Implications of Competition Reforms in Maize and Bus Transport Sectors for Consumers and Producers in Zambia

CREW Project

CUTS International

Implications of Competition Reforms in Maize and Bus Transport Sectors for Consumers and Producers in Zambia

Prepared by

CUTS Lusaka
Plot Number 3653, Mapepe Road
Olympia, Lusaka
Zambia - 37113
Ph: +260.211.294 892
Tele Fax: +260.211.294892
Email: lusaka@cuts.org
Web: www.cuts-international.org/ARC/Lusaka

With research support from

Zambia Institute for Policy Analysis & Research
P.O Box 50782
Lusaka, Zambia
Tel: +260.211.252559
Fax: +260.211.252566
Email: info@zipar.org.zm
Web: www.zipar.org.zm

Supported by:

First published: January 2015

#1503

Contents

List of Tables

List of Figures

Abbreviations

AABF:	Annual Average Bus Fare
AACF:	Annual Average Cost of Fuel
ACMP:	Agricultural Credit Management Programme
BMZ:	German Federal Ministry for Economic Development Cooperation
CCPC:	Competition and Consumer Protection Commission
CREW:	Competition Reforms in Key Markets for Enhancing Social and Economic Welfare
CUTS CCIER:	CUTS Centre for Competition, Investment and Economic Regulation
DFID:	Department for International Development
ERB:	Energy Regulation Board
ETG:	Export Trading Group
FISP:	Farmer Input Support Programme
FRA:	Food Reserve Agency
GIZ:	German Society for International Cooperation
GRZ:	Government of the Republic of Zambia
GTAZ:	Grain Traders Association of Zambia
HMSS:	Household Maize Self Sufficiency
IAPRI:	Indaba Agricultural Policy Research Institute
IFDC:	International Fertiliser Development Centre
MAL:	Ministry of Agriculture and Livestock
MAZ:	Marketers Association of Zambia
MCTI:	Ministry of Commerce, Trade and Industry
MLGH:	Ministry of Local Government and Housing
MMD:	Multi-Party Democracy
MOF:	Ministry of Finance
MTWSC:	Ministry of Transport, Works, Supply and Communications
NAMBOARD:	National Marketing Board
NAPSA:	National Pensions Scheme Authority
NGOs:	Non Governmental Organisations

NRFA:	National Road Fund Agency
PACRA:	Patents and Companies Registration Agency
PPDAZ:	Public and Private Drivers Association of Zambia
PPPs:	Public Private Partnerships
PSI:	Pre-Shipment Inspection
RDA:	Road Development Agency
ROADSIP:	Road Sector Investment Programme
RTSA:	Road Transport and Safety Agency
UBZ:	United Bus Company of Zambia
ZABS:	Zambia Bureau of Standards
ZAMACE:	Zambia Agricultural Commodity Exchange
ZCC:	Zambia Competition Commission
ZCF:	Zambia Cooperative Federation

Acknowledgments

CUTS is implementing a project entitled, 'Competition Reforms in Key Markets for Enhancing Social & Economic Welfare in Developing Countries' (CREW Project), in four countries: Ghana, India, Philippines and Zambia, and across two common sectors: Staple Food and Bus Transport with the support from DFID (United Kingdom) and BMZ (Germany) facilitated by GIZ (Germany). One of the main goals of this project is to demonstrate the benefits of competition reforms for consumers and producers, so that greater attention and support can be provided to this issue by policymakers based in developing countries.

Efforts of several people have gone into making this report a reality. Involvement in various forms, such as direct inputs, thought provoking discussions, timely reviews, incessant encouragement and guidance have been crucial, in development of the report.

First of all, we express our deep gratitude and appreciation to DFID (United Kingdom) and BMZ (Germany) facilitated by GIZ (Germany) for its extensive support and involvement in this project. Special thanks are due to colleagues at Nathan Associates.

The preparation of the report would not have been possible without careful guidance and handholding from our project advisors **Frederic Jenny**, Chairman, OECD Competition Law and Policy Committee, France and **Rughvir Shyam Khemani**, Principal, MiCRA, Washington DC.

Project Advisory Committee Members made valuable suggestions and provided guidance to improve the content of this report. A special vote of thanks goes to some of our PAC members namely **Eberhard Feess** (Professor of Managerial Economics, Frankfurt School of Finance & Management, Germany), **Natalie Timan** (Director of Economics, Competition and Markets Authority, UK), **Owen Gabbitas** (Research Manager, Productivity Commission, Australia) and **Tania Begazo** (Economist, Competition Policy Thematic Group, Investment Climate, World Bank).

This report has been prepared by a team comprising **Kelvin Mulungu, John N'gombe, Robert Mtonga** and **Cornelius Dube** for CUTS International Lusaka. Valuable inputs have also been received from **Joseph Simumba** of **Zambia Institute for Policy Analysis and Research (ZIPAR)** and various key national experts and professionals in Zambia.

We gratefully acknowledge the efforts of **Neha Tomar**, **Shreya Kaushik**, **Simon N'gona, Faith Mwamba** and **Annie Mwambazi-Siame** for their diligence and hard work in assisting in research and finalising the report. We also appreciate the efforts of **Rajeev D Mathur** for editing, **Madhuri Vasnani** for proofreading and **Mukesh Tyagi** for preparing layout of the report.

Last but not the least, this report would not have seen the light of the day without the skillful direction and guidance of **Pradeep S Mehta**, Secretary General, CUTS.

Finally, any error that may have remained is solely ours.

Rijit Sengupta
Project Coordinator, CREW project

Executive Summary

This report, the Diagnostic Country Report (DCR), is a product of the diagnostic or the research phase of the project entitled *Competition Reforms to Enhance Social and Economic Welfare in Developing Countries* (CREW). The project is being implemented by CUTS Centre for Competition Investments Economic Regulations (C-CIER) with support from DFID (UK), BMZ through GIZ (Germany). The three year project aims to demonstrate the implications of competition reforms on producers and consumers in order to attract the attention of policy makers in developing and least developing countries towards effective implementation of competition.

The project is being implemented across four countries, namely, Ghana, India, Zambia and the Philippines, where the common sectors are bus transport and staple food. The project countries were selected keeping in mind the need to capture contrasting reforms and their implications across developing and least developing countries, whereas the sectors were selected because of the high impact they have on common man.

This report makes an attempt to assess the impact of reforms that were undertaken in the **maize** and **bus passenger transport** sectors over time in Zambia.

Maize Sector

Reforms in the maize sector in Zambia include state intervention in the early years of independence before liberalisation reforms were adopted to allow private sector participation. The maize sector reforms saw marketing for both maize and fertiliser changing from the National Marketing Board (NAMBOARD) and the Zambia Cooperative Federation (ZCF). Between 1994 and 1997, the government adopted a pricing policy to reduce subsidies and avoid budgetary allocations towards fertiliser subsidy. Fertiliser was supplied at the real cost that included transportation, handling and storage costs. The Zambia Food Reserve Agency (FRA) was established in 1996, under the Zambian Food Reserve Act (1995) with a primary mission to ensure national food security and income of farmers by maintaining a sustainable national strategic food reserve.

In 2002, the Government of Zambia introduced the Fertiliser Support Programme (FSP) with a view of improving access to inputs by small-scale farmers. Its initial objective was to enhance the participation and competitiveness of the private sector in the supply and distribution of agricultural inputs in a timely and effective manner. In 2009, the government restructured the FSP and renamed it the Farmer Input Support Programme (FISP) with a view to improving its operational efficiency and expanding the sphere of support to the farming community.

The study focusses mainly on three main reforms: the government floor pricing reforms which were implemented through the FRA; the FISP (targeting fertiliser and maize support to farmers) as well as reforms on subsidised maize to maize millers. Although FRA activities through the floor pricing regime had little effect on the mean maize market prices prior to July 2003, the activities affected the variability of prices for maize as measured by the standard deviation. FRA activities were positive in reducing the variance of wholesale prices by about 13.5 percent on average.

The increase in price through the floor pricing regime had minimal beneficial effects in Zambia. It was beneficial to the net maize sellers, who only comprise about 28 percent of all farming households and was not good for the 49 percent who are net buyers. It had no direct effect to about 23 percent of farmers who are neither net sellers nor net buyers. Among smallholder net-maize sellers, benefits from higher maize market prices are concentrated in the hands of the four percent of maize-growing smallholders that account for 50 percent of all smallholder marketed maize. Although the maize floor pricing by FRA is meant to be a poverty reduction measure and ensure small scale farmers have access to market at good prices, the percentage of small scale farmers that sell maize to FRA is so small and it is usually by male headed better-off households.

The FISP subsidy regime created a fiscal burden on the government: in 2011 about 73 percent of the poverty reduction budget was allocated to FISP. Prioritising FISP as a cornerstone of the government's poverty reduction strategy has had little or no measurable impact on rural poverty. Although aggregate maize production has significantly increased in the last decade, in part as a result of these input subsidies and favourable weather, rural poverty has remained consistently high at around 80 percent.

The failures of FSP/FISP to have an impact on rural poverty can be attributed to failure to successfully target poor farmers, as subsidised inputs went disproportionately to wealthier farmers. Delays in input distribution and poor fertiliser use efficiency among beneficiary farmers as well as leakages, which saw inputs intended for the subsidy programme being diverted and sold on the commercial market, could also explain the failure of the FISP. The FISP also led to a poorly-developed agricultural sector dominated by a single crop – maize. Other high potential cash crops and traditional drought resistant food staples such as sorghum, millet and cassava were less prioritised. The excessive dependence on government by farmers also created a lax attitude toward credit repayment and a lack of understanding of the functioning of markets.

The subsidising of millers that was introduced in 2011 also failed to achieve desired goals. The mill-to-retail marketing margins (difference between the wholesale maize price and retail meal price) increased significantly from the level of roughly 900 kwacha per kg before the subsidy to 1,400 kwacha per kg after it. This shows that very little of the treasury costs incurred in providing FRA grain to millers at below-market prices benefited the urban consumers who are the majority consumers of the mealie-meal from the millers. Thus, millers benefited more from the regime than the intended consumers.

Some millers, especially informal and small/medium-scale millers, were excluded from the programme. The subsidies, therefore, did not promote competition among millers since it only favoured a few millers in the field. The removal of the subsidy regime in 2013 did not create any distortions in the market as e real prices for maize grain and mealie-meal after the removal were normal relative to their historical changes. It is mostly millers who benefitted much from the subsidy.

Bus Transport Sector

In the transport sector, the Road Sector Investment Programme (ROADSIP) of 1998 is among the prominent reforms that were undertaken in the transport sector intended to develop the Zambia road sector through attracting investment. This eventually saw the National Transport Policy of 2002, which sought to ensure provision of inexpensive, fast and frequent as well as safe transport.

The transport policy provided for the enactment of laws and regulations as well as enforcing institutions to develop and guide the transport sector in Zambia. The Road Traffic Act No. 11 of 2002 provides for the establishment of the Road Traffic and Safety Agency (RTSA) and a mechanism for planning, implementing and (monitoring and) evaluating government policy on road transport and safety in Zambia. The Public Roads Act No. 12 of 2002 provides for the establishment of the Road Development Agency (RDA) and the management of road infrastructure in Zambia. The National Road Fund Act No. 13 of 2002 was enacted to provide for the mechanism of resource mobilisation for road construction, maintenance and road safety. It established the National Road Fund Agency (NRFA) as the enforcing authority for the Act. The Markets and Bus Stations Act No. 7 of 2007 provides for the establishment and regulation of markets and bus stations. The study focusses on the possible impacts brought about by these reforms in the market.

The minimum investment needed for starting a bus service ranges from about ZMW 600,000 (US$100,000) to about ZMW 1,000,000 (US$167,000) for inter-city buses and ZMW 70,000 to ZMW 150,000 for intra-city buses. On average an inter-city bus carries between 65 and 70 passengers at an average fare of ZMW 120 and ZMW 190 for the Lusaka-Chipata Route and between ZMW 65 and ZMW 90 for the Lusaka-Kitwe route. For intra-city, the average fare is between ZMW 4 and ZMW 5 per trip for the town centre – Chelstone route for a bus with a carrying capacity of 16 passengers. However, it was noted that it takes a period of 1 to 5 years for the operators to recover their investment. Based on the data for the intra-city bus transport, the bus fare has been increasing faster than the fuel price, which could reflect that fares have been pushed by other factors outside fuel. If fuel is the major input into fares, then the bus operators have generally been able to utilise the fare setting regime to their advantage.

Following the deregulation of the transport sector, a number of new entrants entered the passenger transport market. However, the level of entry in the early 1990s was not sufficient to meet the demand. Among the reasons for slow entry was high capital outlay and poor road infrastructure. This prompted the government to offer tax concessions on importation of buses in 1994 and 1995. The measure drastically increased the number of buses on the market. Coupled with liberalisation of the economy, the passenger transport sector was attractive and promised favourable profit margins.

Over the past five years, the operators have witnessed positive changes in the licencing procedures. There has been a reduction in the time it takes to obtain the licences through streamlining of the procedures with the introduction of the electronic licensing systems in 2010. The RTSA has also further decentralised the system of obtaining licences, such as the fitness and road tax certificate making it easier for operators to access this service.

Entry barriers from operators' view also arise owing to there being a number of regulatory bodies in the sector. RTSA is the mandated institution to regulate the sector in partnership with the Zambia Police but other authorities that need to be satisfied include the Patents and Companies Registration Agency (PACRA), Zambia Bureau of Standards (ZABS), Interpol Police, National Pensions Scheme Authority (NAPSA) and the local authorities. All these have a set of regulations that needs to be met and it was indicated that some of them are tedious and act as a barrier.

There is currently no route allocation framework in Zambia. Operators are licenced according to intra-city and inter-city routes, thus can operate anywhere within intra-city and inter-city routes. However, local authorities are considering applying a route allocation policy to enhance the quality of passenger transport.

Government schemes have made it easier for operators with the tax incentive given to new entrants to import buses duty free and quota free being an example. This was implemented over a period of ten years. The operators indicated that this scheme produced positive results going by the surge in number of buses servicing both the intra and inter-city routes and reduced long waiting days for commuters to move from one place to another. The operators acknowledge that the provision and availability of infrastructural facilities improved between the year 2010 and 2011 and access to these facilities is quite easy. However, there is room for more improvement and expansion of the bus terminals.

Based on the results of the perception survey, intra-city commuters reported an average monthly income of about ZK1,500 (about US$250), which is very low. The average fare per trip for the intra-city route was about ZK4.94 (about US$0.82), which is quite high compared to other countries. Commuters spend about ZK128.4 to and fro on intra-city transport per month, which implies that an average commuter spend about 8.6 percent of income on transport. In the intercity bus transport, respondents earn an average income of about ZK1,530 which is similar to that for people using intra-city transport. About 43.4 percent were using inter-city transport for travelling to work, which would also imply frequent use.

The respondents in the intra-city transport indicated that they do not have any bargaining power to negotiate fares. Commuters are thus generally not satisfied with the fare setting process, and believe that it is mostly the government which is to be blamed. Access to bus services however greatly improved, as most commuters wait about 15 minutes during peak hours. About 46 percent of the intra-city commuters take less than five minutes of walking to get to the bus stop and those who get to the bus stop within 15 minutes of walking constitute about 84.6 percent of respondents.

Intra-city commuters generally are not happy with the quality of services, with only 17.3 percent indicating that they were good. This was mostly attributed to overloading, uncomfortable seats and rude bus crew. In the inter-city transport, consumers appear to be satisfied with the quality of the service.

Way Forward

Governance lessons for the maize sector

- Floor pricing benefits the net maize sellers who are seldom poor farmers. The benefits of such reforms are generally not realised by the target group. There is a need, therefore, to constantly generate awareness about the negative effects of these measures to ensure policymakers to gather relevant experiences. Such messages should also be in the agenda for advocates, especially NGOs who protect the interest of poor farmers in Zambia.

- The subsidy regime also distorted the structure of the downstream supply and value chains by denying private sector participation in the farm input supply, agricultural marketing and food processing. In addition to destroying economic efficiency which would have resulted with more competition by the private sector, such policies also make farmers attitude towards credit repayment negative while failing to make them maize self-sufficient.

- The method of allotting subsidies to the millers is also an issue where lessons can be inferred. This distorted competition as the process of selecting millers was not transparent, while at the same time millers pocketed huge profits as there were no measures to ensure that the millers transmit the benefits to the consumers. There is need for a message that ensures that subsidies that are not properly targeted are not re-introduced in Zambia.

- The fertiliser subsidy programme also revealed some loopholes on the enforceability of competition law in the system. There are general indications that there was not too much distribution in terms of companies winning the bids to supply the fertiliser, with possibilities of collusion being raised. Possibilities of collusion should always be investigated, even in retrospect. CCPC could thus develop a keen interest in the industry with the aim of taking corrective action once collusion is established.

Need for a proper fare setting mechanism in Bus Transport

In the transport sector, while the operators have largely benefited from the pro-competition reforms such as ensuring cheaper credit, market access and conducive infrastructure, the fare setting process is stilled skewed in the operators' favour. Passengers, especially in the intra-city transport sector, are heavily disadvantaged as bus fare constitutes a significant portion of their income. This calls for action among all the stakeholders in the sector aimed at ensuring that there is competition among the operators in the fare setting process. Currently, there is no price competition among the operators, which also reduce incentives to invest in quality enhancing mechanisms

Issue of quality in bus transport sector calls for immediate attention

The quality issue is also something calling for attention, as there does not appear to be proper mechanisms designed to make operators compete for quality. At bus termini, the first come first load principle does little to give incentives to operators to invest in quality as they are assured of patronage regardless of the status of the busses. This is also compounded by the use of touts to solicit for custom, whose behaviour is hardly regulated. Efforts also need to be turned towards ensuring that this is addressed.

1. Introduction

Project Overview

The project entitled, 'Competition Reforms in key Markets for Enhancing Social and Economic Welfare' (CREW) is being implemented by CUTS Centre for Competition, Investment & Economic Regulation (CUTS-CCIER) in four developing countries from Africa (Ghana and Zambia) and Asia (India and The Philippines). The project is being implemented with support from the Department for International Development (DFID, UK) and the German Federal Ministry for Economic Development Cooperation (BMZ), facilitated by (Germany Society for International Cooperation (GIZ). The project is intended to develop an approach which can be applied in developing countries for assessing the benefits of competition reforms on consumers and producers in specific product markets.

Competition enforcement is weak across many of the developing countries usually due to a host of different reasons. Among them is the fact that there are no measurable welfare gains from such enforcement that have been documented for use in advocacy to encourage policy makers. With scarce resources, policy makers worldwide are faced with the challenge of deciding where to allocate the resources in a manner that will maximise the net welfare gains of the population. To aid in this process of allocating resources in an optimal manner, this research will demonstrate the gains of competitive markets to consumers and producers and fill the gap in knowledge that exists. There is generally a dearth as to the gains of competition reforms especially on the consumers and producers in the staple food sector.

Through this project CUTS aims to develop an approach, which would help in assessing benefits of competition reforms on consumers and producers in two select sectors. One of the main goals of this project is to demonstrate the benefits of competition reforms for consumers and producers, so that greater attention and support can be provided to this issue by policy makers based in developing countries.

Project Objectives

The project's general objective is to better demonstrate measurable benefits from an effective competition policy and law regime in the developing countries, for ensuring long-term support for competition reforms. The following specific objectives are envisaged:

- To enhance international understanding of the benefits from, and best practices in, effectively implementing competition regimes in developing countries
- To develop and test a methodology (with indicators) for assessing the efficacy of competition regimes in achieving impacts on developing country consumers and producers
- To advocate to national stakeholders and international development partners for according greater importance to competition policy and law issues, in the national development agenda
- To sustain the momentum on fast-tracking competition reforms, gained from stakeholder awareness, understanding about the benefits and participation in related process in developing countries

- To generate greater attention and impetus for competition reforms in key markets of developing countries, resulting in benefits for consumers and producers

Linking Competition Reforms with Benefits

The broad goal for the project is to establish the link between components of an ideal competition reform process with its ultimate goal of achieving social welfare and economic prosperity. This generally starts with a process of consensus and awareness generation among all the critical stakeholders who have influence in society. Awareness generation would then help improve stakeholders' capacity to gather evidence and use it to influence/refine policy and practices. Such a process would lead to the emergence of competitive markets which is conducive for producers and eventually culminates in greater access and lower prices of goods and services for consumers. This should guide national policymakers and stakeholders in designing a comprehensive competition reforms strategy that helps achieve social and economic objectives in developing countries.

Such a process is, however, very involving and time consuming such that it would take a long time to materialise. Various advocacy and public information activities would be needed to create the necessary environment for stakeholders to demand national competition reforms, in a way that it leads to positive impacts on the ultimate beneficiaries.

The process, therefore, requires the government and other relevant stakeholders to join hands to develop the national competition reforms process. This would also incorporate a monitoring and evaluation framework (drawing from the above-mentioned tools) to assess impacts of the process over the course of its implementation. Linking competition reforms with the anticipated benefits would also motivate implementation of related policies as they would be known to have demonstrable effects on consumer and producer welfare.

Sectors

Two sectors were chosen for analysis under the study, namely the staple food and bus passenger transport. The choice of the sectors was based on their direct impact on the daily lives of a large section of the population, such that the development of a competitive market in either of these two sectors can create more benefits to the population. In most developing countries, the expenditure on the staple food constitutes a very significant part of the individuals' budget. Distortions which result in higher prices and challenges in access to the staple food thus have a direct bearing on consumer welfare; hence the importance of ensuring efficiency in production, marketing and distribution of staple food. Similarly, the bus transport sector involves close contact between mass consumers (passengers) and transport operators (producers) on a day-to-day basis. Any distortions or policy responses would have higher chances of direct and immediate impact on the economy. Keeping in mind the very different nature of the market dynamics of passenger transport, both inter-city and intra city passenger transport sub-sectors are the research focus across two distinct geographical areas.

Arrangement of Chapters

The rest of the paper is organised as follows. Section 2 gives a general background about competition reforms that have been undertaken in Zambia over the years. It also discusses the various reforms that have been undertaken in the two sectors that are the focus of the study. The competition reforms in the transport and maize sectors, together with the implications on producers and consumers are discussed in sections 3 and 4 respectively, before section 5 identifies the key findings by pointing out the evidence of the link between the reforms and consumer and producer benefits. Section 6 then gives concluding remarks.

2. Background

History of Economic and Competition Reforms in Zambia

The Competition and Fair Trading Act was enacted in 1994 by the Parliament. The Zambia Competition Commission (ZCC), the body established to enforce the legislation, however, became operational only in May 1997. During its 15 years tenure, the enforcement of the legislation was characterised by a number of problems and constraints. These included the inadequate manner through which the legislation covered some critical competition issues which eventually limited the effectiveness of the law. Examples include the interpretation and treatment of cartels and vertical restraints; the way it defined mergers and their notification process; the coverage of public interest in the Act and timeframes with which business had to wait for the decisions of ZCC. The way in which the legislation was crafted also created problems for ZCC as the law limited its investigative powers; limited administrative penalties that the institution could impose on business denied it a wider institutional mandate, and made it difficult to prosecute cartels due to absence of a leniency programme.

Due to these weaknesses and pressure from different quarters, including from the Business Licensing Reform Programme of 2009, the Competition and Fair Trading Act, 1994 was repealed in 2010 and replaced by the Competition and Consumer Protection Act (No.24 of 2010)[1]. The new law also renamed the competition authority as the Competition and Consumer Protection Commission (CCPC) in line with its extended mandate to cover consumer issues. The new law also introduced an appellate body, the Competition Tribunal, to ensure that decisions of the competition authority could now be appealed outside the normal courts as was the situation during the ZCC era.

The new Act gives CCPC the following functions:

- *(a)* review the operation of markets in Zambia and the conditions of competition in those markets;
- *(b)* review the trading practices pursued by enterprises doing business in Zambia;
- *(c)* investigate and assess restrictive agreements, abuse of dominant positions and mergers;
- *(d)* investigate unfair trading practices and unfair contract terms and impose such sanctions as may be necessary;
- *(e)* undertake and publish general studies on the effectiveness of competition in individual sectors of the economy in Zambia and on matters of concern to consumers;
- *(f)* act as a primary advocate for competition and effective consumer protection in Zambia;
- *(g)* advise Government on laws affecting competition and consumer protection;
- *(h)* provide information for the guidance of consumers regarding their rights under the Act;
- *(i)* liaise and exchange information, knowledge and expertise with competition and consumer protection authorities in other countries;

[1] The Competition and Consumer Protection Act No. 24 of 2010 was passed by the National Assembly and subsequently assented to on 14th August 2010. The Act came into operation on 8th October 2010 when a Statutory Instrument was signed by Minister

(j) advise the Minister on agreements relevant to competition and consumer protection and on any other matter relating to competition and consumer protection; and

(k) cooperate with and assist any association or body of persons to develop and promote the observance of standards of conduct for the purpose of ensuring compliance with the provisions of the Act.

The Zambia competition regime is also underpinned by a comprehensive competition policy, which was put in place in 2010. Zambia thus became one of the few countries across the whole world that has a competition policy. It is well-established that competition law can regulate markets best if it is part of a comprehensive competition policy rather than when it has been enacted in isolation. It is the enactment of a competition law without a complementary adoption of most of the other elements of competition policy that has resulted in some operational shortcomings in many developing countries.

3. Competition Reforms in the Maize Sector and Implications on Beneficiaries

Reforms Undertaken in the Maize Sector Over Time

Maize is a very important crop in Zambia, occupying about 70 per cent of the total cultivated land and accounting for majority of the calorie source among the citizens. Due to its importance, the crop has also been subjected to various policy reforms over the past years. The policies that were pursued by the Zambian government prior to 1990 were characterised by official price control and determination as well as centralised delivery of support services, with public sector having dominance in the agribusiness sector. This was true for policies targeting maize seeds, maize refining as well as fertiliser.

Most reforms in Zambia were partial as government was not fully committed to liberalisation. Policy reversals were very common and this led some players to call it the start-stop reform approach.

Before the reforms in the 1990s, the Zambia economy was characterised by controls and rigidities, which also affected agriculture marketing. At independence, policies aimed at self-sufficiency in maize production were pursued, which was the basis for official price controls and the centralised delivery of credit, input supply, extension and marketing. Marketing for both maize and fertiliser was done through National Marketing Board (NAMBOARD) and later by the Zambia Cooperative Federation (ZCF). Seasonal pricing were adopted, with subsidies for fertiliser and transport being used to encourage maize production in remote regions.

When the Movement for Multi-Party Democracy (MMD) government took over in 1991, structural reforms were introduced in the economy, which were intended to open the economy to outside world (exchange rate liberalisation, trade liberalisation and capital account liberalisation) as well as to promote internal trade through removal of maize meal and fertiliser subsidies and price controls for agricultural commodities. The new Government also accelerated the agriculture reform programme which had begun in 1989 with the abolition of NAMBOARD and the de-monopolisation in 1990 of agricultural marketing so that, in principle, private agents were allowed to purchase and market maize and fertiliser (McCulloch, Baulch and Cherel-Robson, 2000). Further reforms were witnessed in 1993 with the decontrol of maize producer prices and the elimination of maize transport subsidies and the engaging of government supported lending institutions (Zambia Cooperatives Federation, Lima Bank and the Credit Union and Savings Association CUSA) in maize marketing. A floor pricing system for maize was also adopted, which however, along with the credit institutions, discouraged private traders from entering the market (McCulloch, Baulch and Cherel-Robson, 2000).

In 1994, the government launched the Agricultural Credit Management Programme (ACMP) as a transitory arrangement for the provision of credit for fertiliser and seed. This was followed by the decision to avoid setting a floor price in 1995, which is also the year in which the government leased more than half of its storage warehouses to private traders, resulting in the private sector playing a dominant role in the provision of inputs and commodity marketing. The milling industry was also privatised, allowing for the growth of small-scale labour intensive hammer mills, able to provide milling services at substantially lower cost than large-scale mills (McCulloch, Baulch and Cherel-Robson, 2000).

Between 1994 and 1997, government adopted a pricing policy to reduce subsidies and avoid budgetary allocations towards fertiliser subsidy. Fertiliser was supplied at the real cost that included transportation, handling and storage costs. This resulted in different prices across types (i.e. to dressing and basal dressing) and across districts. Prices within the district were made uniform, and this meant subsidising the farmers who were far away from the depot by those near. This regime was abandoned in 1997/1998 agricultural season when government started providing fertiliser through a loan scheme. Since then, government setting for fertiliser price does not differentiate between various market segments. The price is fixed at the same level for whole of Zambia. This means that some provinces are subsidising others (those that are further away from Lusaka).

The Zambia Food Reserve Agency (FRA) was established in 1996, under the Zambian Food Reserve Act (1995) with a primary mission to ensure national food security and income of farmers by maintaining a sustainable national strategic food reserve. The FRA also acts as a macro-economic stabiliser for food grown in the country, such as maize – the nation's staple crop. In pursuit of its mandate, the FRA purchases agricultural crops from smallholder farmers during harvest which would then be distributed to economically disadvantaged areas in the country.

In 2002, the Government of Zambia introduced the Fertiliser Support Programme (FSP) with a view of improving access to inputs by small-scale farmers. Its initial objective was to enhance the participation and competitiveness of the private sector in the supply and distribution of agricultural inputs in timely and effective manner (MAL 2002). In 2009, the Government restructured the FSP with a view of improving its operational efficiency and expanding the sphere of support to the farming community. As part of the revision, the programme was renamed Farmer Input Support Programme (FISP). Camp agricultural committees were incorporated in the identification and selection of the target beneficiaries. The level of support to farmers was also reduced from 8x50Kg of fertiliser and 2x10Kg bag of maize seed to 4x50Kg bags of fertiliser and one 10Kg bag of maize seed, respectively.

In September 2011, the Government of Zambia again started heavily subsidising the price of maize held by the Food Reserve Agency (FRA) to maize millers. This was in the hope that after receiving maize at subsidised prices; millers would pass along the subsidy to Zambian consumers in the form of lower retail maize meal prices. FRA subsidised maize grain to millers at about US$140 per tonne, while it was purchasing at US$265 per tonne; transport was also provided by the FRA to the millers' factories (Kuteya and Jayne, 2012).

The reforms and activities that were undertaken to transform the sector over time since 1990 can be summarised as follows:

Table 1: Activities/Intervention directly related to policies

Activity/Intervention	Year
• Maize meal subsidies removed	1990
• Reduction in fertiliser subsidy • Maize meal subsidy re-introduced before the elections	1991
• De-regulation of informal small-scale milling sector • Fertiliser market opened to full competition • Fertiliser pan-territorial pricing removed	1992
• Official producer and selling prices abolished • Maize market opened to full competition	1993
• Privatisation of the milling industry	1995
• Food Reserve Agency operational	1996
• Pan-territorial pricing re-introduced for FRA distributed fertiliser	1997
• FRA subsidised to buy maize from smallholder farmers	2002
• Maize subsidies increased • Fertiliser subsidies increased • Government legislation gives powers to local authorities to introduce local taxes. Inter-district grain levies put in place. In some districts, taxes on maize amount to roughly 10 per cent of the price received by farmers for maize	2003
• Government raises maize import duty to 15 per cent. • Government issues export permits to selected trading/milling firms	2004
• Government restricts export permits to traders and provides FRA with *de facto* monopoly on the export of maize; some traders and farmers allowed to use FRA export permit later in the season.	2006
• FRA issued with export permit for 226,000, MAZ issued with 50,000, GTAZ got permit for 50,000, and ZNFU had permit for 50,000 tonnes and there is a balance of 50,000 not issued	2007
• Fertiliser and seed subsidy increased	2008
• FISP fertiliser package reduced from 8 to 4	2009
• FRA buys a record 1.7 million metric tons of maize	2011
• Government removes subsidies on millers	2013

Sources: Robinson et al., 2007; AgCLIR, 2011 and many other sources

Identification of Relevant Policies in the Maize Sector to be Examined

Over the years, the Government utilised over 60 per cent of agricultural expenditures on two programmes that had mainly to do with maize; the FRA that purchases maize at pan-territorial prices that are fixed above prevailing market prices and the FISP that distributes subsidised fertiliser (Mason et al., 2011). Maize also powers the milling industry that involves big millers who export to even neighbouring countries.

It is within this context that three main reforms would be the subject of detailed examination in this study; the Government floor pricing reforms which are implemented through the FRA; the FISP (targeting fertiliser and maize support to farmers) as well as the reforms on subsidised maize to maize millers. This would be discussed in turn in the next section.

Implication of the Selected Reforms in the Maize Sector on Beneficiaries

Government Floor Pricing

Assessment based on available evidence

Mason and Myers (2011) conducted a nationwide study to determine the effect of the FRA floor pricing system on maize prices in the market. The approach used was to simulate prices that would otherwise exist in the absence of FRA and compare them with the prices that existed in the presence of FRA. With the exception of 1996/97 (FRA's first marketing year in operation), little difference between the levels of historical and simulated prices prior to mid-2003 were found in the study. From October 1996 through June 2003, mean historical prices were found to exceed mean non-FRA prices (simulated prices without FRA influence) by less than 1 per cent in both Choma (a town in Southern Zambia, one of the main maize producing areas) and Lusaka.

The FRA began buying maize directly from smallholders throughout Zambia at a pan-territorial price in July 2003. Since then, simulated non-FRA maize market prices are substantially lower than historical prices in all marketing years except 2005/06. Between July 2003 and December 2008, the FRA's activities were estimated to have raised mean maize market prices by 19 per cent in Choma and 17 per cent in Lusaka (Mason and Myers, 2011).

Although FRA activities had little effect on mean maize market prices prior to July 2003, the activities affected the variability of prices for maize as measured by the standard deviation. Research by Mason and Myers indicates that the FRA activities were positive in reducing the variance of wholesale prices by about 13.5 per cent on average. The market price stabilising effects of the FRA's involvement in domestic maize marketing are even greater in the July 2003 through December 2008 period; the FRA activities are estimated to have reduced the coefficient of variation for maize market prices in Choma and Lusaka by 34 and 36 per cent respectively.

The increase in price is beneficial to the net maize sellers, which only comprise about 28 per cent of all farming households and it is not good for the 49 per cent who are net buyers while it has no direct effect to about 23 per cent of the farmers who are neither net sellers nor net buyers (Mason and Myers, 2011). This has welfare implications as the net sellers usually are farmers who are well-to-do and have higher assets base. Among smallholder net-maize sellers, benefits from higher maize market prices are concentrated in the hands of the 4 per cent of maize-growing smallholders that account for 50 per cent of all smallholder marketed maize (Mason and Myers, 2011). This group has more assets than other smallholder.

Though prices have been stabilised by FRA activities, any positive gains from price stabilisation are more likely to have been negated by the negative effects of raised prices. Other studies (Myers, 2006) have also indicated that the benefits of price stabilisation accrue to the better off farmers more than to the poor farmers. Better-off households are more likely to be producers of some or all food commodities because they own more productive assets. Their price risk preferences are, therefore, more consistent with the predictions of pure producer theory, which holds that firms (producers) are generally price risk-averse (Baron, 1970; Sandmo, 1971). Myers and Mason (2011) warn that if these results hold for Zambia, then floor pricing has been regressive as it disproportionately benefits the better off farmers.

Chapoto and Jayne (2009) in their study on the effect of FRA marketing and floor pricing on price unpredictability show that FRA purchases appear to have no significant impact on next month's market prices. Price instability is a key measure of the stability of a market in terms of how well both consumers and producers can plan their activities in engaging with the market. As global prices demonstrated in 2008 and 2009, developing countries need measures to buffer their price systems from instability which can affect both producers and consumers surplus through mismatched costs and revenues and *vice versa* respectively. While FRA intentions are to provide a floor price for grain trade in markets, in most cases this ends up becoming the price ceiling. However, it is sometimes the case that market prices exceed FRA buying prices, as in 2008. In such cases, FRA purchases may not exert upward pressure on maize prices as one might expect. Also, because FRA purchases result in stock accumulation, it is quite likely that marketing agents take account of the size of the government stock overhanging the market in their expectations of future prices later in the season.

Food Reserve Agency's pan-territorial and pan-seasonal pricing policy may also have complex and offsetting effects on the direction of near-term future market prices. The bulk of the FRA's maize procurement is soon after harvest, between July and October, when maize prices are relatively low. Typically, prices gradually rise and peak during the hunger period (December through March). Government actions however influence the incentives for private players to store maize and sell when the price has gone up in the dry hunger season by offloading 'cheaper' maize on the market from FRA. However, the studies (Chapoto and Jayne, 2009) have shown that the impact of floor pricing is a downward pressure on next month's maize prices and generally in periods of high produce to reduce the magnitude of seasonal price increases and hence have a stabilising effect on market prices.

Even though the maize floor pricing by FRA is meant to be a poverty reduction measure and ensure small scale farmers have access to market at good prices, the percentage of small scale farmers that sell maize to FRA is so small and it is usually by male headed better-off households. For example in 2003/04, only 1 per cent of the smallholder farmers sold maize to FRA while in 2007/08 this figure increased to 10 per cent[2].

Because of this reform, maize has been over-promoted at the expense of other crops. Increase in expected FRA floor price leads to increased fertiliser rate application on maize and also leads to expansion of area under maize cultivation and quantity harvested. Though this is good for productivity, it is done at the expense of other crops and kills diversification which is one of the objectives of government. Therefore, it is seen that floor pricing has a positive effect on maize production (by increasing the area cultivated) and productivity (by increasing fertiliser rate application and harvested produce) but has no direct effect on the yields of maize. Equally, even though it is at the expense of other crops in terms of management share/attention, there is no effect on the area cultivated on other crops (Mason *et al.*, 2012). Institutions like the World Bank have urged the government to stop the price support arguing that "this old policy has not resulted in significant reduction in rural poverty and job creation. This policy direction has also limited private sector investments in the agriculture sector"[3] and that it promotes mono-cropping of maize.

To determine if FRA has an impact on the revenue from maize, results from the first model-probit are interpreted before focussing on the second part of the analysis (table 2). The data

[2]Mason et al (2012)
[3]http://www.reuters.com/article/2012/05/31/zambia-maize-idAFL5E8GV0FB20120531 Accessed, August 24, 2014.

used here is from the Supplemental Survey for 2008, which covers the whole country from 393 standard enumeration areas (SEAs). The sample size is slightly over 8,000 smallholder farmers. The null hypothesis that “the reform has no effect on producers’ total revenue from maize” is being tested. It is hypothesised thus because there are suspicions that with maize being the main crop, difference in market may affect the revenue from this crop. The first part simply indicates the factors that influence participation in FRA marketing activities by the farmers. Variables that are thought to influence this are included to act as controls.

Table 2: Factors influencing farmers to sale to FRA

Variable	Co-efficient	Standard Error	P>|z|
FISP participation	1.17741	.0513512	0.000
Age of HH head	.0000398	.0014863	0.979
No. of prime age adults	.0423857	.0114562	0.000
Education of HH head	.0221283	.0055861	0.000
Total maize produced (Kgs)	.0000681	3.46e-06	0.000
Constant	-1.879906	.093353	0.000
Loglikelihood= -2217.980; N= 8090. Dependent variable is selling to FRA=1			

Farmers who participate in FISP have a higher chance of selling their maize produce to FRA compared to those who do not participate in FISP. Studies, as indicated above, show that FRA mostly buys maize from quite accessible areas and given that FISP may also be targeting viable farmers in not-so remote areas, which is not a surprising finding. Farmers who are relatively better off and have some marketable surplus are the majority sellers of maize to FRA and usually these are the same farmers who are unfortunately targeted by FISP with relatively big land holdings compared to those who are not targeted.

Family labour availability, which is measured by the prime age number of family members, is a significant factor in predicting whether the farmer sells to FRA or not. Surprisingly, the more the family labour, the less the chance of a farmer selling to FRA. Education of the household head is another factor that affects the probability of selling to FRA negatively. Well educated household heads are less likely to sell to FRA; this could be because they are able to get good contracts from the private traders and are able to follow other buyers. It is also likely that they are able to wait for the price to increase some months after harvest when supply has reduced.

From this first step, propensity scores are calculated and used in the second part (table 3). The variables included in the first part are used to calculate the propensity scores in the second part of the estimation.

Table 3: Impact of FRA on maize revenues

Sample	Treated	Control	Difference	S.E	T-stat
Unmatched	3308332	272012	3036319	86795.47	34.98
ATT	3308332	605871	2702460	198470.10	13.62

The results indicate that on average those who sold to FRA have higher revenues from maize whether it is through the quantity sold or through the higher price that FRA offers or a combination of both factors. A close investigation shows that the difference is arising from a host of reasons. To control for differences in these factors, we focus on the matched results in the second row. Comparison of the revenue for maize from the two matched group shows that the revenue from the treated group is higher than from the untreated (those who do not sell maize to FRA). However, when compared with the unmatched, the difference reduces from ZMK 3,036, 319 to ZMK 2,702,460. This emphasises the importance of the matching technique to make sure we are comparing oranges and oranges and not oranges and apples. Using the T-statistic, we find significant difference between households who sold to FRA and those that did not sell to FRA in terms of revenue from maize.

FRA buying activities have had an impact in increasing the revenue from maize mostly because they sell more maize than the non-FRA farmers as can be seen from the regression table where producing more maize increases the likelihood of selling to FRA though marginally but significantly. However, this accumulates to the already wealthy farmers who have on average bigger land holdings, use more fertilizer and have bigger asset base. It can therefore be argued that FRA activities are not pro-poor and have had negative distributional effects on the resource-poor farmers.

Results from Perception Survey

The majority of farmers feel they do not have many options for selling their maize produce. About 60 per cent perceive the available buyers or channels for selling as not adequate (table 4). Despite this perception, there are a host of buyers (see table 5) to which they can sell their maize. The availability of these buyers in the same season was not established. For example, FRA usually buys maize in more accessible areas within 9 kilometers of a town while the private traders usually go into the remote areas. This perception is also fuelled by what farmers perceive to be the low price, especially if it is below the FRA price.

Table 4: Perceived availability of options for selling maize

Do you have options for selling?	**Frequency**	**Percent**
Yes	47	38.52
No	75	61.48
Total	**122**	**100.00**

Source: CREW Perception Survey, 2014.

The perception is also from the poor services they receive from the buyers as the rating for most channels was very poor. When asked to actually name the available options, most were able to name various channels, indicating that the channels are many in number. There is a desire for better buyers who can buy at competitive prices and fill the perceived gap among farmers. There is an unmet service (buying at FRA competitive prices) in maize buying that leads to discrediting of the available channels by farmers.

The majority (about 60 per cent) of the farmers interviewed sell most of their produce to FRA (table 5). Since the number of smallholder farmers who sell to FRA is generally small, the contradiction can be explained by the fact that the perception survey data is mainly from one region as the perception survey was not intended to be representative but to establish the impact of the reforms. Government remains the number one preferred buyer for maize mostly because their prices are usually higher than the market price in seasons when the harvest is more than enough to meet the national demand. The second channel for selling after FRA is the local traders. The local traders meet a market need as they come in when FRA is still waiting for the moisture content to improve to the desired 12.5 per cent.

Table 5: Buyers for majority of the produce

Where do you sell majority of your produce?	Freq.	Percent
Middlemen	8	6.56
Local trader	15	12.30
Money lender	2	1.64
Local open market	10	8.20
Government agency (FRA)	72	59.02
Any available buyer	13	10.66
Others	2	1.64
Total	122	100.00

The dissatisfaction with the current network of buyers is reflected in the rating that the farmers who engage with these buyers gave them (table 6). On an average, all buyers were rated as average-most farmers could not say they were good. Only money lenders were rated as bad. This could have something to do with the exorbitant interest that they charge and the strict rules they apply in terms of repayment and repossession of collateral if one fails to pay. The dissatisfaction with FRA has to do with the payment system. Perennially farmers complain of late payments; in some cases they are not even able to purchase inputs when they are still cheap as they would not have received the payment. Most of the remaining buyers offer lower prices than FRA- something that has tainted their image in the eyes of the farmers even though they may be buying at the market price.

Table 6: Rating for current buyers

Rate the current network of procuring entities you can access	1 = Very good; 2 = Good; 3 = Neutral; 4 = Bad; 5 = Very Bad
1=Middle men/women;	3
2=Local trader;	3
3= Money lender;	4
4= Local open market;	3
5=Exchange with input;	4
6=Agro-firm;	3
7=Government agent (FRA);	3

FRA changed its policy around 2010 and started buying from whoever brings maize even if it is a middleman and not farmers only. Most farmers feel the decision by FRA to stop buying directly from them has disadvantaged them and is the only decision they attribute to what they describe as negative change in the past 5 years by FRA. There is also a complaint that the price of maize has not improved from government. There is suspicion among farmers, especially those who do not receive the FISP fertiliser and seed that the reason for the low price is because the government is supporting farmers through FISP.

Prices for other buyers are generally lower than FRA price. About 84 per cent of the farmers generally feel the price at which these other players buy at is either equal or lower when compared to that of FRA (table 7). A bigger proportion, about 43 per cent think the price is equal to that of FRA, indicating some of competitiveness of the private sector, but almost equal proportion think the price is lower. Usually, with uniform pricing for FRA, farmers near the road network will get almost the same prices as FRA prices from the private sector, but for remote farmers, the prices from the private sector will be lower as they compensate for transportation.

Table 7: Comparison of other buyers' price and FRA price

How does the price compare to FRA	Freq.	Percent
Higher	17	15.74
Equal	46	42.59
Lower	45	41.67
Total	108	100.00

<u>Michael Porter's model: impact of floor pricing in the maize trading market</u>

Barriers to Entry

FRA activities on the market have generally not been pro-competition, with the government in some years buying as much as 86 per cent of the marketed surplus for maize. This leaves the private sector with a small quantity to buy and compete from. From the private sector's point of view, therefore, FRA activities constitute an entry barrier into the maize market. FRA occupies a big market share, leading to concentration of power in one player. In most years, FRA price is above the equilibrium market price, and government is able to use public resources to sustain this price, stifling out competition from private players. The few private sector actors that try to buy below the prices are labelled as "briefcase" business men, a term that is synonymous with exploitation of farmers.

There are, however, no barriers related to brand identity or proprietary product differences as maize is a homogenous product. However, government buys only pure white maize. Private players can purchase other maize varieties that are not white, such as yellow, to supply to feed making companies and breweries. Among the private players, the market appears to demonstrate a high degree of competition with many players all and none having a lion's share of the spoils left by FRA. Capital requirements are not very restricting and storage costs not very high as maize is purchased in the dry season where it can be stacked on the ground.

Bargaining Power of Suppliers

Smallholder farmers who live outside the main roads have little bargaining power. The quantities they market are also too small to allow them any bargaining power. In most instances, the private traders are the ones who go to these remote areas to mop up the maize at usually much lower prices than the national average to recover their transport costs.

Collective action to bring the quantities together to enjoy economies of scale and bargaining power is almost non-existent as cooperatives have concentrated on the input side. However, for the big commercial farmers with big quantities who can supply and transport to millers, they have some form of bargaining power.

In Zambia, maize remains the number one staple food. Therefore, due to the absence of substitutability, suppliers as a whole have bargaining powers. Government uses maize as a measure of food security and will most times listen to the cries of farmers in fear that once they do not grow it, the country will go hungry. This gives some level of power to the producers although they are mostly small scale and unorganised to exercise it.

Bargaining Power of Buyers
Traders, through the Grain Traders Association of Zambia (GTAZ), indicated that the level of competition in the industry is very high though government policies are bringing distortions in the market through the activities of FRA. There is no buyer concentration in the market, with no buyer having a huge share of the market.

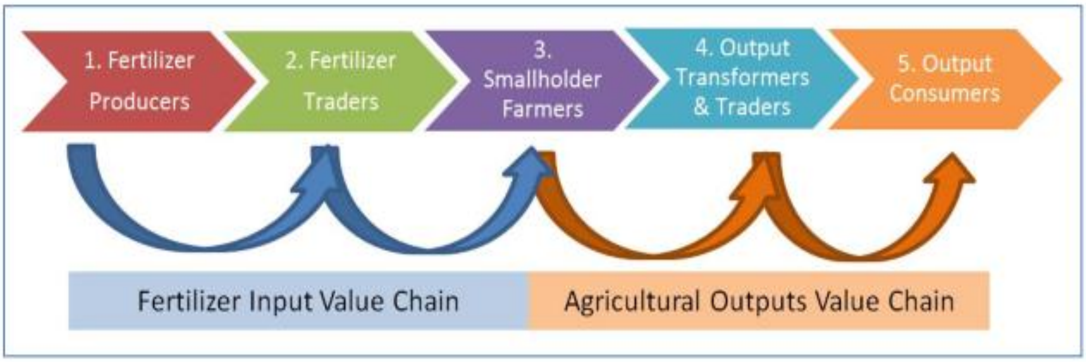
Volumes of maize are purchased almost equitably from main districts in Zambia. Bargaining power only comes in if the buyer gets a big percentage of the quantity from one farmer or farmer group.

Threat of Substitutes
With respect to maize in Zambia, there are purely no substitutes from a national point of view. Cassava is still only in some rural areas.

Farmer Input Support Programme

Assessment based on available evidence
As already mentioned, the FISP mostly targeted fertiliser; hence a brief description of the fertiliser market structure could also help in understanding the channels through which the policy reforms operated. The fertiliser flow in Zambia starts from the producers (suppliers) through the traders to commercial and smallholder farmers (figure 2). In the case of government distributed fertiliser under the FISP, the fertiliser moves from producers to successful bidders who distribute it to the smallholder farmers through the cooperatives in each district and agricultural camp.

Figure 1: Fertiliser-output flow in Zambia



Source: IFDC, 2013

There is no production currently taking place in Zambia. The only company that used to produce fertiliser is the state funded Nitrogen Chemicals of Zambia which is based in Kafue town, some 45 kilometers from Lusaka. The plant needs major repairs/upgrades. There has been interest from private firms like Sasol to invest in the plant, but government has not been willing to privatise it fully. The number of importers involved in wholesaling and distribution is estimated at around 13 and includes the following: Nitrogen Chemical of Zambia (Government manufacturing plant near Lusaka), Greenbelt Ltd. (also trades and blends in Tanzania and Mozambique), Zambia Fertilisers Ltd. (does blends also), Bridgeways Commodities, Pro-vet, Nyiombo (Zambia-based), Omnia Ltd., Louis Dreyfus and Export Trading Group (ETG). FISP programme is a major business for most of these importers.

The government decided on the subsidy level for farmers' purchase from FRA then invited tenders from different companies to bid. Bids were selected based on a number of criteria including experience, current quantity in stock and prices. As many bidders as possible can apply provided they meet the criteria. Each company can present one bid without collusion with another. Usually two companies were selected to supply fertiliser, mainly DAP for basal dressing and urea for top dressing. To keep NCZ operating, government also allocates some quantity under FISP for NCZ to blend, usually around 30,000 tonnes, representing about 15 per cent (total of 200,000MT was distributed). The remainder of the companies would then import to supply through the commercial channel. Two companies have dominated the government programme in the past: Nyiombo and Omnia.

There was a fiscal burden on government as the subsidies on price controls and marketing became too high. In 2011, for example, 73 per cent of the poverty reduction budget was allocated to FISP. Evidence suggests, however that prioritising FISP as a cornerstone of the government's poverty reduction strategy has had little or no measurable impact on rural poverty. Headcount rural poverty rates have actually increased marginally from 77.3 in 2004 to 77.9 per cent in 2010 despite a major scaling-up of expenditures on the FISP programme (IAPRI, policy brief number 51, 2012). Other research evidence shows that although aggregate maize production had significantly increased in the last decade, in part as a result of these input subsidies and favourable weather, rural poverty has remained consistently high at around 80 per cent (CSO 2010; Burke, Jayne, and Chapoto 2010; Mason *et al*. 2011). Subsidies were having a toll on government expenditure, and at one point maize subsidies were larger than the total budget deficit.

Several research studies have analysed the failures of FSP/FISP to move the dial on rural poverty and found that it could be attributed to several factors, including: 1) failure to successfully target poor farmers, with subsidised inputs going disproportionately to wealthier farmers; 2) delays in input distribution; 3) poor fertiliser use efficiency among beneficiary farmers; 3) poor monitoring of programme effects; 4) leakages, whereby inputs intended for the subsidy programme are diverted and resold on the commercial market; 5) lack of an exit strategy for weaning off beneficiaries; and 6) crowding out of private sector fertiliser purchases and suppliers (Xu *et al* 2009; Burke, Jayne, and Sitko 2012; Burke, Jayne, and Black 2012; Mason and Jayne 2012).

Whilst the objectives of these policies and institutional arrangements were partially achieved through an increase in maize production of 60 per cent in the 1980s, the system was not sustainable and such policies led to a poorly developed agricultural sector dominated by a single crop; maize. Other high potential cash crops and traditional drought resistant food staples such as sorghum, millet and cassava were less prioritised. Huge government expenditure and subsidies which contributed to inflationary budget deficits; insolvent public marketing and farm financing agents; very low farm productivity and incomes among small scale farmers; absence of private sector participation in the areas of farm input supply, agricultural marketing and food processing; and reduced household food security were also some of the effects. Controls also had perverse effects on farmer behaviour, including excessive dependence on government, a lax attitude toward credit repayment and a lack of understanding of the functioning of markets (Mwanaumo, 1999).

The price of fertiliser is fixed at the same level for the whole of Zambia. This means that some provinces are subsidising others (those that are further away from Lusaka.) The subsidy policy negates the previous regimes objectives as it discourages the private sector from participating in the market beyond those areas close to Lusaka as the price in the far lying areas is not market driven. To sell at that price, private players would have to pay for their own transportation costs. Because the price was uniform across products type, and did not consider the nutrient value, it did not encourage competition and market efficiency.

There are two opposing views when it comes to fertiliser. Some stakeholders continue to be convinced that the private sector is unable to adequately serve the needs of smallholder farmers, especially in the more remote parts of the country. Only 20 per cent of smallholder farmers used fertiliser in 1999/00- lower than in the 1980s-, the year after liberalisation when the private sector was allowed to play a full role in fertiliser marketing without government interference. There are serious concerns over private traders' willingness to deliver inputs on credit for low-resource farmers. And from this standpoint and experience, it is argued that government intervention is necessary to promote smallholder farmers productivity.

Others advance that fertiliser market should receive further restructuring to remove the constraints that the private sector face and remove the huge burden on the treasury. These two arguments have been behind government reform policies and the intervention or withdrawal from the markets.

In the pre-reform era (before 1991), government controlled the marketing pricing aspects of fertiliser and the goal was to keep the prices as low as possible for smallholder farmers. Uniform pricing, which was an equity measure, was practiced and the subsidy rates stood at 50 per cent of the cost (MOF, 1989). By doing this, the government also attended to the welfare of miners and other urban consumers of maize meal because it allowed the farmers to produce a surplus. The results of these policies were not good for the market due to the following reasons:

- There was no incentive for either market development or efficiency in the market as the prices did not reflect the relationship in market forces and associated costs.
- The private sector was stifled away from participating in the fertiliser trade.
- Economic efficiency was also lost as the fertiliser pricing did not take account of the different nutrient levels for fertiliser. For example, fertiliser with less potassium, all other nutrients being equal, was sold at the same price as one with more potassium.
- Uniform pricing of inputs, which may be desirable in the initial stages, reduced competition and hindered market efficiency by not allowing flexibility in the pricing mechanism that promotes competition and market efficiency.

The repeal of the NAMBOARD Act allowed private players who were able to import and export fertiliser to enter the market. Between the years, 1994 and 1997, when government adopted a pricing policy to reduce subsidies and avoid budgetary allocations towards fertiliser subsidy, fertiliser was supplied at the real cost that included transportation, handling and storage costs. This resulted in different prices across types (i.e. to dressing and basal dressing) and across districts. Prices within the district were made uniform, and this meant subsidising the farmers who were far away from the depot by those near.

Several papers have found the following as the main effects of the subsidy programme:

- Government subsidies displaced the demand of fertiliser from the private players or commercial purchases; this was even higher in areas where the private sector had a higher presence and among households that cultivate two or more hectares of land than those that cultivate less than one hectare (Xu *et al.*, 2009).
- There was significant leakage in terms of the fertiliser that is received by farmers. As much as 33 per cent of the fertiliser that is intended for smallholder farmers leaks out into the commercial channels, dampening prices further (Mason and Myers, 2011).

However, it is not in all areas that the private sector is being crowded out. A study in Zambia[4] showed that in areas with low private sector activities, subsidy programmes tend to demonstrate the desired effect on private sector development. The study found that a one-unit increase in subsidy distribution will increase total fertiliser use by more than 1 kg/ha. In other words, the private sector will be crowded in by either increases in effective demand or reduction in average fixed costs. In some areas for example in 2002/2003 this effect was as large as 1kg/ha of subsidised fertiliser leading to the use of 1.69 additional kg/ha of fertiliser.

It is important to note that the subsidy programme had the greatest effect on incremental fertiliser use in poor areas. This is a sensible result, since these would be the areas lacking effective demand to attract private retailers prior to government intervention. The main finding is that the impact of the fertiliser subsidy programme on overall fertiliser use depends on the type of area in which the programme operates.

These findings are consistent with "on the ground" feedback from commercial distributors in Zambia who indicate that they wait to see where government programmes are operating and the quantities to be distributed by FISP in a particular year and then arrange to distribute their fertiliser to other areas which will not compete with the government programmes (Govereh *et al*., 2006).

While anecdotal stories are common, Mason (2011) was able to measure the degree to which Farm Inputs Support Program fertiliser was leaked in Zambia by comparing nationally representative estimates of receipts of subsidised fertiliser by rural households with official programme estimates from the Ministry of Agriculture. After accounting for the leakage of programme fertiliser, Mason's estimates of crowding out increased from 0.14 to 0.47 percentage points.

To measure the impact of FISP on household maize self-sufficiency (HMSS), we use the available data for 2007/8 agricultural season (table 8). Household maize self-sufficiency is one of the measures of producer and consumer welfare that was selected. As noted above, most of these farmers are both producers and consumers of maize. The null hypothesis being tested is that FISP does not lead to HMSS- leaving these households food insecure and dependent on food aid. We use the same data described on the floor pricing which is a nationwide representative data with over 8,000 smallholder farmers sampled. Data includes a

[4] Xu et al (2009)

range of variables from demographics, land use, cropping patterns, access to market and input use as well as sources (table 8). The model fit is significant at 99 per cent confidence interval as indicated by the probability of the chi-square. Though pseudo R-squares is quite low, but in bivariate models, this is not a very important indicator and it is generally acceptable for it to be low. The log likelihood function is very good.

Table 8: Impact of FISP on household maize self-sufficiency

Variable	Coefficient	Standard Error	P>|z|
FISP participation current season	-0.642	0.353	0.069
FISP participation previous season	-0.144	0.301	0.633
Age of HH head	0.013	0.004	0.002
No. of prime age adults	-0.058	0.037	0.117
Education of HH head	-0.015	0.018	0.395
Constant	-3.661	0.278	0.000
Loglikelihood= 1201.706; N= 8090. Dependent variable if HH was in need of food aid =1			

Receiving inputs from FISP both in the current year and the previous year reduces the probability or likelihood of receiving food aid. However, only the current year's coefficient is significant at 90 per cent confidence level. This means even if the household received inputs in the previous year from FISP expecting them to produce enough food to take them through the year is not likely. This raises questions of sustainability and ultimate graduation from the programme if it is unable to make farmers become maize self-sufficient. What was found to be more significant instead is the age of the household head, with elderly headed households more likely to food shortages. One of the problem that are likely to be associated with FISP failing to make households food secure in the long term has to do with its implementation- most farmers complain of late delivery of inputs. Agriculture has become more precise in the face of changing climate and any small delays in conducting of the cultural activities results into major yield losses. Farmers go as far as abandoning the crop if the fertiliser delays leading to lost labour and further losses in yield (Mulungu and Tembo, 2014).

Distance in terms of the points of collection for FISP and the nearest accessible point for the private dealers are tabulated and compared qualitatively from the perception survey data (table 9). There is a big difference in the distance to the nearest point for FISP and the private with the private being more than 20 kilometers. High costs of serving remote areas with roads that are barely maintained with poor telecommunication networks discourage private sector participation.

Table 9: Distance to market for fertiliser, government vs private in Kms

Player	Observations	Mean	Max
Private	1454	29.3	880
Government	869	8.9	170

In terms of fertiliser acquisition, more than half of those that were interviewed get their inputs from the government programme-FISP (table 10). The remaining half get their inputs mainly from agro-dealers. Farmers stated that at times they have had to switch from public to private because of delays in the delivery; an indication of wrong targeting as these farmers can afford the fertiliser in the commercial channel. The other reason given for switching was that the bags given under FISP are not adequate. Government targets the poor but viable farmers with land holding of 2 hectares and the fertiliser supplied under FISP is not usually enough to meet the farm requirements. More than 70 per cent said agro-dealers were reliable compared to just about 50 per cent who said FISP was reliable.

Table 10: Sources of Fertiliser

Source of Fertiliser	Freq.	Percent
Public (FISP)	58	50.43
(Agro-dealer)	53	46.09
Other	4	3.48
Total	**115**	**100.00**

Subsidies in Zambia have also had different impact on competition in the maize sector. In the early 1990s when there was partial withdrawal of government maize production subsidy and pan-territorial pricing, maize area and production coupled with fertiliser use was reduced (Govereh et al., 2008). This later resulted in significant and huge substitution effects that occurred between 1990 and 2000 where farmers shifted production from maize to other cash-giving crops such as cotton and tobacco. Smallholder farmer competition declined as fewer farmers were involved in maize production.

Robust studies conducted by ZAMACE indicate that amendments of the 2005 FRA marketing function to only designated agricultural products resulted in distortions in the maize markets. While the goal of government may be to ensure fair producer prices and consumer prices as well as food security, its involvement in the market may undermine these same goals by creating uncertainty with other players. Furthermore, a study done by Abbink *et al* (2008) on the relevance of rules-based marketing policy (a policy in which the government pre-commits itself to a future course of action rather than discretionary interventionism), confirms that rules-based policies promotes competition, much more stable market outcomes, reduce risks associated with food shortages. This means that transparent and predictable rules are needed in the agricultural market sector.

In many developing countries, cartels are known to result in inefficiency, inequality and tend to result into chronic food shortages. These can be due to a few players in the sector coming together to control the marketed surplus of maize. Elsewhere, Wangia *et al*., (2002) contends that both southern and eastern Africa had very strong cartel within the maize sector. In the mealie-meal sector, government has often accused the big millers, mostly those that are members of the Millers Association of Zambia (MAZ) of acting like a cartel in increasing the price of mealie-meal after the subsidies were removed. MAZ however maintains that the prices are purely market determined and have more to do with the cost of production, which is mainly influenced by the cost of procuring maize grain.

In the distribution, there is well documented evidence[5] of collusion among the big companies. Those bidding for FISP fertiliser supply and distribution have colluded to ensure that they win the bids. This has resulted in high distribution cost for fertiliser and robbed government

[5] http://zambiadailynation.com/2013/06/06/omnia-nyiombo-face-prosecution/ Accessed on 24 August, 2014.

of millions of kwacha. The companies colluding have also won the tenders for almost all years, disadvantaging other companies and almost taking them out of business.

Michael Porter's model: impact of FISP on the input market

Barriers to Entry

The current national consumption is around 250,000-300,000 metric tons of which about 200,000 MT is imported under the FISP programme. Therefore, as far as market share is concerned, government occupies a big share of the market. The other barrier to entry among the private players is the capital requirement in dealing with fertiliser, a product which is bulky. IFDC (2011) estimates that for a 20,000 MT of fertiliser import, FOB is around $12mn, a huge sum of money for most firms, especially Zambian ones with major constraints to business financing.

There are no barriers related to brand identity or proprietary product differences as most farmers in Zambia generally use any fertiliser that has the basic nutrients. Also, government is not very strict on the composition of the main elements in fertiliser. Niche markets for some special fertiliser with higher concentrations of certain elements like calcium exists in the commercial farmers sector.

The bidding process for FISP distribution of fertilisers and seed, which has been found irregular as outlined above, has created two big companies resulting in them having economies of scale hence able to bar other as they have built capacity to fulfill the requirements like having some stock under storage – implying you need to absorb storage costs.

Bargaining Power of Suppliers

For imported fertiliser, there is little differentiation in Zambia. Except for some small niche commercial farmers market, the products are generally the same, leaving suppliers with little bargaining power. Fertilisers are perfect substitutes and consumers can easily switch from one supplier to another. Although there is labelling of the composition of the elements, the recommendation for Zambia is mainly blanket for the whole of Zambia. This means suppliers have little bargaining power in terms of their product being unique.

With about 13 importers meeting a national demand of about 250,000 MT of fertiliser, there is little concentration and this means they have less bargaining power as consumers can switch between them and the suppliers have little ability to collude or fix prices in an oligopolistic setting.

Bargaining Power of Buyers

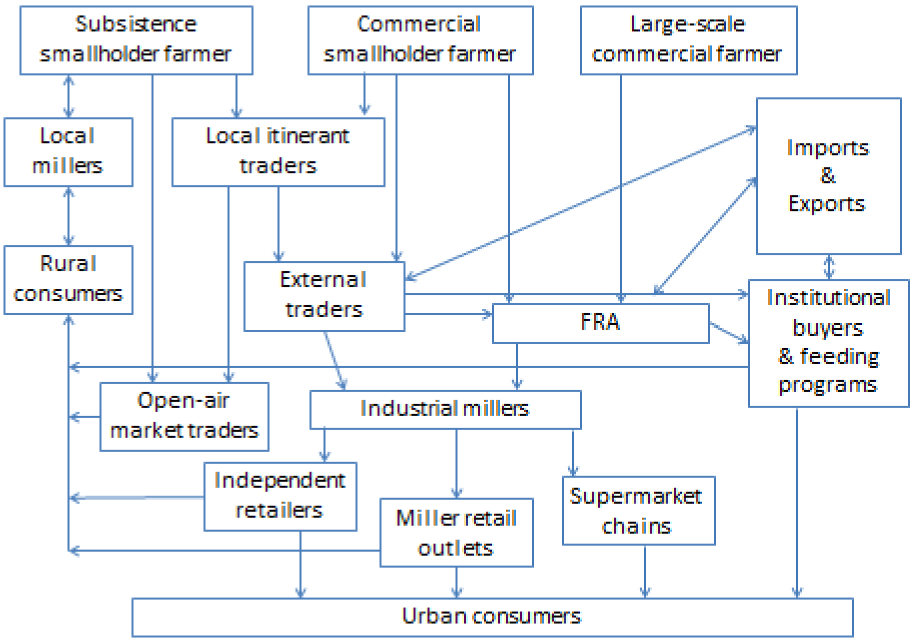
Smallholder farmers who receive fertiliser under FISP have very little bargaining powers but the government does have bargaining powers in the bidding process. For the commercial farmers, the quantities purchased by them are usually high to allow them to have bargaining powers over the suppliers. Due to the information that they possess and the fact that they (commercial farmers) can switch between suppliers, they have enough leverage.

Impact of Subsidies on Millers

<u>Assessment based on available evidence</u>

Understanding the various channels through which millers can get access to maize in Zambia would also help appreciate the impact of the reforms. Despite government dominance in supplying maize to millers, there is still a plethora of other players. These players basically compete with government for stocks and usually go in the market earlier than government and to areas where FRA may not reach. As figure 3 shows, the chain is complicated and it is difficult to categorise and mark the flow of the commodity correctly. However there are different types of buyers from the three categories of farmers, but it is mainly FRA, millers, and itinerant traders who may be camped in the villages to assemble the produce.

Figure 2: Maize marketing players and chains



Source: Mainville and Mulungu, 2014

Millers are an important link in the marketing chain for white maize. The milling industry is highly competitive with between 30 and 40 millers processing more than 1/3 of the country's production on an annual basis, and the largest miller—National Milling Corporation—accounting for only 5-7 per cent of market share. Furthermore, millers' distribution systems reach more than 70 per cent of the Zambian population. Although most mills are located in Lusaka and the Copperbelt, some mills are also based in other provinces. There are also thousands of small-scale hammer, or posho, millers operating in both rural and urban areas. These millers operate on a fee-for-service basis, milling grain that consumers have either produced on their own plots/farms or purchased in the local market.

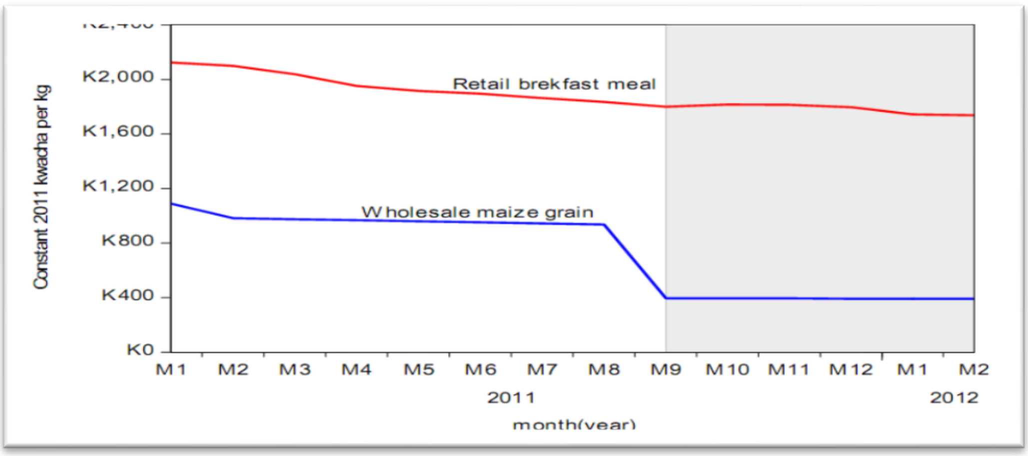
The Millers Association of Zambia is the voluntary organisation for industrial millers (production of at least more than 1.5 tons per hour). Only two big millers are not members out of about 26 millers. The millers cover about 80 per cent of Zambia because in rural areas, at times the people run out of grain and are forced to buy mealie-meal. The millers also supply to Congo DR and Zimbabwe and there are no restrictions to mealie-meal exportation as it is considered a value-added product.

The study by Kuteya and Jayne (2012) assessed the impact of the policy of subsidising millers through the FRA that was introduced in 2011. It was based on the examination of the marketing margins that existed between wholesale maize grain and retail maize meal in the four Zambian urban markets of Lusaka, Chipata, Ndola, and Kasama. They analysed the mill to-retail margins using a linear econometric model. Their analysis differentiates between two phases. The first phase was from January 2000 to August 2011; during this period millers purchased maize from the market or from the FRA at competitive prices. The second phase was from September 2011 to March 2012, when FRA began subsidising maize grain to millers at US$140 per tonne (equivalent to Zambian Kwacha K700 rebased) while it was purchasing maize at US$265 per tonne.

In addition to above activities, Kuteya and Jayne (2012) also note that the FRA also provided transport for this maize to the millers' factories and plants. This implies that the GRZ further subsidised millers' acquisition price meaning that the effective ex-depot FRA price for millers was at around US$80 (ZMK40) per tonne.

Results from the study by Kuteya and Jayne (2012) indicate that, over the eleven-year period from 2000 to 2011, margins declined as inflation-adjusted retail prices for breakfast meal had declined whilst wholesale prices stayed constant. After the subsidy was conferred to millers in September 2011, the mill-to-retail marketing margins (difference between the wholesale maize price and retail meal price) had increased significantly from the level of roughly 900 kwacha per kg by August 2011 to 1,400 kwacha per kg as shown in figure 4. It is however, not expected that the retail price for mealie-meal would immediately go down as millers would still be clearing the old grain stock they bought at a higher price. However, even after sometime after 2011 (Figure 4), the mealie-meal price remained virtually constant indicating that millers accrued the benefits from the subsidy. Their study generally indicate that very little of the treasury costs incurred in providing FRA grain to millers at below-market prices benefited the urban consumers who are the majority consumers of the mealie-meal from the millers.

Figure 3: Constant prices of wholesale maize grain & retail breakfast meal per Kg (in Lusaka)



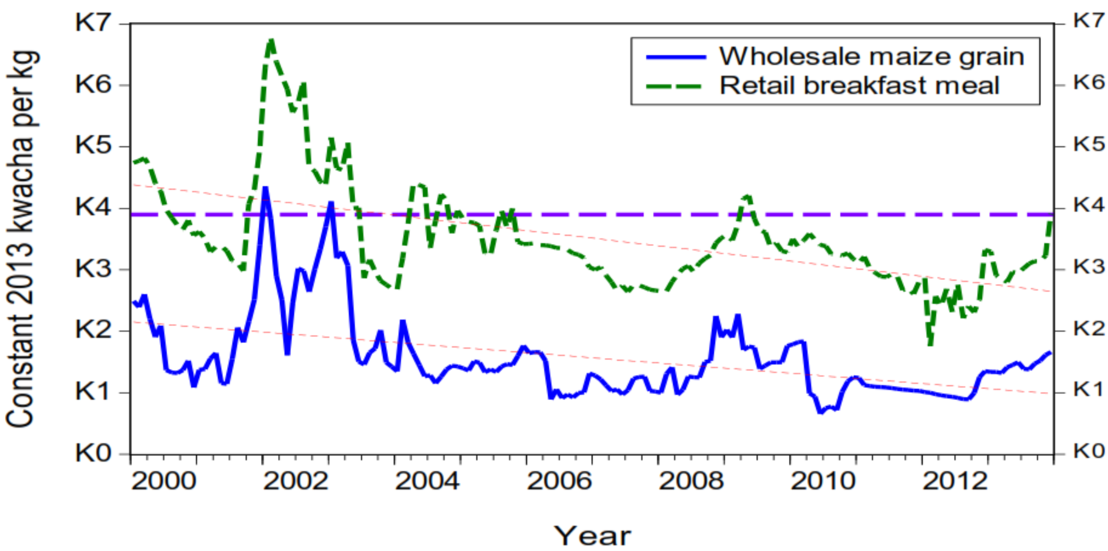
Source: Kuteya and Jayne, 2012

Kuteya and Jayne (2012) observe that some millers were excluded from the programme. In particular, those excluded were informal and small/medium-scale millers and these were greatly disadvantaged because they could not acquire maize grain at as low a price as millers receiving subsidised maize from the FRA. Thus from the above observation, the subsidies did not promote competition among the millers since it only favoured a few millers in the field. Kuteya and Jayne (2012) conclude that such an uneven playing field would negatively affect the future competitiveness and market structure of Zambia's maize milling industry. Besides, we can argue that a good share of consumers – the low income in urban areas and majority of the rural – of maize rely on the services of the informal and small/medium millers and excluding such millers from the subsidy programme partly diluted the benefits of the subsidy programme on the final consumers.

Kuteya and Jayne (2012) further observe that such activities would over time entrench the market share of the selected millers having access to subsidised maize supplies, force non-selected millers out of business, and adversely affect the degree of competitiveness within the milling industry. All in all, their key observation was that the benefits of the subsidies were not transmitted to the intended consumers as expected. Millers Association of Zambia also mentions that the subsidy distorted the market but agree to the fact that it benefitted the millers in times of deficit and scarcity of maize. Despite such shortfalls and uncertainty emanating from the maize staple industry, the programme continued up to May 2013 when GRZ decided to discontinue it citing the reason that resources that GRZ was spending could be better allocated to other key sectors (Kuteya *et al.*, 2014).

Sitko (2014) also establishes that wholesale maize-grain prices were reduced substantially from about ZMK4.00 per kilogram in 2000 to about ZMK1.00 per kilogram in 2011, even though there was little or no impact of consumer welfare. However there was a corresponding reduction in retail breakfast meal prices though by lower margins (figure 5).

Figure 4: Mealie-meal and maize prices overtime



Source: Sitko, 2014.

Despite empirical evidence as indicated in the study by Kuteya and Jayne (2012) that pointed out that subsidies on mealie-meal did not lead to lower prices of mealie-meal for consumers, their removal in the midst of persistently high prices of the staple commodity has ignited public debate from different sectors. Many accusations have continued being directed at GRZ's decision to remove subsidies that it has contributed to current maize meal pricing which is uncompetitive (Kuteya *et al.,* 2014). A study by Kuteya *et al.,* (2014) notes that maize price subsidies in Zambia merely attempted to serve two distinct purposes which are: to lower consumer prices and raise producer prices. Kuteya *et al.,* (2014) attribute the removal of subsidies in 2013 by GRZ to the findings by Kuteya and Jayne (2012) that subsidies on millers do not result into expected benefits among consumers but only to the selected millers.

Attempts have also been made to assess the impact of the 2013 removal of the subsidies. Kuteya *et al.* (2014) notes that inflation adjusted prices for maize grain and mealie-meal in December 2013 fell within normal historical bounds. This means that the real prices of these essential commodities were normal relative to their historical changes. The Food Reserve Agency (FRA)'s subsidised wholesale maize grain, wholesale maize grain without FRA subsidies and retail breakfast meal prices were all in their normal ranges and could be predicted with small and non-significant margin error using the historical data. This means that despite the subsidy being removed in May, by December 2013, the effect on price had not yet been witnessed in the market. The study concludes that mealie meal real prices in December 2013 were actually lower than in several other years since 2000.

On the other hand, reforms in maize marketing have resulted in much needed competition among the millers in the industry. Positive outcomes have emerged through market liberalisation by declining the market margins between wholesale maize prices and retail maize meal prices paid by consumers. Increased competition in the maize milling industry together with rapid investments have led to significant decline in real maize meal prices over the 1994-2007 period. Further, the removal of millers' subsidies in 2013 has levelled the playing field in the industry. Even though the price of maize flour has increased, studies (Kuteya *et al.,* 2014; Kuteya and Jayne, 2012) show that it cannot be wholly attributed to the removal of subsidies.

Michael Porter's model: impact of the miller subsidy policy in the maize market

Barriers to Entry

Starting a maize-mill is a very capital intensive procedure and the capital requirements are frequently the strongest barrier to entry. Access to distribution channels to get maize from the farmer to the mill and to get the processed maize from the mill to the consumer is often hampered by high transportation costs and poor logistical management. High maize storage costs (silos), high input costs in the maize production and processing industries as well as perishable nature of maize products also act as entry barriers for maize production.

Larger maize millers have economies of scale as the cost per unit decreases as the size of the milling plant increases or expands. Since it is mostly these that had access to FRA subsidised maize, they could have more ability in determining maize flour prices compared to other competing millers who could not buy due to the uneven playing field brought about by the subsidy policy. Subsidies are allocated to main millers based in the cities (Lusaka and

Copperbelt), disadvantaging those in the rural areas and other provinces. This acts as entry barriers to other potential entrants without such advantages.

Bargaining Power of Suppliers to Millers

The more maize millers there are in a certain region the higher the rivalry and the lower the bargaining power of one miller. However, since some millers used to receive subsidised maize while others could not, the bargaining power over the final price differed per miller.

Bargaining Power of Buyers

The concentration and volume of the buyers as well as the information that they have regarding a specific product often influence the power that they have to influence prices of milled maize products. In Zambia the ability of the consumers to buy directly from large millers instead of through supermarkets or from other sources that sell the same product at a cheaper price is limited, which also limits their bargaining power. However, the supermarkets that buy from the millers have some level of bargaining power as millers compete for limited space in the shops, especially during the period when these millers received subsidised maize from FRA because government would issue a recommended price for mealie-meal which people make a benchmark. Different brands of a variety of maize products are however available and buyers typically choose to buy those products that satisfy their needs the best in terms of quality, quantity and price.

Threat of Substitutes

As more substitutes become available, the demand for a product becomes more elastic. Cheaper substitutes for certain maize products will be preferred especially if their quality is deemed well by consumers. Millers who produce maize products cheaper will thus have a competitive advantage to those millers who cannot afford to produce maize products more cheaply. However, there are no close substitutes to maize, making it difficult for suppliers or millers to be subjected to any serious competition forces.

4. Competition Reforms in Bus Transport Sector and Implication on Beneficiaries

Reforms Undertaken in the Bus Transport Sector Over Time

The bus transport sector has witnessed many reforms since independence. In what is known as the 'Mulungushi Reforms', the first Republican President of Zambia, Kenneth David Kaunda announced that the state would intervene in the running of the national economy through nationalisation of all private retail, transport and manufacturing firms in the country. In an effort to control the means of production, create employment and provide cheap services to the poor indigenous people of a newly politically independent Zambia, the new government implemented a nationalisation policy in April 1968[6]. By the end of 1970, over 80 per cent of the economy was placed under state control. However, a state owned Transport Company, United Bus Company of Zambia (UBZ) still existed and offered cheap passenger transport services throughout the country – even to remotest parts, where private firms were not willing to operate. UBZ heavily subsidised its services for the benefit of the poor consumers.

Following the change of government in 1991, Zambia implemented economic liberalisation reforms. The economic reforms that Zambia undertook were characterised by privatisation or commercialisation of state owned enterprises and removal of consumer subsidies. This saw UBZ being privatised. Not long after privatisation, UBZ went into liquidation. Private entrepreneurs were encouraged to invest in the passenger transport sector. In order to urgently fill the void created by the liquidation of UBZ, the government removed customs duty on imported buses in 1993.

Among the prominent programmes on road transport is the Road Sector Investment Programme (ROADSIP) which was embarked upon in 1998. ROADSIP was intended to develop the Zambia road sector through attracting investment. The programme was funded by the World Bank to the tune of an estimated cost of US$1.6bn, with the potential of further support if it was successfully implemented (Mwanaumo, A, 2012).

When the ROADSIP was undertaken, one of its objectives was to increase and improve the core road network. An increase in road networks would be expected to enhance consumer welfare through improved access to markets as well as reduction in average travel time, especially if more direct routes are introduced. This would also contribute positively to choices available as some markets become more accessible. An improvement of the road network would be expected to enhance consumer welfare by reducing average travel time as well as the overall journey comfort, while more choice would also be expected as more suppliers are attracted into the improved routes. Expansion of networks would also be expected to create demand for services, which would also see more players entering the market. ROADSIP was also expected to improve road safety, which would have a direct bearing on consumers using road transport. Among the achievements of the ROADSIP

[6] Nationalisation: A case study of Zambia; Noyoo, N. Rhodes University Summer School; September 13, 2011; www.ru.ac.za/rhodesuniversity/content/iser/documents/docs/Nationalisation%20-%20The%20Zambian%20Experience%20-%20Ndangwa%20Noyoo.ppt; Accessed August 18, 2013

process was the development of the National Transport Policy of 2002, which currently is undergoing review.

The National Transport Policy of 2002 provided a statement of intent about how the government planned to manage the transport sector. Taking cognisance of the linkages of the transport sector with the rest of the economy, its objectives included economic growth, socio-demographic aspects, employment creation and sustenance, balance of payment, environmental resource aspects, equal regional development and proposing high levels of healthiness.

The National Transport Policy sought to ensure that there is provision of inexpensive, fast and frequent as well as safe transport. Thus measures intended included seeking funding for the development of multi-modal transport infrastructure through public expenditure or private sector funding through Public Private Partnerships (PPPs). The policy also sought to develop and review regulations and technical standards determining entry into the transport sector as well as ensure coordination of the traffic. These objectives, which were to be achieved through the enactment of regulations as well as establishing institutions to enforce them, have a direct bearing on competition in the sector through regulating the number of players as well as controlling their conduct.

The Ministry of Transport, Works, Supply and Communications (MTWSC) is responsible for the development, implementation and evaluation of the National Transport Policy. It does this through its specialised departments and agencies. Other stakeholders with interactions with the Ministry include the Ministry of Commerce, Trade and Industry (MCTI), the Ministry of Local Government and Housing (MLGH) and local authorities for land use and urban and rural road transport development.

To ensure that the management capacity of the roads and road transport sector is enhanced, the transport policy provided for the enactment of laws and regulations as well as enforcing institutions to develop and guide the transport sector in Zambia. These include the following:

- Road Traffic Act No. 11 of 2002

The Road Traffic Act No. 11 of 2002 provides for the establishment of the Road Traffic and Safety Agency (RTSA) and a mechanism for planning, implementing and (monitoring) evaluating government policy on road transport and safety in Zambia. Thus, RTSA was established to educate, regulate and enforce the Road Traffic Act. Due to delays however, the RTSA became functional only in 2006. RTSA was given the powers to register and license vehicles, license drivers and ensure safety of all road users. The institution thus has a mandate to regulate competition in the market as it directly controls the number of players and thus affects the structure of the market.

- Public Roads Act No. 12 of 2002

The Public Roads Act No. 12 of 2002 provides for the establishment of the Road Development Agency (RDA) and the management of road infrastructure in Zambia. RDA was given the responsibilities of developing, maintaining and improving the road network in Zambia. The institution thus also has plays a critical role in ensuring that there exist road infrastructure which is conducive enough for enhancing the welfare of producers and consumers. The regulations thus have a bearing on competition.

- National Road Fund Act No. 13 of 2002

The National Road Fund Act No. 13 of 2002 was enacted to provide for the mechanism of resource mobilisation for road construction, maintenance and road safety. It established the National Road Fund Agency (NRFA) as the enforcing authority for the Act. NRFA was given the responsibility of coordinating and mobilising funding to finance the road infrastructure. The success of the NRFA in mobilising funding from government, multilateral and bilateral cooperating partners, road users (through fuel levy, road tax and road tolls) and from the private sector through PPPs is also critical in determining the success of the functions of both RTSA and RDA. The law thus has a bearing on competition in the sector.

- Markets and Bus Stations Act No. 7 of 2007.

The Markets and Bus Stations Act No. 7 of 2007 provides for the establishment and regulation of markets and bus stations. The Act also empowered the Minister, in consultation with the local authority in whose area the market or bus station is situated, to establish a Management Board for managing and maintaining the respective market or bus station. The Act also identifies other important players with a role to play in regulating competition and enhancing welfare in the road transport sector. Under the Act, local authorities should designate bus stations and bus stops to facilitate for the provision of passenger transport services for inhabitants in an area within the local authority. All markets and bus stations in Zambia are thus placed under the control of a local authority having jurisdiction in the area in which they are situated. Under the Act, in addition to the local authority, the management of a market or bus station is also under a management board, whose responsibilities include formulating policies and guidelines for the maintenance and management of particular bus stations under its management. This also helps determine the level of competition at the termini which also affects welfare of both operators and consumers using the services.

Since their enactment, all these laws shaping the transport sector have undergone amendments to ensure that they deal with problems that are identified as they are implemented. In addition, the Ministers responsible for the laws have also issued various regulations and statutory instruments to govern their operations. For example, recently, the Road Traffic (Public Service Vehicles) Regulations, 2013 (Statutory Instrument 39 of 2013) was issued, which deals with several operational issues intended to ensure the effective implementation of the Road Traffic Act, 2002. These laws with their regulations generally form the basic reforms that have been undertaken in the road transport sector.

Identification of Relevant Policies in the Bus Transport Sector to be Examined

Given the objectives of the project, it is critical to identify those regulations and laws that could be examined to assess whether were competition-enhancing or competition-distorting. The policy and regulations described in the previous sub-section can be viewed as generally summing up all the regulations that shape the transport sector in Zambia. However, not all of them can be assessed in terms of their potential impact on competition in the market. It is critical to realise that both ROADSIP and the Transport Policy, 2002 were the main strategies that were designed to create implementation tools such that RTSA, RDA that the various local authorities would use to ensure attainment of the set objectives. Thus the laws and regulations that were introduced to implement the laws can be identified as the reform to be examined as they created institutions with specific roles to play in the market.

Given the complementary roles that they play, the following are the regulations that can be identified as relevant for examination under this study:

- The Road Traffic Act No. 11 of 2002
- Public Roads Act No. 12 of 2002
- National Road Fund Act No. 13 of 2002
- Markets and Bus Stations Act No. 7 of 2007

Due to paucity of data, the impact of these regulations would not be assessed in isolation as it is difficult to control for the impact of other regulations which would be performing complementary roles. The focus for assessment would generally be based on the following broad areas, which were the target areas when these regulations were put in place and which have a bearing on competition:

- registering and licensing vehicles, drivers and ensuring safety of all road users;
- developing, maintaining and improving the road network in Zambia;
- mobilising funding to finance the road infrastructure based on the extent to which the infrastructure has improved; and
- bus stations and bus stops development.

Another reform or regulation that would also be of interest is the fare regulation regime. The fare adjustment process takes place through the following steps:

- Producers submit a joint request – as an ad-hoc trade association or committee to revise bus fares (whether increasing or reducing) – to RTSA;
- RTSA assesses whether the request is justified or not by seeking authority from the MTWSC to engage stakeholders to discuss the request;
- If the MTWSC grants authority, RTSA proceeds to invite stakeholders – who include a representative from the MTWSC, ad-hoc trade association or committee of producers, consumer interest groups and any other stakeholders who may add value to the process – to a meeting to discuss the proposed request. If the MTWSC does not grant authority, RTSA notifies the requesting producers that there request is not justified. It, therefore, remains up to the concerned producers to justify their case;
- At the meeting, stakeholders present their various cases justifying their positions. RTSA moderates the meeting as it proceeds. Usually, these meetings continue until producers and consumer interest groups reach a consensus;
- RTSA would then present a report to the MTWSC stating its recommendations with respect to the consensus arrived at;
- The MTWSC would then accept or reject the recommendations from RTSA. If the MTWSC accepts the recommendations from RTSA, the latter would then proceed to issue a public advertisement or notice of revision of bus fares usually granting one week's effective notice. If the MTWSC rejects the recommendations, stakeholders are brought back to the negotiating table.

An attempt to assess the impact of these regulations ensues.

Implication of Policies in the Bus Transport Sector on Beneficiaries

In order to assess whether the reforms have resulted in any significant impact in the economy, interviews were conducted with Government, the regulators, consumers and producers. The findings from the discussions can be used to infer the possible impact on producers and consumers separately in this section.

Implication of Reforms on Producers

For Producers, The Reforms Can Be Said To have created an impact if they have an impact of costs, entry into the market, ability to invest into the bus transport industry, as well as access into the market.

There was generally some reluctance to participate in the field work by the bus operators, with only 13 operators willing to take part during the first two days. There were generally reservations due to the length of the questionnaire and suspicions about the intentions of the study, especially whether the information would be passed on to regulators. A focused group discussion was then organised through the assistance of the association of bus operators and the Public Private Drivers Association for both intra-city and inter-city bus services. This was also not well attended, with only about 16 participants although representation at the association level ensured rich knowledge about the issues. Based on what transpired during the focused group discussion as well as from the submissions from the operators who had been engaged, the following discussion tries to assess the impact of the reforms on various measures.

Price/Cost

Due to lack of historic data, the discussion given in this section is mostly about the *status quo* situation. The choice and source of buses procured is a decision of the producer as there are currently no regulations restricting operators' choice. Based on the interviews with the bus operators, the minimum investment needed for starting a bus service ranges from about ZMW 600, 000 (US$100,000) to about ZMW 1,000,000 (US$167,000) for inter-city buses and ZMW 70, 000 to ZMW 150, 000 for intra-city buses. On average an inter-city bus carries between 65 and 70 passengers at an average fare of ZMW 120 and ZMW 190 for the Lusaka-Chipata Route and between ZMW 65 and ZMW 90 for the Lusaka-Kitwe route. For intra-city, the average fare is between ZMW 4 and ZMW 5 per trip for the town centre- Chelstone route for a bus with a carrying capacity of 16 passengers. However, it was noted that it takes a period of 1 to 5 years for the operators to break even that is to recover their investment. While the operators agree that the various reforms that were introduced contributed positively, they could not give estimates of the actual benefits they enjoyed due to the reforms and the study could not estimate this due to the absence of cost data before the reforms.

For the intra-city routes, interviews with operators revealed that the total revenue per day per bus amounts to about ZMW 1,600. The operators also mentioned that the cost of maintaining a bus amounts to about ZMW 5,000 per month on average. The operators indicated that most of them enjoyed abnormal profits in the year 2011 but experienced losses in 2014, mostly due to increased competition. In the absence of baseline data, however, it is difficult to calculate the actual contribution that the reforms created. In the inter-city services market, interviews with services providers revealed that the revenue that is realised per bus, per day for the Lusaka- Chipata route is ZMW 8,000 while for the Lusaka-Kitwe Route it is about ZMW 5,000. The interviews also revealed that there have been positive changes in the cost of operating a bus service from the year 2008 to 2010. Among the reasons advanced was the stability in the exchange rate at the time which had a significant impact on the cost of parts and other products.

Although operators would always expect to charge higher fares, some aspects of fare control exists in Zambia. RTSA manages the process of fare adjustment in consultation with the MTWSC whenever producers intended to adjust bus fares. Although the market was liberalised, the need to protect consumers from unjustified fare hikes was deemed important. While this enhances consumer welfare, it could also be argued to be reducing the profitability of the sector, especially given excessive competition.

The impact of this fare pricing regime can be assessed based on data on annual average bus fares from RTSA and the Energy Regulation Board (ERB) (Table 11). Based on the data for the intra-city bus transport, the ratio of the annual average bus fare to the annual average cost of fuel per litre increased from 0.41 in 2010 to 0.56 in 2013. This generally demonstrates that the bus fare has been increasing faster than the fuel price, which could reflect that the fares have been pushed by other factors outside fuel. If fuel is the major input into the fares, then the bus operators have generally been able to utilise the fare setting regime to their advantage. However, data limitations could not allow an exploration of this issue further for a more conclusive result.

Table 11: Fuel movements and bus fare movement between 2010 and 2013

No.	***Indicator***	***Route***	***2010***	***2013***
1	Annual Average Cost of Fuel per litre (AACF)	Intra-City	1.35	1.60
2	Annual Average Bus Fare (AABF)	Intra-City	0.55	0.90
3	Ratio of AABF to AACF	Intra-City	0.41	0.56

Entry

From the producer (operator's) perspective, the liberalisation policy in the passenger transport market would be expected to ease entry of producers into the market by reducing barriers to entry into the market. Following the deregulation of the transport sector, a number of new entrants entered the passenger transport market. However, the level of entry in the early 1990s was not sufficient to meet the demand. Among the reasons for slow entry was high capital outlay and poor road infrastructure. This prompted the government to offer tax concessions on importation of buses in 1994 and 1995. The measure drastically increased the number of buses on the market. Coupled with liberalisation of the economy, the passenger transport sector was attractive and promised favourable profit margins.

Unfortunately, the study could not reveal the number of new entrants into the passenger transport market corresponding to the period following government's offer of tax concessions on the importation of buses in 1993-1995. Further, information on changes in passenger transport fares for both intra-city and inter-city during the same period could also not be obtained. This was attributed to the lack of readily available electronic data.

Data from RTSA (table 12) shows that there has been an increase in the number of vehicles registered between the five year period from 2008 to 2012 in all categories, which also include bus transport. The total registered vehicle population stood at 452,584 in 2012, having increased significantly from 277,870 in 2008. While this is the aggregate vehicle population, the number of long term road services license holders in Zambia (which includes bus transport), has also been increasing (table 12). Between 2009 and 2012 a total of 10,318 such long term licenses were issued; hence entry into the market was increasing. One caveat is the fact that vehicles no longer in use due to accidents and ordinary breakdown beyond repair are also among the statistics and have not been excluded.

Table 12: Vehicles registered in Zambia 2008-2012

Vehicle Category	*Population Size*				
	2008	***2009***	***2010***	***2011***	***2012***
Motor-cycles (Less than 3 Wheels)	*7,113*	*7,866*	*9,450*	*11,345*	*17,893*
Motor-tricycle	*83*	*92*	*135*	*245*	*621*
Light passenger	*167,055*	*184,713*	*204,465*	*236,830*	*297,835*
Heavy passenger	*5,615*	*6,207*	*6,514*	*6,897*	*7,879*
Light load (GVM ≤ 3,500kg)	*56,935*	*62,953*	*66,287*	*72,899*	*89,675*
Heavy load (GVM > 3,500kg)	*34,900*	*38,590*	*42,496*	*44,765*	*71,789*
Agricultural tractors	*1,167*	*1,291*	*1,620*	*1,768*	*2,897*
Agricultural trailers	*167*	*184*	*199*	*245*	*320*
Other trailers	*4,835*	*5,345*	*6,345*	*6,954*	*9,765*
Total	***277,870***	***307,241***	***337,513***	***381,948***	***452,584***
Change per annum	*47,538*	*29,371*	*30,272*	*44,435*	*70,639*
Long term road services licences		*2,728*	*2,814*	*2,669*	*2,107*

Source: RTSA

Entry is also affected by the costs of licensing. The average cost of licensing in 2012 was estimated at about US$580.00 per annum, which is generally very low for a commercial licence. Before starting to operate a bus service (whether intra-city or inter-city), the operator is required to obtain a road service licence as contained in the Road Traffic Act. One also needs to have a public service driver's license to operate. Further, the vehicle being used as a medium of service needs to have road fitness, road tax and insurance. The bus operators indicated that obtaining these licences is fairly easy. The operators believe that ideally, obtaining these licences (fitness and road tax) is supposed to be within one week for new vehicles and one or two days for renewals. However, they explained that sometimes the procedures are prolonged due to the bureaucracy and corruption within the systems.

There was, however, a general consensus that over the past five years, the operators have witnessed positive changes in the licensing procedures. For instance, there has been a positive change (reduction) in the time it takes to obtain the licences through streamlining of the procedures within the RTSA with the introduction of the electronic licensing systems in 2010. This has reduced the time it takes to obtain these licenses for operating a bus service despite the unnecessary delays which continue to be experienced. The RTSA has also further decentralised the system of obtaining licences such as the fitness and road tax certificate making it easier for operators to access this service. These licences can now be obtained from the local post offices.

Entry barriers from the operators' view also arise owing to there being a number of regulatory bodies in the sector. RTSA is the mandated institution to regulate the sector in partnership with the Zambia Police. There are other authorities that need to be satisfied which includes the Patents and Companies Registration Agency (PACRA), Zambia Bureau of Standards (ZABS), Interpol Police, National Pensions Scheme Authority (NAPSA) and the Local Authorities. All these have a set of regulations that needs to be met and it was indicated that some of them are tedious and act as a barrier. Further, the operators believe there is lack of a properly defined standard operation mechanism between RTSA and the Zambia Police which result in operators facing double charges or fines. This layer of regulators always increases the costs of regulation as well as the informal costs that arise through corruption.

Discussions with RTSA revealed that there is currently no route allocation framework in Zambia. Operators are licensed according to intra-city and inter-city routes, thus can operate anywhere within intra-city and inter-city routes. However, the local authorities are considering applying a route allocation policy to enhance the quality of passenger transport. This finding is very surprising, especially since there is need for orderly conduct in the intra-city routes. Those routes that are close to town for example are likely to be overwhelmed, especially if the fares do not differ much with respect to distance. The absence of a clear route allocation policy could also create a situation where buses simply choose a route based on quality factors, for example avoiding routes where there is likely to be a huge presence of enforcement agencies. Accountability to the passengers also diminishes if the buses can just come and go as they please, with the operators knowing that they might not use the route again in future. This also reduces the incentives for the bus crew to engage with passengers in a friendly manner. This brings the need for an effective route allocation policy in Zambia.

Interviews with operators also revealed that the operators have benefited from some schemes which helped on entry and expansion into the market. The operators acknowledged that the liberalisation policy resulted into a new structure being created in the market which allowed unrestricted entry for private individuals to operate in the sector.

Investment
Most of the operators interviewed indicated that they purchase their buses locally through hire purchase schemes provided by the companies selling the commonly used coaches/buses for inter-city travel. They also added that, once they get these buses on hire purchase, they have to pay at least 50 per cent of the total price for the bus to be in their possession and thereafter begin paying the balance in installments within the next two months. Government schemes have made it easier for the operators and the tax incentive given to new entrants to import buses duty free and quota free being an example. This was implemented over a period of ten years. The operators indicated that this scheme produced positive results going by the surge in number of buses servicing both the intra and inter-city routes and reduced long waiting days for commuters to move from one place to another. The second scheme that was indicated was a loan scheme introduced in 2014 for 1000 Higer Buses facilitated by government implemented through the PPDAZ – an association with a membership of about 3000 operators. The impact of this scheme is however yet to be tested. There are, however, concerns on the allocation method of the buses to the members. Secondly government is also yet give out all the 1000 buses as initially planned.

Access to Essential Services (Infrastructure)

Lusaka has four intra-city bus terminal stations namely Kulimatawa, City Market, Lumumba, and Millennium. For intercity, the bus terminus at Lusaka was highlighted by the operators as one stop shop facility harbouring a number of service providers servicing inter-city routes. The operators acknowledge the efforts of the Ministry of Local Government and Housing, through the local authorities, in providing the necessary infrastructure. Under the Markets and Bus Stations Act No. 7 of 2007, local authorities should designate bus stations and bus stops to facilitate for the provision of passenger transport services for inhabitants in an area within the local authority. All markets and bus stations in Zambia are thus placed under the control of a local authority having jurisdiction in the area in which they are situated. Under the Act, in addition to the local authority, the management of a market or bus station is also under a management board, whose responsibilities include formulating policies and guidelines for the maintenance and management of a particular bus station under its management. The operators acknowledge that the provision and availability of these infrastructural facilities improved between the year 2010 and 2011 and access to these facilities is quite easy. However, there is room for more improvement and expansion of the bus terminals.

Implication of Reforms on Consumers

For consumers, the reforms would be expected to have an impact through their effects on prices (fares), choice, quality and access to buses. A total of 203 passengers were interviewed based on the two main routes that were identified for analysis for both the intra-city and inter-city bus services. In the inter-city services, two main routes, Lusaka-Chipata (58 passengers) and Lusaka-Kitwe (41 passengers) were identified for analysis while in the intra-city, Town Centre-Chelstone (57 passengers) and Town Centre-Matero (47 passengers) routes were used. Based on the results of the interviews, the following analysis can be made:

Price

Consumers would generally welcome measures that reduce the cost of fares, especially given that the majority of the users are low income earners. Based on the results of the perception survey, intra-city commuters reported a modal monthly income of ZK0-999 income range, whose average is about ZK500 (about US$83.3). The average monthly income for intra-city commuters was found to be about ZK1,500 (about US$250), which is also very low. The commuters mostly use public transport, with about 68 per cent of them indicating usage of public means of travel, 26 per cent indicating private means while 6 per cent use both means of travel. The average fare per trip for the intra-city route was about ZK4.94 (about US$0.82), which is quite high compared to other countries. Although there are some who use intra-city transport for travelling to work (thus would travel for 22 days a month assuming a five day working calendar), on average, the respondents travel about 13 days in a month, which implies that they spend about ZK128.4 to and fro on intra-city transport per month. This therefore implies that an average commuter spend about 8.6 per cent of income on transport. Those who use intra-city transport to commute to work however would see transport cost constituting about 14.5 per cent of their income, which is very high. Advocacy aimed at correcting the fare setting system is still needed to ensure that consumers fully benefit from the reforms when it comes to fares.

The situation is not very different for the inter-city bus transport users. On average, respondents earn an income of about ZK1, 530, which is similar to that for people using intra-city transport. Most of the inter-city users (45.5 per cent) however indicated that they undertook the trip for religious reasons, which could indicate that the trips would be less frequent. However, about 43.4 per cent were using inter-city transport for travelling to work, which would also imply frequent use. Despite existence of alternative means of transport, about 68.7 per cent of the respondents indicated that these alternative modes have higher fares compared to bus transport, which would reflect that resource constraints play a role in determining public bus transport usage. However, the fact that bus transport service is cheaper compared to other alternatives could also be in line with government objectives of the reforms. This is also reflected by the fact that about 76.8 per cent of the respondents also indicated that the services offered by bus transport is poorer compared to these alternative means.

Despite a wide range of choices available for inter-city bus transport, with too much competition for passengers at the stations, about 97 per cent of the respondents indicate that they hardly have any negotiating power of the fares. There was also a general belief among the respondents that there is no price competition among the providers in terms of fares as these were not significantly different, with about 57.6 per cent of the respondents indicating that the pricing was not competitive at all. Given that the fares are not determined by market forces but rather through a system pioneered by the operators, this is not surprising. The respondents are generally worried about the fare changes that have been taking place, with about 83.8 per cent of them indicating that the fares had negative implications on them. The removal of fuel subsidies was identified as the government intervention that mostly created fare increases.

The respondents in the intra-city transport were also almost unanimous in indicating that they do not have any bargaining power to negotiate fares that would be charged, with about 98 per cent of the respondents indicating that there is hardly any concession available to them. In addition, about 55.8 per cent of the respondents also indicated that there is hardly any price competition among the operators, as they charge uniforms fares. This is despite the fact that fares have been increasing regularly, with about 79.8 per cent of the respondents indicating that the price changes over the last five years were generally negative towards their interest and thus unjustified. Commuters are thus generally not satisfied with the fare setting process, and believe that it is mostly the government which is to blame, as about 83.7 per cent of the respondents attribute the negative developments to government interventions, which include currency rebasing, removal of fuel subsidy and the increase in road tax. The fare increases are mostly heard through the media, with about 54.8 per cent of the respondents indicating that prices are increased without any notice as the maximum notice period is only one day.

The fare increase process is also something that the inter-city respondents are not happy about, as about 80 per cent only got to know about the fare increases through the media, without any notice period. About 67.7 per cent of those who indicated that they only got to know through the media indicated that they only get to know this within one day before taking effect. There is also a general belief that the fares paid are just too high given the services that the inter-city travellers enjoy, as over 70 per cent of the respondents do not believe that the fares are justified in relation to the service given.

In the absence of baseline data on the situation that prevailed before the various reforms that targeted fares, it is possible that even the high levels of fares and the unpopular fare setting process among the consumers for bus transport could be an improvement. However, the high fares point to the need for more reforms aimed at reducing transportation costs to enhance consumer welfare. The high fares at a time when there are so many operators could reflect excess supply of these small capacity buses, which also limit returns, or could simply point to a flawed process of fare determination which over-protects operators. The fare setting mechanisms could thus have loopholes which prevent the attainment of a competitive rate which eliminates other inefficient players as competition would detect.

Access and Choice

In as much as the local authorities are responsible for the management of bus stations (and bus stops), there seems to be no clearly outlined system of operations at these facilities. What is evident is that bus drivers and other informal interest groups regulate the bus terminals informally. Although some producers on inter-city routes schedule their services, departures and arrivals on intra-city routes are not scheduled. This makes it difficult to attribute any developments to government reforms and regulations.

A participant observation on a typical day at the bus station (or bus stop) would reveal a situation where a poor passenger approaching a bus station (or bus stop), was descended upon by an increasing number of hawkers touting them, enticing the passenger to choose their bus. Although these hawkers mislead the potential passenger, lying to them that their bus was almost about to start off but in actual fact not, their presence demonstrate the level of competition that was brought about by the increase number of buses and hence more options for a passenger to choose from.

Access is also reflected by the waiting time for an average commuter at the bus station to get bus transport. In the intra-city routes, about 74 per cent of the respondents indicated that their waiting time is at most 15 minutes during peak hours and this drops to about 67.3 per cent during off-peak hours. Only about 5 per cent of the respondents wait for at least 30 minutes during peak hours, and the rate increases to 5.7 per cent during off peak hours. This generally demonstrates that access to the transport services by commuters is generally good. Access to bus stops would also reflect the extent to which the necessary infrastructure has been put in place to cater for all commuters. About 46 per cent of the respondents take less than five minutes to get to the bus stop and those who get to the bus stop within 15 minutes constitute about 84.6 per cent of the respondents. Since about 90.4 per cent indicated that they do not take any other transport to get to the bus stop, most commuters using bus transport walk to the bus stations and arrive within 15 minutes. Thus access to the intra-city bus services has generally improved since the reforms have been initiated.

In the inter-city bus transport, about 77.8 per cent of the respondents do not wait for more than 15 minutes for a bus during peak hours while this is reduced to about 70.7 per cent during peak hours. This also demonstrates that inter-city buses are fairly accessible within a reasonably short time frame. About 48.5 per cent of the inter-city users also get to the bus station within five minutes from their areas of residence, with over 88 per cent of them being able to get to the bus station within 15 minutes from their places. About 89.9 per cent of the respondents also indicated that they do not use any other transport to get to the bus stations for inter-city transport, which also demonstrates that the facilities are relatively near to their areas of residence.

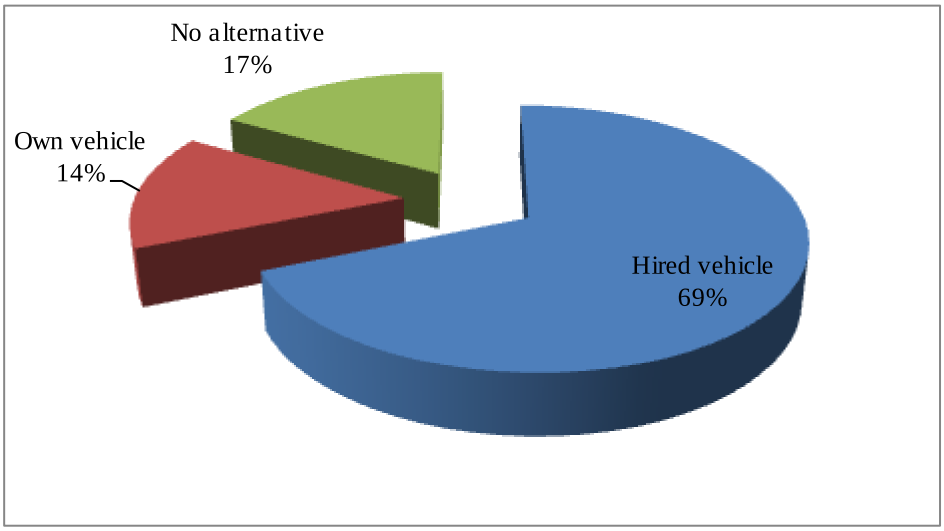
To assess whether the reforms that the government has been doing over the years have been noticeable to the commuters, they were asked whether they had witnessed any changes over the past five years in the intra-city transport. About 77 per cent of the respondents indicated that they had observed some positive changes in availability of transport over the past five years, with only 3 per cent indicating that availability had actually worsened. About 16 per cent indicated that there have been no changes, while the rest had no idea. The majority, constituting about 72 per cent also indicated that they had witnessed positive changes in terms of accessibility. About 37.5 and 25 per cent of the respondents attributed changes in availability and accessibility respectively to the government efforts.

In the inter-city bus transport segment, about 80.8 per cent of the respondents indicated that there have been positive changes in terms of availability of buses over the past five years. Most of the respondents believe that the changes that were witnessed were due to government intervention, although only 50.6 per cent of them believe that the changes were positive and helped travellers. Among the interventions that were cited by both the inter-city and intra-city respondents as beneficial are the following:

- infrastructure development –road network;
- infrastructure development –bus stations;
- liberalisation;
- removal of customs (import) duty; and
- market access.

One of the anticipated benefits of the reforms from the consumer's point of view was the issue of choice. Choice can be viewed from two perspectives; the increase in the number of buses to choose from, as well as alternative means of public transport. However, the perception analysis of the intra-city results demonstrates that there are generally no other alternative means of public transport that an intra-city commuter can opt for besides hired vehicles, which are more costly (figure 1).

Figure 5: Alternative means of transport to bus intra-city transport



Despite using the intra-city bus transport services, those who indicated that they have alternatives are prevented from using them simply because they are more costly compared to bus transport. About 65 per cent indicated that their preferred alternatives are more costly compared to bus transport, while about 15 per cent had not compared the prices. In addition, about 73 per cent of the respondents also indicated that their alternative methods of travel offer services that are better than the bus transport they are using, which also demonstrates that most bus transport commuters are using it mostly due to financial constraints than satisfaction. This demonstrates the extent to which choice still needs enhancement.

Respondents however indicated that despite intra-city bus transport being mostly composed of regular buses, there have been some developments over the past years where different types of buses are now plying the intra-city route. About 64.8 per cent of the respondents indicated that they had noticed some increase in the type of buses in the intra-city route over the past five years, which also increases the choices available. However, about 33.7 per cent of the respondents believe that the types of the buses to choose from have not changed. In addition, although the majority believes that there have been changes in the type of buses available, only about 24 per cent believe that the changes that took place were due to government intervention.

In the inter-city route, despite there being other types of buses such as the express (fast), luxury and others, over 94 per cent indicated that they prefer the regular buses. However, over 62 per cent indicated that over the past five years, there has been an improvement in the choices available to them in terms of types of buses to use.

Quality

About 67.3 per cent of the intra-city bus transport respondents were of the view that the bus fares are too high given the quality of the services provided. The commuters are generally not happy with the quality of the services, with only 17.3 per cent indicating that they were good. Although only 42.3 per cent indicated that the quality of services is really bad, the majority (about 62.5 per cent) of the commuters interviewed indicated that the trip which they had just taken was very uncomfortable. This was mostly attributed to overloading (72.3 per cent); uncomfortable seats (9.2 per cent) and rude bus crew (6.2 per cent). Despite the services being poor, about 53.8 per cent of the respondents indicated that there have been changes in the quality of the services, even though about 6.7 per cent believe that the changes were for the worse. While many believe that there has been an improvement in quality, only 25 per cent believe that this was due to road service enforcement, with 50 per cent attributing this to market access which increased competition.

In the inter-city transport, consumers appear to be satisfied with the quality of the service, as about 59.6 per cent of them believe that the services are either just okay (neutral) or are good, with 44.4 per cent believing that the quality of the buses and service is bad. However, about 65.7 per cent of the respondents indicated that the journey which they had just taken was not comfortable, which would also be attributed to poor quality of service. This was however attributed to overloading, as about 72 per cent of those who were not comfortable mention this as the reason for their discomfort. However, about 58.6 per cent of the respondents believe that there have been changes in quality of inter-city buses over the past five years, even though 12.5 per cent of them believe that the changes were negative. About 50 per cent of the respondents attribute this to competition induced by market access rather than regulation, since only 25 per cent of the respondents attribute this to RTSA.

The quality of the buses has also been improved by reforms that have been intended to cushion consumers against sub-standard buses. Used buses that are procured have to meet the Pre-Shipment Inspection (PSI) criteria designed and implemented by the Zambia Bureau of Standards (ZABS). This was declared compulsory in 2006 and is carried out to minimise risk of unsafe and substandard vehicles entering the Zambian market, thus ensuring health, safety and environmental protection for consumers in Zambia. The PSI criteria ensures that the vehicle passes a safety and mechanical inspection and that it is free of CFC (R12) gas. This has also enhanced quality of service for passengers.

The interviews with consumers thus generally give an indication that there have been improvements in the quality of buses, although this still needs enhancement.

Emerging Issues on Transport Sector Reforms

Fare Setting

Findings generally point out that fares and profitability of transport seem to have increased over time, at the expense of consumers. As has been described, the fare setting process is initiated by operators by submitting a joint request to RTSA for fares to be adjusted upwards, for which the MTWSC, consumer interest groups and other stakeholders would participate in a meeting before fare revision. However, bargaining power, lobbyism and possibly corruption in fare fixing could explain why consumer voices are failing to control the system. The platform where operators are required to submit one common position also creates a platform for collusion among the operators.

The fare setting process might need to be relooked at with the objective of balancing consumer interest and producer interest. One possible means for this is to ensure that the process is totally liberalised while government intervention can only be tolerated in extreme cases. Liberalisation would also be counterproductive if collusion exists among the operators, which would also call for active participation of CCPC in awareness generation as well as through investigations aimed at prosecuting collusion among the operators. The process would be expected to create price competition which would eventually wipe off the above normal profits enjoyed by the operators.

Quality Control

Many customers complain about poor quality (at least compared to the fare), which could point out some loopholes in the quality control process. While RTSA licences buses for them to be operational, the quality control process also falls with the traffic police. However, poor quality vehicles always find their way back into the roads, even after some challenges with the enforcement agencies. Vehicles that of poor quality therefore need to be taken off the roads and only allowed if they are fit for carrying passengers comfortably. Fines only create room for corruption in the roads while they also create more incentives for aggressive marketing on the part of such low quality busses to carry more passengers to recover the costs of the fines. The quality control system for public transport sector thus needs to be enhanced to ensure that only busses of good quality are allowed in the roads.

Route allocation

The absence of an effective route allocation system in Zambia is a cause for concern. Indications from the study are that once an operator is licensed to operate in the intra-city bus transport, the operator is free to choose a route that is lucrative, even for the day. This does not promote order and also ensures that passengers can easily be exploited, especially for those routes which are considered not too lucrative by the operators. Given the number of reforms that have been initiated in the sector over the years, it is also surprising that the need for orderly conduct, especially in the intra-city routes, has not been appreciated at policy level. Urgent engagement with the Government and the government agencies in the transport sector is needed to ensure that the need for a route allocation policy is appreciated.

Overlap of Regulatory Authorities

Although this is not likely to be resolved quickly due to vested interest and even corruption, the multiplicity of regulators is also an advocacy target. So many regulators need to be satisfied before a player can start operations, with some of their requirements also related. This calls for a harmonised system where the operators' needs are all addressed at one window. A one stop platform where all the requirements are assessed at once could go a long way in lessening the entry barriers in terms of regulatory costs as well as corruption. There is, therefore, need to engage RTSA, Zambia Police, the Patents and Companies Registration Agency, Zambia Bureau of Standards, Interpol Police, National Pensions Scheme Authority and the local authorities on the best way of ensuring that such a platform can be created.

5. Key Findings

Maize Sector

The introduction of floor pricing by Government was generally against the spirit of competition and did not actually create the anticipated benefits. Information based on existing studies shows that FRA activities had little effect on mean maize market prices despite being introduced to lower them. The FRA activities were however positive in reducing the variance of wholesale prices and thus helped in inducing market price stabilising effects.

The high price offered by FRA was only beneficial to the net maize sellers, who only comprised about 28 per cent of all farming households, while it created adverse effects for the 49 per cent who are net buyers and had neutral effects to about 23 per cent of the farmers who were neither net sellers nor net buyers. Since the net-sellers are farmers who are well-to-do and have higher assets base, the effect on farmer welfare was generally negative as the majority did not benefit. The price stabilisation gains are thus outweighed by the negative effects as the benefits of price stabilisation accrue more to the better off farmers than to the poor farmers. In addition, although the maize floor pricing by FRA is meant to be a poverty reduction measure and ensure small scale farmers have access to market at good prices, the percentage of small scale farmers that sell maize to FRA is too small at only 1 per cent during the 2003/04 season and 10 per cent in 2007/08. Floor pricing was thus not pro-poor and had negative distributional effects on the resource-poor farmers.

Floor pricing also led to increased fertiliser rate application on maize and expansion of area under maize cultivation and quantity harvested over at the expense of other crops. Floor pricing had a positive effect on maize production (by increasing the area cultivated) and productivity (by increasing fertiliser rate application and harvested produce) but had no direct effect on the yields of maize per hectare. This policy direction also limited private sector investments in the agriculture sector and by promoting mono-cropping of maize.

The FISP, which was also intended as a poverty reduction strategy, also failed to eradicate poverty. Evidence shows that prioritising FISP as a cornerstone of the government's poverty reduction strategy had little or no measurable impact on rural poverty as headcount rural poverty rates actually increased marginally from 77.3 in 2004 to 77.9 per cent in 2010 despite a major scaling-up of expenditures on the FISP programme.

The FISP also created insolvent public marketing and farm financing agents denied the presence of private sector participation in the areas of farm input supply, agricultural marketing and food processing. They also created excessive dependence on government, a lax attitude toward credit repayment and a lack of understanding of the functioning of markets among farmers. Evidence also shows that the FISP did not succeed in making the farmers become maize self-sufficient.

The private sector was also stifled away from participating in the fertiliser trade. The programme also saw economic efficiency being lost as the fertiliser pricing did not take account of the different nutrient levels for fertiliser. This reduced competition and hindered market efficiency by not allowing flexibility in the pricing mechanisms. Government subsidies also displaced the demand of fertiliser from the private players or commercial purchases. It also created significant leakage, with about 33 per cent of the fertiliser intended for smallholder farmers leaking into the commercial channels, dampening prices further for other private sector suppliers.

The FISP also created competition distortions in the distribution market as those bidding for FISP fertiliser supply and distribution colluded to ensure that they win the bid in some geographical areas. This resulted in high distribution cost for fertiliser and robbed government of millions of kwacha. The companies colluding have also won the tenders for almost all years, disadvantaging other companies and almost taking them out of business.

The benefits of the subsidies to maize millers were not transmitted to the intended consumers as expected as the mill-to-retail marketing margins increased significantly despite the subsidy. This suggests that it was mostly the millers who profited from the subsidy without transmitting the benefits to the urban consumers who are the majority consumers of the mealie-meal from the millers.

The miller subsidy policy also excluded some from the programme, especially informal and small/medium-scale millers who were offering competition to the larger millers. These were greatly disadvantaged because they could not acquire maize grain at the same price as millers receiving subsidised maize from the FRA; hence killing competition.

The removal of the subsidy to the millers in 2013, which is a pro-competition reform, did not result in negative effects in the economy. The real prices of mealie meal after the removal were found to be normal relative to their historical changes when the subsidy was in place. This also implies that there was not much benefit from the subsidy programme in the first place.

Transport Sector

The various reforms that the government has introduced over the years had an impact on bus suppliers. This includes profitability for both intra-city and inter-city operators brought about by the liberalisation of the bus fares system which saw the passenger transport sector becoming attractive with favourable profit margins. Based on data on annual average bus fares from RTSA and the Energy Regulation Board the bus fare has been increasing faster than the fuel price, which could also reveal that the fare setting regime has mostly been to the bus operators' advantage.

There have been positive changes in the cost of operating a bus service from the year 2008 to 2010, which can also be attributed to the various reforms that the government initiated in the sector. These include tax concessions on importation of buses in 1994 and 1995 aimed at helping operators meet the high capital outlay needed for buses, which drastically increased the number of buses on the market. Following the deregulation of the transport sector, a number of new entrants also entered the passenger transport market.

Although data on entry into the industry over the whole period after liberalisation could not be established, data from RTSA for the five year period from 2008 to 2012 shows that there has been an increase in the number of vehicles registered between in all categories, which also include bus transport. Between 2009 and 2012 a total of 10,318 long term road services licences were issued, which also demonstrates entry into the market.

Obtaining licences is fairly easy with significant positive changes having been witnessed over the past five years in the licensing procedures. This is with respect to the time it takes to obtain the licences through streamlining of the procedures within the RTSA, the introduction of the electronic licensing systems in 2010 and decentralisation of the system of obtaining licences to local post offices.

Some entry barriers still exist through a multiplicity of regulatory bodies in the sector whose set of regulations are tedious and not harmonised, which result in operators facing double charges or fines. The study has also revealed that the provision and availability of infrastructural facilities improved between the year 2010 and 2011 and access to these facilities is quite easy.

There has been some impact of the various reforms in the transport sector on consumers although some are negative. The fare setting system for example has seen consumers spending more on bus transport than what should be expected as more buses enter the market. An average commuter for intra-city spends about 8.6 per cent of income on transport; with those who use intra-city transport to commute to work spending about 14.5 per cent of their income on transport, which is very high.

The importance of bus transport over alternatives is also apparent, as most users find bus transport cheaper compared to other alternative modes of transport, which could be in line with government objectives of the reforms. However, despite a wide range of choices available for inter-city bus transport, passengers hardly have any negotiating power of the fares. This has created a situation where there is no competition among the providers in terms of fares as these are not significantly different among operators, especially in the intra-city sector. The fare setting process thus has generally not favoured commuters and passengers.

The positive impact of the reforms on management of bus stations (and bus stops) from the passengers' point of view could generally not be established as other informal interest groups, especially touts soliciting for customers on behalf of operators, appear to regulate the bus terminals informally. The departure of a bus appears to be influenced by the ability of the touts to fill it up with passengers rather than any published travel schedules. However, the presence of these touts demonstrates the level of competition that was brought about by the increase number of busses and hence more options for a passenger to choose from.

The reforms have enhanced access to buses for both the intra-city and inter-city passengers. In both the intra-city and inter-city routes, the waiting time at bus stops is at most 15 minutes during peak hours. Access to bus stops also reflects the extent to which the necessary infrastructure has been put in place to cater for all commuters. A significant proportion of passengers take less than five minutes to get to the bus stop while most get to the bus stop within 15 minutes of walking. Access to the intra-city bus services has thus generally improved since the reforms have been initiated.

The study has also revealed that more choices have been afforded to the passengers by the reforms, as different types of buses are now plying both routes. The improvement in choice has been noticeable by the passengers over the past five years. However, passengers are not happy with the quality of the buses with respect to the fares that are charged. In the intra-city route, this is generally compromised by the first come first load principle which eliminates the options of choosing. Quality of services is also compromised by overloading and uncomfortable seats. However, passengers generally believe that there have been positive changes in the quality of the services over the past five years.

6. Concluding Remarks & Way Forward

The study gives important lessons which could shape future governance in the maize and transport sectors. While introducing floor pricing reduces variances of wholesale prices, it only benefits net maize sellers who are seldom poor farmers but better off farmers who were never the targets for such reforms. Stakeholders need, therefore, to constantly generate awareness about the negative effects of these measures as a way of ensuring that policy makers glean important lessons in future. Such messages should also be in the agenda for advocates, especially NGOs who protect the interest of poor farmers in Zambia.

The subsidy regime also distorted the structure of the downstream supply and value chains by denying private sector participation in the farm input supply, agricultural marketing and food processing. In addition to destroying economic efficiency which would have resulted with more competition by the private sector, such policies also make farmers attitude towards credit repayment negative while failing to make them maize self-sufficient. Lessons can also be learnt from the manner in which maize millers received subsidies from government. This distorted competition as the process of selecting millers was not transparent, while at the same time millers pocketed huge profits as there were no measures to ensure that the millers transmit the benefits to the consumers. There is need for a message that ensures that subsidies that are not properly targeted are not re-introduced in Zambia. This is also a message that needs to be communicated well to the policymakers.

The fertiliser subsidy programme also revealed some loopholes on the enforceability of competition law in the system. There are general indications that there was not too much distribution in terms of companies winning the bids to supply the fertiliser, with possibilities of collusion being raised. Possibilities of collusion should always be investigated, even in retrospect. CCPC could thus develop a keen interest in the industry with the aim of taking corrective action once collusion is established.

In the transport sector, while the operators have largely benefited from the pro-competition reforms such as ensuring cheaper credit, market access and conducive infrastructure, the fare setting process is stilled skewed in the operators' favour. Passengers, especially in the intra-city transport sector, are heavily disadvantaged as bus fare constitutes a significant portion of their income. This calls for action among all the stakeholders in the sector aimed at ensuring that there is competition among the operators in the fare setting process. Currently, there is no price competition among the operators, which also reduce incentives to invest in quality enhancing mechanisms.

The quality issue is also something calling for attention, as there does not appear to be proper mechanisms designed to make operators compete for quality. At bus termini, the first come first load principle does little to give incentives to operators to invest in quality as they are assured of patronage regardless of the status of the buses. This is also compounded by the use of touts to solicit for custom, whose behaviour is hardly regulated. Efforts also need to be turned towards ensuring that this is addressed.

The licensing regime was generally found to be fairly easy for bus operators. However, attention now needs to be shifted towards ensuring that the multiplicity of regulators operate in a harmonised manner to reduce compliance costs as well as routes for corruption.

References

- Abbink. K., Jayne T. S., and L.C. Muller. 2008. *The relevance of rules-based maize marketing policy: an experimental case study of Zambia*. World Bank.
- Baron, D.P. (1970). *Price Uncertainty, Utility, and Industry Equilibrium in Pure Competition*. International Economic Review 11(3): 463-480
- Govereh, J T.S. Jayne, and A. Chapoto. 2008. *Assessment of Alternative Maize Trade and Marketing Policy Interventions in Zambia.* Working Paper No. 33. Lusaka, Zambia: Food Security Research Project.
- Govereh, J., Jayne, T. S., Nijhoff, J. J., Shawa, J. J., Haantuba, H. H., Belemu, A., ... & Banda, A. K. (2002). *Developments in fertilizer marketing in Zambia: Commercial trading, government programs and the smallholder farmer* (No. 54604). Michigan State University, Department of Agricultural, Food, and Resource Economic
- IFDC (2013). Zambia Fertilizer Assessment.
- Kuteya, A. N., and Jayne.T.S (2012). *Is the Government of Zambia's Subsidy to Maize Millers Benefiting Consumers?* Indaba Agricultural Policy Research Institute. Working Paper No. 67. Lusaka, Zambia: IAPRI.
- Kuteya, A. N., Chisanga, B., and Sitko, J (2014). *Did the removal of subsidies in 2013 lead to higher mealie meal prices?* Indaba Agricultural Policy Research Institute Policy Bulletin No. 01. Lusaka, Zambia: IAPRI.
- Mason, N. M. and T. S. Jayne (2009). *Staple Food Consumption Patterns in Urban Zambia: Results from the 2007/2008 Urban Consumption Survey*
- Mason, Nicole M. & Jayne, Thomas S. & Myers, Robert J (2012). *Smallholder Behavioural Responses to Marketing Board Activities in a Dual Channel Marketing System: The Case of Maize in Zambia*,2012 Conference, August 18-24, 2012, Foz do Iguacu, Brazil 126927, International Association of Agricultural Economists.
- Mwanaumo, A (1999). *Agricultural Marketing Policy Reforms in Zambia*. Paper presented at the Fourth Agricultural Transformation Workshop, Tegemeo Institute, Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, 27–30 June. Nairobi, Kenya.
- Mwanaumo, A (2012), A *Presentation on Road Infrastructure Bonds* at a Trade Mark Conference in South Africa on 30th November 2012 trademarksa.org/sites/default/files/publication/30-11-12, Accessed on 24th August 2013
- Myers, Robert J. (2006). *On the costs of food price fluctuations in low-income countries*. Food Policy, Elsevier, vol. 31(4), pages 288-301, August.
- Sandmo, A. (1971). *On the Theory of the Competitive Firm under Price Uncertainty*. American Economic Review 61(1): 65-73
- Sitko. N., (2014). *Agricultural data and policy implications in Zambia*. Presentation at the cooperation partners group meeting. IAPRI. Lusaka. Zambia.

- Wangia. C, Wangia. W., and De Groote. H. (2002). *Review of maize marketing in Kenya: implementations and impact of liberalization, 1989-1999*. Proceedings of 7 th Eastern and Southern African Regional Maize Conference. Nairobi, Kenya, 11-15 February.
- Xu Z., Guan Z., Jayne T.S. and Black, R. 2009. *Factors Influencing the Profitability of Fertilizer Use on Maize in Zambia*. Agricultural Economics: 40(1): 437-446
- Xu, Z., W.J. Burke, T.S. Jayne., and J. Govereh (2009). *Do Input Subsidy Programs "Crowd In" or "Crowd Out" Commercial Market Development?* Modeling Fertilizer Use Decisions in a Two-Channel Marketing System. Agricultural Economics 40(1):79–94

1983 2012 CUTS International

www.cuts-international.org