

RESEARCH REPORT

**ASSESSMENT OF THE FEASIBILITY OF
IMPLEMENTING THE FARMER INPUT SUPPORT
PROGRAMME (FISP) THROUGH AN ELECTRONIC
VOUCHER SYSTEM IN ZAMBIA
A CASE STUDY OF PETAUKE DISTRICT**

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A research report submitted to Mulungushi University as a partial fulfillment of the requirement of the award of a Diploma in Social Work.

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ACRONYMS

ACF	Agricultural Consultative Forum
ACTESA	Agricultural Commodity Trade In Eastern and Southern Africa
BEO	Block Extension Officer
CFU	Conservation Farming Unit
COMESA	Common Market for Eastern and Southern Africa
COMRAP	COMESA Regional Agricultural Programme
CSPR	Civil Society for Poverty Reduction
DAC	District Agricultural Committee
DACO	District Agricultural Coordinating Officer
DMCO	District Marketing Coordinating Officer
FAO	Food Agricultural Organization
FISP	Farmer Input Support Programme
FISP	Fertilizer Support Programme
FSRP	Food Security Research Project
MACO	Ministry of Agriculture and Cooperatives
MTZL	Mobile Transactions Zambia Limited
NCZ	Nitrogen Chemicals of Zambia
PRSP	Poverty Reduction Strategy Paper
SAO	Senior Agricultural Officer
SSA	Sub-Saharan Africa
VSC	Voucher Scratch Card

ZARI

Zambia Agricultural Research Institute

DECLARATION

I declare that this report is my own work, that it has not been submitted for any Diploma/degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Student Name

Kapela Mwangi

Signed.....

Date:

Name of Supervisor: Professor Sichone

Signature:

Date:

DEDICATION

This work is dedicated to my Husband, Mr. Lungu Geoffrey and my daughter Frolence Lungu for the encouragement and support rendered to me during the period of undertaking this programme. My husband ensured that within the family emerge resources, that I would have a sound education which has stood me in good stead up to the level of my university achievement.

ACKNOWLEDGEMENTS

The preparation of this document demanded the involvement of many stake holders whose contributions have been fully acknowledged below.

- ❖ I am indebted to the entire faculty of Mulungushi University for accepting me to study at their reputable institution. Special thanks go to World Food Programme, Ministry of Agriculture Petauke district for attaching me at their institution during my research field work.
- ❖ On a more academic level, my research supervisor Professor Sichone deserves a special mention. His inclusive and constructive comments made me go to an extra mile in my quest for knowledge. He was my tower for academic excellence during my research, not forgetting all Lectures at Mulungushi University for their critical analysis of my research report making it a factual presentation of the academic work.
- ❖ Last but not the least I owe special thanks to all my respondents and friends' for the support rendered during my academic work.

ABSTRACT

Since 2002, the Zambian government has been spending about 40 percent of the agricultural sector budget on the Farmer Input Support Programme (FISP). This is a recurrent subsidy aimed at increase agricultural productivity, rural incomes, and national food security, while at the same time aiding in the development of private sector input markets. While it cannot be disputed that during the FISP period, the nation has experienced tremendous increases in maize production, this has been achieved at a huge cost to the treasury while the impact on both input market development and poverty has been minimal.

In response to the persistent concerns regarding FISP, Government commissioned a team to investigate alternative modes of improving input utilization and input market development in smallholder farming areas. However, one of the most important recommendations made by the team—that the government adopt a voucher-based system for procuring and distributing inputs—has yet to be implemented. A voucher-based system for managing input distribution and procurement is seen as a way of addressing many of the problems that continue to plague FISP.

Regardless of the potential that e-vouchers have in addressing some of the challenges faced under the current FISP, government has been reluctant to initiate a voucher-based system for implementing the FISP. Among the reasons advanced for this reluctance include concerns about the current input supply networks to effectively implement and utilize the system, especially in remote areas where the agro-dealer density is thin and mobile phone services may not be adequate; non-availability of cash at the time of procuring inputs as well as political and food production concerns if the system fails to perform as expected.

Utilizing data gathered from existing voucher-based pilot programs currently operating in Zambia, the study assessed the potential and feasibility for

implementing the FISP or part of the FISP through a voucher system. The following findings emerged from the analysis.

1. An e-voucher system is likely to improve the competitiveness of fertilizer distribution in rural Zambia, which is currently more underdeveloped than the seed sector. This growth in competitiveness will likely reduce the costs of fertilizer in rural areas and encourage the distribution of fertilizer types that are appropriate for Zambia's varying agro-ecological zones. The current FISP system is seen to discourage crop diversification. Our data shows that the choices of input selected by e-voucher beneficiaries do not differ much from that under FISP. Despite a range of inputs being available under the e-voucher, the majority of farmers will first get basal dressing, maize seed and top dressing before getting any other non-maize products.
2. Targeting of beneficiaries is likely to be improved through improved monitoring of who gets the inputs and how much they get, because e-voucher systems use an improved database that electronically links beneficiaries to inputs to be collected.
3. E-voucher systems effectively address the issue of timeliness of input delivery by relying on the private sector to assume the responsibility of input procurement and distribution to rural retail outlets. Our evidence shows that virtually all beneficiaries had procured their inputs by November.
4. As much as agro-dealers still find it easy to stock seed, probably due to high competition levels among seed suppliers, they still have a problem stocking fertilizers as most of them do not have supply relationships with suppliers. This is an important obstacle that must be addressed if FISP is going to be successfully implemented through an e-voucher system.
5. By transferring responsibility for input distribution from MACO staff to private sector the e-voucher is not only likely to build local business capacity and free time for MACO staff to concentrate on their core business, but also increase farmers access to extension as agro-dealers were also found to provide extension services in a bid to improve customer relationships.

6. Some remote areas only had one agro-dealer each. These agro-dealers were too small and lacked the capacity to supply even the small e-voucher quantities in the pilot programme. This leads to questions about their ability to handle the larger FISP programme. However, our evidence shows that in isolated areas where local agro-dealers struggled to meet demand, the guaranteed market provided by the e-voucher served as an incentive for other agro-dealers to fill the gap. However, there were reports that in filling this gap, agro-dealers hiked prices, provided farmers with limited choices of inputs, and only gave farmers a very short window in which to redeem the vouchers.
7. In terms of the challenges with e-vouchers faced by farmers, the majority (57.1 percent) considered the distance from the agro-dealers to the farms as the biggest challenge faced, followed by non-availability of inputs (14.1 percent) and poor mobile phone connectivity (7.6 percent)
8. Based on our findings, while there are clear benefits to utilizing e-vouchers for FISP, certain recommendations in terms of rolling out must be followed. These include:
 - a. Geographically phased approach: this is necessary given the variations in terms of agro-dealer concentrations, infrastructure availability, and farmer concentration as well as the importance of agriculture (particularly maize) to the local population across districts. We recommend that government focuses its roll-out efforts in more accessible regions, while piloting the program a two or three more remote districts.
 - b. Radical measures need to be undertaken, such as government-backed credit guarantees for agro-dealers, to ensure adequate availability of key commodities in agro-dealer shops, particularly for fertilizer. This will require serious coordination between agro-dealers, suppliers and financial institutions. Government must play a lead role in this coordination process

- c. Creation of a stop order facility within the mobile transactions providers that will allow small agro-dealers to automatically repay their input suppliers as vouchers are redeemed and enable them access credit facilities.
- d. E-voucher cards should be designed to be flexible, so as to permit farmers to acquire a variety of inputs and to source inputs from various agro-dealers in their region.
- e. If the FISP is to be implemented through the e-voucher, then funds must be made available immediately so as to compensate agro-dealers. The government cannot rely on the private sector to carry the debt, as they do now. This may require better financial management
- f. Government and cooperating partners must partner to assist the FISP implementation office in MACO to undertake a series of start-up planning, organization and training activities. This should include completion of a computerized farmer registry, e-voucher program design/implementation details, and agro-dealer accreditation and farmer sensitization/training. This activity should be done in consultation with FAO, CFU, WFP, MTZL, ACTESA-COMRAP and other stakeholders who have experience in the implementation of the e-voucher.

CHAPTER ONE

1.0 Background Information

This research report assesses the feasibility of implementing the Farmer Input Support Programme (FISP) through an Electronic Voucher System. Since 2002, the Zambian government has been spending about 40 percent of the agricultural sector budget on the Farmer Input Support Programme (FISP). This is a recurrent subsidy aimed at increase agricultural productivity, rural incomes, and national food security, while at the same time aiding in the development of private sector input markets. While it cannot be disputed that during the FISP period, the nation has experienced tremendous increases in maize production, this has been achieved at a huge cost to the treasury while the impact on both input market development and poverty has been minimal.

In response to the persistent concerns regarding FISP, Government commissioned a team to investigate alternative modes of improving input utilization and input market development in smallholder farming areas. However, one of the most important recommendations made by the team—that the government adopt a voucher-based system for procuring and distributing inputs—has yet to be implemented. A voucher-based system for managing input distribution and procurement is seen as a way of addressing many of the problems that continue to plague FISP.

Regardless of the potential that e-vouchers have in addressing some of the challenges faced under the current FISP, government has been reluctant to initiate a voucher-based system for implementing the FISP. Among the reasons advanced for this reluctance include concerns about the current input supply networks to effectively implement and utilize the system, especially in remote areas where the agro-dealer density is thin and mobile phone services may not be adequate; non-availability of cash at the time of procuring inputs as well as political and food production concerns if the system fails to perform as expected.

Utilizing data gathered from existing voucher-based pilot programs currently operating in Zambia, the study assessed the potential and feasibility for implementing the FISP or part of the FISP through a voucher system The FSP was launched by the Government of

the Republic of Zambia (GRZ) in 2002 as a temporary measure to provide subsidized hybrid maize seed and fertilizer packages to smallholder farmers and to promote the participation of private traders in supply. When the FSP was announced, the Government indicated that farmers would be eligible to receive support for two consecutive seasons only and that the subsidy level would be reduced by 25% per year.

The program was meant to run for three years to the end of the 2004/05 farm season. Contrary to these initial plans, the scale of FSP operations has grown significantly since the program was launched with large additions to the numbers of farmers targeted in some years, a change in the subsidy level from 50% to 60%, little attention to the intended two-year “graduation” requirements, and a significant escalation of total costs and cost per beneficiary. The budgeted amount for 2007/08 was ZMK 150 billion.

Many parts of Zambia especially Southern, Western, Eastern and Central parts have, in the last two decades, become drought prone areas with annual rainfall ranging between 500 – 700mm. However, during the 2008 farming season, Southern and Western provinces, which usually experiences seasonal droughts, were affected by severe flooding. Floods, excessive rainfall, unevenly distributed rains; drought and other sudden extreme weather conditions including soil fertility decline pose a serious challenge to the agricultural livelihoods of many households and communities in Zambia. The negative effect of floods and droughts in these areas poses a risk to the already fragile farming environment upon which the rural livelihoods are dependant.

The challenges of agriculture among small scale farmers include low farm productivity and continuing yield decline as a result of soil degradation associated with inappropriate farming practices. HIV/AIDS, together with high costs of external inputs and the vagaries of climate change continue to negatively impact on the agriculture landscape for small scale farmers. Land degradation as a result of inappropriate farming practices, climate variability and rising input costs have all contributed to declining crop production and productivity among small scale farmers (SSFs) in Zambia.

1.1 Statement of the Problem

Moreover, despite the high spending on FSP input subsidies and FRA price support, very little attention has been given to how these two parts of Zambia's larger subsidy program work together. Each year the total size of the FSP and level of input price support is decided separately from funding decisions for the FRA and what price it will pay for maize. Farmer profitability is a function of input costs and output prices and these variables need to be considered together in deciding on effective subsidy policy. Particularly, if the objective is to "graduate" farmers from the FSP after two years, there needs to be a clear focus on input and output prices to know if farmer profits make this goal realistic. While the overall performance of Zambia's total subsidy program is not a subject for investigation of the present study, these observations suggest that Zambia may be missing an important opportunity to get better value for its spending on agriculture.

1.3 General objective of the study

The main objective of the study was to assess feasibility of implementing the farmer Input Support Programme (FISP) through an Electronic Voucher System in Zambia.

1.4 Specific objectives

1. To assess whether or not e-vouchers can address the main short-comings of the current FISP system.
2. To examine how transparent is the e- voucher compared to the FISP.
3. To examine farmers opinions on the weaknesses of e- vouchers.
4. To identify the implications of the farmer input support program (FISP) on crop production amongst small scale farmers in Petauke.

1.5 Hypothesis

It was hypothesised that, small scale farmers have not benefited from e-voucher in the Farmer Input Support Program.

1.6 Research Questions

1. What are the major challenges faced by small scale farmers in Petauke in using.
2. Who are the major beneficiaries of the farmer support program?
3. What benefits have the small scale farmers benefited from the farmer support program.

1.7. Rationale/Significance of the study

The empirical findings or results from this study can help to position stakeholders and policy makers in the Ministry of Agriculture and Cooperatives in Zambia to make informed judgments about what pupils would want to be taught in their school science courses. Through that, they can identify the contextual variables that may be modified to bring about improvement in policy implementation in the agriculture sector.

1.8 Limitations of the study

Undoubtedly, a study of this magnitude and sensitivity was confronted at two major fronts, by respondents not being willing or free to tell the truth by way of protecting their self image or may fear to expose their superior's weaknesses.

1.9 Scope of the study

The study focused on the period of 10 years from 2001 to 2011.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction to the chapter

The proceeding chapter presents Literature review in relation to the subject under discussion. The first part is the discussion on the Farmer Input Support Programme, second part deals with the eligibility of the FSP.

2.1 Background of Farmer input support programme

The Fertilizer Support Program (FSP) was launched by the Government of Zambia in 2002 as a temporary measure to provide subsidized input packages for maize to smallholder farmers and to promote the participation of private sector traders in supplying these producers in all areas around the country. In 2007, the FSP accounted for roughly 30% of the Ministry of Agriculture and Cooperatives' (MACO's) total budget allocation and 45% of the discretionary budget for poverty reducing programs. Originally the FSP was to last for three seasons, but it is now in its eighth year at the field level.

ii. Given the importance of agriculture to Zambia and high level of spending on the FSP, the Government expressed an interest to the World Bank to assist in better understanding the efficiency of its allocations to the sector. Does spending on the FSP represent good value for money and has the program made an effective contribution to agriculture production and other national priorities such as rural poverty reduction, improved domestic and household food security, and private sector development? What are the program's main strengths and limitations, and how could FSP be improved?

iii. This impact assessment was prepared together with the Government to help answer these questions. The GRZ's commitment to transparent, value for money analysis of the agriculture budget is itself an important part of achieving Zambia's strategic development objectives for the rural sector as set out in the documents "Vision 2030" and "Fifth National Development Plan" (FNDP). With this report, the World Bank aims

to support national policymakers and other agriculture stakeholders by providing empirical information needed for transparent discussions and meaningful deliberations on the current and future role of agricultural input subsidies in Zambia.

The FSP is meant to build the “capacities of both the private sector and smallholder producers” as part of “a well-managed transition to full market liberalization.”² The FSP Implementation Manual notes that several positive developments have been recorded in agriculture since the introduction of economic reforms, but that the capacity of private firms has remained constrained in providing essential marketing services including the ability to supply inputs to smallholders in adequate and timely amounts. The FSP was therefore conceptualized as a program that would improve the access of smallholder farmers to inputs and enhance the participation and competitiveness of the private sector to supply these farmers in the future (MACO,2011).

To achieve these objectives, the FSP was designed to distribute 1ha maize input packs to qualifying farmers at subsidized prices. Each FSP pack was meant to consist of 20kg hybrid maize seed plus four 50kg bags of Compound D basal fertilizer and four 50kg bags of Urea top dressing fertilizer (i.e. 20kg seed + 4x4 fertilizer).⁴ FSP inputs were to be accessed only through approved farmer cooperatives and other farmer groups who would apply through local District Agricultural Committees (DACs) for their members to receive support. According to the original design, farmers were to be “graduated” from the FSP after two consecutive years by which time it was believed they would be able to stand on their own. Farmer payments were to be collected by the sponsoring cooperative or farmer group and deposited in local bank accounts as a condition for the inputs being released. Table 1 provides an overview of budgeted amounts and number of households planned as beneficiaries since the program was launched. As indicated, MACO expects every 1ha FSP pack it budgets for to result in three tons of maize being produced.

Since 2002, the Zambian government has been spending about 40 percent of the agricultural sector budget on the Farmer Input Support Programme (FISP). This is a recurrent subsidy that is meant to address the problems of poor access to improved

inputs, high food insecurity and poverty levels, low farm incomes, low national effective demand for fertilizer, and the high cost of farm inputs (fertilizers and seeds) at farm-gate levels. Overall the FISP, is meant to be a gradual subsidy and part of “a managed” transition towards full market liberalization through increased private sector participation in the supply of agricultural inputs to small scale farmers (CSPR, 2011/ACF, 2009).

While it cannot be disputed that during the FISP period, the nation has experienced tremendous increases in maize production (Mason et al., 2011), this has been achieved at a huge cost to the treasury while its impact on poverty has been minimal. Furthermore, there are other concerns raised by stakeholders as regards the program’s operations and objectives. Various reviews (CSPR, 2011; ACF, 2009; World Bank, 2010 and CSPR, 2005) show that the programme has faced many challenges among which include:

- i. Poor targeting of farmers/beneficiaries;
- ii. Delays in input distribution;
- iii. Poor fertilizer use efficiency among targeted farmers;
- iv. Crowding out of private sector participation in input markets;
- v. Long-term concerns about the FSP sustainability in terms of financial and human resource usage;
- vi. Poor monitoring of program effects making it difficult to measure programme achievements against objectives;
- vii. Inconsistency in policy implementation, especially in reversal of plans to reduce the subsidy level, and to stimulate agro-dealer development;
- viii. Promotion of maize at the expense of other cash crops, thus negatively affecting efforts to promote crop diversification.

In February, 2009 the government responded to the persistent concerns regarding FISP by commissioning a team to investigate alternative modes of improving input utilization and input market development in smallholder farming areas. More specifically, through an investigation of alternative input subsidy programmes being developed in the region, the team was tasked with providing concrete recommendations on improving: 1. The timeliness and cost-effectiveness of FISP input procurement and distribution; 2. Improving FISP's impact on food security, and; 3. Ensuring FISP has a positive impact on both rural poverty and rural input market development (ACF, 2009)

The recommendation that came out of this study led directly to significant changes in the operation of FISP. However, one of the most important recommendations made by the team—that the government adopt a voucher-based system for procuring and distributing inputs—has yet to be implemented. Based on the study's findings, a voucher-based system of procuring and distributing agricultural inputs is likely to eliminate many of the problems faced by the FISP in its current form.

The purpose of this report is to assess the feasibility of utilizing an e-voucher system to address some of the persistent shortcomings of the current FISP program and to determine whether or not input markets in Zambia are sufficiently well-developed to support an e-voucher system.

As Minot and Benson (2009) show, e-vouchers are a form of smart subsidy designed to provide goods and services in ways that promote both market development and improved welfare conditions for the poor. The e-voucher is a mobile delivery and tracking system that uses electronic vouchers to distribute subsidized products through private-sector suppliers, to targeted farmers. This innovative approach to subsidized product distribution involves a web based system that can be accessed via internet on mobile phones. This allows for real time registration of beneficiaries and electronic payment to local retail agents who distribute the products.

In Zambia, e-voucher based distribution systems are currently being used by the World Food Programme (WFP), Conservation Farming Unit (CFU) and the Food and Agricultural Organization (FAO) Farmer Input Research Initiative (FISRI). According to

these organizations, the system which was developed with a local private sector partner, is seen as a means of reducing the bureaucracy, logistical and operational overheads associated with traditional subsidy delivery methods (such as the FISP) through delegating functions such as input procurement, distribution and storage among others to the private sector. By so doing these organizations seek to improve the overall impact of their aid spending on beneficiaries.

In theory, the voucher systems being developed by these organizations directly address the challenges faced under the current FISP. Under the current e-voucher systems beneficiaries receive a Voucher Scratch Card (VSC) from the extension officer, which entitles them to a specified array of agricultural inputs and implements that can be collected at nearby retail agro-dealer outlets. On confirmation of the transaction, the agro-dealer receives instant payment to their online account which they can transfer to their personal bank accounts thus facilitating real-time payment. Thus, rather than government staff taking responsibility for the sourcing, distributing, storing and distributing inputs, as is the case under the current FISP system, the voucher system utilizes the private sector to perform most of these logistical responsibilities. Thus, e-vouchers have the potential for simultaneously providing farmers with low cost inputs, while supporting small business development and strengthening local economies as well as freeing up time for government staff to perform their core business.

The e-voucher also has the potential to be used as a tool for crop diversification. E-vouchers give farmers the opportunity to choose products from local agro-dealers that best meet their specific needs. Rather than being provided a standard set of inputs for maize production as is the case under the current FISP system. Because farmers can choose to use their e-vouchers on a variety of products and brands carried by their local agro-dealers, more-vouchers have the potential to increase the number of companies involved in supplying inputs to farmers. This represents a potentially radical change from the current FISP system which sources fertilizer from only two to three suppliers out the more than 15 fertilizer companies that operate in Zambia. By stimulating competition among fertilizer companies, e-vouchers may help to eliminate the current

FISP practice of distributing uniform fertilizer types across Zambia's diverse agro-ecological and soil conditions for logistical convenience.

Furthermore, by opening up the supply of inputs to all input suppliers in the country the voucher would eliminate government's involvement the input procurement system as no tendering would be required. Similarly government staff would not be involved in the onward delivery of inputs from the districts to the satellite depots. By utilizing private sector distribution networks to connect large-scale suppliers with local agro-dealers there is potential to eliminate the recurrent problem of late input delivery that plagues the current the FISP system.

Regardless of the potential that e-vouchers have in addressing some of the challenges faced under the current FISP, government has been reluctant to initiate a voucher-based system for implementing the FISP. Among the reasons advanced for this reluctance include concerns about the current input supply networks to effectively implement and utilize the system, especially in remote areas where the agro-dealer density is thin and mobile phone services may not be adequate. Other concerns include the non-availability of cash at the time of procuring inputs as well as political and food production concerns if the system fails to perform as expected. These are valid concerns and deserve careful consideration when assessing the feasibility of implementing FISP through a e-voucher based system.

The current e-voucher pilot programmes being implemented by CFU and FAO in twelve districts may provide much needed clarity on the potential for FISP to utilize e-vouchers in ways that address some of the persistent problems that plague the current FISP system. Utilizing data gathered from existing voucher-based pilot programs currently operating in Zambia, this study seeks to assess the potential and feasibility for implementing the FISP or part of the FISP through a voucher system. The specific objectives of the study are:

1. Utilizing an analysis of existing e-voucher programmes in Zambia, combined with secondary analyses of voucher programmes in other countries in the region, assess

whether the voucher system can eliminate the problems or some of the problems associated with the FISP

2. Assess whether the concern of the government as regards weak agro-dealer network in most areas is founded
3. Provide concrete guidance on necessary policies, investments, and implementation modalities for adopting e-vouchers as part of Zambia's input distribution programme

CHAPTER THREE

RESEARCH METHODOLOGY

Study Design

The study used both the qualitative and quantitative designs in order to give accurate information on the research study under discussion.

Target Population

The informants were farmers, World Food Programme agricultural officers and District Agricultural Officers.

Sample Size

The sample size consisted of 40 respondents from Petauke, of which 5 Agriculture Officers from Petauke District Agriculture Office. However, it is worth noting that in most instances beneficiaries were drawn from more than the planned two camps to meet the sample target of 40 beneficiaries. Extension officers were also interviewed to get their views on the e-voucher vis-à-vis FISP. For Petauke district, two agro-dealers were also interviewed. Key informants included staff from MACO, CFU, FAO and the fertilizer importers Omnia, Greenbelt, Export Trading, Bridgeway Commodities, Nitrogen Chemicals of Zambia, and Zdenakie

Data Collection

Both primary and secondary data was used in collecting information. The study utilized qualitative methods such as semi-structured informal interviews for the survey study. The study relied on both secondary and primary data sources to address the research objectives.

Primary data sources includes the beneficiaries of these pilot voucher schemes and key informant interviews with stakeholders who in one way or the other have been involved in the implementation of the FISP and/or the e-voucher pilots in Zambia. In order to

address the government's concern about agro-dealer development in remote regions of the country data were collected in districts considered both accessible and remote.

Secondary data sources included the many studies that have been done on the Fertilizer Support Programme (FISP) in Zambia by institutions such as the World Bank, the Agricultural Consultative Forum (ACF) and the Food Security Research Project (FSRP). Together, these institutions have done extensive reviews of the implementation and operations of the FISP. Other secondary data sources included reports done on the voucher system of implementing input subsidies from countries such as Kenya, Malawi, Ghana, Nigeria and Tanzania. From these reports, the challenges, and opportunities that the voucher system present were examined so as to feed into the design of the current study.

Sampling Procedures

In order to select 40 respondents from the sample size the following methods were used:-

- ❖ Purposive sampling method was used in selecting District Agricultural Officers and World Food Support Programme.
- ❖ Stratified random sampling method was used in selecting small scale farmers from different 5 cooperatives within Petauke District.

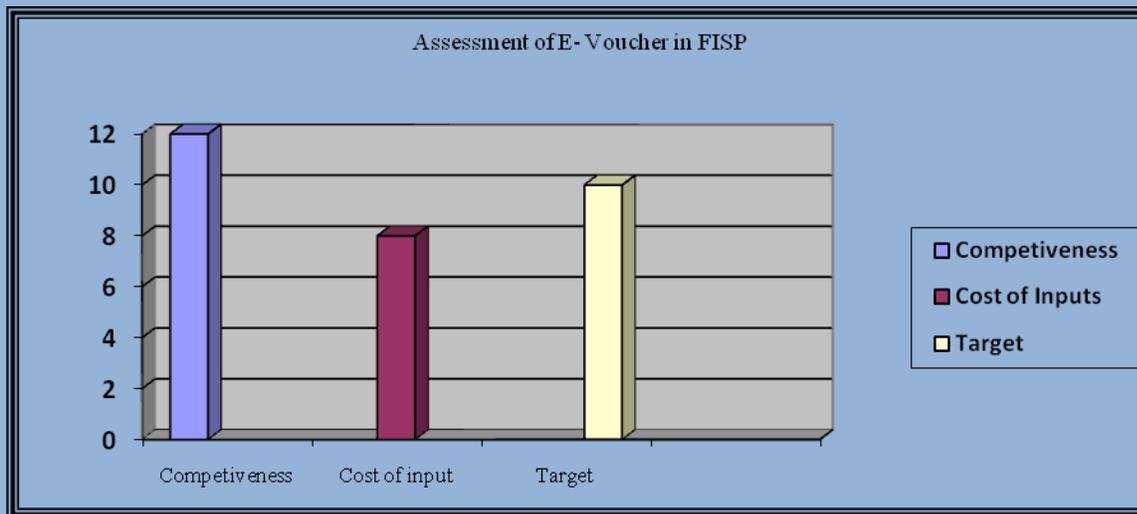
CHAPTER FOUR

PRESENTATION OF THE RESEARCH FINDINGS

5.0 Introduction to the chapter

The proceeding section presents the findings in relation to the research objectives.

5.1 Assessment of the feasibility of implementing the farmer Input Support Programme (FISP) through an Electronic Voucher System in Zambia.



FISP Impact on crop diversification

As presented above, the researcher found that out of 40 respondents, 12 respondents said that e vouchers have improved competitiveness of fertilizer distribution in rural Zambia in particular to the people in Petauke.

There are concerns that the FISP is having a negative impact on crop diversification as farmers have been shifting area and other resources from other crops to maize. For instance, in 2011, maize accounted for 61 percent of the value of all production compared to 48 percent in 2001 (Mason et al., 2011). Despite the consecutive years of above average maize production, the gross real value of Zambia's crop output has not exceeded its levels of the early 2000s, reflecting the fact that less land and labor is currently allocated to relatively high-valued crops. Blanket subsidies and the assured

market for maize have been drawing farmers from producing other cash crops, such as cotton. Examination of the cotton production statistics (Kabwe et al., 2011) show that in the last two years, despite consistent increases in cotton prices, Zambian cotton production has not risen as much as would have been the case if market distortions for maize were not in place. Furthermore, maize production has even been extended in areas which are not very suitable for the crop at the expense of other suitable crops, thus exposing the farmers to weather variability risks.

The voucher system is more flexible than the FISP in that farmers can theoretically select from an array of inputs other than for maize. In this regard, the voucher system can be used as a diversification tool, which is in line with the Patriotic Front's commitment of "correcting the mono-crop syndrome" by balancing of crops grown by small farmers (Patriotic Front, 2011). By varying the types of inputs that can be collected using region specific vouchers, the system can be used to tailor subsidies towards production of specific crops depending on suitability to the geographical placement and weather pattern.

Unlike the FISP system, where D-compound and urea are distributed countrywide (for logistical convenience) regardless of soil type and agro-ecological region, the voucher is flexible and allows for distribution of a variety of fertilizers to suit the agro-ecological regions. By simply indicating the quantities of basal dressing to be supplied, the agro-dealers would then source for the right type of basal dressing based on the agro-ecological region. Providing farmers with inputs that are appropriate for their agro-ecological conditions can improve returns to fertilizer use (Burke, 2011). Table 3 shows the types of inputs distributed using the vouchers in the pilot areas for both the FAO and CFU.

Table 1: Types of inputs collected by farmers in order of choice by voucher programme

Programme	Input type	Percentage of respondents who collected inputs as			
		1 st choice	2 nd choice	3 rd choice	4 th choice
CFU	Magoye Ripper	8.0	4.4	2.4	0.9
	Herbicides	13.6	11.7	16.5	23.9
	Knapsack sprayer	20.7	14.1	7.1	7.3
	Chaka hoe	9.4	15.6	18.2	26.6
	Maize seed	2.8	5.9	17.1	8.3
	Legume seed	0.5	5.4	12.4	5.5
	Basal dressing fertilizer	29.6	1.0	0.6	0
	Top dressing fertilizer	0.5	22.4	0.6	0.9
	Lime	3.3	3.9	7.6	12.8
FAO	Magoye ripper	4.7	2.2	1.5	3.1
	Herbicide	3.3	6.6	7.2	12.8
	Chaka hoe	12.4	5.9	14.3	27.0
	Knapsack sprayer	4.7	3.7	3.4	2.0
	Maize seed	15.3	8.8	31.4	27.0
	Legume seed	0.4	4.4	6.0	5.1
	Basal dressing fertilizer	48.5	24.5	8.0	2.0
	Top dressing fertilizer	5.5	40.7	19.3	9.7
	Lime	2.2	0.0	4.9	7.6

Under the Petauke pilot programmes assessed, the e-voucher was used to distribute a variety of inputs including seeds (legume (Common beans, Soya beans, groundnuts, cow

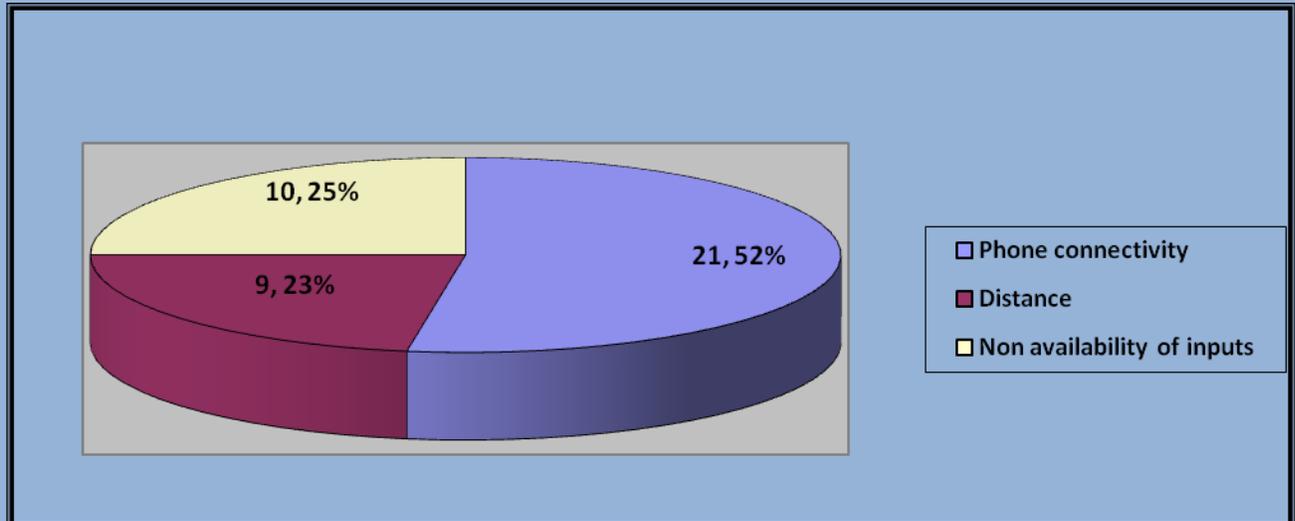
peas and velvet beans) and maize seed), fertilizers (basal and top dressing as well as lime) and implements (Magoye rippers and their accessories such as trek chains, bolts and spanners), knapsack sprayers and Chaka hoes. Farmers could pick an assortment of inputs and implements depending on preference until the money on the card was exhausted. They also had an option of topping up with cash where they wanted inputs worth more than the voucher amount. In terms of choices, basal dressing fertilizer ranked choice number one for the majority of both CFU (29.6 percent) and FAO (48.5 percent) beneficiaries. Surprisingly maize seed and top dressing fertilizer were ranked as first choices by very few farmers for both voucher programmes. However, top dressing fertilizer was ranked second by the majority under the CFU (22.4 percent) and the FAO (40.7 percent) beneficiaries. Similarly, maize seed was ranked third by the majority of the FAO beneficiaries (31.4 percent) while Chaka hoes were ranked third by majority of CFU beneficiaries (18.2 percent) followed by maize seed (17.1 percent).

It is worth noting that although a variety of inputs and implements were available, the order of the types of inputs collected by the majority of the beneficiaries (basal dressing fertilizer, top dressing fertilizer and then maize seed) does not seem to differ from the FISP. There were more farmers collecting lime under the CFU programme compared to the FAO programme. This is despite the FAO programme operating in high rainfall areas which are prone to acidity problems. Similarly, there were more CFU farmers collecting legume seed (though after as third and fourth choice) compared to FAO farmers.

8 respondents as shown on Figure 1 shows that e –vouchers have improved on the issue of targeting. Another persistent concern with FISP has been that of poor targeting of beneficiaries (CSPR, 2011; World Bank, 2010; CSPR, 2005). For instance, the CSPR (2011) shows that in Mazabuka and Choma, there have been instances where some eligible farmers have failed to raise the required down payment leading to cooperative leadership requesting some well off farmers to pay on their behalf and receiving more than the recommended one hectare pack. Consequently in terms of targeting, the programme is seen to be favoring the well-off farmers at the expense of the poor farmers

(who happen to be in the majority) leading to FISP having a very low impact in terms of poverty reduction.

5.2 Challenges faced by beneficiaries as regards redeeming the vouchers



The farmers were asked to provide the challenges that they faced with the e-voucher pilots. As shown on Figure 2 above, the researcher found three main challenges being faced by Petauke farmers as redeeming of the e voucher is concerned. Out of 40 (100%) interviewed, 10 respondents representing 25% in Figure 2 above shows non availability of farming inputs as a challenge.

9 respondents representing 23% indicated distance from the farm gate to the agro dealer in Petauke as a challenge for them as redeeming the voucher is concerned.

21 respondents representing 52% said that phone connectivity is a major challenge being faced by farmers in Petauke as redeeming the e – voucher is concerned.

5.3 Comparison of the e- voucher over FISP

Strengths and Weaknesses

As regards the strengths/weaknesses of the FISP as compared to the e-voucher the respondents were asked to state their perceptions on the two modalities of input distribution. Over 90 percent reported that the e-voucher had more strength as opposed to the FISP. The respondents were further asked to rank the strengths of the e-voucher as opposed to the FISP. Receipt of inputs by intended beneficiaries on time was ranked first by 40 percent and second by 17 percent (table 3) which is receiving inputs by intended beneficiaries.

Table 3: Ranked number one as a strength of the e-voucher versus FISP

Strength of e-voucher over FISP	Frequency	Percent
Inputs are received on time	16	40
Inputs always get to the intended beneficiaries	7	17
The system is less complicated	4	10
Always get the correct inputs	6	15
Don't have to travel far to get	6	15
Other	1	3
Total	40	100

Further, receipt of correct inputs and not travelling far to get the inputs was on the same rank as shown on table 2 below.

The research also shows that, the e- voucher system is a less complicated system as shown above on table 2.

5.4 Farmers opinion on weaknesses of the E-voucher

Those farmers who reported late delivery as a problem of the e-voucher were disaggregated by district. Table 3 shows that the majority of the farmers who identified late delivery of inputs as a weakness of the e-voucher were those in the isolated districts. This implies that the e-voucher did not have much impact on timeliness of delivery in the isolated districts areas of Petauke.

Item	Frequency	Percentage
Late delivery of inputs	16	40%
Long distances to agro-dealers	9	23%
Poor quality inputs	7	17%
Difficulties in redeeming vouchers	8	20%
Agro-dealers over-charging for inputs		
Total	40	100%

Disaggregated by Petauke district, although the distance still remains the major challenge (table 3) the proportion of beneficiaries who cite distance as the main challenge is smaller for the rural districts within a province as compared to those in urban districts. For instance, in Eastern province, Petauke which is less remote had the majority of the respondents (23 percent) citing distance as the major challenge while other farmers which are more remote cited the same reason. The likely reason for this is that in most remote areas that do not have local agro-dealers, dealers from nearby towns would bring truck loads of inputs on selected days near them for collection. Whether or not agro-dealers would perform in the same way if e-vouchers were scaled up under FISP is difficult to determine.

CHAPTER FIVE

DATA ANALYSIS

5.0 Introduction to the Chapter

The proceeding chapter presents the analysis of the research findings in relation to the research objectives and the hypothesis.

5.1 Assessment of the E-Voucher system in farmer Input Support Programme

As presented in the previous chapter, Farming support programme has a positive impact on crop production in that it lifts the small scale farmers who cannot afford to buy farming inputs in time and on a large scale.

Despite its positive effects the research shows that the project is characterized by late delivery of farming inputs by the government.

One apparent reason for this outcome was a significant over subscription of farmers by participating coops before they knew their actual allocation. Although the FSP design anticipated an orderly process of informational meetings and farmer selection to ensure the right people got the inputs, many of these procedures were either not followed or happened too late in the season to be effective. Thus far, the allocation of subsidized inputs across the country has been based primarily on the proportional distribution of farmers in each district. Because the most populous areas usually also have the best developed private supply networks, therefore, a large amount of the total subsidy has gone to areas where there is already reasonable private supply capacity while less populous areas, where farmers have fewer private sector alternatives, are left behind. The universal recommendation to apply a 4x4 maize input pack is also inconsistent with important differences in climate, market access, and individual farmer objectives. In the sampled areas, for example, 6% of beneficiaries said they relied more heavily on cassava for their staple food than maize and would likely have benefitted more from other kinds of support than the FSP was designed to provide.

5.2 Assessment of specific stakeholder's concerns as regards e-voucher

As earlier indicated, regardless of the potential that e-vouchers have of addressing some of the challenges faced under the current FISP, government has been reluctant to initiate a voucher-based system for implementing the FISP or part of the FISP. Among the concerns raised include the capacity of the current input supply networks to effectively implement and utilize the system especially in remote areas where the agro-dealer density is thin and the adequacy of mobile phone services in the country. To assess these concerns, we draw on data from the key informant interviews at MACO, agro-dealers, as well as farmer beneficiaries of current e-voucher systems.

5.3 Assessment of the current status of agro dealer networks

According to the IFDC, the private sector agro-input supply sector is usually made of two main categories: i) importers or suppliers; ii) distributors, retailers and or agro-dealers. The importers are interested in the agro supply sector as part of many other activities and see participation in Government invitations to tender as a lucrative business opportunity with limited financial risk. They do not generally invest in the promotion and distribution of the inputs nor technology transfer associated with input use and have little, if any interaction, with the farmers. On the other hand, agro-dealers are present in the field and have direct links with the farmers. They do not have the financial standing necessary to procure from international suppliers (they depend on the importers/suppliers) but these agro-dealers have the incentive to build their business through increased sales to local farmers and are most interested in increasing their product and business knowledge and in creating demand for agro-inputs by transferring profitable technologies to their farmer customers.

Before liberalization, the state-owned Nitrogen Chemicals of Zambia (NCZ) was the sole supplier and distributor of fertilizer in the country. However, with the introduction of market reforms from the early 1990s, private traders and distributors were allowed to enter the sector. Although these were perceived to have managed to supply the commercial farm sector, the Government saw that not enough capacity existed to serve smallholder producers in all parts of Zambia, especially in outlying areas. Twenty years

down the line, the government still views the private sector as not being capable of effectively filling the gap left by Government's withdrawal from fertilizer markets.

For each of the eleven (11) districts covered during the survey, two agro-dealers were interviewed making a total of 22 interviews for agro-dealers. However, it is worth noting that even though some agro-dealers were operating in more than one district, there representatives at the district level were still interviewed to get district specific information. For a full list of these agro-dealers, their areas of operation and contact details see annex 2. As regards the government's concern on agro-dealer capacity, the data from the survey shows mixed results. In terms of experience, the agro-dealers were found to have been operating for between 5 to 20 years implying that most are well established in the agro-input business.

Survey results show that agro-dealer's capacity to supply inputs was dependent on location and the type of inputs (i.e. whether fertilizer or seed). Fertilizer was quite a challenge for most of the agro-dealers especially in the remote areas. Lacking supply relationships with fertilizer importers, some agro-dealers had to make several trips to Lusaka to procure fertilizer as they do not have enough capital to procure in bulk. Some agro-dealers reported having to procure fertilizer at retail price, spending days on the queues as well as being required to pay cash. This limits their capacity to supply large quantities. Fertilizer prices also exhibited price variations across the agro-dealers and within agro-dealers. This was attributed to the different transportation costs as dealers had different experiences with each batch they procured.

As regards seed supply, most agro-dealers had sufficient capacity to supply the e-voucher demand without any problems. This was mostly because they had well established relations with seed companies who supply them the seed on consignment and bear the costs of transportation. Most agro-dealers said they e-voucher had benefited their businesses a lot especially as regards improving their relationships with seed suppliers. Among the reported benefits include:

- i. Increased business volumes even for non-voucher products as farmers got other products as well when they came to redeem vouchers

- ii. They got a lot of publicity which has boosted their businesses
- iii. Due to increased seed sales resulting from the e-voucher, some agro-dealers had their commissions raised from 12 percent to 14 percent
- iv. Some agro-dealers had been promoted to handle mini-depots as a result of increased sales of seed

Some remote areas such as Sinazongwe and Chiengi only had one agro-dealer each. These agro-dealers were too small and lacked the capacity to supply even the small e-voucher quantities leading to questions about their ability to handle the larger FISP programme. However, agro-dealers from other districts were called in to assist, and where this happened, it was shown that farmers did not have to travel long distances to redeem the vouchers as the agro-dealers set camp near their villages. However, there were complaints of price hiking; limited choices and farmers being given a very short window in which to redeem the vouchers. This implies that if the voucher system was to be implemented, it would call for geographical targeting as some areas are less suitable.

5.4 Assessment of beneficiary perceptions of the e-voucher

To further assess the capacity of the current input supply networks to effectively implement and utilize the e-voucher system, especially in remote areas where the agro-dealer density is thin and mobile phone services may not be adequate, was done by asking beneficiaries perceptions about the services received.

The farmers were asked to provide the challenges that they faced with the e-voucher pilots. Table 2.8 shows that the majority of the farmers (57.1 percent) considered the distance from the agro-dealers to the farms as the biggest challenge faced. This was followed by non-availability of inputs (14.1 percent) and poor mobile phone connectivity (7.6 percent). Under the FISP, inputs are delivered up to the camp level and farmers do not have to travel long distances to collect them. Similar concerns were expressed by MACO who felt that the e-voucher programme would disproportionately affect some farmers who would stop getting fertilizers as they may not be able to travel the long distances.

Crowding out effects of the FISP

By subsidizing the cost of inputs, it was anticipated that the FISP would generate the requisite market demand among smallholders to incentivize private sector investment in input distribution networks, thus reducing need for direct government involvement in input distribution. Furthermore, by contracting private firms to distribute fertilizer on behalf of government, the FISP was intended to reduce the average fixed costs that private firms would otherwise face in developing supply channels to remote areas, thereby “crowding in” private investment (Xu et al., 2009).

However, despite this clear objective there are major concerns that FISP in its current form may in fact be limiting private sector market development (World Bank, 2010). In the fertilizer sector, for example, FISP is directly implicated in the “crowding out” of fertilizer suppliers. For instance, of the over fifteen fertilizer companies operating in Zambia, only Omnia, Nyombo and Nitrogen Chemicals of Zambia are contracted to supply fertilizer. According to government, the fertilizer tendering process remains focused on these three companies, because other suppliers did not tender or were judged to lack the necessary capacity due to limited access to commercial finance (World Bank, 2010). Moreover, contrary to expectations about local agro-dealer development, the FISP has led to reduced availability of privately supplied inputs as input retailers routinely delay in stocking of fertilizer until the FISP supplies have been distributed due to the uncertainty and unpredictability of the program. As such farmers have not been easily able to access commercial fertilizer as an alternative to late deliveries under the FISP.

The World Bank (2010) survey shows that the FISP displaced at least 7 percent of private sector customers at the district level. Furthermore, Xu et al. (2009) showed a strong crowding-out effect in areas where the private sector was relatively more active (i.e. areas nearer to district towns as well as those in prime maize growing areas). A 1 kg increase in government subsidies per household resulted in a 0.01kg increase in fertilizer usage per household (or 0.99 kg reduction in usage of private sector fertilizer). Furthermore, the study shows that introduction of government fertilizer resulted in a 47

percent decline in private sector fertilizer purchases in some areas and a complete elimination of private sector activity in other areas (Xu et al. 2009). However, in low private sector activity areas the programme tended to have an improved effect on private sector development (ibid).

In theory, the e-voucher has the potential to reverse the crowding out of private sector participation that has resulted from the FISP as more private firms are likely to be involved in the supply of inputs to rural areas. However, our findings show that certain inputs are better positioned to rapidly respond to demand growth resulting from the use of e-vouchers than others. In particular, there appears to be significant differences between fertilizer and seed companies in terms of the development of marketing relationships with district level agro-dealers.

Seed suppliers appear to have developed increasingly sophisticated marketing arrangements in rural areas. For example, seed suppliers have developed relationships with agro-dealers in the rural areas to which they supply inputs on consignment. The agro-dealers then sell the seed on their behalf and deposit the proceeds in their accounts. The agro-dealers are then given commissions based on the sales. Our assessment of agro-dealers shops in six provinces showed that they stocked a variety of seeds from different seed companies. According to FAO representatives interviewed, the level of competition among the seed suppliers for agro-dealer agents is so high (especially for areas where the e-voucher is operating) such that the seed companies come to lure agro-dealers during the trainings in Lusaka so that they stock their seeds. These seed suppliers (due to competition) were reportedly transporting the seeds to the agro-dealers premises.

On the other hand, problems were reported with fertilizer suppliers who seem to be enjoying some monopoly. Agro-dealers reported that fertilizer suppliers do not supply fertilizer on credit or concession. Furthermore, they do not even provide transport to the agro-dealers for the quantities procured. Due to the high demand for the commodity, they were reportedly selling fertilizer at retail price even to agro-dealers who were also made to queue up sometimes for days to procure the commodity. Interviews with the

large fertilizer suppliers in Lusaka confirmed the findings from the field as regards transportation and non-availability of credit or concession relationships with agro-dealers. They claimed that compared to seed, fertilizer is a bulky commodity and costs much more to transport per hectare. For this reason, they would rather leave the transportation of the commodity to the agro-dealers when they purchase as it is easier for each agro-dealer to include a markup in the price based on how far they transport the commodity.

In order for the e-voucher system to accommodate a programme of the magnitude of the FISP, relationships between agro-dealers and fertilizer importers/suppliers are very important. Inputs, particularly fertilizer, have to find its way to the agro-dealers (who in most cases are capital constrained) in the districts without government necessarily getting involved. As such the fertilizer suppliers were asked to provide more information on the nature of their relationships with the agro-dealers and how best these relationships could be created (where they did not exist) or improved (where they were poor). Of the 8 fertilizer suppliers interviewed, only two indicated having supply relationships with some agro-dealers who they could supply the inputs on concession. All the fertilizer suppliers expressed concern about the high risk involved in giving fertilizers to these agro-dealers. They kept referring to an incident where a big fertilizer company had to write off a debt of about 25 million dollars due to non-remittance of funds after the agro-dealers had sold the fertilizer some years back. These suppliers preferred to have some outlets of their own in the high potential districts, other than selling through agro-dealer agents.

However, the other big reason given for deteriorating relationships with agro-dealers (agents) was the FISP itself. Some fertilizer suppliers reported that for the last two seasons, the government has supplied such large quantities of fertilizers under the FISP that their agents were crowded out of business. They claim that for the last two seasons, the FISP has almost supplied the entire smallholder fertilizer requirement leaving no space for commercial sales to small-scale farmers. The increased availability of subsidized fertilizer in the rural areas has led to closure of some outlets through which these suppliers were supplying as demand for privately supplied fertilizer has declined

tremendously. For instance, Bridgeway commodities had closed some of its retail outlets outside Lusaka as a result of increased competition from FISP in the last two years (2009/2010 and 2010/2011). The company was found to be diversifying from fertilizer supply into fish and banana supplying as a result of this increased competition with the FISP.

5.5 FISP and Private Sector Capacity Building

Among the reasons that motivated government to come up with the FISP to take over input distribution from FRA was the concern that private input dealers operated in an unpredictable policy environment, leading to uncertainties about private sector expansion into the input markets and ability to take over the input supply function from government (World Bank, 2010). Among the aims of the FISP in this regard included ensuring transparency and competitiveness in input supply, thereby breaking cartels and monopolies, and being more predictable in order to create favorable conditions for private sector expansion (World Bank, 2010). However, this has not been the case as fertilizer and seed companies have always voiced particular concern on the late announcement of the size and scope of the FISP each year. Consequently, private companies have limited their own distribution plans to avoid the risk of being displaced by the FISP. Contrary to government expectations about FISP, rather than promote private sector development and help break monopolies, the programme had the opposite effect; it has tended to benefit the tender winners at the expense of tender losers, and competitive market development generally.

By eliminating need for direct involvement of government in the tendering process, the e-voucher system has the potential (in theory) of reducing or eliminating these monopolies. Under the e-voucher, all the government needs to do is to announce in time the quantities of inputs that they will supply in the different districts. Then the private sector suppliers would respond based on their competitive ability to operate in the different areas.

The information obtained from MACO and private input suppliers, including those that been awarded tenders to supply FISP and those that have never been awarded before, the perceived ability of e-vouchers to eliminate these monopolies was mixed.

Respondents at MACO agree that the current system of supplying FISP fertilizer has not helped to build the capacity of fertilizer suppliers. They confirm that the system favors the big suppliers who are capable of carrying big risks and borrowing massively. However, they reiterate that the tendering process, which is done in three phases (preliminary phase, commercial phase, and financial phase), is quite transparent. The main reason why most of the smaller suppliers fail is that they are unable to secure sufficient credit to finance the fertilizer procurement, which is critical because the government can take years to pay. Conversely, the two big fertilizer suppliers manage to capture the FISP fertilizer tender as they are capable of borrowing extensively and are better able to handle risk compared to the smaller suppliers. Therefore, MACO believe that if the voucher is implemented in the same environment where the funds are not ready upfront, then those firms that cannot manage to wait for a year to get payment would still be unable to participate.

The suppliers who have supplied the FISP echoed the same sentiments as the MACO. The primary issue they raised was that the e-voucher is highly dependent on cash being available upfront, such that when the agro-dealer redeems a voucher, he/she is paid immediately. Given the significant capital constraints at the agro-dealer level this is critical. Without money being made immediately available to agro-dealers, their capacity to replenish commodities is severely hampered. Considering that MACO has been taking so long to pay, they wondered how it would work out. The other concern raised, which was also raised by MACO, was that the system would result in some areas that are well serviced by roads and have huge farmer densities being over supplied while the remote areas would be undersupplied. They claimed that this could be the case because under the FISP they are required to supply to the entire province regardless of the profitability. The voucher system would lead to unbundling of districts, which raises concerns that most suppliers would concentrate exclusively on high potential areas at the expense of more remote regions.

Those fertilizer suppliers who have never supplied under the FISP had their own view. They believed that the tendering process is biased in favor of some suppliers. They claim that regardless of the price at which a supplier bids, they are not likely to win the tender. They believe that the tendering system is always tailored to suit some selected suppliers regardless of the prices and quality of inputs supplied. They claim that as long as there are guarantees that the government is going to procure a given amount of inputs in a particular area, and the information is given to suppliers in time, they would be able to mobilize funds and supply those areas either by having outlets in those areas or through agents. They further claimed that despite having only limited relationships with agro-dealers, they would be willing to risk a few truck loads at a time until the requirements are met. However, just like MACO and the other category of suppliers, most were quick to point out that the government would have to speed up the payments otherwise the system would not work.

5.6 Testing of the Hypothesis.

The researcher earlier that small scale farmers have not benefited from e-voucher in the Farmer Input Support Program. Inline with the research findings which has showed a positive impact of e- vouchers in the Farming Input support programme in which it has been evidenced that, e voucher improves competitiveness of fertilizer distribution in Zambia; reduce the cost of fertilizer and effective in targeting and monitoring farmers as farming input are concerned.

The researcher therefore refutes the first hypothesis and presents that e voucher is effective in farming Input support programme.

CHAPTER SIX

CONCLUSION AND RECOMENDATIONS

6.1 CONCLUSION

Farming Input support program is a liable programme that if well implemented can have positive impact on the crop production. The current report shows that overall; the analysis finds that the FSP faces a number of important challenges. The FSP has become an open-ended program with large variations in the number of farmers targeted each year, a rapid escalation of total costs, and service delivery that beneficiaries report to be of mixed quality.

An e-voucher system is likely to improve the competitiveness of fertilizer distribution in rural Zambia, which is currently more underdeveloped than the seed sector. This growth in competitiveness will likely reduce the costs of fertilizer in rural areas and encourage the distribution of fertilizer types that are appropriate for Zambia's varying agro-ecological zones. The current FISP system is seen to discourage crop diversification. Our data shows that the choices of input selected by e-voucher beneficiaries do not differ much from that under FISP. Despite a range of inputs being available under the e-voucher, the majority of farmers will first get basal dressing, maize seed and top dressing before getting any other non-maize products.

6.2 RECOMMENDATIONS

In considering the future of the program, the Government may wish to consider the following recommendations.

This study was motivated by two key objectives: 1) to assess the potential for a voucher system to eliminate some of the persistent problems with FISP, and 2) to evaluate some of the major logistical concerns that have limited the willingness of government to adopt an e-voucher system. Based on this assessment, we will now seek to provide concrete guidance on necessary policies, investments, and implementation modalities for adopting e-vouchers as part of Zambia's input distribution programme.

1. Our findings suggest that while e-vouchers appear to be well positioned to address some of the pressing concerns with FISP, there are significant geographic and logistical constraints that may undermine their effectiveness. For instance, fertilizer is likely to be supplied in a competitive manner thus reducing costs and supplying the appropriate types according to agro-ecological suitability leading to increased returns. Targeting is also likely to be improved through improved monitoring of who gets the inputs and how much they get. Similarly, the majority of the beneficiaries are likely to receive inputs on time.
2. Furthermore, by transferring responsibility for input distribution from MACO staff to private sector, the e-voucher is not only likely to build local business capacity and free time for MACO staff to concentrate on their core business, but also increase farmers access to extension as agro-dealers provide extension services in a bid to improve customer relationships. However, the e-voucher may not be sufficient to address the problem of crop diversification as the choices of input selection do not differ much from that under FISP. Furthermore, the agro-dealers still have a problem stocking fertilizers, a problem exacerbated by government's delays in paying for the inputs and raising questions on the system's sustainability.

3. Some of government's trepidation about using e-vouchers appears founded in some cases. For instance, certain remote regions do not have sufficiently well-developed agro-dealer networks to support an e-voucher based FISP system, while a general underdevelopment of fertilizer retailing appears to plague much of the country. This suggests that, while there are clear benefits to utilizing e-vouchers for FISP, certain recommendations in terms of rolling out the system must be followed. These include:

A Geographically phased approach: this is necessary given the variations in terms of agro-dealer concentrations, infrastructure availability, and farmer concentration as well as the importance of agriculture (particularly maize) to the local population across districts. A phased approach would imply starting with those areas with high potential for success, i.e. dense agro-dealer network, good infrastructure and prior experience with the system. However, caution should be taken to avoid piloting in all high potential areas which happen to be the nation's bread basket as it could lead to risking national food security and fail to attract political buy-in which is very cardinal for success.

4. Most agro-dealers are still financially constrained and have problems stocking some inputs which they could not procure on consignment or credit. Fertilizer was a major challenge despite the small volumes handled under the e-voucher. This implies that for a large program like the FISP, radical measures need to be undertaken, such as government-back credit guarantees for agro-dealers. This will require serious coordination between agro-dealers, suppliers and financial institutions. Government must play a lead role in this coordination process.
5. It is worth noting that the large suppliers expressed interest in supplying to agro-dealers in some areas where they have competitive advantage as long as they have prior information on the quantities of inputs the government will distribute in those areas through the voucher system. The data at household level shows that those household which are in remote district districts received more services as well as travelled less distances to procure inputs. This was because the guarantees enticed agro-dealers to go to those areas. This suggests that guarantees are very

important in attracting the agro-dealers and the private sector in general to invest even in areas that are remote.

6. One way to promote input acquisition by agro-dealers on credit is through the creation of a stop order facility within the mobile transactions providers such as Mobile Transactions Zambia Limited (MTZL). A stop order facility (prevents the agro-dealer from accessing the money without authorization) will allow small agro-dealers to automatically repay their input suppliers as the e-vouchers are redeemed and enable them access credit facilities. The stop order facility will allow MTZL to recover or hold monies owed by agro-dealers for suppliers and transfer the balance to the agro-dealer. The suppliers will be assured of payment for the inputs supplied to agro-dealers because the VSC can only be redeemed through the MTZL platform and there will be no room for defaulting.
7. E-voucher cards should be designed to be flexible, so as to permit farmers to acquire a variety of inputs and to source inputs from various agro-dealers in their region. Considering the low price of printing the cards, issuing multiple cards would help. In addition, the e-vouchers should include seed for other crops to facilitate diversification. This is particularly the case in areas where maize may not be an appropriate crop, for example in some areas of Luapula, Western and Northwestern provinces. In addition, the presence of so much carry-over stocks of maize as is currently obtaining in the country and its continued production at current levels is not commercially viable because it is not competitive.
8. The FAO and CFU programs target lead farmers who are elite. Yet they still face some problems in terms of Implementing Officers not capturing the correct data leading to redeeming problems due to differences in the beneficiaries' data on the MTZL database and the NRCs. These challenges are likely to increase if a programme of the magnitude of FISP were to be implemented using the e-voucher system. There is therefore need to emphasize that a farmer can only be registered when they come with an NRC.

9. Similarly, for the programme to effectively operate, it relies on advance supply of funds to MTZL to enable instantaneous payment to input suppliers. This may pose the biggest challenge to government if the FISP has to be implemented in an e-voucher arrangement. If the FISP is to be implemented through the e-voucher, then funds must be made available immediately so as to compensate agro-dealers. The government cannot rely on the private sector carrying the debt as they do now. This may require better financial management.
10. Government and cooperating partners must partner to assist the FISP implementation office in MACO to undertake a series of start-up planning, organization and training activities. This should include completion of a computerized farmer registry, e-voucher program design/implementation details, and agro-dealer accreditation and farmer sensitization/training. This activity should be done in consultation with FAO, CFU, WFP, MTZL, ACTESA-COMRAP and other stakeholders who have experience in the implementation of the e-voucher.

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APENDIX SECTION

APPENDIX A

INTERVIEW GUIDE FOR SMALL SCALE FARMERS

1. For how long have you stayed in this area?
2. For how long have you being a farmer?
3. What motivates you to do what you do?
4. What are some of the challenges that you as a small scale farmers?
5. How do you manage to solve this challenge?
6. Have you benefited from the Electronic Voucher used in the farming support programme?
7. If yes how has it improved your crop production?
8. What farming inputs did you receive in the 2 last farming seasons?
9. Did you receive this input on time?
10. In your own opinion what do you think should be done to improve the electronic voucher system in the farming input support programme?

APPENDIX 2

**SELF ADMINISTRED QUESTIONAIRES FOR MACO/WFP STAFFS AND KEY
STAKE HOLDERS**

Sex: Male Female

1. What is the e – voucher?

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2. What are the main objectives of introducing the e -voucher in the farmer input support programme?

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3. What is the eligibility Criteria for one to benefit in the Electronic voucher in the FISP?.

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4. How many small scale farmers have befitted from 2008 to date in Petauke district as the e – voucher in the implementation of the FISP is concerned?

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5. What has been the implication of the FISP to small scale farmers?

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6. What challenges are small scale farmers as e- voucher are concerned in the FISP?

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7. What do you think should be done to improve the electronic voucher in the implementation of the FISP?

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Thank You for your Participation!!!!