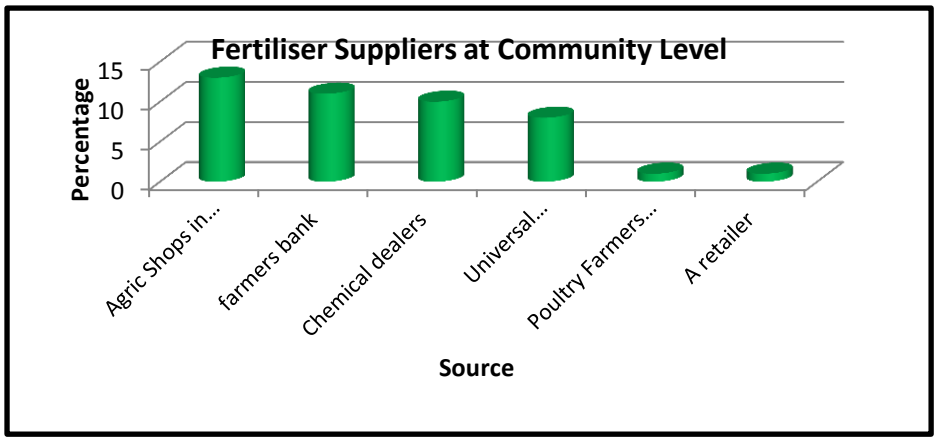
Some importers as a way of enticing their agents and farmers provide them some incentives, such as bearing part of the transportation cost and providing gift vouchers to distributors for onward presentation to the farmers. It appears, however, that the industry has few suppliers or importers who are actively involved in the fertiliser trade. There is the tendency that there may be inefficiencies in practices of these importers but because of the few numbers of players these may go unnoticed. This may be so because where there are few players there is a greater possibility of transferring inefficiencies to consumers because there are not many very strong competitors.

Fertiliser Wholesale and Retail Market Outreach

Fertiliser importers sell their products through a few registered wholesalers/retailers who are independent dealers. Some of the key registered wholesalers/retailers include Sefa and Jane (Kumasi), AGLOW (Accra), AgriMat (Accra), Chinese Woman (Kumasi), Obek Agro Services (Kumasi), SMAKO (Nsawam), Iddissal (Tamale), and Dagx Agrofarma (Accra-North). Currently, it is estimated that there are between 35 and 50 distributors and as many as 4,000 retailers, (World Bank, 2012), the market is already quite robust, and the density of agro-dealers in some regions is high.

The registered wholesalers/retailers take delivery from statutory warehouses of the importers for distribution to the network of rural retailers in the districts and farming communities. These retailers are generally agrochemical shops operated by individuals. Figure 6.1 shows fertiliser suppliers at community level.

Figure 6.1: Source of Fertilisers



7. High Fertiliser Prices, Remote Causes and Challenges of FSP

Fertiliser Pricing by Importers

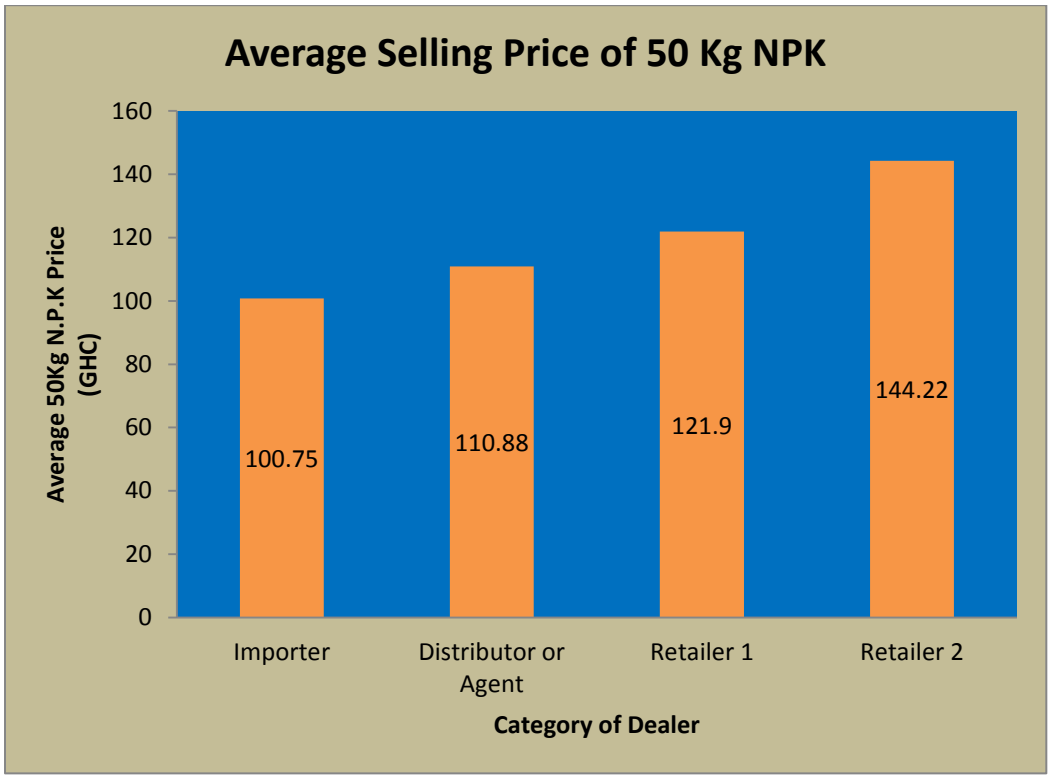
Marketing margin typically determined as a percentage of the total cost of the product at each stage of the distribution and value chain is set by business owners to cover unaccounted costs, expenses, and profit to pay for their entrepreneurial efforts. It also includes port handling and transport costs. The fertiliser product pricing is caused by the following factors:

- Studies of fertiliser cost structures suggest that high prices are due more to policy uncertainty and structural problems that keep transportation costs unnecessarily high, than to excessive margins, especially at the retail level.
- Inflation rate, exchange rate depreciation or appreciation (and degree of currency over- or under-valuation), interest rates (including Treasury bill/note rates, Central Bank reserve rates), size of budget deficit (and extent to which Government borrows to cover deficit) also affect fertiliser prices.
- Inability of the Government to add organic fertiliser (a substitute to chemical fertiliser) which is been produced in the country to the subsidy programme.
- Inability of buyers to organise themselves to the extent that they could demand participation in price setting.

There most commonly used fertiliser for crop production in Ghana is NPK and there are combinations of this which are: NPK: 23:10:15/50 kg and NPK: 15:15:15/50 kg. The data, however, showed that the prices on the market are the same for them. The results showed that the average price of 50 kg bag of NPK is sold by the importers at GH¢100.75 on the open market and the distributors or agents sells it at an average price of GH¢110.88. This represents about 9 percent price difference between the importer and distributor.

The cost of transportation between the importer and the destination of the distributors depends on the distance and it is charged per bag. This range from GH¢1.50 through GH¢5.00 to GH¢9.00 per bag depending on the part of the country the distributor is located. Loading is also charged per bag and this was quoted GH¢0.60 per bag from the importer to the distributor as at the time of this study. Retailers (shall be called Retailer 1) who sells in 50 kg bags for farmers sells at an average price of GH¢121.90 while those (shall be called Retailer 2) who buy from Retailer 1 and sells in 5 kg bowls (popularly called *Olonka*) sells a 50 kg bag of NPK at an average price of and a high as GH¢155.00.

Figure 7.1: Average Price Build-up of NPK from Importer to the Farmer



The price differential in average terms between the distributor and Retailer 1 is about 9 percent while the price difference between the Retailer 1 and the Retailer 2 is about 16 percent. As most farmers buy in 5 kg, it can be said that the price differential between the importer and the farmers, especially those who buy in small 5 kg from retail markets is about 34 percent and this could go as high as 50 percent.

The result is presented in Figure 7.1. Aside transportation, loading and storage cost (though not much) which respondents (distributors and retailers) could not readily quantify because they were using their own warehouse, the remainder of the price difference could be attributed to profit margin and other miscellaneous expenses. Similar trends had been observed for Urea, Sulphate of Amonnia and Potassium Nitrate Sulphate of Potash/25 kg (see Appendix 1) for details of the prices.

The report revealed that the economic conditions of majority of the farmers are so poor such that they still complain about the price of the subsidised fertiliser. It was also revealed during the cause of this study that the subsidy which was between 50 percent and 60 percent of the market price at the inception of the programme in 2008 has reduced to about 25 percent as the time of this research.

The distributions of the subsidised fertiliser also come very late in the planting season when most farmers have bought from the open market. Most farmers also complain of inadequate or unavailability of the subsidised fertilisers for which they are compelled to

rely on the open market, which is usually very expensive as per the views of the farmers.

It was revealed that some farmers are not even aware of the existence of the fertiliser subsidy programme. According to the Peasant Farmers Association of Ghana (PFAG) most farmers are in very remote areas for which they do not even have knowledge of the existence of the programme. PFAG also indicated that the introduction of commercial farmers into the subsidy programme has also affected the quantity that smallholder farmers have access to. In some instances, these well-to-do commercial farmers buy more than they need and later sell it in the open market for the famers who are not able to buy directly from the distributors.

The Government of Ghana is also not able to subsidise prices for the quantity need by smallholder farmers and has even reduced the subsidy percentage in the country because of budgetary constraints. PFAG again indicated that some agents are notorious for causing artificial shortages and selling subsidised fertilisers to farmers at high prices. In addition, the association added that the Government normally add the transport to subsidy up to the regional levels and since most of the retailers are located in the district capitals and zonal areas, these retailers tend to add that cost, which sometimes send the higher than the approved subsidised price.

Availability of Alternate to Inorganic Fertilisers

This indicator was assessed on the basis of a farmer's ability to have access to other sources of fertiliser aside their regular source of supply due to seasonal shortages. Nearly 55 percent of the farmers have alternate source of fertiliser supply, (see Figure 7.2). However, 57 percent of the farmers with no access to alternate source of fertiliser supply said it was either difficult or very difficult to access alternate source of supply. The organic commercial production of fertiliser (which is substitute) despite being existing is not well developed and the Government is yet to add it to the FSP.

Even if farmers are able to source for alternate source of fertiliser, this is done at additional cost due to scarcity. Figure 7.3 gives an indication of the cost difference in a farmer sourcing for fertiliser from an alternate supplier. The duration for sourcing for alternate source of fertiliser supply is also as indicated in Figure 7.5. This indicates limited completion in the fertiliser market at the retail and famer level.

Figure 7.2: Ability to Source for Alternate Source of Fertiliser

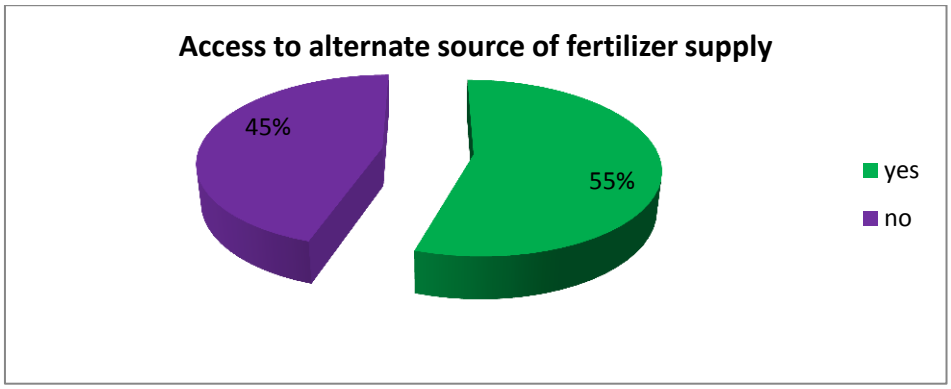
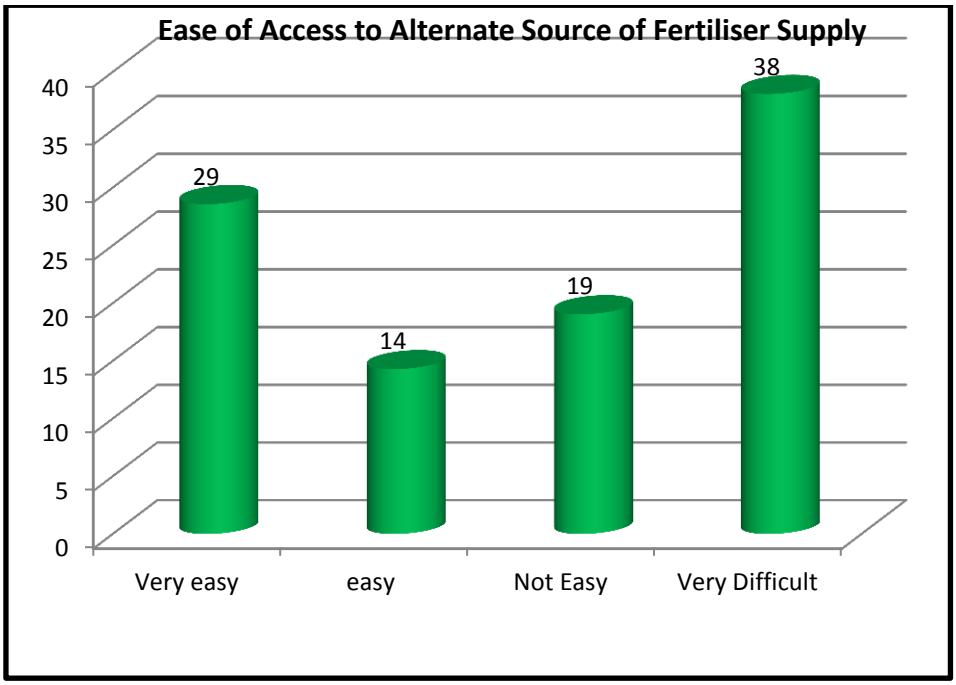


Figure 7.3: Ease of Sourcing for Alternate Source of Fertilisers



Source: Author's Computation, 2015

Figure 7.4: Cost of Sourcing for Alternate Source of Fertilisers

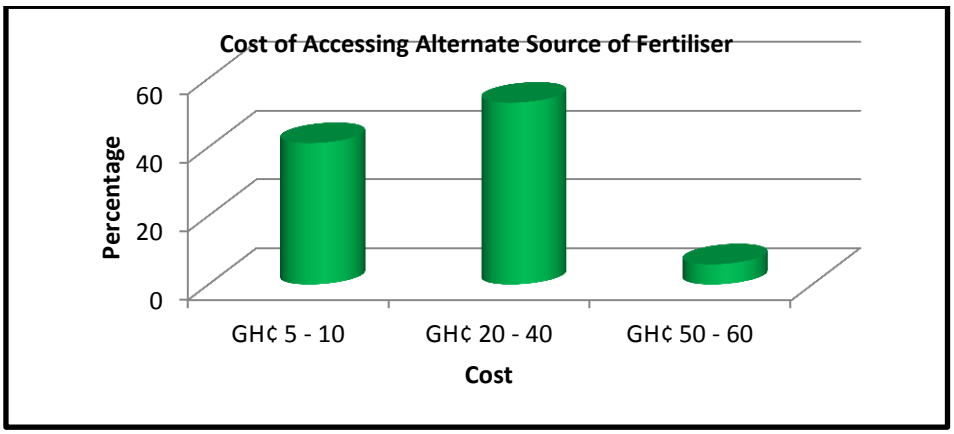
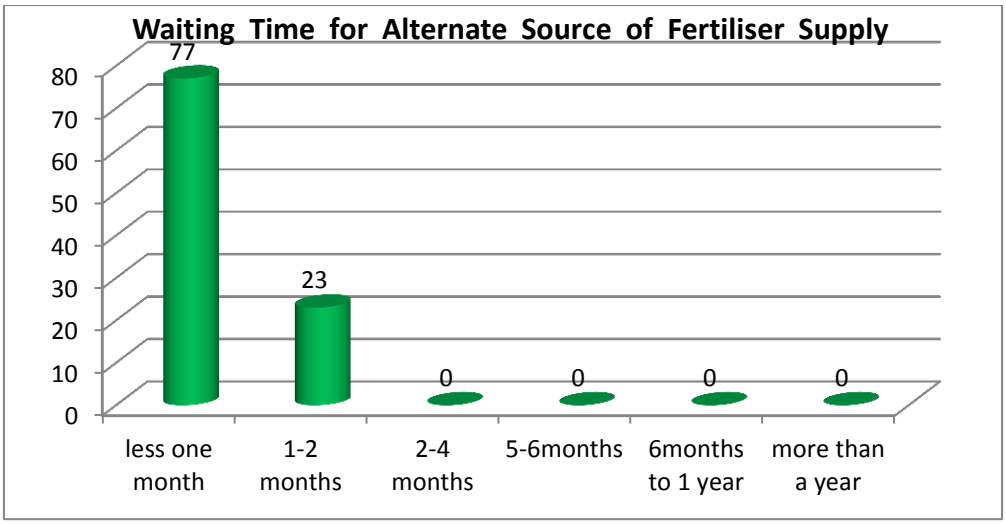


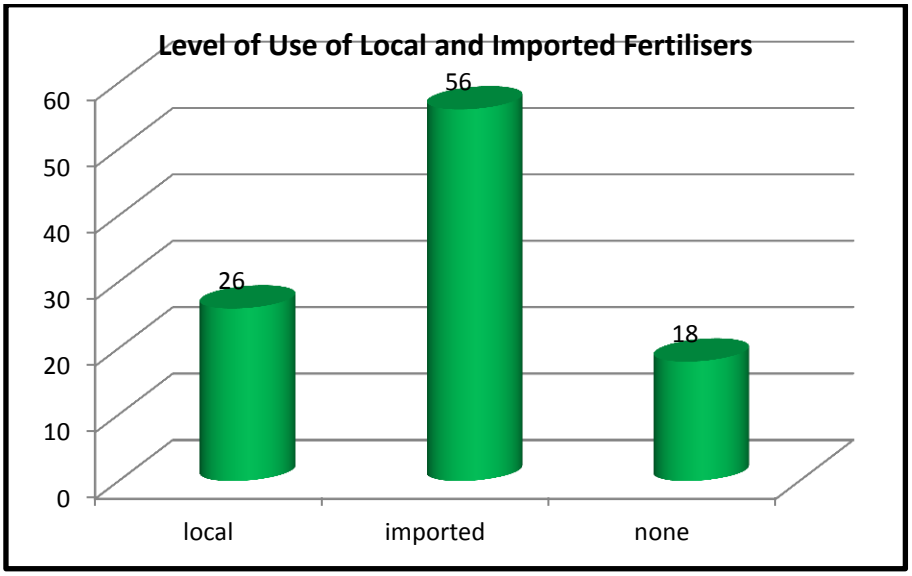
Figure 7.5: Duration for Sourcing Alternate Source of Fertiliser Supply



Source: Author's Computation, 2015

Due to the above challenges the fertiliser market remains below what was expected when the reforms were launched. Out of the 50 farmers interviewed as part of this study, only 56 percent use conventional inorganic fertilisers and 26 percent use organic fertilisers, such as cow dung and poultry waste. As much as 18 percent do not use any fertiliser product at all (see Figure 7.6).

Figure 7.6: Level of Fertiliser Utilisation



8. Constraints to Competitiveness of Fertiliser Markets in Ghana

Lack of Market Information and Poor Linkages

Information on sales, inventories, and warehouse conditions is either not available or incomplete and poorly recorded. There is no systematic collection and dissemination of local and international market information. Some importers and dealers are not willing to give out information, while others would quote prices higher than the acquisition prices.

To be effective, importers and distributors need information about demand, stocks, supply sources, and prices in the domestic and international markets. The availability and accessibility of timely market information improve decision-making and induce greater private investment as transaction costs decline, resulting in net gain to input suppliers and farmers. The absence of such information imposes on the traders unwarranted search and transaction costs and often leads to importation of expensive products.

Similarly, bankers need information about the creditworthiness of potential borrowers. With limited information, bankers, importers, and distributors must invest in screening out potential defaulters when extending credit to avoid the problem of adverse selection, thereby increasing transaction costs. Finally, the lack of information on requirements from neighbouring countries prevents regional collaboration and consolidation through major ports to achieve economies of scale and on-shore bagging of bulk fertilisers (Debrah, 2000).

Limited Marketing Skills of Potential Dealers

Years after the liberalisation of fertiliser marketing, the number of dealers and retail outlets in the rural areas still remain severely inadequate. Consequently, many farmers have to travel long distances to obtain supplies. Potential dealers lack the knowledge of how to effectively reach out to the farmers to sell their products and how to bring finance into the business through their own arrangements.

They also lack the knowledge for planning and forecasting quantities, timing, and prices according to the market situation and the needs of the farmers of the area. Consequently, the rural markets in the business are still undeveloped. The independent dealer in rural areas is an essential part of the fertiliser marketing and distribution chain. If properly motivated and trained, this dealer can turn into a very effective agent of change who can develop the market in the local area. Local fertiliser traders buy and

sell fertiliser within the same season or within the same month with limited investment storage.

Currently, some banks and other financial institutions are showing interest in the sector. Loan guarantee funds are being designed and implemented, insurance products are being tested, warehouse receipt system is being developed, and more financial institutions are becoming members of the credit registry bureau for increased transparency and information sharing. All of these are steps in the right direction for the development better financial services for the agriculture sector.

9. Conclusion and Recommendations

Conclusion

The findings of the study have indicated that the fertiliser import, marketing and/or distribution have two systems: Open Market and Fertiliser Subsidy Programme. During the period of the existence of the subsidy programme, the price to be sold per bag for all farmers are to be the same across the country with all things being equal. The study, however, found out that due to challenges faced in implementation of the programme some farmers buy at higher prices slightly higher than the government approved price.

Among distributors and retailers the system is highly competitive but still developing. There is real lack of investment capital among these groups.

Some transport unions are involved in price fixing when it comes to the fee to be charged per bag for transported fertlisers. The unions fix price to be charged per bag of fertiliser for a particular distance for its members and members are obliged to respect that. This is anticompetitive and has to be discouraged.

The registration, clearing and port handling procedures are complex and frosted with many challenges, which make the distribution of fertiliser inefficient and it associated high cost whether with the open market or the subsidised fertiliser. There are serious challenges and bureaucratic bottlenecks associated with the clearing procedures, which do not promote effective competition.

The registration, clearing and port handling procedures are complex and frosted with many challenges, which increases delays and transaction cost at the port. These costs are passed on to the cost of the fertiliser whether with the subsidised or the open market one.

Recommendations

In order to improve the competitiveness of the fertiliser markets for both suppliers and users there is the need for some fundamental improvements in policy with considerations for better performance. Improvements in each of these areas will contribute to improved profitability of fertiliser distribution by reducing input costs, raising or stabilising producer prices and improving fertiliser use efficiency.

Policy Support

Policy Focus on Fertiliser Market at Retail and Farmer Level

Much as there are challenges in the importation of fertiliser, the major constraints in the industry are at the retail level, which has direct impacts on the ability of the farmer who is the end user to buy and utilise the product for the expected benefit. Therefore, there must be policy focus on the individual farmer (either private land owner farmer or tenant farmer) to address their specific fertiliser market needs. A much higher priority for agriculture and rural development should be considered in relation to practical methods of increasing long-term farm productivity, for example, through the development of new local seed varieties, new higher value crops, improved cultivation practices and increased and more effective use of fertilisers.

Reducing Bureaucracy and Discretionary Controls

There is the need to reduce the amount of bureaucracy at the import and distributive stage, especially obtaining permission from the relevant administrative authority for their operations, port clearing procedures etc. since these stifles active entrepreneurship except by those businessmen who are well connected or who know their way round the system.

The private sector is more likely to import and develop retail distribution networks if government or donor distribution programmes to stimulate fertiliser use are designed collaboratively with the private sector and in a manner that does not crowd out existing commercial demand.

The risks of providing credit to retailers should be shared (for example, credit guarantees) and incentives should be given to domestic companies to import fertiliser and expand their distribution network closer to the farmers.

Access to credit to retail businesses, should be provided by enacting policies and programmes in support of micro financial institutions to serve the rural sector in support of local trade and as an incentive to expand retail businesses and fertiliser demand in the rural areas.

Macro-Economic Stability

One of the pre-conditions to the successful development of agriculture and the fertiliser market is general economic stability – steady economic growth, low inflation, stable foreign exchange rate and there is need for the Government to ensure the attainment of these factors.

The following components are critical:

1. There is need for the Government to provide alternative subsidies and/or investing in sector like credit subsidy and also consider options to guarantee loans to dealers to incentivise the use of fertilisers and other inputs
2. The Government should also provide incentives to domestic companies to import fertilisers and develop private fertilisers distribution systems and
3. The Government should establish supporting policy environments to attract investments into the local fertiliser production and distribution sectors of the countries.

Increased Access to Credit and Capital

1. The Government should provide access to credit to retail businesses, and to producers by enacting policies and programmes in support of micro-financial institutions to serve the rural sector in support of local trade and as an incentive to expand retail businesses and fertiliser demand in the remote rural areas.
2. The Government should encourage and extend prudent banking services to rural areas.
3. Special focus should be on credit for small scale fertiliser retail businesses and small scale farmers. Credit availability largely dictates the marketing of fertilisers. Most governments have initiated various programmes and assisted cooperative credit systems to help meet this need. They have, however, tended to serve the large and medium-scale farmers, because of the nature of credit procedures and eligibility requirements. In this way, they have been able to reach only a small proportion of the small-scale farmers, whose only source of credit would normally be traders or moneylenders. Evidence from many of these institutions is that loan repayment rates of as low as 40 percent are quite common.
4. Incentive to savings by the farming population should be provided through innovative financial instruments (i.e. indexed crop insurance) that will protect their lending portfolios at the same time that will protect farmers from the main perils (i.e. drought or excessive rain) adverse effects by credit institutions.
5. Promotion of areas for improvement in provision of agricultural finance services, which do not necessarily require regulatory changes given as following::
    - Encouragement of banks and other financial institutions to accept agricultural equipment and other farm assets as collateral against which loans can be made. Development of collateral registries is one way to facilitate this practice.
    - Development of credit reference bureaus to provide banks with more information about lending risks. Ideally, such bureaus should be in the private sector.
    - Putting in place legal and regulatory frameworks to encourage use of collateral-based lending and warehouse receipt programmes.

Early Release of Subsidies

Early release of subsidies takes away any form of uncertainties on the part of the farmers and the distributers. It was reported that due late release of subsidies, some farmers have to go to the opened market to buy the non-subsidised fertilisers above the market. This reduces the economic welfare of the farmers.

Improved Transportation

The first criterion for effectiveness in fertiliser distribution is that the product be available in adequate quantities when and where it is needed. This depends on the existence of suitable transport modes and storage facilities. It also reflects managerial capacity in ordering, stock movement and sales territory allocation. With good management and advance planning, economical ways around transport and storage bottlenecks may often be found. Governments should also be able to foster investment in the provision of needed physical facilities and to employ operations specialists in important distribution management positions. Specifically, the following interventions should be considered.

- There is need for the development of improved infrastructure – mainly roads and services necessary to trigger agricultural market development. District Assemblies could invest in local feeder roads.
- There should be a review for the reduction or elimination of unnecessary harbour charges to further reduce transport and handling prices of fertiliser. One particular example is the unnecessary fee applied for the shore handling of some types of fertilisers like urea that are classified as dangerous products in port handling documents. De-classifying urea as a hazardous product would be helpful.
- Dealers should expand their distribution network closer to the farmers.

Fertiliser Product Quality Control

The quality of fertiliser cannot be judged by its appearance, so that the buyer depends on information supplied by the manufacturer and distributor. Quality control of fertilisers is normally a government responsibility and bags of fertilisers for sale should normally be required to carry the following basic information:

- Name of the fertiliser
- Brand name or name of the manufacturer
- Percentages of primary nutrients
- Other characteristics and
- Weight (gross or net)

Enforcement

Legislation on the quality and packaging of fertilisers is effective only to the extent that it can be enforced. Qualified people must be appointed as inspectors and given the necessary authority to examine stocks of fertiliser offered for public sale and to take penal action against offenders. This does not mean that a special core of fertiliser inspectors is required. Quality control of fertilisers can be combined with that of agricultural products and supplies, such as seeds, pesticides and veterinary medicines.

Improved Market Skills and Information

1. There is need to support agro-dealers training programmes to develop their technical and business capabilities to run their business as well as to serve as *de facto* extension agents to make sound technical recommendation to farmers, especially in remote rural areas service for technology development and education
2. Farmers' knowledge and skills in sustainable crop and soil management practices should be improved through well-informed, capacity building and extension services to educate farmers and retailers on their proper use.

Improved Fertiliser Costs

Governments have a major part to play in ensuring that farmers receive fertilisers at the lowest possible cost commensurate with a reliable and timely supply. Also importers who import fertiliser product primarily from Eastern Europe, importers should be tapping much more into the cheap markets in that region of the world and in the Middle East.

A better and more sustainable solution would be to use resources on initiating and intensifying more efficient demand-inducing activities. Such activities include demonstration of results and methods pertaining to fertiliser use and crop varieties, as well as dealer network and output market development (including agro processing) to increase the market size, thereby providing opportunity to reduce prices through lower landed unit prices, greater competition, and bulk blending.

Improved Competition

At the wholesaler/retailer level, policy should be directed to initiating or promoting a competitive market situation, so that at a minimum, farmers have a choice of two suppliers. While this may not always be possible in the outlying districts where the market is small and expensive to service, the main market areas, closer to the main towns, should provide good opportunities for competing suppliers to operate.

In order to promote this level of competition, the MoFA can provide a useful service by gathering and publishing reliable market prices for agricultural commodities and livestock at various locations around the country. Weekly prices of the main fertilisers and other inputs should also be published. This information can be circulated by farmers' cooperatives and also by radio and television. There should be regular early morning radio programmes covering topical farming issues and giving the latest market prices. The following are proposed to address the issues identified in the fertiliser industry:

- Regarding outreach, with the current market size, bulk and joint procurements offer opportunities for significant reduction in freight costs. In addition, a better use of existing depots distributed throughout the country can also improve the development of the retail network. Currently, this valuable infrastructure is not fully utilised.
- Regarding opportunities for the profitability, refining the obsolete fertiliser recommendations, which for the most part date as far back as 1973, and using more cost-effective products as discussed earlier are required.
- Improving the efficacy of fertiliser use also implies critical improvement in farmers' technologies, including greater use of improved seed and integrated soil fertility management strategies as discussed in the national soil fertility action plan. In other words, significant research efforts need to be supported at the Soil Research Institute (SRI), the Crops Research Institute (CRI) and the universities.

Table 9.1: Location-wise Unit Cost of Fertilisers

Importer	**Afcott**	**Yara**	**Chemico**	**Louis Dreyfus**				
Location	**Tema**	**Tema**	**Tema**	**Tema**				
Unit Cost of the following	**GH¢**	**GH¢**	**GH¢**	**GH¢**	**Average Price**	**Minimum**	**Maximum**	
NPK: 23:10:15/50 kg	100.00	100.00	106.00	97.00	100.75	97.00	106.00	
NPK: 15:15:15/50 kg	98.00	94.00	98.00	96.00	96.50	94.00	98.00	
Urea/50 Kg	91.00	85.00	88.00	90.00	88.50	85.00	91.00	
Sulphate of Amonnia/25 kg	75.00	63.00	75.00	66.00	69.75	63.00	75.00	
Potassium Nitrate/25 kg	142.00	140.00	145.00	145.00	143.00	140.00	145.00	
Sulphate of Potash/25 kg	100.00	100.00	102.00	100.00	100.50	100.00	102.00	
Wholesaler	**Aglow Agric**	**Pure and Perfect Ventures**	**Greenshield Agrochemicals**	**OKLE Farms**	**NAPFARM**			
Location	**Accra**	**Tema**	**Ho**	**Ashaiman**	**Somanya Road**			
Unit cost of the following	GH¢	GH¢	GH¢	GH¢	GH¢	Average Price	Minimum	Maximum
NPK: 23:10:15/50 kg	111.00	110.00	112.00	110.00	111.00	110.80	110.00	112.00
NPK: 15:15:15/50 kg	111.00	110.00	112.00	110.00	111.00	110.80	110.00	112.00
Urea/50 kg	104.00	105.00	105.00	102.00	103.00	103.80	102.00	105.00
Sulphate of Amonnia/50 kg	87.00	86.00	90.00	90.00	85.00	87.60	85.00	90.00
Potassium Nitrate/25 kg	160.00	160.00	163.00	161.00	162.00	161.20	160.00	163.00
Sulphate of Potash/25 kg	112.00	110.00	111.00	110.00	112.00	111.00	110.00	112.00

Similarly, the practice of soil testing for site-specific recommendations needs to be promoted. The need for such initiatives was clearly recognised in Medium Term Agricultural Development Programme (MTADP) and Accelerated Agricultural Growth and Development Strategy (AAGDS) that have guided government policies and programmes for triggering a demand-led growth of the agricultural sector since the structural adjustment programme was launched. The national soil fertility management action plan that has specific activities to tackle soil-related problems is yet to be implemented.

Improved Fertiliser Crop Price Ratios

There is need for farmers and input dealers for better use of fertiliser as a productive resource through agricultural research, particularly into new, more productive seed varieties and more productive cultivation practices given local conditions.

Invest in Upgrading Public Infrastructure

The will include improvement in physical facilities, such as improved port facilities. Government should invest in port improvement facilities to reduce further the port cost by making them more agile and efficient.

APPENDIX 1

Retailer 1 (Subsidised FSP Figures)

Fertiliser Type	**Name, Location & Phone No.** Apus investment 0208177392	**Name, Location & Phone No.** K Emma agro chemicals. 0243681243.	**Name, Location & Phone No.** Mighty agro chemicals. 0242192323	**Name, Location & Phone No.** Hanford investment. 0244774631	**Name, Location & Phone No.** Awurade ne mehwefo. 0541671015	**Name, Location & Phone No.** Issaka Malik. 0240138115	**Name Location & Phone No.** Hanna Ferka	**Name, Location & Phone No.** AL Hassan Kruga	**Name, Location & Phone No.** Osei Bonsu	**Name, Location & Phone No.** Stephen Kpakia 0202235359
	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)
NPK:23:10:15	97	98	97.00	102.00	104.00	104.00	100	95	99	102
NPK:15:15:15	103.00	97.00	97.00	100	97.00	97.00	100	95	99	100
Urea	98.00	80.00	90.00	98.00	97	97.00	98	98	96	98
Sulphate of Ammonia	78.00	68.00	77.00	78.00	68.00	78.00	68	85	69	68
Sulphate of Potash	=	=	=	=	=	=	=	=	=	=
Potassium Nitrate	8.00/1 kg sachet	8.00/1 kg 25kg=16.00	7.20	8.00/1 kg	8.00/1 kg	=	8.00\1 kg	8.00\1 kg	8.00\1 kg	=

RETAILER 2

Fertiliser Type	**Name, Location & Phone No.** Abdulai Yakubu 0246963769	**Name, Location & Phone No.** Issaku Issah 0242102680	**Name, Location & Phone No.** Kofi Bonya 0247775350	**Name, Location & Phone No.** Saaka Dauda 0207987271	**Name, Location & Phone No.** Alhassan Mussah -	**Name, Location & Phone No.** Nana Arhenkan -	**Name, Location & Phone No.** Osman Mumuni -	**Name, Location & Phone No.** Kofi Boahen 0500469460	**Name, Location &Phone No.** Oscar Addo	**Name, Location & Phone No.** Abau asana -
	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)	Price (GH¢)
NPK:23:10:15	150	140	140	140	155	140	150	140	137.2	150
NPK:15:15:15	150	150	140	140	150	140	150	140	137.2	150
UREA	133	133	128	133	133	133	133	134.4	134.4	133
Sulphate of Ammonia	126	126	126	126	126	124.6	126	126	123.2	126
Sulphate of Potash	-	-	-	-	-	-	-	-	-	-
Potassium Nitrate	10.00	-	10.00	10.00	9.50	-	-	10.00	10.00	9.00

CUTS International

Consumer Unity & Trust Society
D-217, Bhaskar Marg, Bani Park, Jaipur 302016, India
Ph: 91.141.228 2821, Fx: 91.141.228 2485
Email: cuts@cuts.org, Web: www.cuts-international.org