



**COMPETITION AND CONSUMER PROTECTION  
COMMISSION**

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**AGRO-INPUT (FERTILIZER) VALUE CHAIN STUDY IN ZAMBIA**

**STUDY CARRIED OUT UNDER THE ZAMBIA AGRIBUSINESS AND TRADE  
PROJECT (ZATP)**

**June, 2019**

## ACRONYMS

7NDP	Seventh National Development Plan
AGRA	Alliance for a Green Revolution in Africa
BRRRA	Business Regulatory Review Agency
CAADP	Comprehensive African Agriculture Development Programme
CCPC	Competition and Consumer Protection Commission
CCRED	Centre for Competition, Regulation and Economic Development
CCSA	Competition Commission South Africa
CSO	Central Statistical Office
DAC	District Agricultural Committee
EIA	Environment Impact Assessment
FAO	Food Agriculture Organisation
FISP	Farmers Input Support Program
FSP	Fertilizer Support Programme
GDP	Gross Domestic Product
IAPRI	Indaba Agricultural Policy Research Institute
IFDC	International Fertilizer Development Centre
LAN	Limestone Ammonium Nitrate
MACO	Ministry of Agriculture and Cooperatives
MCPAT	Markets and Competition Policy Assessment Tool
MCTI	Ministry of Commerce Trade and Industry
MNDP	Ministry of National Development Planning
MoL	Ministry of Labour
MPRA	Munich Personal RePEc Archive
MT	Metric Tonne
NAMBOARD	National Agricultural Marketing Board
NCZ	Nitrogen Chemicals of Zambia
OECD	Organisation for Economic Cooperation and Development
PACRA	Patent and Company Registration Agency
PMR	Product Market Regulation
SNAP	Second National Agricultural Policy
SOEs	State Owned Enterprises
UN	United Nations
ZABS	Zambia Bureau of Standards
ZAM	Zambia Association of Manufactures
ZARI	Zambia Agriculture Research Institute
ZATP	Zambia Agribusiness and Trade Project
ZCSA	Zambia Compulsory Standards Agency
ZDA	Zambia Development Agency
ZIAMIS	Zambia Integrated Agricultural Management Information System
ZMA	Zambia Metrology Agency
ZMW	Zambian Kwacha
ZNFU	Zambia National Farmers Union

## TABLE OF CONTENTS

<b>ACRONYMS</b> .....	1
<b>TABLE OF CONTENTS</b> .....	2
<b>LIST OF TABLES</b> .....	3
<b>LIST OF FIGURES</b> .....	4
<b>ACKNOWLEDGMENTS</b> .....	5
<b>EXECUTIVE SUMMARY</b> .....	6
<b>INTRODUCTION</b> .....	9
<b>Study Rationale</b> .....	11
<b>Objectives of the Study</b> .....	13
<b>Scope of Work</b> .....	13
<b>Methodology of the Study</b> .....	14
<b>Limitations of the Study</b> .....	14
<b>STUDY FINDINGS</b> .....	15
<b>Fertilizer Sub-Sector</b> .....	15
<b>Fertilizer Value Chain</b> .....	16
<b>Commercial Fertilizer Supply in Zambia</b> .....	18
<b>Fertilizer Importation</b> .....	20
<b>Fertilizer Manufacturing/ Blending Market Structure</b> .....	24
<b>FARMER INPUT SUPPORT PROGRAM (FISP)</b> .....	32
<b>Fertilizer Distribution and Retailing</b> .....	38
<b>Freight and Warehousing (Logistics)</b> .....	41
<b>CONCLUSIONS</b> .....	46
<b>RECOMMENDATIONS</b> .....	49
<b>REFERENCES</b> .....	51

## **LIST OF TABLES**

Table 1. NCZ Annual Production Figures.....	28
Table 2. Fertilizer Market Concentration in Zambia .....	30

## **LIST OF FIGURES**

Figure 1. Fertilizer Usage in Zambia (Kg/ha),(2002-2017).....	11
Figure 2. The Zambia Fertilizer Value Chain.....	17
Figure 3. World Bank Enabling Business of Agriculture (2017).....	24
Figure 4. Fertilizer Market Share in Zambia, 2018.....	27
Figure 5. Direct Fertilizer Distribution During 2018/19 FISP e-Voucher ....	36
Figure 6. FISP Spending, 2010/11 – 2018/19 .....	37
Figure 7. Fertilizer Distribution in Zambia.....	39

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## **EXECUTIVE SUMMARY**

The fertilizer sub-sector is one of the allied spheres of the agricultural sector in Zambia. Due to soil fertility problems coupled with increased food demand necessitated by increased population, the use of fertilizer has become key in increasing agricultural productivity and ensuring significant contribution of the agriculture sector to the economy. Currently, fertilizer has been estimated to account for between 30% and 50% of the costs to produce grain and or oilseeds. Specifically, to stimulate the agriculture sector, increasing amounts of public resources have been channelled towards the fertilizer sub-sector in the last two (2) decades to make it more competitive and responsive. The fertilizer sector in Zambia therefore presents both a huge market and an opportunity for infusing value in the agriculture value chain.

Despite Government presence in the fertilizer market, its activities are discharged by the private sector through the tendering process to secure and distribute the subsidised fertilizer. Currently, the fertilizer market has twelve companies with only five involved in either manufacturing or blending of fertilizer while the majority of the companies operate as importers or distributors of both fertilizer and fertilizer raw materials.

The presence of both Farmer Input Support Programme (FISP) subsidized fertilizer and commercial fertilizer in the same distribution value chain poses some competition challenges. Given the significant presence of Government, competition at the distribution level of the value chain occurs at the tendering stage with companies failing to secure tenders left to concentrate on commercial fertilizer distribution in direct competition with distributors of the FISP fertilizer. Retailers stock both commercially distributed and FISP fertilizer. While large scale farmers are capable of either making their own imports or buying directly from distributors, the retail market (agro-dealer level) is largely a small-scale farmers market with the majority on the FISP program.

Because of the parallel distribution of fertilizer in the same value chain, there have been concerns of government presence crowding out the private sector contrary to the initial intention by Government of using FISP as a stimulant of the distribution system.

Due to major delays in receiving inputs including fertilizer under FISP, farmers tend to just resale fertilizer as crops could have already gone past the stage of fertilizer application. Other farmers resale the fertilizer obtained under FISP in order to recover money they would have used to get fertilizer on credit from agro dealers. All these distorts the efficiency of the fertilizer market as the subsidized fertilizer finds its way in the competitive commercial market selling at extensively cheaper prices.

There has been a resurgence of the commercial fertilizer market due to perceived inefficiencies of the FISP program such as late payments and activation of the system making the commercial fertilizer distribution less risky. However, leakages of the FISP fertilizer market still pose competition challenges as commercial fertilizer is still expected to compete with leaked FISP fertilizer.

Fertilizer is a bulk product whose distribution presents logistical challenges in terms of transportation and warehousing. The sector is closely integrated into the freighting support service of the value chain. The performance of the distribution networks and systems has therefore a direct impact on the performance of the fertilizer value chain. The assessment of transport and warehousing services and other factors that affect the price of fertilizer in Zambia showed that transportation and logistics cost contribute as high as 70% to the final price of fertilizer in Zambia. This makes fertilizer prices in Zambia to be higher than the competitive international prices by about 70%. Transporting fertilizer from sea ports to Lusaka per ton per km is around \$0.11-\$0.17. Inadequate warehouses also pose another



constraint in supplying fertilizer competitively and at a cheaper price. For instance, rail transportation rates are by far cheaper than the rates from road freight both domestically and within the region. However, using rail transportation requires fertilizer importers to have proper warehouses spread across the country in order to facilitate early transportation of fertilizer as rail delivery is slow than by road . Importation border clearing through the Dar es Salaam corridor and transporting to Lusaka is relatively expensive compared to clearing at the Beira port due to the inefficiencies and delays related to the Dar es Salaam port.

Barriers to entry into the fertilizer market are limited to requirements of handling potentially hazardous chemicals with certification and authorisation required from several different sector regulators and government units. They are however challenges such as (i) high number of permit/licences and product certification requirements; (ii) fragmented permit, licencing, and certification processes; (iii) high cost of licence and permit fees; (iv) high start-up costs; and (v) high cost of imported raw materials. In contrast, findings revealed that agro-dealers, retailers and wholesalers are generally faced with lighter challenges associated with basic licensing as a trader in agro-chemicals and fertilizers.

## INTRODUCTION

1. The Government of the Republic of Zambia (GRZ) has recognized agriculture as one of the key priority sectors in achieving sustainable economic growth and poverty reduction as evidenced by the prioritization of the sector by major policies such as the Vision 2030, the Second National Agricultural Policy (SNAP) and the Seventh National Development Plan (7NDP). This is because evidence has shown that in developing countries, a well performing agricultural sector translates into significant improvements in Gross Domestic Product (GDP), contributes to employment creation, and broadens the country's tax base. Though its contribution as a share of GDP has been declining for the past ten (10) years<sup>1</sup>, the agricultural sector and its associated spheres (sub-sectors) remain integral to the Zambian economy. About 48.9% of the Zambian population depends on agriculture<sup>2</sup> primarily through smallholder production for their livelihoods and employment.
2. The fertilizer sub-sector is one of the allied spheres of the agricultural sector in Zambia. Due to soil fertility problems coupled with increased food demand necessitated by an increase of human population<sup>3</sup>, the use of fertilizer is not only key in increasing agricultural productivity but also in ensuring significant contribution of the agriculture sector to the national Gross Domestic Product (GDP). For instance, fertilizer has been estimated to account for between 30% and 50% of the costs to produce grain and or oilseeds. Thus, to stimulate the agriculture sector, increasing amounts of public resources have been channelled towards the fertilizer sub-sector in the last two (2) decades,<sup>4</sup> to make it more

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<sup>1</sup> In 2017, the contribution of agriculture to Zambia's GDP was 7.16 percent down from 20% in the 1990s (World Bank, 2018).

<sup>2</sup> IAPRI 2018

<sup>3</sup> Zambia has been experiencing population growth, rapid urbanisation and rising per capita income which has serious implications on food policies and markets, rural development, and the nutrition outcomes of the population.

<sup>4</sup> FISP was allocated a total of K2.8 billion in 2017 as a way of stimulating the private sector participation in agro-inputs and increase competition- Ministerial Statement on the Update on Implementation of the Farmer Input Support Programme (FISP) 2017/2018 Agriculture Season  
[http://www.parliament.gov.zm/sites/default/files/images/publication\\_docs/MINISTERIAL%20STATEMENT%20BY%20THE%20MINISTER%20OF%20AGRICULTURE\\_0.pdf](http://www.parliament.gov.zm/sites/default/files/images/publication_docs/MINISTERIAL%20STATEMENT%20BY%20THE%20MINISTER%20OF%20AGRICULTURE_0.pdf)

competitive and responsive<sup>5</sup>. For example, in 2011, Government spent approximately US\$184 million (or 0.8% of GDP) to provide nearly 182,500 metric tons (MT) of fertilizer and 9,000 MT of hybrid maize seed to FISP-participating farmers at subsidized prices.<sup>6</sup> The US\$ 184 million expenditure on fertilizer procurement and distribution in 2011 represented approximately 29% of the agriculture budget in 2010<sup>7</sup> and this figure was increased to 56%<sup>8</sup> in 2016.

3. On a whole, increases in the proportion of the public agricultural budget that is spent on fertilizer largely through agricultural subsidy programs (particularly FISP in the Ministry of Agriculture (MoA) and the Food Security Pack (FSP) in the Ministry of Community Development and Social Services, (MCDSS)) over the last two decades has led to an overall increase in fertilizer usage per hectare (ha) from around 30kg/ha in 2002 to over 100kg/ha in 2017 (
- 4.
- 5.
6. **Figure 1**).<sup>9</sup> Therefore, the fertilizer sub-sector in Zambia presents both a huge market and an opportunity for infusing value in the agriculture value chain. In addition, the fertilizer sub-sector represents the most profitable and Research and Development (R&D) intensive portfolio of agribusiness value chain.<sup>10</sup>

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<sup>5</sup> <https://www.daily-mail.co.zm/fisp-the-production-hurdles-and-future/>

<sup>6</sup> International Monetary Fund (IMF).2012. Zambia 2012 Article IV Consultation. IMF Country Report No. 12/200. Accessed March 2013, available at <http://www.imf.org/external/pubs/ft/scr/2012/cr12200.pdf>

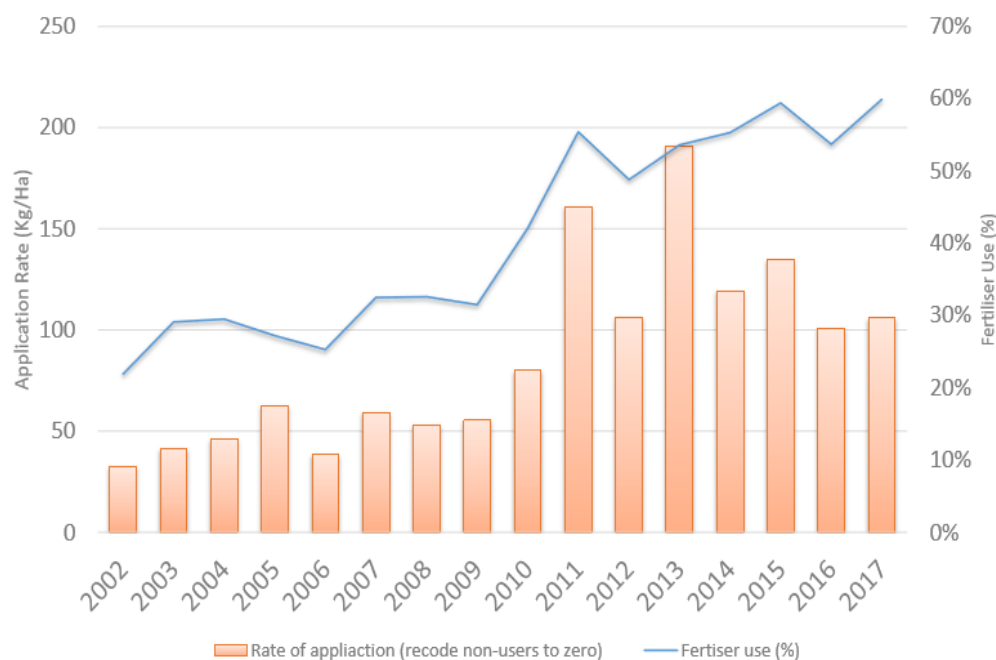
<sup>7</sup> <https://agriknowledge.org/downloads/8w32r563r>

<sup>8</sup> [http://www.renapri.org/wp-content/uploads/2017/01/IAPRI-Booklet\\_2016.pdf](http://www.renapri.org/wp-content/uploads/2017/01/IAPRI-Booklet_2016.pdf)

<sup>9</sup> According to Mofya-Mukuka and Kuteya (2018), the decline in fertilizer usage during the e-voucher period (2015 to date) is due to enhanced agricultural diversification among households. Rhoda Mofya-Mukuka and Auckland Kuteya (2018). Structure of the Zambian Fertilizer Market. Presented at the Seminar of the Role of Regulation in Stimulating Private Sector Development in the Fertilizer Value Chain, Friday, 7th July 2018, Intercontinental Hotel, and Lusaka.

<sup>10</sup> Naveen Kumar (May 2, 2016) Article titled- Agriculture Inputs: The Most Lucrative Part of the Agribusiness Value Chain accessible on <https://seekingalpha.com/article/3970288-agriculture-inputs-lucrative-part-agribusiness-value-chain?page=2>. Material accessed on 27/6/2018. Also accessible on <https://www.nasdaq.com/article/agriculture-inputs-the-most-lucrative-part-of-the-agribusiness-value-chain-cm615138>

**Figure 1. Fertilizer Usage in Zambia (Kg/ha)**



Source: Crop Forecast Survey (CFS), various years

### Study Rationale

- Despite the increase in the number of players following further liberalization of the fertilizer sub-sector in the early 2000s, the industry has continued to face a host of challenges that constrain its growth,<sup>11</sup> competitiveness and consequently its contribution to the economy. Notable challenges affecting the fertilizer sub-sector include high fertilizer prices which are unaffordable to most small-scale farmers, high importation and transport costs, seasonal shortages due to severe shortcomings in storage, market frustrations due to high government involvement and policy inconsistencies, and distribution of fake and low-quality fertilizers resulting from inadequate inspection/monitoring by relevant institutions mandated to regulate the sub-sector.<sup>12</sup> For instance high government’s involvement in the market through FISP

<sup>11</sup> For instance, from 2011 to date, fertilizer usage in Zambia has remained virtually the same, below 400,000 MT per annum.

<sup>12</sup> Rhoda Mofya-Mukuka and Auckland Kuteya (2018). Structure of the Zambian Fertilizer Market. Presented at the Seminar of the Role of Regulation in Stimulating Private Sector Development in the Fertilizer Value Chain, Friday, 7th July 2018, Intercontinental Hotel, Lusaka.

and other input subsidies as well as through the state-owned fertilizer company, NCZ, has led to market frustrations in the private sector, limiting their participation and investments in the industry. This is despite the fact that, although innovations, infrastructure and engagement with new markets are fundamental to advancing the Zambian fertilizer sector, the critical role of the private sector to provide the needed investment, leadership and impetus is essential for the industry's growth prospects. These plus competition issues in governments' tendering processes for the supply of significant fertilizer quantities under the main agricultural subsidies in the country have been reported to have affected efficiency of the fertilizer sub-sector, limiting its contribution to agriculture and the economy as a whole.

8. Fertilizer prices, competition and quality developments affect the comparative advantage of agricultural production by way of increase in yields<sup>13</sup>. For instance, lack of a competition responsive sector restricts businesses from reaching their full potential and distorts competition and the policy transmission from public sector to the private sector. This has potential to affect the growth prospects for the agriculture sector. This necessitates the need for a rigorous analysis of the fertilizer value chain to identify what stifles competition in the fertiliser sub-sector and identify recommendations on the design of more effective policies that foster competition and growth of the fertiliser sub-sector. As a competition enabling evaluation of the fertilizer sector, the study seeks to contribute to the understanding of the bottlenecks that hinder the efficient functioning of the fertilizer market in Zambia. This is because a better understanding of the bottlenecks constraining the growth of the fertilizer subsector is central in crafting informed decisions and interventions. Deficiencies in information and analysis have led to policy and market failures in developing countries<sup>14</sup>.

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<sup>13</sup> [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/563385/IPOL\\_STU\(2015\)563385\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/563385/IPOL_STU(2015)563385_EN.pdf)

<sup>14</sup> Benson, T. N., Minot, J., Pender, Robles, M. and Von-Braun, J. (2008). Global Food Crises: Monitoring and Assessing Impact to Inform Policy Response. International Food Policy Research Institute (IFPRI), Issue Brief 55. Washington, D.C., USA.

## **Objectives of the Study**

9. The overall objectives of the fertilizer value chain study were to:
  - (i) Evaluate what stifles effective competition in the fertiliser sub-sector, including how government interventions shape incentives for firms to compete and invest;
  - (ii) Identify recommendations on the design of more effective policies that foster competition and growth of the fertiliser sub- sector; and
  - (iii) Assess the expected effects of pro-competition policy reforms on economic variables in order to prioritise reforms and provide evidence of expected gains.

## **Scope of Work**

10. Although different types of fertilizers exist on the market and thus are applied in agriculture, conventional or inorganic fertilizers are the most commonly used in the Zambian agriculture sector. The majority of the large and small-scale farmers interviewed during the study depend on conventional fertilizers to rejuvenate the fertility of their fields. As a result, the study focused on assessing the fertilizer value chain as it relates to conventional fertilizers. Overall the scope of work for the study was to: (i) identify key players across the various nodes of the fertilizer value chain; (ii) assess the performance of the actors; (iii) evaluate the level and impact of government's fertilizer programs and interventions on the competitiveness of the fertilizer industry; (iii) evaluate the behaviour of players (firms and other actors) to identify potential anticompetitive practices based on the development of theories of harm; (iv) assess the adequacy of support services and policies and their impact on competitiveness in the fertilizer value chain; and (v) provide recommendations on how to promote competition in the fertilizer market by removing or re-designing government interventions in markets or enforcing competition law.

## **Methodology of the Study**

11. Purposive quota sampling technique was used to select stakeholders to interview because the study topic is specialized to a group of institutions and organizations who are key stakeholders in the fertilizer sub-sector. On the other hand, snow ball sampling technique was used to select agro dealers, fertilizer traders and farmers in the districts. To ensure that the study is a representation of the entire fertilizer value chain in the country, the study was conducted in 5 provinces – Lusaka (Lusaka), Central (Kabwe and Kapiri Mposhi), Copperbelt (Ndola, Masaiti and Kitwe), Eastern Province (Chipata and Katete) and Southern Province (Choma and Monze). The study areas were purposively selected based on the location of the head offices for the major respondents (public sector, regulators, fertilizer manufacturers and importers, private sector and research institutions) where the staff of the study targeted are based.
12. The sample for the study included the following categories of respondents: (i) public sector regulators (CCPC, PACRA, MCTI, MoA, and ZABS),<sup>15</sup> (ii) fertilizer companies/producers/blenders/importers (NCZ, ETG, Zambian Fertilizers, Omnia, Foresticol Fertilizers)<sup>16</sup>, (iii) research institutions and private sector stakeholders (IAPRI, Musika, ZNFU, and the ZAM), (iv) traders and agro-dealers,<sup>17</sup> and farmers.<sup>18</sup>

## **Limitations of the Study**

10. The major limitation of the study was failure to interview all the stakeholders identified at the inception of the study. Some of the respondents, especially corporate entities, were unavailable for

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<sup>15</sup> Interviews with public sector regulators and policy makers were done at national level.

<sup>16</sup> Interviews with fertilizer companies were conducted at national and provincial levels.

<sup>17</sup> Traders and agro-dealers were identified and interviewed in the districts visited.

<sup>18</sup> Two focus group discussions with the farmers were held in each of the districts to be visited.

interviews during fieldwork and this could have had an impact on the extent of the data collected for analysis.

## **STUDY FINDINGS**

### **Fertilizer Sub-Sector**

11. From independence to-date, the Zambian fertilizer sub-sector has undergone various changes, producing various marketing and pricing regimes. These regimes vary from controlled marketing and pricing at all levels in the 1980s to market liberalization and price deregulation in the 1990s.<sup>19</sup> Before 1989, fertilizer procurement and distribution were done solely through the then government agricultural marketing parastatal, National Agricultural Marketing Board (NAMBOARD). During this period, fertilizer prices and marketing were controlled by the government with the express goal of keeping the prices as low as possible to small-scale farmers. Prices were established based upon a uniform price policy and subsidized at the rate of 50% to promote equity in fertilizer use and food production among smallholder farmers.<sup>20</sup> In 1989, the government abolished NAMBOARD and initiated a process of fertilizer market reforms in the early 1990s. Under the market reforms of the 1990s, private firms were able to import or export fertilizer out of the country. In addition to freeing up entry of private firms, government also liberalized pricing of fertilizer as these two policies operate in tandem. Private firms were able to charge a price to reflect the marketing costs and a mark up to cover the risks of trading. Among the key steps that government put in place were the discontinuation of direct fertilizer subsidies to farmers and removal of duty on fertilizer imports.

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<sup>19</sup> Jayne, T.S and Jones, G etal (2002). Fertilizer subsector development: A comparative analysis of Ethiopia, Kenya, and Zambia. USAID. Lusaka

<sup>20</sup> Jones, G and Thomas, S. (2002) Developments in Fertilizer Marketing in Zambia: Commercial Trading, Government Programs, and the Smallholder Farmer. Working paper no. 4 - food security research project



12. In the early 2000s, Zambia pursued the fertilizer marketing and pricing policy which focused on implementing the sectorial dictates of a market-led economy whose characteristics included free entry of as many fertilizer traders as was feasible and availability of information on fertilizer prices and its availability.<sup>21</sup> The overall objective of the new government's agricultural policy was to promote the development of a competitive, efficient and transparent private sector-driven marketing system for fertilizer in a way that contributes to rural development and income growth. Despite these reforms, government through the input subsidies (particularly Fertilizer Support Programme (FSP)/FISP<sup>22</sup>) has continued to be an important player in the fertilizer sub-sector. On a whole, the continuous liberalization of fertilizer marketing is meant to remove previous market distortions, introduce new competition into the market and stimulate growth of new markets.<sup>23</sup>

### **Fertilizer Value Chain**

13. A value chain is a representation of a firm's value-adding activities, based on its pricing strategy and cost structure.<sup>24</sup> It is a series of decision-making processes and flows of products, information and money along a continuum from the good's import to its final use.<sup>25</sup> The value chain provides a framework that divides activities that generate value into two categories that is, primary activities and support activities. Primary activities comprise a set of macro activities that contribute to the creation of value in a direct manner while support activities consist of micro and/or meso functions and tasks that are intended to support primary activities.<sup>26</sup>

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<sup>21</sup> Government of the Republic of Zambia. 2000. National Agricultural Policy (2001 - 2010). Ministry of Agriculture, Food and Fisheries, Lusaka, Zambia, Unpublished Draft.

<sup>22</sup> The two subsidy programmes have been discussed in detail in the subsequent chapters.

<sup>23</sup> MPRA. 2018. Effects of Fertilizer Subsidy in Zambia. Hohenheim: MPRA.

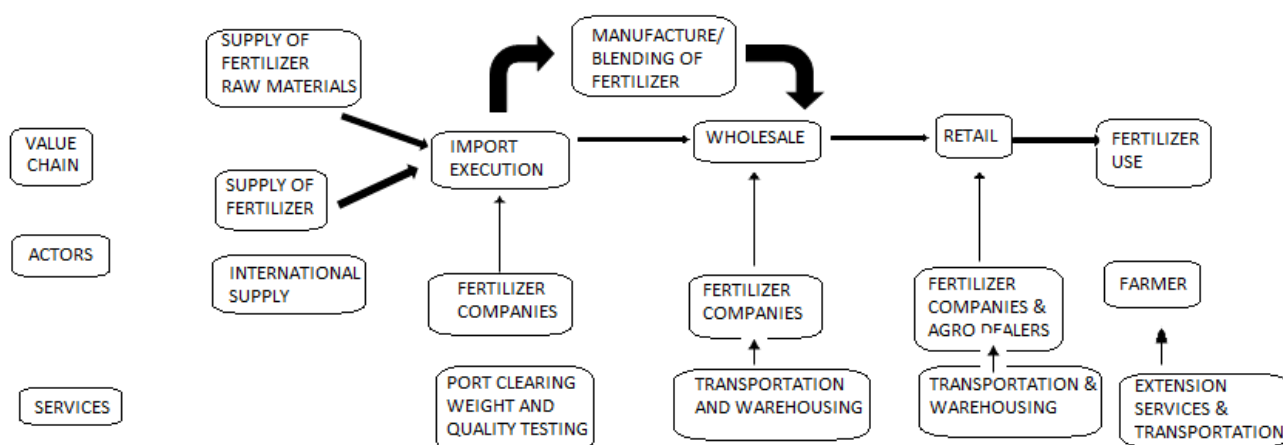
<sup>24</sup> Porter, M.E. (1985) *Competitive Advantage: Creating and Sustaining Superior Performance*, Simon & Schuster

<sup>25</sup> Van der Vorst, J.G.A.J., Da Silva, C.A., Trienekens, J.H. (2007). *Agro-industrial supply chain management: concepts and applications*. Occasional Paper 17, FAO press, p. 71.

<sup>26</sup> Porter, M.E. (1985) *Competitive Advantage: Creating and Sustaining Superior Performance*, Simon & Schuster

14. The Zambian fertilizer value chain is summarized and presented in Figure 2. The major nodes of the value chain include: (i) importation of either finished fertilizer or fertilizer raw materials; (ii) import processing or execution; (iii) fertilizer manufacturing/blending; (iv) distribution (wholesale and retail); and (v) fertilizer utilization by final consumers (typically farmers). In addition, the presentation identifies the main actors as well as the support services provided and services providers at each node.

**Figure 2. The Zambia Fertilizer Value Chain**



Source: Authors' impression

15. The value chain consists of two categories of actors or players namely chain actors and operational service actors. Chain actors include international suppliers, producers/blenders, importers, wholesalers, retailers and farmers. International suppliers of fertilizer and/or fertilizer raw materials are companies which often source fertilizer from countries such as Saudi Arabia, Morocco, China, Russia and Ukraine.
16. Operational service actors include; transporters, Government institutions and departments, banks and district cooperatives. Transporters play an important role in the chain by moving the fertilizer

from the port to the central warehouses as well as to the regional warehouses. Government institutions ensure that the rules and regulation governing the importation, manufacturing and trading of fertilizer are followed. For instance, at the border of entry into the country, the imported fertilizer or fertilizer raw materials is inspected for: (i) quality by the Zambia Compulsory Standards Agency (ZCSA); (ii) environmental requirement compliance by Zambia Environmental Management Agency (ZEMA); and for weight compliance by the Zambia Metrology Agency (ZMA). The fertilizer is either imported in bulk or already bagged. When the fertilizer is imported in bulk the bagging and weighing is done at the port.

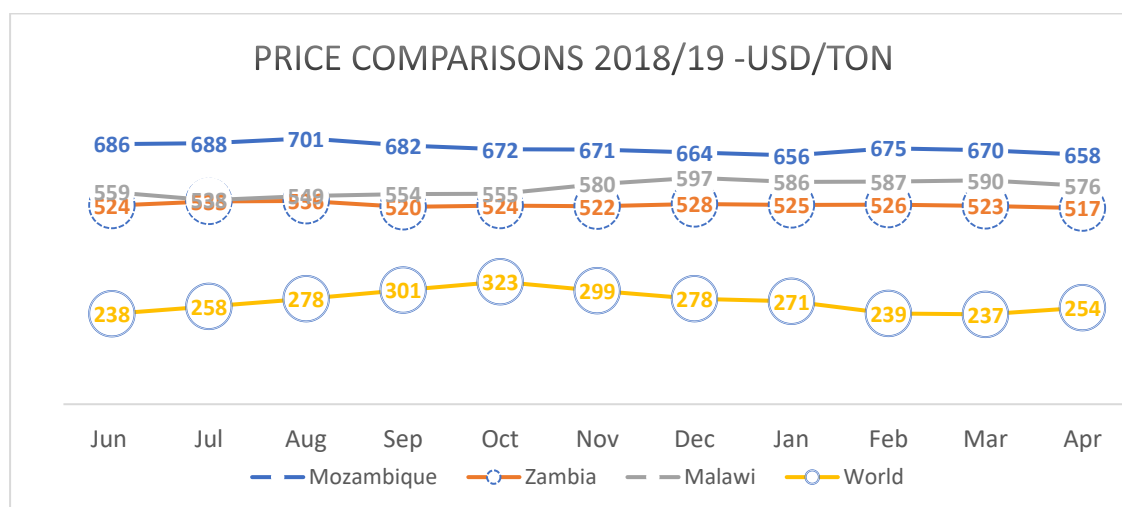
17. Banks provide financial services to both retailers and some farmers especially commercial farmers who acquire fertilizer on credit. Banks also facilitate international transactions between international fertilizer and/or fertilizer raw materials supplier and the local fertilizer importers or producer.
18. Distribution (selling) is done in two ways; under government subsidy programs (FISP and FSP) and on commercial or direct purchase basis. Under conventional FISP, fertilizer companies supply fertilizer to the government. The Government then distribute using district agricultural administration and cooperatives. The Government also ask the supplier to distribute fertilizer directly to the farmers through their cooperatives. Under e-FISP both suppliers (importers/blenders) and agro dealers (wholesalers and retailers) sale fertilizer directly to small-scale farmers. Both suppliers (importers/blenders) and agro dealers (wholesalers and retailers) also sale to predominantly medium and large-scale farmers under direct purchases either by cash or on credit.

### **Commercial Fertilizer Supply in Zambia**

19. Over 65% of the total fertilizer consumed in Zambia is under the FISP programme and this is mainly focused on small scale farmers.

Commercial fertilizer or private market importers have their own licensed agents in major towns and well-established farm areas.<sup>27</sup> Agents supply large commercial farmers as well as very large agricultural producers mostly by placing advance orders directly with the importer or an agent in their area. Despite commercial prices of fertilizer in Zambia being quite competitive in comparison with prices in other countries in the region such as Tanzania and Mozambique<sup>28</sup>, prices were at least \$200/ton higher than the benchmark international prices from May 2010 to mid-2011, and then more than \$400/ton higher thereafter<sup>29</sup>, despite world prices of fertilizer stabilizing over the same period.<sup>30</sup> In 2018 and 2019, fertilizers prices remained higher (\$525.4/ton) than the benchmark international prices (\$270.5/ton) **(Error! Reference source not found.)**.

**Fig 5: Commercial Prices of Fertilizer in Zambia and the Region**



Source: compiled from various sources.

<sup>27</sup> Agribusiness Indicators: Zambia, The World Bank, December 2012

<sup>28</sup> In May 2012, the average retail price of urea was US\$ 38 per 50-kilogram bag, which then was lower than in countries like Tanzania and Mozambique, which have sea ports. Significant volumes of fertilizer come to Zambia from South Africa, including a certain portion transported via railway, which is much less costly than transporting by truck. It could also be that commercially sold fertilizer is bought mainly by large-scale farms that are more likely to buy in bigger bulks, which would reduce the unit price of fertilizer. <https://agriknowledge.org/downloads/8w32r563r>

<sup>29</sup> Simon Roberts and Thando Vilakazi, Regulation and rivalry in transport and fertilizer supply in Malawi, Tanzania and Zambia, Centre for Competition, Regulation and Economic Development University of Johannesburg

<sup>30</sup> <http://africafertilizer.org/national/>

20. Regionally, the Zambian fertilizer market has reflected competitive prices. The average price of urea fertilizer in both Mozambique and Malawi is high compared to Zambia. The fertilizer price gap between Mozambique and Zambia is over \$100 per ton despite Mozambique sea shore unlike Zambia while both countries face with the same free on-board costs.<sup>31</sup>

### **Fertilizer Importation**

21. Zambia imports most of its needed fertilizer received through Beira, Dar-es-Salaam and South African ports. In the year 2013, national fertilizer consumption was estimated at 250,000-300,000 MT, 200,000 of which was under the FISP, a subsidy program that focuses mainly on maize farmers. In the same year, Zambia imported a total of 382,459.00 MT of fertilizer and fertilizer raw materials<sup>32</sup>. Implying that the total quantity of fertilizer that was available in the 2013/2014 farming season was enough to meet and exceed local demand of fertilizer at the below full potential consumption that is occurring in Zambia. Currently, total national fertilizer consumption is approximately 400,000 MT, however, estimates by fertilizer companies and other actors in the chain indicates that the potential fertilizer consumption in Zambia stands between 500,000 - 600,000 MT if the right policy environment were to prevail and farmers were to receive appropriate and adequate extension services.<sup>33</sup>
22. Over the years, there has been an increase in the number of farmers reported to be using fertilizer as well as the rate of fertilizer application. The average rate of fertilizer utilization in 2016 was 100.7kg/hectare (ha).<sup>34</sup>

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<sup>31</sup> <http://africafertilizer.org/national/>

<sup>32</sup> <http://www.fao.org/faostat/en/#data/RV>

<sup>33</sup> <https://ifdcorg.files.wordpress.com/2015/04/zambia-fertilizer-assessment.pdf>

<sup>34</sup> <http://www.iapri.org.zm/images/TechnicalPapers/IAPRI-Booklet.pdf>

23. The Zambian government took major steps in the fertilizer sector such as the removal of the direct subsidies and the removal of duty on fertilizer imports. The exchange rate also has had a direct impact on the price of fertilizer. The importers usually include a premium on their retail prices to reflect the fluctuation of exchange rate when their sales revenues are converted into tradable currency.
24. The government under the FISP Programme awards contracts to two bidding companies in the supply of subsidized fertilizer. The remaining companies import the fertilizer to sale under competitive commercial markets parallel to the subsidy program. The major companies that have won the tenders under FISP in the past are Nyiombo, Greenbelt, ETG, Omnia, Neria and Nyimba Investments.

### **Competition Consideration on Importation**

25. There are generally no restrictions to the importation of fertilizer in Zambia. Most imports fall into one of three tax bands that is, 0-5% for capital goods and raw materials, 15% for inter-mediate goods and 25% for finished goods<sup>35</sup>. Zambia applies a zero rate to fertilizer imports<sup>36</sup> that is, there is 0% duty and 0% tax on major fertilizer ingredients like Nitrogen, Phosphorous and Potassium to promote the importation of these raw materials for the production of fertilizer locally<sup>37</sup>. In general, the tax regime is designed to promote local manufacturing of fertilizer and discourage importation of finished fertilizer. For instance, income from chemical manufacturing of fertilizer is taxed at a reduced rate of 15%<sup>38</sup> compared to the standard rate of 35% (2018 and 2019) for

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<sup>35</sup> [www.export.gov/articleid?=Zambia-Import-Tariffs](http://www.export.gov/articleid?=Zambia-Import-Tariffs)

<sup>36</sup> Value Added Tax Cap 331 of the Laws of Zambia

<sup>37</sup> <http://documents.worldbank.org/curated/en/481731468166490328/pdf/825080WP0ABIZa00Box379865B00PUBLIC0.pdf>

<sup>38</sup> [www.zra.org.zm/commonHomePage.html?viewName=TaxIncentives](http://www.zra.org.zm/commonHomePage.html?viewName=TaxIncentives)

importers.<sup>39</sup> Fertilizer produced locally is thus expected to be cheaper compared to imported finished fertilizers.

26. Incumbent companies especially multinational companies have an established supply network which makes it easier for them to access fertilizer and/or fertilizer raw materials than small companies worse off local and new companies. Moreover, companies like Yara and Omnia have parent or sister companies operating in other countries where they source fertilizer or fertilizer raw materials. These difficulties in accessing the supply of either fertilizer or fertilizer raw materials maybe an hindrance not only to downstream players seeking to enter upper stream but also to new entrants.
27. Logistics and management constraints pose as a challenge that potentially hinder entrants in the market. Due to the fact that Zambia is landlocked, it receives most of its imports through ports in neighboring countries such as Beira (Mozambique), Dar-es-salaam (Tanzania) and Durban (South Africa). This imply long haulage distances along the mostly poor roads prevalent in Zambia which ultimately translates into increased transportation costs for the fertilizer or the materials used in the blending thereof.
28. The market for fertilizer is very competitive on a global level and thus there is little variability in the price of fertilizer on the international market. This makes it difficult for the local manufacturers of fertilizer to compete with incumbent firms which have already attained economies of scale and efficient means of production.<sup>40</sup>

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<sup>39</sup> PWC Zambia-budget-2019.pdf and 2019 Budget Speech

<sup>40</sup> <https://ifdcorg.files.wordpress.com/2015/04/zambia-fertilizer-assessment.pdf>

## **Regulatory Framework for Imports**

29. The importation of fertilizer in addition to being subject to tax laws and regulations is also subject to the Control of Goods Act Cap 421 and Agriculture (Fertilizer and Seeds) Act (Fertilizer Act) that was first enacted in 1966 and amended in 1994. The Fertilizer Act provides for the regulation and control of the manufacture, processing, importation and sale of agricultural fertilizers and farm feed; minimum standards of effectiveness and purity of fertilizers and feed among others.
30. The Fertilizer Act provides for wide discretions that have the potential to distort competition. For instance, the Fertilizer Act grants the Minister responsible for agriculture powers to restrict, limit or prohibit the importation of any particular farming requisite, or class of farming requisites, into Zambia, without the prior written consent<sup>41</sup> and the conditions under which any particular farming requisite may be imported<sup>42</sup>. Unless applied uniformly across competitors, selective application would raise competition concerns.
31. Regulation in the fertilizer import sector contribute to the barriers to entry in addition to the large capital outlay required to invest in logistics and warehousing infrastructure especially for small companies wishing to engage in fertilizer importation. Section 65 of the Environmental Management Act Number 12 of 2011 requires licencing at a fee of fertilizer importers while Section 19 of the Compulsory Standards Act mandates the testing of such imports at the importers' own costs. **Error! Reference source not found.** shows where Zambia stands ompared to other countries in Sub-Sahara Africa in terms both efficiency and cost of registering a new fertilizer product.

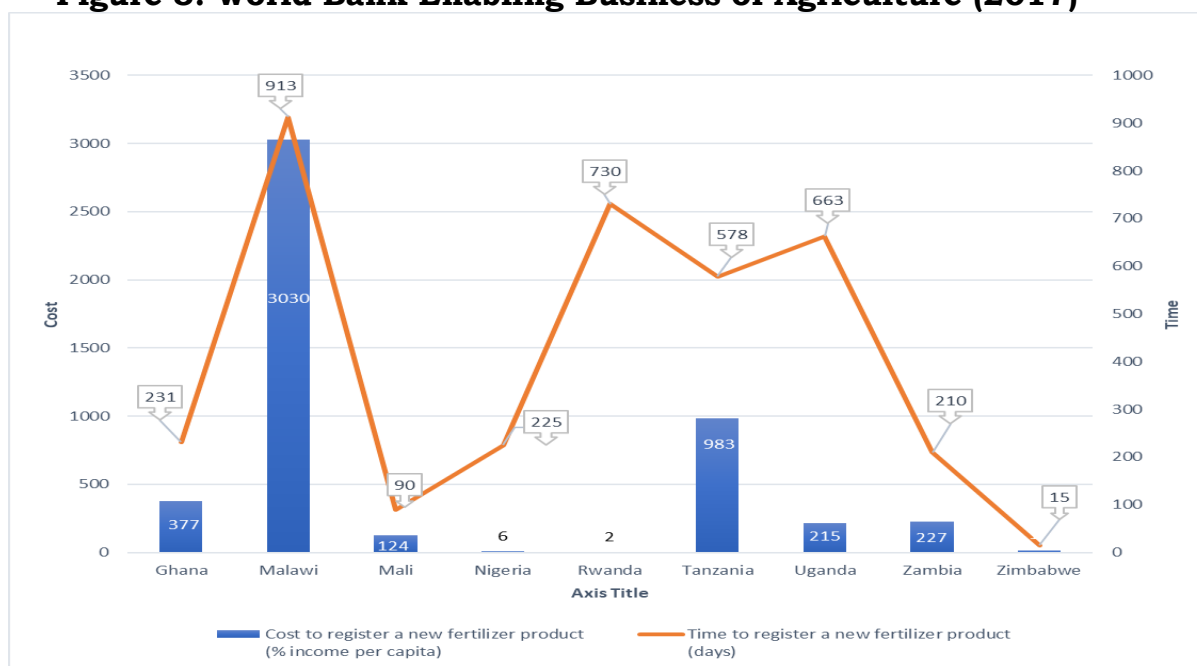
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<sup>41</sup> Section 38 of the Fertilizer Act

<sup>42</sup> Section 52(o) of the Fertilizer Act



**Figure 3. World Bank Enabling Business of Agriculture (2017)**



Source: adapted from World Bank Enabling business of agriculture (2017)<sup>43</sup>

32. The figure shows that it takes 210 days to register a new fertilizer product in Zambia compared to the benchmark frontier of 11 or less days and cost 227% of per capita income for fertilizer companies against the benchmark frontier of 0.0% to register a new fertilizer product.
33. Currently the enforcement of rules governing the import, export, production and distribution of fertilizer is the responsibility of several fragmented regulatory bodies and government ministries such as the ZABS, CCPC, ZMA, PACRA, ZEMA, MCTI, MoA, and Ministry of Labour (MoL), among others.

### **Fertilizer Manufacturing/ Blending Market Structure**

34. Despite strong government presence in fertilizer sub-sector, there are twelve (12) active fertilizer companies. The companies include Nitrogen

<sup>43</sup> Enabling Business Agriculture 2017 Report access at <https://eba.worldbank.org/en/reports> on 22nd May, 2019

Chemicals of Zambia (NCZ), Export Trading Group (ETG)<sup>44</sup> which is the parent company of Zambian Fertilizer as well as Falcon Fertilizers, Yara Fertilizer Zambia<sup>45</sup>, Omnia<sup>46</sup>, Sasol, Fert Seed Grain (FSG), Alpha Commodities, Mauritius Chemical and Fertilizer Industry (MCFI), Premano, Neria Investments and Nyimba Investments, with the most recent entry being Foresticol which started its operation in Zambia in 2017. Factors that limit entry include the small size of the market considering the competition from subsidies<sup>47</sup>, financial requirements and logistics and management constraints in handling bulky products<sup>48</sup>. Fertilizer companies such as Omnia and ETG have a wide distribution network with depots across the country while other companies have significant dominant presence in selected regions. The commercial importers target large farmers and smallholders through their own distribution networks.<sup>49</sup>

35. Out of the twelve fertilizer companies that are currently operational in Zambia, five of them are fertilizer manufacturing and/blending companies while the remaining seven are simply importers of fertilizer. The five-fertilizer manufacturing/blending companies are NCZ, Omnia, ETG, Foresticol and Yara Investment.

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<sup>44</sup> ETG is one of the largest Africa's Agricultural Conglomerates that has been in existence since 1957. ETG started its operation in Zambia in 2004 and later acquired Zambian Fertilizer. The ETG fertilizer brands therefore include Falcon, Zambian Fertilizer and Kynoch. In Zambia ETG does not manufacture fertilizer, however, it does blend, import and export, however, through its Zambian fertilizer brand in the country, it has developed blending, granulating and pelletising facilities at its plant in the light industrial area in Lusaka.

<sup>45</sup>Yara fertilizer limited is one of the leading and oldest international fertilizer company which started operation in 1905. At the beginning of 2016, Yara purchased Greenbelt Fertilizers, thereby taking over the business in Zambia, Malawi and Mozambique. Yara is not an importer or distributor but it manufactures and blends fertilizer using world leading technologies to meet the market demand, however, in Zambia it only imports as well as blending.

<sup>46</sup> Omnia is the South African based company and the oldest private fertilizer company in Zambia. It is a diversified chemicals Group that supplies chemicals and specialised services and solutions for the agriculture, mining and chemical application industries. It both manufactures and blends fertilizer in South Africa, however, in Zambia and many other countries it operates as an importer.

36. Despite the number of fertilizer companies, Zambia is a net importer of fertilizer. In addition to importing some quantities of finished fertilizer, all the essential ingredients used for manufacturing/ blending are imported from countries such as Morocco, Saudi Arabia, Russia, China and Brazil depending on availability and favourable prices and enters the country via Durban, Richards Bay, Beira and Dar es Salaam.
37. In recent years, the fertilizer sub sector has seen a tremendous amount of investments such as the commissioning of a US\$4million fertiliser blending plant by ETG in 2017 estimated to produce 350MT of fertilizer per day and investment of over K200 million in infrastructure development, acquisition of state-of-the-art machinery by Forestcol which has the potential to produce 150MT (this is equivalent to three thousand 50kg bags) per day.
38. Since the re-introduction of agricultural subsidies specifically the FISP and FSP in 2002 and 2000 respectively, the Zambian fertilizer market has been dominated by Omnia and Nyiombo, with collective shares estimated to be around 70-80% in 2009 in a fertilizer market of roughly 540 000 tons. ETG and Greenbelt have gained some market share in recent years, while Nyiombo has lost a substantial share. Estimated market shares for commercial sales only (not subsidized sales) in 2013/14 were: Omnia 30%; Greenbelt 30%; ETG 10%; Nyiombo 7%; Zambian Fertilizers 6%; and others 17%<sup>50</sup>. There has also been an increase in new entrants on the market, including those set up by former employees of fertilizer companies. The variation of market share in recent years between the fertilizer companies can be attributed to, among other reasons, the end of the cartel arrangements between Omnia and Nyiombo, which were investigated and found to have rigged government contracts for fertilizer supply between 2007 and 2011<sup>51</sup> and

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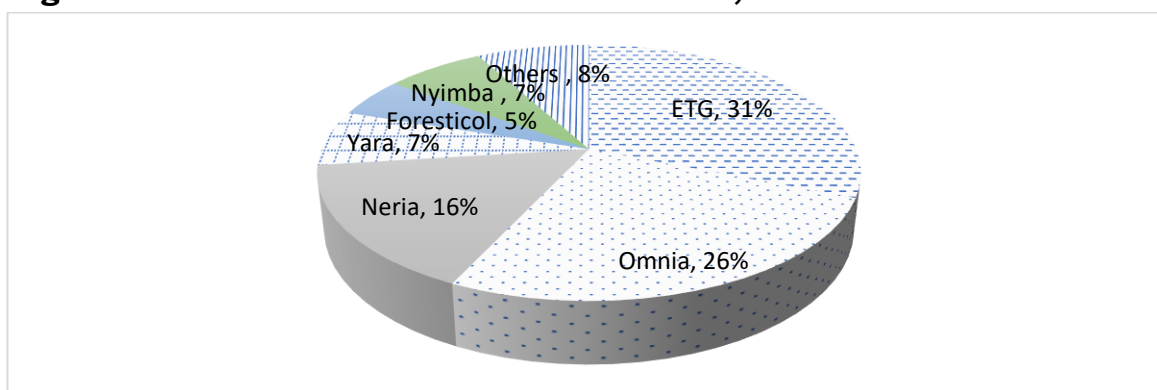
<sup>50</sup> Estimated sales from both secondary and primary data

<sup>51</sup> Case investigated by the Competition and Consumer Protection Commission

the entry into the market by already established companies such as Yara and Foresticol.

39. After the Omnia-Nyiombo cartel exposure, government embarked on efforts to make the market more efficient and competitive,<sup>52</sup> a development which has led to an increase in both local and multinational fertilizer companies participating in the fertilizer market. Figure 4 below depicts the respective market share for fertilizer companies as of 2019.

**Figure 4. Fertilizer Market Share in Zambia, 2018**



Source: Based on study findings

40. ETG does not only sale Compound D and Urea fertilizers but also vegetable fertilizers. ETG was found to have the largest market share (31%) across the country which could be attributed to availability, quality and price of its fertilizer. Despite not participating directly in the FISP since 2012, Omnia was still found to be a preferred brand amongst

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<sup>52</sup> One such effort has been the decision to reduce the amount of inputs including fertilizer that is centrally procured and distributed directly by the government under the FISP by changing the mode of delivering FISP from conventional to e-voucher. For instance, the government in 2014/15 season run a pilot e-voucher targeting an initial 241,000 farmers across 13 districts in Southern, Lusaka, Central and Copperbelt Provinces, and by the 2016/17 season, the number of farmers benefiting from the e-voucher initiative was increased to 602,000 farmers across 39 districts in all the provinces of the country. In 2017, a decision was made to out-scale the e-voucher initiative to all districts but because of severe technical and administrative implementation challenges experienced during the 2017/18 season, the government in 2018 rescinded its earlier decision by reducing the amount of FISP delivered through the e-voucher during the current 2018/19 season to 60%. Unlike under conventional FISP, the e-voucher is open to all fertilizer companies and the quantity that each company is able to sell is dependent on availability of the product on the market and the usual market 'forces' of demand and supply.

farmers as it is perceived to be of the highest quality compared to any other brand with 26% market share. Neria has 16% market share largely due to its continued participation in FISP, Yara 7%, Nyimba 7%. Forestcol 5% and others 8% market share.

41. NCZ is the only state-owned fertilizer company involved in the production of granulated fertilizers. Until recently, NCZ was the largest producer and supplier of ‘D’ Compound also known as basal fertilizer in Zambia under the FISP fertilizer subsidy and commercial supply to the private sector. Its manufacturing plant has the capacity to produce 400,000 MT of fertilizer but the closest to producing that amount has been 124, 000 MT. Besides ‘D’ Compound, NCZ produces other fertilizers such as X, R, C, V and VW Compound. Presented in **Error! eference source not found.** below are annual production figures of all the different types of fertilizer produced by NCZ.

**Table 1. NCZ Annual Production Figures**

Year	Quantity of fertilizer (MT)	Fertilizer Supply Regime
2010	22,000	FISP
2011	26,000	FISP
2012	44,000	FISP
2013	96,000	FISP
2014	122,000	FISP
2015	116,000	FISP
2016	124,000	FISP
2017	62,000	Post FISP
2018	26,000	Post FISP
2019 (to March 2019)	10,000	Post FISP

Source: NCZ Sales and Marketing Office

### **Competition Considerations - Manufacturing/ Blending**

42. NCZ was given preferential treatment by the government to supply all the ‘D’ Compound fertilizer required for the government fertilizer subsidy programme; known as Fertilizer Support Program (FSP) in the period 2002 to 2010 and FISP in the period 2010 to 2016 potentially closing out other fertilizer manufacturing companies from the FISP

program. Under this arrangement, NCZ was required to supply between 30,000 and 35,000 MT of 'D' Compound annually. Production of this fertilizer was done with the support of government financing through the MoA who were responsible for procuring fertilizer raw materials. These raw materials were purchased from the Middle East (Saudi Arabia and Iraq), Algeria and/or Nigeria through the MoA using the government procurement wing. The move by government to reduce its direct influence in the fertilizer sub-sector so as to enhance its competitiveness has severely disadvantaged the state-owned enterprise as the plant faces low capacity utilization.

43. NCZ's loss of preferential treatment to supply at least 30,000 MT of 'D' compound under FISP and its financial struggling, has culminated into manufacturing arrangements with other companies. The findings showed that NCZ receives raw materials from Nyimba Investments, Zambian Fertilizers, Neria Investments and others in exchange for using NCZ's plant and personnel to produce granulated fertilizer in exchange for NCZ retaining an agreed percentage of granulated fertilizer as payment<sup>53</sup>. Importing finished fertilizer products into the country attracts higher tax tariffs, port charges and transportation costs while importing raw materials is cheaper and creates local synergies including supporting the local producer of 'D' compound/ammonium nitrate fertilizer (NCZ). Additionally, agreements with NCZ help eliminate the double marginalization problem as NCZ supplies the fertilizer to other companies at prices equal to the marginal cost (no mark-up for trade between these firms) for the benefit of consumers.
44. Though the fertilizer market in Zambia has a significant number of fertilizer-supplying companies, both, the Herfindahl-Hirschman Index

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<sup>53</sup> The study found that NCZ is the only company in the region with the plant that is able to produce granulated fertilizers. The other companies only produce blended fertilizer, and when in need of granulated fertilizers, the companies supply NCZ with the raw materials for NCZ to produce granulated fertilizer on their behalf. Under certain instances, the fertilizers are produced and branded in NCZ's packaging while at times NCZ's responsibility ends at only producing granulated fertilizer on behalf of the other companies.

(HHI) and the Top-Four Concentration Ratio (CR4) calculated from the market share of the different fertilizer companies above indicated that the fertilizer industry is concentrated implying that the market is relatively competitive (Refer to Table 2 for the HHI). The market thus depicts an oligopolistic structure of three to four major players having a significant influence on the quality and price of fertilizer in the market. The nature and intensity of competition between these players therefore matters greatly for market outcomes, as well as whether the market can be effectively contested by smaller rivals and entrants.

**Table 2. Fertilizer Market Concentration in Zambia**

	<b>Herfindahl-Hirschman Index (HHI) <sup>54</sup></b>	<b>Top-four Concentration Ratio (CR4)</b>
<b>Concentration based on sales</b>	0.208 (2080)	80% (0.8)

*Source: Estimated from study findings*

45. Although efforts by regulatory bodies are being made to create a single window for licencing<sup>55</sup>, requirements to comply with multiple Laws and regulatory body's requirements still remain one of the barriers to entry include high transportation and warehousing costs. Besides the challenges associated with registration and permits, the following were found to be the key issues that are likely to deter a new entrant into the subsector or cause them to enter the subsector at a low scale:

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<sup>54</sup>The HHI is the sum of the squared market shares of each firm operating in a market while top-four concentration is the sum squared market shares of the top four firms operating in a market .Both the top-four concentration ratio and the HHI range from zero to one; increases in these indices indicate a decrease in competition (and a potential increase in market power), whereas decreases indicate an increase in competition. The main difference between the two indices is that the HHI places more weight on larger firms.

An *H* below 0.01 (or 100) indicates a highly competitive industry.

An *H* below 0.15 (or 1,500) indicates an concentrated industry.

An *H* between 0.15 to 0.25 (or 1,500 to 2,500) indicates moderate concentration.

An *H* above 0.25 (above 2,500) indicates high concentration

CR<sub>4</sub> of 0% to 40% (0.0 to 0.4) indicates Low concentration (Perfect competition to Oligopoly)

CR<sub>4</sub> of 40% to 70% indicates medium concentration. (Oligopoly)

CR<sub>4</sub> of 70% to 100% indicates high concentration monopoly. (Oligopoly to Monopoly)

CR<sub>4</sub> of 100% indicates extremely concentrated (Monopoly)

<sup>55</sup> Submissions by Zambia Metrology Agency during the report validation workshop held on 30<sup>th</sup> May, 2019 at Protea Towers, Lusaka

- a) Start-up costs<sup>56</sup> – fertilizer companies already in the market enjoy low average costs due to large capital outlays they have. Already existing fertilizer companies have a complex supply and distribution chain which enables them get the benefit of economies of size which results in the overall average price of fertilizer they offer to be lower than smaller or new fertilizer companies. The new fertilizer companies would thus have to haggle with the challenges of the incumbent fertilizer companies’ low prices by getting into the market at competitive prices in order to gain customers.
- b) High cost of imported raw materials - raw materials needed for the blending of fertilizer in Zambia are costly and are subjected to high taxes and tariffs at the borders as they enter Zambia.<sup>57</sup> This coupled with the bulky nature of the fertilizer raw materials entails high transportation cost.
- c) For new fertilizer brands to gain acceptance, promoters often have to invest in either demonstration farming or offer the fertilizer to farmers for free for a couple of seasons. Acceptance of new fertilizer brands depends on known performance and not necessarily price alone<sup>58</sup>. Extension service offers play a pivotal role in a far as acceptance of new fertilizer is concerned. Farmers tend to trust extension officers and if such officers express ignorance of a certain brand, that influences farmers’ purchasing decisions<sup>59</sup>.

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<sup>56</sup> Foresticol invested USD 20 million for its 130, 000 metric tons fertilizer producing plant while ETG invested over USD 5 million in its fertilizer blending plant at the MFEZ

<sup>57</sup> The study found that imported fertilizer (ready to use on a crop) is duty free, but the raw materials required for the blending or manufacture of fertilizer are not. The tariffs on fertilizer raw materials were consistently reported by Omnia, ETG and NCZ.

<sup>58</sup> Submissions during the Stakeholder validation meeting held on 31<sup>st</sup> May, 2019 at Protea Towers in Lusaka

<sup>59</sup> Submissions during the Stakeholder validation meeting held on 31<sup>st</sup> May, 2019 at Protea Towers in Lusaka



46. Fertilizer use is largely seasonal and the pricing of fertilizer appear to follow demand in addition to the cost of production. The findings showed that the price of fertilizer during the peak season reached around ZMW330 on commercial sell and about ZMW360 on FISP e-voucher from about ZMW 200 - 250 during off peak for the 2018/19 season. This largely disadvantages the end users of the commodity.

### **FARMER INPUT SUPPORT PROGRAM (FISP)**

47. As part of its agricultural transformation agenda, the Zambian government introduced the Fertilizer Support Programme (FSP) in 2001/2002 farming season and was later revised and renamed in 2009 to the Farmer Input Support Programme (FISP). It is estimated that the FISP program, accounts for approximately 61% of the total annual fertilizer trade in the country causing up to 37% trade diversion in the sub-sector from FISP to commercial fertilizer markets.<sup>60</sup> In line with the need to transform the agricultural sector, the overall goals of FSP and FISP were to (i) improve household and national food security, (ii) improve incomes for smallholders, (iii) improve the farm households accessibility to farm inputs through a subsidy (iv) regenerate their resource base and (v) build the capacity of the private sector in the supply of farm inputs.<sup>61</sup>
48. The FISP was implemented through cooperatives and other farmer groups. These groups were ‘pre-selected’ by District Agriculture Committees (DACs) and only farmers belonging to pre-selected groups were eligible to participate. In addition to cooperative/farmer group membership, participating farmers were required to: (i) be active small-scale farmers in the cooperative coverage area; (ii) have the capacity to

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<sup>60</sup> Rhoda Mofya-Mukuka and Auckland Kuteya (2018). Structure of the Zambian Fertilizer Market. Presented at the Seminar of the Role of Regulation in Stimulating Private Sector Development in the Fertilizer Value Chain, Friday, 7th July 2018, Intercontinental Hotel, Lusaka.

<sup>61</sup> MACO (2008). Fertilizer Support Programme Internal Evaluation. Report. Lusaka, Zambia: Ministry of Agriculture and Conservation.

grow 1-5 ha of maize; (iii) be able to pay the farmer share of the input costs (e.g., 50% in 2002/03); (iv) not be concurrently benefiting from the Food Security Pack Programme<sup>62</sup> and (v) not be defaulters under the Fertilizer Credit Programme.<sup>63</sup> Note that there were no requirements related to inability to afford inputs at commercial prices, nor were there explicit aims to target female-headed households.

49. In essence, the objectives of the Fertilizer Support Programme and FISP were the same. The main difference between the two (2) was in the following aspects; (i) under FISP, the input pack size was cut in half to 200 kg of fertilizer and 10 kg of hybrid maize seed; (ii) FISP had the involvement of local leaders in the selection of beneficiaries<sup>64</sup>, and (iii) the expansion in the range of crops included in the program. Rice was added in 2010/11, and sorghum, cotton, and groundnuts were added in 2012/13. This was all because of the push for crop diversification.
50. Until 2014, the Government was responsible for both direct procurement and distribution of inputs (maize seed and fertiliser) to farmers enrolled in FISP. However, this mode of delivering the subsidy programme was found to be associated with several implementation and policy challenges which affected the effectiveness of the conventional version of the FISP. First, by distributing standard input packs, the FISP was not tailored to the maize seed variety as well as crop type requirements for the different agro-ecological zones. This not only constrained farming diversification efforts in the sector but also

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<sup>62</sup> The Food Security Pack Programme was a 100% grant (as opposed to a loan or cost-sharing program). The program was targeted toward vulnerable but viable farmers that cultivate less than 1 ha and are not in gainful employment. In addition, beneficiary households must be female-, elderly-, or child-headed, keeping orphans or abandoned children, headed by terminally ill individuals, and/or unemployed youth (PAM 2005). This programme fell under the Ministry of Community Development and Social Services and not the Ministry of Agriculture.

<sup>63</sup> MACO (2008). Fertilizer Support Programme Internal Evaluation. Report. Lusaka, Zambia: Ministry of Agriculture and Conservation.

<sup>64</sup> Under Fertilizer Support Programme, beneficiaries were selected by cooperative boards and the local agricultural extension officers only. Under FISP, representatives from traditional authorities (e.g., the chief or headman), community-based organizations, youth farmer organizations, and public offices other than MoA are also involved in the selection of FISP beneficiaries.

resulted in inefficiencies in production especially in areas not suitable for maize production. Second, the direct distribution of inputs by the Government was characterised with very high logistical and administrative costs and gross inefficiencies that resulted in delays in delivering the inputs and misappropriation of programme resources including inputs.

51. In order to address these challenges and after six years of stalled progress, the MoA initiated the e-voucher system as pilot project delivering the FISP input subsidy through pre-paid bank cards rather than via centrally procured and directly delivered inputs. In addition to the need to address inefficiency challenges of the FISP, the migration to e-voucher was specifically motivated by the need to: (i) encourage more private sector participation in agro-input distribution, thereby reducing the public expenditure on the delivery of private goods such as fertilizer and seed<sup>65</sup>; (ii) ensure timely delivery and access to inputs by smallholder farmers; (iii) allow farmers to choose inputs of their choice, thereby promoting agricultural diversification; and (iv) reduce leakage (better targeting) and increase the number of beneficiaries.
  
52. The e-voucher system, which basically stands for electronic voucher, uses a mobile delivery and tracking system to distribute subsidized products through private sector suppliers to targeted farmers.<sup>66</sup> This

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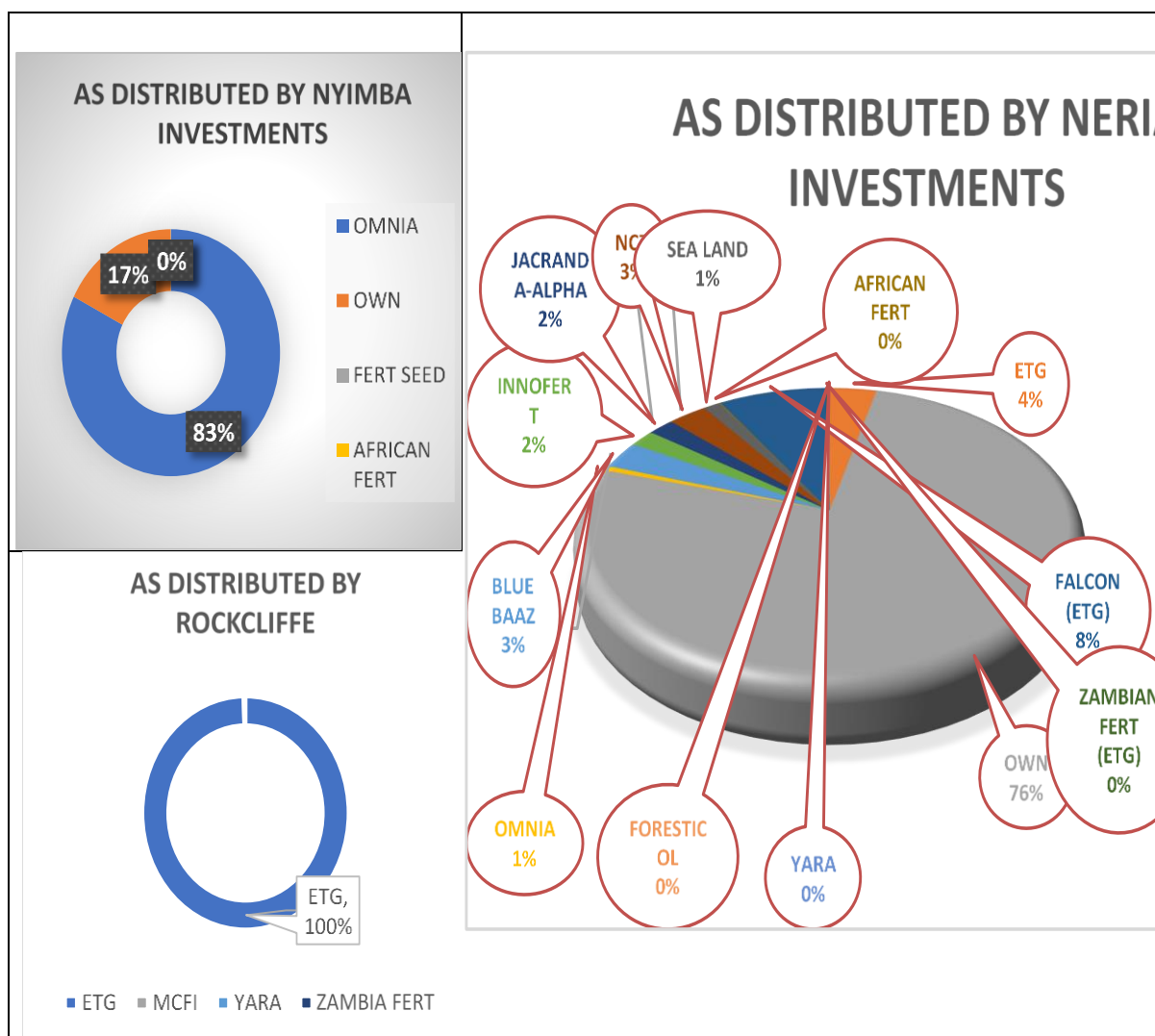
<sup>65</sup> For instance, like for seed, when conventional FISP was in place, through a tendering process, fertilizer companies would make bids for the supply of fertilizer to the programme and usually, two companies were awarded the tender to supply fertilizers under the programme. The winning bidders would then be responsible for supplying the entire FISP consignment of fertilizer required for a given period. Under such circumstances, these fertilizer companies would be the main suppliers of fertilizer for a given crop production season. The other fertilizer companies would then mainly service the commercial farmers, agro-dealers, retailers and wholesalers. Under the current e-voucher system where the small-scale farmers source fertilizer through an electronic voucher payment system, the study found that no one single Fertilizer Company would have the entire FISP fertilizer consignment. Instead, findings showed that all the fertilizer companies through independent agro-dealers, retailers and wholesalers, and their own retail/wholesale outlets would be a source of fertilizer for FISP farmers.

<sup>66</sup> Kuteya A.N and Chapoto A, 2017. "E-Voucher Performance and Recommendations for Nationwide Rollout during the 2017/18 Farming Season". Indaba Agricultural Policy Research Institute. Policy brief No. 89

involves a web-based platform called the Zambia Integrated Agricultural Management Information System (ZIAMIS). ZIAMIS was designed as a web based, real time registration and electronic payment system with associated applications to coordinate and operationalize the key processes of the electronic voucher system. A farmer can therefore be registered as a beneficiary through this system for the procurement of subsidised farm inputs through electronic payment to the agro dealers and retail agents who distribute the farming inputs.

53. The e-voucher was first piloted in 2014/15 season targeting an initial 241,000 farmers across 13 districts in Southern, Lusaka, Central and Copperbelt Provinces, and by the 2016/17 season, the number of farmers benefiting from the e-voucher initiative was increased to 602,000 farmers across 39 districts in all the provinces of the country. In 2017, a decision was made to out-scale the e-voucher initiative to all districts targeting 1 million farmers but because of severe technical and administrative implementation challenges experienced during the 2017/18 season, the government in 2018 rescinded its earlier decision by reducing the amount of FISP delivered through the e-voucher during the current 2018/19 season to 60%.
54. Figure 5 below shows the fertilizer brand distribution by the three of the four companies that were awarded contracts to distribute 40% of the FISP e-voucher conventionally during the 2018/19 agricultural season.

**Figure 5. Direct Fertilizer Distribution during 2018/19 FISP e-Voucher**



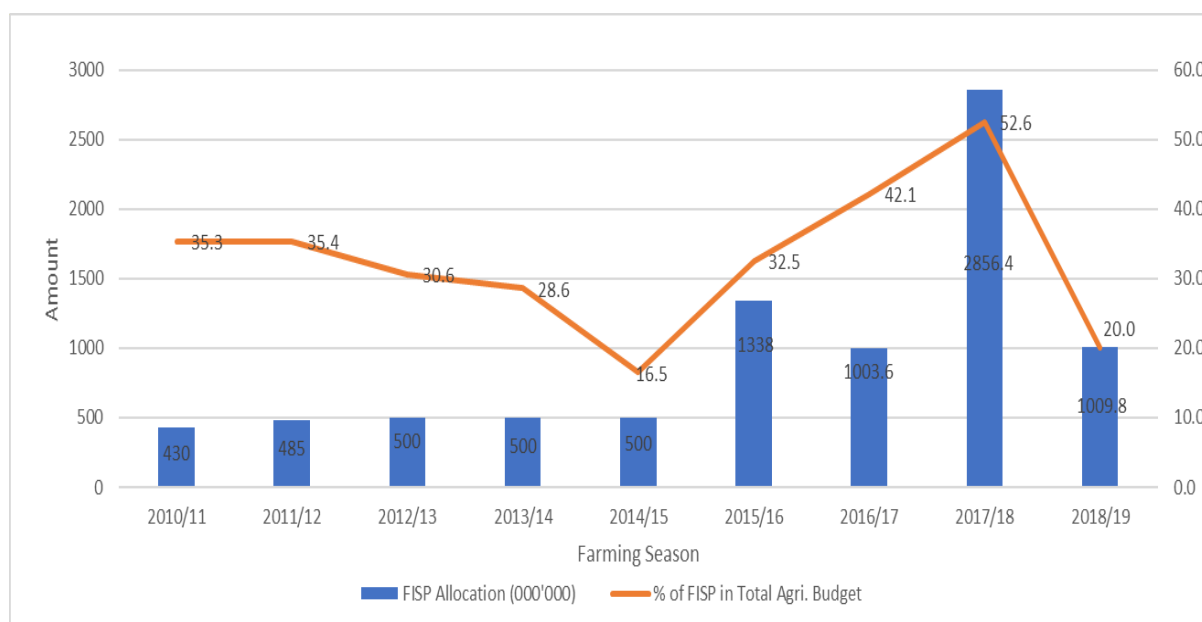
Source: MoA, redemption of inputs records under the 40% of the FISP e-Voucher

55. Rockcliffe distributed almost 100% ETG fertilizer brand, Nyimba investments distributed 83% of Omnia fertilizer while Neria distributed about 14% of other assorted brands. Considering quantities distributed, Neria Investments was the major supplier under the direct input distribution component of the FISP e-voucher last season, distributing almost 50% of the total fertilizer delivered to farmers under conventional FISP.

## Investments into the FISP

56. From 2000 to date, government has continued to make huge investments into the main input subsidies in an effort to increase supply of and access to farming inputs among farmers. It is expected that this will lead to increased productivity in the agriculture sector. Regarding FISP, government's expenditure on the input subsidy program between 2010 and 2018 averaged 33% of the total budget allocation to the agriculture (Figure 6)<sup>67</sup>. When supplementary spending is considered, the figure was even higher, at 35% of the total government spending on agriculture.

**Figure 6. FISP Spending, 2010/11 – 2018/19**



Source: Study Findings

57. Consequently, FISP has continued to account for the largest proportion of the total fertilizer consumption among small-scale farmers and in the country as a whole. For instance, from 2002 to 2015 when FISP was

<sup>67</sup> Rhoda Mofya-Mukuka and Auckland Kuteya (2018). Structure of the Zambian Fertilizer Market. Presented at the Seminar of the Role of Regulation in Stimulating Private Sector Development in the Fertilizer Value Chain, Friday, 7th July 2018, Intercontinental Hotel, Lusaka

being delivered using conventional means, about 95% of the total fertilizer supplied to smallholder farmers in the country was distributed through FISP. This figure constituted around 65% of the country's fertilizer consumption. Although under the e-voucher farmers are free to buy any input of their choice from the subsidy money, the study found that fertilizer accounted for over 80% of the value of all inputs sourced by the farmers under FISP during the 2018/19 season.

### **Competition consideration for Commercial and FISP Fertilizer**

58. Over the past 10 years and more, the government interventions in the fertilizer market has been through the FISP smart subsidies<sup>68</sup> as well as policy formulations that promote private sector involvement in the market. The presence of both FISP subsidized fertilizer and commercial fertilizer in the same distribution value chain poses some competition challenges. Given the significant presence of Government, competition at the distribution level of the value chain occurs at the tendering stage with companies failing to secure tenders left to concentrate on commercial fertilizer distribution in direct competition with distributors of the FISP fertilizer. There has been a resurgence of the commercial fertilizer market due to perceived inefficiencies of the FISP program such as late payments and activation of the system making the commercial fertilizer distribution less risk.

### **Fertilizer Distribution and Retailing**

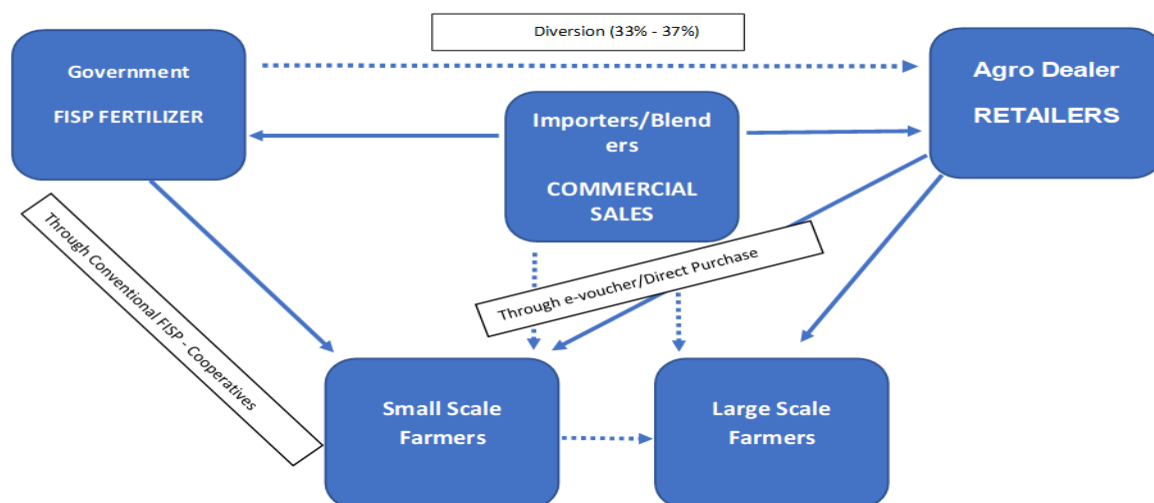
59. Distribution and retailing of fertilizer are done either through the government subsidy programmes (FISP and FSP) or commercial which includes direct purchase. Under FISP, fertilizer companies supply fertilizer to the government which then distributes through district agricultural administration and cooperatives. Importers, blenders and agro dealer's supply fertilizer directly to the farmers through their

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<sup>68</sup> Voucher programs that provide farmers with government subsidized vouchers where they can redeem fertilizer at local agro-input dealers.

cooperatives<sup>69</sup>. Under FISP, suppliers (importers/blenders) and agro dealers (wholesalers and retailers) sale fertilizer directly to small, medium and large-scale farmers by purchases made either through cash or credit<sup>70</sup>.

**Figure 7. Fertilizer Distribution in Zambia**



Source: Adapted from Mofya-Mukuka and Kuteya (2019)<sup>71</sup>

60. Market players in the fertilizer sector have increasingly assumed the role of distributor and retailer including importers, blenders; all acting as agro dealers. The distributors make it easier for farmers to obtain not only products but extension services<sup>4</sup>. Companies such as Omnia and ETG have set up approximately 23+ depots throughout the country for their fertilizer distribution with supply presence covering Southern, Lusaka, Central, Copperbelt, Eastern to Northern provinces with each province having not less than 3 depots where their fertilizers are accessible to both farmers and agro dealers directly<sup>72</sup>. Others

<sup>69</sup>The World Bank (2012). *Agribusiness Indicators: Zambia*. Accessed on 20<sup>th</sup> May, 2019. <<http://documents.worldbank.org/curated/en/481731468166490328/pdf/825080WPOABIZa00Box379865B00PUBLIC0.pdf>>

<sup>70</sup> Agritech Expo Zambia (2017). Zambia's Leading Outdoor Agriculture Expo. Accessed on 20th May, 2019. <[http://www.agritech-expo.com/uploads/Pages/site191\\_50398\\_en\\_file1.pdf](http://www.agritech-expo.com/uploads/Pages/site191_50398_en_file1.pdf)>

<sup>71</sup> Ibid

<sup>72</sup> Interview with the business and marketing manager at ETG Zambia.



companies such as Foresticol rely on independent agro-dealers and sometimes other fertilizer companies to distribute their product.

### **Competition Consideration on Fertilizer Distribution**

61. The diversity of distributors in different provinces portray a generally a competitive market. Agro-dealers who retail the fertilizer were also found to stock a variety of agricultural inputs such as fertilizer plant boosters, animal feed and seed acting as a one stop shop for farmers. Fertilisers are purchased from distributors on either cash basis or on credit. The study found that where fertilizer is sourced on credit by an agro-dealer operating in an area where the distributors is also present, they were often directed to sale the fertilizer at dictated prices with active price monitoring for compliance. Threats of termination of supply were used to enforce this directive with Southern Province recording the highest number of such submissions.
  
62. Fertilizer stocked by an agro-dealer incur the same costs with the only difference being the type of customer. Some of the fertiliser is redeemed as FISP fertilizer by the eligible farmers while other source it for cash. The study found that despite the cost of fertilizer being the same, FISP beneficiaries were being charged more per bag than those that bought on a cash basis. The findings showed that the price of fertilizer during the peak season reaches around ZMW330 on commercial sell and about ZMW360 on FISP e-voucher from about ZMW 200 - ZMW250 during off peak season respectively. The study found that the FISP fertilizer prices were paged within a given range and this information was domiciled with the Zambia Integrated Agriculture Management Information System (ZIAMIS) which is able to detect and reject prices outside the range. The ZIAMIS is a system that supports the management of different agriculture processes especially the FISP. This is one way Government ensures that fertilizer prices are not highly priced to

farmers<sup>73</sup>. However, there is a possibility that FISP fertilizer is sold on the upper price within the range in the ZIAMIS.

63. The justification given for the price differentials include transportation and late payments by the Government as risk premiums necessitating the price differentials. However, transportation and logistics apply to both commercial sold and FISP distributed fertiliser and thus cannot be used as a justification while delayed payments by government does not make the transactions different warranting price differentials. This is a consumer issue as it appears agro-dealers and retailers are increasingly taking advantage of the farmers who have no option but to source their inputs from FISP accredited dealers.
64. The selection of agro-dealers to distribute FISP fertilizer must be re-considered with qualified and experienced agro dealers given preference. Southern province had close to 200 agro dealers with close to 100 agro dealers located in one district. Most agro dealers on the FISP program are seasonal hence their propensity to want to maximize the profits within a given window during the farming season<sup>74</sup>.

### **Freight and Warehousing (Logistics)**

65. Fertilizer is a bulk product whose distribution presents logistical challenges in terms of transportation and warehousing. The sector, although not a core element of the value chain, it is a core support service closely integrated into the fertilizer value chain. The performance of the distribution networks and systems has therefore a direct impact on the performance of the fertilizer value chain. Fertilizer has been estimated to account for between 30% and 50% of the costs

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<sup>73</sup> Submissions during the Stakeholder validation meeting held on 31<sup>st</sup> May, 2019 at Protea Towers in Lusaka

<sup>74</sup> Submissions during the Stakeholder validation meeting held on 31<sup>st</sup> May, 2019 at Protea Towers in Lusaka

to produce grain and or oilseeds<sup>75</sup> , and of this, transportation and logistics cost contribute as high as 70% to the final price of fertilizer in Zambia. This means around 21% to 35% of the price of producing grain and oil seed is composed of transportation and warehousing logistics.

66. The main cost items incurred by importer, blenders and agro dealers are transportation, handling at the port and other stages in the system, damages, insurance, warehousing and theft. Transport charges are generally on the rise because of increased fuel prices as at December, 2018<sup>76</sup>. In addition, inadequate warehouses also pose constraints in supplying fertilizer competitively and cheaply. Although rail transportation rates are by far cheaper than the rates from road freight both domestically and within the region, speed of movement and proximity of warehousing facilities near rail stations pose a challenge.
67. Domestic transportation significantly affects the cost of fertilizer marketing. Most of the agro dealers for example Neria in Eastern province, do not own warehouses but lease from government and other private owners. Fertilizer handling costs are generally incurred when agro dealers use labourers to load and off-load trucks, the loading and off-loading charge in Central, Copper belt and Southern provinces was approximated at K1 per bags and approximated at K2 per bag in Eastern province<sup>77</sup>. Importers and blenders offer transportation services of fertilizers purchased by agro dealers at a fee of about K1500 per truck of about 600 fertilizer 50kg bags purchased or received on credit.
68. Most fertilizer companies outsource transportation with the exception of those that are vertically integrated with a transport and logistics firm.

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<sup>75</sup> FISP was allocated a total of K2.8 billion in 2017 as a way of stimulating the private sector participation in agro-inputs and increase competition- Ministerial Statement on the Update on Implementation of the Farmer Input Support Programme (FISP) 2017/2018 Agriculture Season [http://www.parliament.gov.zm/sites/default/files/images/publication\\_docs/MINISTERIAL%20STATEMENT%20BY%20THE%20MINISTER%20OF%20AGRICULTURE\\_0.pdf](http://www.parliament.gov.zm/sites/default/files/images/publication_docs/MINISTERIAL%20STATEMENT%20BY%20THE%20MINISTER%20OF%20AGRICULTURE_0.pdf)

<sup>76</sup> Indaba Agricultural Policy Research Institute (2013). A Review of Zambia's Agricultural Input Subsidy Programs: Targeting, Impacts, and the Way Forward.

<sup>77</sup>International Fertilizer Development Center (2013). *Zambia Fertilizer Assessment*. Accessed on 20<sup>th</sup> May, 2019. <<https://ifdcorg.files.wordpress.com/2015/04/zambia-fertilizer-assessment.pdf> >

The uses of transport forwarding company that usually act as agents between the buyer of bulk fertilizer and the firm offering logistic services adds to the cost of logistics. The study found that most fertilizer companies contract directly with a trucking company and not through a freight and forwarding company to minimize the costs associated with dealing with an intermediary such as a freight and forwarding company. However, this practice transfers the risk of managing the relationship with the transport company to the importing company.

69. In addition to road transportation costs, the fertilizer attracts broad shipping costs, including the cost of insurance and freight. Once the shipping vessel has docked in Durban, Beira or Dar-es-Salaam, the importers arrange for offloading, storage and trucking from the port. In some special cases, the fertilizer importers sell volumes of fertilizer to the distributor who then solely distributes the products through their retail networks. Dar es Salaam has a bigger storage facility than Beira port, however Beira port has lately invested in erecting port terminals which has made transporting fertilizer through the Beira port relative cheaper than clearing at Dar es Salaam because the Beira port is near Lusaka than the Dar-es-Salaam with differences in kilometres (km) of about 903km.

### ***Freight and Warehousing Competition Considerations***

70. There has been a sharp increase in the number of trucking companies and consequently trucks in the Zambian transport sector in the past decade. This was influenced by the removal of import duties on trucks in 2008/9 and has resulted in overcapacity in the market which has in turn led truckers to partially reduce their rates. However, this influx of trucking companies leading to reduction in rates has been offset by the costs faced by these companies such as fuel costs which are relatively high in Zambia, fuel levy and inspection of \$6/truck for every four

months, and road tax of approximately \$200/truck per year, these costs have also been raising.

71. The 'core' of the road freight sector in Zambia consists of firms with large articulated trucks (up to 56 tons) operated by small-medium sized Zambian trucking companies carrying bulk goods within Zambia (copper metal and concentrate, cement, coal, sugar, grain, and smaller containerized goods). This segment of the trucking sector is driven by agriculture and mining demand. Many Zambian companies operate at this level, transporting goods to and from inland ports (Ndola, Lusaka, Livingstone, Kapiri Mposhi) or connecting with rail transport when available. The largest trucks typically operate along Zambia's regional routes and are operated by the larger transport companies. The rest of the market consists of small- and medium-sized operators with trucks of less than 20 tons, mostly owned and operated by businesses or owner-driver companies.
72. Prices over the years have varied significantly when comparing the rates from Beira to locations in Zambia versus those from Durban and Dar-es-Salaam. In 2015 for instance, transporting fertilizer to Lusaka was around \$130/ton from Beira versus a rate of \$160/ton from Dar to Lusaka and up to \$260/ton from Durban to Lusaka. The trucking companies argue that the trucking industry operating from Beira is very well 'organized' in terms of availability of trucks and efficiency. Trucking companies sometimes charge a low rate if they have secured consistent lucrative return loads back from ports to Zambia. This is consistent with the fact that trucking companies would sometimes only charge Zambian Fertilizers approximately \$100/ton from Durban if the trucking company has already secured a return load back to South Africa from Zambia. This is compared to about \$185/ton without a return load.
73. Further, the study found recent transportation cost of fertilizer from Dar-es-salaam ports to Lusaka at \$293/ton. Factoring exchange rate of about ZMW13/\$1 gives transportation cost of fertilizer from Dar-es-

salaam to Lusaka of about ZMW 190 per 50kg bag. In addition, transporting fertilizer from Lusaka to Ndola is about ZMW 13000 – ZMW 14000 for a truck carrying 600 bags of 50kg fertilizer. This implies that one 50kg bag of fertilizer attracts transportation cost of ZMW20 – ZMW25 to reach depots and agro-dealers outlets across the country. The average price of a 50kg bag of fertilizer was established to be at ZMW 290 during off-peak season and ZMW 320 in peak season. Thus, the contribution of transportation cost to price of fertilizer in Zambia was assessed to be around 70% of the cost of fertilizer.

74. The domestic rates are not very different from the rates charged in Beira, Durban and Johannesburg. Zambia's domestic rates for trucking companies to fertilizer companies is a flat rate of around ZMW1.4/ton/km for a 30-ton truck transporting. This rate is equivalent to \$0.11/ton/km compared to about \$0.08 per ton per km in 2008. However, since local producers do not pay duty, they generally incur lower transportation costs as compared to importers of fertilizer.
75. Companies that are vertically integrated with a transport/logistics firm such as ETG use their own fleet to transport fertilizer and other inputs to farmers in an effort to maximize their margins and to internalise some transportation costs. Subsequently, such fertilizer companies are able to supply fertilizer that is relatively cheaper compared to their competitors. On the whole, such a business model enables fertilizer companies to compete more vigorously in the market by charging low prices for fertilizer margins on transport to the benefit of farmers.
76. Competition among transporters was found to be based on rates. The study found that in order to win customer loyalty from fertilizer companies and agro dealers, transport companies initially charge low rates especially if there are lucrative return loads. Over the years, these transport companies would increase their transport rates yet the fertilizer company and agro-dealers would still choose to trade with that same company and not choose a transport firm offering a lower commercial transport rate. In general, the study found that such

predatory marketing strategies among trucking companies to win customer loyalty may inadvertently be important drivers of the 'lack' of competition in road transportation over time because of the reluctance by clients (fertilizer companies and agro dealers) to switch between transporters based on price, efficiency and performance.

77. Further it was established that some fertilizer firms prefer to use the Dar es Salaam port though this route is longer than the Beira port in transporting fertilizer and as a result firms incur more transportation cost than if fertilizer is transported through the Beira port. Some fertilizer companies submitted that sometimes a fertilizer firm is compelled to use an expensive transport route as a way of evading congestion because when fertilizer is in high demand time taken to bring the fertilizer in the country is of primary importance.
78. Consumption of fertilizer in Zambia is currently between 400,000 to 500,000 MT and between 70% - 80% of this annual consumption is demanded during the peak period (October – January). The limited warehousing faced in the supply of fertilizer and delay from transporting fertilizer from ports inhibits fertilizer supplier to supply fertilizer that is equivalent to the fertilizer demand in the peak farming period. The study found that these and the high price of fertilizer under e-FISP prompt firms and other fertilizer distributors to withhold stock.

## **CONCLUSIONS**

79. There are a good number of fertilizer companies in Zambia, however, very few companies are involved in producing and/or blending fertilizer. Furthermore, though the fertilizer market in Zambia has a significant number of fertilizer-supplying companies, the fertilizer market is highly concentrated and mostly dominated by multinational companies. The fertilizer value chain in Zambia has a market structure which has at least 12 active fertilizer suppliers, the majority being the importers with few fertilizer producing firms.

80. The industry is crowded with a lot of agro-dealers who sell fertilizer to mostly small-scale farmers both through commercial trade and FISP e-voucher. The buyers of fertilizer are the commercial farmers and the small-scale farmers. Commercial farmers usually buy fertilizer on credit from specific fertilizer companies who provide them with auxiliary services such as soil testing and this kind of contract equip such farmers to a specific brand. The small-scale farmers who are the majority of the buyers of fertilizer in Zambia usually buy fertilizer from the agro-dealers and suppliers depots that are in their respective districts.
81. There is varying Competition in the Zambian fertilizer sector at the two streams of the value chain. Competition is stiffer among agro-dealers than among fertilizer importing and blending companies such that no single agro-dealer can neither determine the market price of fertilizer nor monopolize the supply of fertilizer to the farmers. Agro-dealers are motivated to supply as agent of FISP e-voucher but due to late delay in payments of money by the government to these agro-dealers, the agro-dealers prefer to withhold stocks of fertilizer and opt to sell it to the farmers on cash basis. Other agro-dealers are intending to never participate in the FISP e-voucher system because they have accrued interest charges to the suppliers of fertilizer for late payment of fertilizer that was supplied to agro-dealers on credit.
82. The two major importers and blenders of fertilizer being Omnia and ETG have a combined market share of over 50% and procure fertilizer in huge volumes and can market their products on a large scale. These two fertilizer firms procure fertilizer at low average cost because their plants are scattered around the globe and they get the raw materials from cheap sources. Omnia and ETG sometimes supply fertilizer to small emerging importers of fertilizer in Zambia. Such kind of trade creates an environment where these two firms can dictate the quantity of fertilizer to be supplied on the market, because they can determine



how much to supply to the competitor and what price to charge the competitor. Additionally, such trade fosters an environment for discriminatory pricing and resale price maintenance.

83. The emerging of Foresticol fertilizer, a local producer of fertilizer compound 'D' and Ammonium nitrate compound has enhanced competition in the sense that, the local importers of fertilizer now have a variety source of fertilizer. Additionally, information asymmetry between farmers and the suppliers of fertilizer hinders competition in the markets as some farmers perceive fertilizer to be homogenous hence paying little attention on the quality of the product on the market. This has resulted in fertilizer firms relaxing on competing extensively on quality and auxiliary service but on price.
84. Competition in the fertilizer market has further been hampered by regulation and policy inefficiencies. There is no national fertilizer-specific coordinating institution that guides and coordinates efforts of the various institutions to avoid overlaps and/or replication of efforts in Zambia. Currently the enforcement of rules governing the import, export, production and distribution of fertilizer is the responsibility of several fragmented regulatory bodies. In carrying out their mandates, these institutions work according to their respective Acts, policies and regulations. This often leads to overlaps and sometimes duplication in the responsibilities of agencies, henceforth, undermining comprehensive and effective coordination of fertilizer production, marking and distribution. Furthermore, the sub-sector is still being legislated by the ancient and complex Fertilizer and Seeds Act.
85. There are no substantial legal (regulatory) and strategic barriers to entry, however, they are serious structural barriers to entry such as high cost of capital, symmetric cost which give multinational fertilizer firms a competitive advantage as they are capable of producing and supplying other agricultural inputs. This makes them enjoy economies of scale and scope and a reduction in the cost of advertisement and

market. Other barriers to entry that hinder competition includes; fees of accessing some licenses and registration requirements as well as the limited dissemination of information in the public domain so that the emerging firms are aware of the tariffs and other government incentives in place to encourage private sector involvement in the fertilizer chain.

## **RECOMMENDATIONS**

86. Based on the assessment firms' behaviour as well sources of anti-competitive behaviour in the fertilizer sub-sector, the study makes the following recommendations to promote competition in the fertilizer sub-sector:

<b>Issue</b>	<b>Concern</b>	<b>Recommendation</b>	<b>Expected Impact</b>	<b>Keys Actors for Implementation</b>
Licencing and regulation	They are a number of licencing and regulatory bodies that increase the cost and time of setting up fertilizer importation or distribution effectively contributing as barriers to entry	Establishment of a single licensing window for fertilizer importation, manufacturing and distribution.	The cost reduction will encourage small companies to enter the market and reduce time and cost involved in production, procurement and distribution of fertilizer.	MOA, MCTI
E-FISP	Crowding out of Private Sector Participation in the fertilizer market	Government should not involve itself in fertilizer procurement but instead concentrate on providing allowances to vulnerable farmers for input redemption	All fertilizer will be distributed commercially opening up the market to more private sector participation	MOA and MCTI
Agriculture (Fertilizer and Seed) Act and the Control of Goods Act	Widespread discretion that have a potential to affect competition	Amend the two pieces of legislation to ensure that they are competition friendly	This will increase transparency and reduce policy inconsistencies that tend to affect competition	MoA and MCTI

FISP fertilizer prices	FISP fertilizer sold on above market prices but within ZIAMIS range	Remove price ranges in the system to allow market to determine prices and sanction agro-dealers abusing farmers with high prices	This will allow markets to determine and discover the correct price ranges and protect farmers.	MoA, Smart Zambia, MCTI
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