THE IMPACT AND EFFICIENCY OF THE FERTILISER SUPPORT PROGRAMME (FSP) ON FOOD SECURITY AMONG SMALL SCALE FARMERS IN RURAL ZAMBIA: A CASE STUDY OF CHONGWE DISTRICT

by

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ABSTRACT

Despite the implementation of the Fertiliser Support Programme (FSP), there were indications of food insecurity continuing among small-scale farmers in rural Zambia during the 2006/2007 farming season. The FSP was introduced by the Zambian government in 2002 under the Poverty Reduction Strategy Paper (PRSP). The FSP is aimed at increasing the production of maize and enhancing sustainable food security amongst small-scale farmers by supplying fertiliser and maize seed at a subsidised price. Specifically, the study examined the extent to which the FSP had contributed to food security among households in Chongwe, the timeliness of delivery of inputs to beneficiaries; and identified the challenges faced in implementing the FSP.

In order to accomplish this, a multi-stage sampling method was used to select 125 small-scale farmers from five agricultural cooperative societies in Chongwe district (i.e. Ikatishani, Nyangwena, Mabwe, Evergreen and Anti-Poverty). Purposive sampling was employed to select 15 key informants to include in the study. Key informants were drawn from the Ministry of Agriculture and Cooperatives (MACO) officials in the district, cooperative officials and village headmen. Small-scale farmers were interviewed using a semi-structured questionnaire. Interview guides were used to collect qualitative data from key informants. Qualitative data were analysed manually while quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) computer software.

The results presented in this Study show that the FSP contributed to a moderate improvement in food security during the 2006/2007 farming season in Chongwe district. Maize production, maize sales and income earned by small-scale farmers improved to a modest level during the same period.

Further, the Study established that a large quantity of the inputs was delivered late, after October, during the FSP for 2006/2007 farming season in chongwe. Inputs were expected to be in Chongwe by October as stipulated in the FSP implementation manual. For the category of small-scale farmers who obtained less than eight bags, 15.2 percent of respondents indicated that they received basal fertiliser after October, while 4.8 percent of the respondents received basal fertiliser within the stipulated time (*by October*). For top dressing fertilisers, 19.2 percent of the respondents indicated that they received the commodity after the stipulated time, while 0.8 percent received the top dressing fertiliser within the official time. In each case ,1.6 percent of the respondents could not remember when they actually recieved the basal and top dressing fertilisers.Slightly above 78 percent (78.4 percent) are those who received basal and top dressing fertilisers belonged to the "*Not Applicable Category*".

For the category of small scale farmers who received all the eight bags of fertiliser, 54.8 percent indicated that they received basal fertiliser after October, while 4.0 percent received basal fertiliser within the official period. For top dressing fertiliser, a total of 56.8 percent received the commodity late, while 0.8 percent received the commodity in time. In addition to this, 8.0 percent of the respondents could not remember when they received the top dressing fertiliser. Slightly above 34 percent (34.4 percent) of the respondents belonged to the "*Not Applicable Category*".

Delivery of maize seed was also untimely during the same period. Above 57 percent (57.6 percent) of small-scale farmers received maize seed beyond the official time, while 8.0 percent received the seed on time. Less than 10 percent (9.6 percent) of the

respondents could not remember when they actually received the 20kg bag of maize seed. Almost 25 percent (24.8 percent) belonged to the "*Not Applicable Category*". In most cases, the supply of both basal and top dressing fertilisers was inadequate and/or fertilisers was delivered earlier than maize seed.

The Study also identified challenges encountered in implementing the FSP Programme during the 2006/2007 farming season. Some of the challenges were: delayed input supply, receipt of fertiliser by small-scale farmers, poor crop marketing arrangements, and lack of funds by some small-scale farmers to meet the required contribution of 40 percent payment. Other challenges identified were non-usage of satellite depots, poor feeder road network, lack of Animal Draught Power (ADP), non practice of conservation farming/crop diversification and unpredictable government policies on maize and fertiliser marketing. These challenges affected production of maize and food security and consequently contributed to food insecurity in Chongwe district.

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ACRONYMS AND ABBREVIATIONS

ACF	:	Agricultural Consultative Forum
ACMP	:	Agricultural Credit Management Programme
ACP	:	Agricultural Commercialization Programme
ADB	:	Agricultural Development Bank
ARM	:	Athi River Mining
ATC	:	Authority to Collect
AU	:	African Union
BEO	:	Block Extension Officer
CAADP	:	Comprehensive African Agriculture Development Programme
CASE	:	Competitive Agricultural Systems and Enterprises
CB	:	Cooperative Board
CBNRM	:	Community Based Natural Resource Management
CBO	:	Community Based Organisation
CEO	:	Camp Extension Officer
CO	:	Cooperative Official
CSPR	:	Civil Society for Poverty Reduction
CSO	:	Central Statistical Office
CUSA	:	Credit Union and Savings Association
DAC	:	District Agriculture Committee
DACO	:	District Agricultural Coordinator
DC	:	District Commissioner
DFID	:	Department For International Development – UK
DMACO	:	District Marketing and Cooperative Officer.

ECA	:	Economic Commission for Africa
ETPs	:	Extension Tests Plots
FAO	:	Food and Agriculture Organisation
FIPS-Africa	:	Farm Input Promotions - Africa
FPP	:	Farmers Production Plots
FRA	:	Food Reserve Agency
GDP	:	Gross Domestic Product
GNP	:	Gross National Product
GRM	:	Government of the Republic of Malawi
GRZ	:	Government of the Republic of Zambia
IDS	:	International Development Studies - UK
IFDC	:	International Centre for Soil Fertility and Agricultural Development
IFPRI	:	International Food Policy Research Institute
ISFM	:	Integrated Soil Fertility Management
LCMS	:	Living Conditions Monitoring Survey
MACO	:	Ministry of Agriculture and Cooperatives
MCO	:	Marketing and Cooperatives officer
MP	:	Member of Parliament
MoFNP	:	Ministry of Finance and National Planning
NATSAVE	:	National Credit and Savings Bank
NCZ	:	Nitrogen Chemicals of Zambia
NGO	:	Non Governmental Organisation
PCO	:	Programme Coordinating Office

PRSP	:	Poverty Reduction Strategy Paper
QPM	:	Quality Protein Maize
SAA	:	Sasakawa Africa Association
SAO	:	Senior Agricultural Officer
SCODP	:	Sustainable Community Oriented Development Programme
SHEMP	:	Smallholder Enterprise and Marketing Programme
SPP	:	Starter Pack Programme
SPSS	:	Statistical Package for Social Sciences
SSA	:	Sub-Saharan Africa
TIP	:	Target Input Programme
UNDP	:	United Nations Development Programme
UNECA	:	United Nations Economic Commission for Africa
USP	:	Universal Starter Pack
USAID	:	United States Agency for International Development
VH	:	Village Headman
WFP	:	World Food Programme
ZCF	:	Zambia Cooperative Federation
ZEFSA	:	Zambia Emergency Food Security Assessment
ZHDR	:	Zambia Human Development Report
ZMK	:	Zambian Kwacha
ZNFU	:	Zambia National Farmers Union

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Food Security is one of the major development problems faced by the world today. The International Food Policy Research Institute (2005) predicts that globally by 2015, 600 million people will suffer from hunger; 900 million people will live in absolute poverty and 128 million pre-school children will be malnourished (Institute of Development Studies, 2006:1).The African Union (2006) also estimates that 27 percent of Africans are undernourished, a two percent decline since 1995. However, since Africa's total population increased from 589 million to 764 million over the period, from 1995 to 2005 the estimated absolute number of undernourished people has risen from 176 million to 210 million.

Halving hunger and extreme poverty by 2015 is the first Millennium Development Goal (MDG). However, persistent hunger is still prevalent world wide, slowing progress towards all other MDGs, particularly in Sub-Saharan Africa (SSA). To improve upon past efforts to achieve food security, the New Partnership for Africa's Development (NEPAD) developed a Comprehensive Africa Agriculture Development Programme (CAADP).The African Union Assembly endorsed the CAADP in July, 2003. The CAADP also has been endorsed by African Heads of States and Governments as a vision for the restoration of agricultural growth, food and nutrition security, and rural development in Africa. A specific goal of CAADP is to attain an average annual growth rate of six percent in agriculture. To achieve this goal, CAADP aims to stimulate agriculture – led development that eliminates hunger and reduces poverty and food insecurity. More specifically, the NEPAD vision for Africa holds

that by 2015, Africa should: attain food security; improve agricultural productivity to attain a six percent annual growth rate; develop dynamic regional and sub-regional agricultural markets; integrate farmers into a market economy, and achieve a more equitable distribution of wealth (CAADP, 2006: v). To realise this, several African countries committed themselves to allocating at least 10 percent of their national budgets to agriculture within five years, starting from 2005. Farmers in SSA also still lag far behind other developing areas in fertiliser use. The average intensity of fertiliser use throughout SSA is roughly eight kilograms per hectare (8kg/ha) whereas nutrient depletion reaches over sixty kilograms per hectare (60kg/ha). This fertiliser usage remains much lower than elsewhere. For example, 86 kg/ha in Latin America, 104kg/ha in South Asia, and 142kg/ha in Southeast Asia, averaged over the 2000/2001 and 2002/2003 years (Crawford *et.al*., 2005:6). In 2006, the African Union (AU) and NEPAD organised the African Fertiliser Summit in Abuja, Nigeria. The first of the resolutions by the AU member states is to increase the level of fertiliser use from the current average of eight kilograms per hectare to 50 kilograms per hectare by 2015. Zambia has one nationally-recommended application rate of fertiliser that is, 200kgs of Compound D (basal dressing) and 200kgs of urea (top dressing) per hactare of maize. An immediate measure of the declaration recommended the elimination of taxes and tariffs on raw materials of fertiliser. Many African farm households depend on land cultivated so many times that its fertility is heavily reduced. Therefore, small-scale farmers must consistently raise productivity of their land to escape from being food insecure and produce enough food for the family (IDS, 2006: 1).

Maize production in Zambia has fallen since liberalization of the economy in the early 1990s as fertiliser became less affordable and subsidies did not reach many small-scale farmers. The

country's poor agricultural performance is negatively affecting nutrition. The proportion of stunted children has risen from 36 to 47 percent since 1990. Incomes have fallen and diets are less varied, with limited access to fruit and vegetables (Ibid).

At independence in 1964, Zambia enjoyed a relatively high standard of living with per capita GNP of over five hundred United States Dollar (US$500) and annual inflation rate of less than five percent. Between 1965 and 1974, Zambia experienced an economic boom due to large amounts of Copper reserves and high Copper prices making the country one of the strongest economies in the SSA in the mid 1960s (CSO, 1998).

Zambia's economic boom however, did not last long due to, among other reasons, the decline in world copper prices and the deteriorating terms of trade in the mid-1970s. Consequently, during the 1974-1990 period, the growth rate in GDP dropped from 3.7 percent per annum to an average of only 1.0 percent. Further, Zambia's per Capita GNP dropped from US$500 in 1964 to US$ 250 between 1990 and 1998. Also, inflation rose to over 100 percent. Formal sector employment dropped from 544,200 to 465,000 between 1990 and 1998 (CSO, 1998). As a result of this decline in the economy, the country was unable to import farm inputs such as fertilisers and seed as well as importing food in years of shortages.

However, recently, the country's economy has consistently recorded positive growth between 2002 and 2006 averaging 4.7 percent. The highest GDP growth at 5.8 percent was attained in 2006; while the lowest GDP growth of 3.0 percent was recorded in 2002. The average annual inflation rate for the same period was at 16.9 percent. The lowest annual inflation rate of 8.2 percent was recorded in 2006, while the highest annual inflation rate of 26.7 percent was in

2002.The end of year inflation in 2005 at 15.9 percent was reported to be the first lowest rate achieved since the advent of liberalisation of the economy in 1991 (GRZ/MoFED, 2002; MoFNP,2007).

The deteriorating situation in Zambia was largely reflected in the increasing food insecurity levels over the years. Estimates indicated that in 1991, about 70 percent of the Zambian population was poor out of whom 58.2 percent were extremely poor, and the majority over 70 percent was found in rural areas (Kapungwe, 2002). Existing reports such as the *Living Conditions Monitoring Survey (LCMS)* further indicate that Zambia is faced with high levels of poverty with 72.9 percent of the national population still living in poverty (CSO, 1998). Poverty is described by the World Bank as a household food security implication and is based on the cost of minimum food basket and lacked other social basic needs. The minimum food basket contains food eaten by the average family that meets the nutritional requirements of household members**.** Poverty is lack of human basic needs, such as clean water, nutrition, health care,education,clothing and shelter, because of the inability to afford them. (World Bank, 1994:19). The concept of poverty is used in this study because it goes hand in hand in determining levels of food security.

The 2006 *LCMS* results revealed that poverty in Zambia declined from 68.0 percent in 2004 to 64.0 percent in 2006. This means that 64 percent of the population was poor in 2006 compared to 68 percent in 2004 (CSO, 2007: 14). Rural-Urban analysis further showed that poverty in rural areas continued to be much higher than in urban areas. The 2006 *LCMS* results revealed that 80 percent of the population in rural areas was poor compared to 34

percent in urban areas. A similar pattern was observed in 2004 when poverty levels were higher in rural areas at 78 percent compared to 53 percent in urban areas (Ibid).

In addition to this, a survey entitled *"The Nutrition and Household Food Security in Zambia: Status Trends and Key Determinants"* conducted in 2001 by Programme Against Malnutrition (PAM) revealed levels of food insecurity. About 67 percent of the Zambian households were found to be food insecure in 2001. The highest proportions were in Western Province and North-Western Provinces with 79 percent each. The lowest proportions were in the urbanised provinces of Lusaka and Copperbelt with 57 percent and 56 percent, respectively (GRZ/UNDP, 2003:45).

Lack of access to food may only be a part of the problem. Although there could be enough food in the world and in some cases a drop in food prices, food insecurity today is also a food availability problem. In Zambia poverty levels are still high among the people. It is considered that with high poverty levels in the population, people live on very little income or none at all. Therefore, over the longer term, poverty contributes further to food insecurity as it restrains households' potentiality for accumulation growth in agriculture as well as elsewhere.

Recognizing that a large proportion of small-scale farmers in rural areas depend on agriculture for sustenance, the Fertiliser Support Programme (FSP) was introduced by the Zambian Government in 2002 under the Poverty Reduction Strategy Paper (PRSP). The PRSP was prepared by the Zambian Government as a condition of debt relief by the World Bank and the International Monetary Fund (IMF). The FSP was created as one of the Government's programmes aimed at increasing food production and enhancing food security among small-scale farmers by supplying inputs (fertilisers and seeds) at a 50 percent subsidy initially (MoFNP, 2002/2004). The general objectives of the FSP are: to promote the use of

low input and conservation farming technologies among selected small-scale farmers who meet the criteria; distribute the required enterprise inputs in time and to provide extension messages to support the enterprise (Ibid). The specific objectives of the FSP for 2006/2007 farming season were: to increase private sector participation in the supply of agricultural inputs to small-scale farmers; to ensure timely, effective and adequate supply of agricultural inputs in the country; to ensure comprehensiveness, and transparency in the distribution of inputs and thereby breaking monopolies; to expand the market for the private sector and reduce direct role of Government (MACO, 2006:2).

1.2 Statement of the Problem

The overall research problem addressed in this study was that, despite the introduction of the FSP to increase food production and enhance food security among small-scale farmers by supplying fertilisers and seed at a prescribed subsidy, there were indications of food insecurity continuing. Government has been funding the FSP with colossal sums of money. Roughly three hundred and fifty billion kwacha (ZM K 350,000,000,000) was spent by government during the FSP for 2006/2007 farming season (Interview with MACO/Information Sub-Programme, Programme Producer, 3rd September, 2008). Government has been spending further huge sums of money through relief food, even when there are no emergencies such as floods and/or drought among others. For example, Government donated 60 tonnes of relief food to Mpongwe and another 60 tonnes to Masaiti Districts to alleviate the critical hunger situation facing the people (Muller *et al*., 2007:63). The World Food Programme (WFP) in 2006 sent 222, 175 metric tonnes of relief food and undisclosed tonnes of beans and cooking oil for immediate distribution to starving villagers in Mazabuka (Ibid)

In spite of the above government commitment and that of cooperating partners, food security was not ensured. The main question the investigation intended to find answers was therefore! What impact did the FSP have on food security among small-scale farmers in rural Zambia?

1.3 Objectives of the Study

1.3.1 General Objective

The main objective of the study was to evaluate the impact and efficiency of the Fertiliser Support Programme (FSP) on food security among small-scale farmers in rural Zambia.

1.3.2 Specific Objectives

(i) To examine the contribution of the FSP to household food Security in rural areas, particularly in Chongwe district, and

(ii) To examine the timeliness of delivery of inputs to beneficiaries of the FSP.

1.4 Conceptual Framework

The key concepts used in this study are: food security, household, and rural area. (i) Food security can be broadly defined as access by all people at all times to enough food for an active healthy life on sustainable basis" (MACO, 2004:6).

In this respect, farmers by virtue of being producers, have access to the food that they produce. Access can also be determined by a household endowments (land, labour, capital and other resources).These resources can be transformed into food entitlement through various means for procuring food (for instance through, gifts or exchanges) by household.

(ii) a household is defined as a group of persons who normally live and eat together. These people may or may not be related by blood, but make common provision for food or other essentials for living and have only one person whom they all regard as the head of the household. Household may also consist of one member (CSO, 2003:5). A household is food secure when it has access to food needed for a health life for all its members (adequate in terms of quality, quantity, safety and culturally acceptable) and when it is not at undue risk of losing such access (Drinkwater *et al*; 1992). (iii) a rural area is defined as an area associated with small populations, sparse settlements, remoteness from urban settlements and dependence on farming occupations. Rural areas also lack basic amenities such as good piped water, good electricity distribution, proper sewerage system, and proper health care distribution (Gesler &Ricketts, 1992:241).

This study applies the Competitive Agricultural Systems Enterprises (CASE) Approach as the conceptual framework to provide links from the literature and the aim of the research. The CASE approach was developed by the International Centre for Soil Fertility and Agricultural Development (IFDC). The approach emphasises the importance attached to competitiveness both related to the agricultural production systems within the target region, and to rural and urban enterprises that are directly linked to the agricultural production system by providing inputs and market outlets. The CASE is a demand driven approach, which fosters production chain development, by strengthening the innovative capacities of the various stakeholders. These stakeholders include: as policy makers, farmers, research extension organisations, fertiliser manufacturers, seed companies, Non-Governmental Organisations (NGOs), service providers and other organisations and individuals involved in farming (Poulton *et al*, 2006; 29). Some activities focus on different aspects and depend on the bottlenecks identified by the

major stakeholders themselves for improved competitiveness. The CASE can be grouped into three categories:

(i) Improving the accessibility, both geographically and financially, of external inputs, for example, by stimulating the development of infrastructure, such as warehouses and local shops, through investments in the private sector capacity development, networking with savings and credit systems and development of lobbying capacity to enforce effective regulations promoting competitiveness and fair trade;

(ii) Development of market outlets for agricultural produce, for instance, by stimulating the development of agricultural-linked enterprise, the diversification of agricultural production and improved co-ordination between consumers and producers and;

(iii) fine tuning of technological options to improve the efficiency of external input use, including optimal strategies of fertilisation according to climatic zone, soil type, and crops cultivated and complimentary measures of soil fertility management and of water harvesting, mainly through investments in participatory, as much as possible farmers – led research and extension (Ibid).

The CASE approach aims at accelerating sustainable agricultural and economic growth through two concepts as its basis. These are: (a) Integrated Soil Fertility Management (ISFM) which involves the judicious use of mineral fertilisers combined with locally available organic amendments to increase land productivity while maintaining or enhancing soil fertility, thus improving the quality of the environment; and (b) developing and strengthening commodity chains that decrease the cost of input provision, processing and marketing of agricultural produce. The CASE aims at improving co-ordination between producers and both input and

output markets (Ibid). The assumption underlying these two concepts are that, firstly, organic inputs generally have low nutrient contents, and large and often non-available amounts of organic fertiliser would be required to maintain soil fertility levels in each and every field. Therefore, sustaining soil fertility and increasing productivity using organic resources alone is a losing battle. The opposite strategy, the sole use of inorganic fertilisers, may lead to yield gains in the short term but may negatively influence soil fertility, for example, through acidification both inorganic and organic fertilisers, where the inorganic fertiliser provides most of the nutrients and the organic fertilisers increase the soil organic matter status, soil structure and buffering capacity of the soil in general. Use of both inorganic and organic fertilisers has proven to result in synergy, firstly, improving efficiency of both nutrients. Secondly, the approach promotes developing and strengthening of commodity chains. Economies in Sub-Saharan Africa (SSA) are characterised by thin markets, poor infrastructures, low levels of employment and incomes in urban centres, and informal and often exclusive networks of information exchange and trade. In such contexts, supply-oriented strategies aimed at accelerating agricultural growth quickly reach their limits (Crawford *et al.* 2006:29). To develop competitive commodity chains, the CASE approach also seeks to strengthen the technical and managerial competencies of the various actors involved; in particular, the farmers, and local entrepreneurs, such as inputs dealers, processors, stockists and traders at the grassroots. Co-ordination between themselves and (potential) buyers needs to be strengthened, while maintaining a healthy competition, that is, the competition that stimulates continuous innovation.

The CASE approach influences resources, combines activities from different projects and/or programmes to obtain synergy, and stakeholders are encouraged to work as much as possible

together to contribute to the dynamics of intensification, whether directly or indirectly. The CASE approach is also complimentary to Community Based Natural Resource Management (CBNRM) initiatives. These initiatives provide platforms and institutions for natural resource management that are in particular related to the management of collective goods. It stimulates innovation by farmers, local entrepreneurs or rural bankers. An additional observation on the CASE experience is the importance of the strategic site selection, making the investment where the basic cropping potential will permit fertiliser uptake.

There is no single individual, group or organisation that can embrace all the activities that are needed to facilitate agricultural intensification and to meet the needs of particular community adequately. Therefore, the CASE approach mechanism through inter-institutional collaboration takes an enormous flight in boosting agricultural productivity which in turn effectively contributes to sustainable food security.

1.5 Literature Review

This section reviews literature on food security in Zambia and other African countries. The section begins by reviewing literature on Zambia. Thereafter, literature from other African countries was reviewed.

1.5.1 Experiences from Zambia.

A research was conducted in 2005 by the Civil Society for Poverty Reduction (CSPR) on the effectiveness of Fertiliser Support Programme (FSP) in enhancing food security among small-scale farmers from the three rural districts, namely, Kalomo, Mumbwa and Mpika. Key factors were identified to be responsible for reducing the supply of fertilisers that small-scale farmers receive (CSPR, 2005:23).Key factors identified for reducing were: long distance from

the fertiliser collection points, non utilisation of satellite depots in remote areas and lack of use of local transporters for fertiliser distribution. Farmers who are in remote areas have been finding it difficult to collect their fertiliser consignments and this acts as a limiting factor to access the fertilisers.

While it is a government policy to encourage the private sector in the distribution of farm inputs, the private sector focused on areas along the railway line and avoiding remote areas where the majority of the small-scale farmers are found. In the FSP some transporters have been resisting going into remote areas and raised concerns over the poor road network especially in remote parts of the districts. In the study sites covered, farmers acknowledged that because of these factors mentioned earlier, they were not only unable to access farm inputs (seed and fertiliser) in time, but were also unable to sell their farm produce in time. This in turn resulted in dislocating their planning mood for their farming activities. They said if they had the money in advance, they would then be able to plan their budgets and put aside some of their money from farm sales to buy farm inputs. It is clear that the CSPR study revealed important observations that are relevant to support the need for this study. This is especially the case in the observations mentioned above relating to the effectiveness of the FSP in not enhancing food security among small-scale farmers in the three districts mentioned earlier. To this extent, CSPR study has helped to provide useful insights and consequently made a contribution in directing this study on issues that need to be investigated. In addition, the literature is relevant to this study because it shows that there was very little impact of the FSP in terms of reducing food shortages and increasing household food security and incomes.However, the limitation for CSPR study is on the scope of the study and methodology. The scope of the study was narrow in the sense that it did not cover all the

districts in the country as such it is not clear how the FSP had performed in other districts, such as Chongwe and many others apart from Kalomo,Mumbwa and Mpika.

The UK Institute of Development Studies (2005) conducted a research on Agricultural Development in Zambia's Northern Province in three villages, namely Ngulula and Kabila in Kasama district and Lufubu in Luwingu district. This research demonstrated what had happened in Zambia over the last two decades. In Ngulula,Lufubu and Kabila, small-scale farmers have moved into maize production and out again. Currently, cassava and millet are the most widespread crops, although maize production remains common, especially local varieties. Many small-scale farmers used to grow and sell maize until fertilisers became unaffordable. Although the Zambian Government reintroduced fertiliser subsidies in 2002, access to these inputs is uneven. It is evident that the Institute of Development Studies (IDS) study has made a significant contribution as regards the understanding of the problems faced by many small-scale farmers in rural areas in an attempt to continue cultivating maize. In addition to this, this literature is relevant to this study because it provides information that even with a subsidy, fertiliser access and use are constrained by poor infrastructure, especially for remote "off road" communities, and high cost of other inputs, including seed and herbicide. The IDS study in relation to this dissertation provides information that subsidies are constrained by other factors as well. It is important to note, however, that the scope of this study has some limitations. The IDS Study does not specifically discuss the nature and extent of the FSP subsidies. The study only focused on production of maize and other traditional food crops without a subsidy in some villages in Northern Province of Zambia.

Another research conducted by the Zambia Emergency Food Security Assessment (2003) showed that Western Province had the highest incidence of food insecurity with the majority of households classified as severely food insecure. Except for Lusaka Province, which had 48 percent, the rest of the provinces had more than 70 percent of their households being food insecure (Ibid). The same study also revealed that there were inter-district variations in household food security in the districts showing that food insecurity is widespread all over the country. Eleven districts had severe household food insecurity between 70 percent and 80 percent, with Lukulu and Shang'ombo in Western province having very high incidences of extreme household food insecurity at 95 percent and 89 percent, respectively (Ibid). The study further revealed that there was uneven and wider inter-province variation in the distribution of food security, with figures ranging from as low as 13 percent in Central Province, to as high as 48 percent in Lusaka province. In relative terms, the study also shows that households headed by females had a much higher chance of being food insecure than those headed by males. Further, female headed households, large sized households and those headed by the elderly, those above 50 years, were also found to be highly vulnerable to food insecurity. This literature is relevant to this study in that it provides insights on the overall variations, inter-district variation, and on households headed by females, elderly and large sized households' position on the food security situation. However, the limitation of the research by Zambia Emergency Food Security Assessment (ZEFSA) in relation to this study is that it does not provide information specifically and directly on input subsidies with regard to the FSP and its implementation. It is also evident that the research by ZEFSA provides information at the national level and district level in form of statistics or figures without exactly mentioning or listing causes of food insecurity. Information based on aggregate statistics does not provide a

true reflection of individual districts, such as Chongwe and other districts not directly covered by the research.

The Agricultural Consultative Forum (2002) conducted a research during the 2001/2002 farming season in Zambia. The Agricultural Consultative Forum (ACF) noted that the area under maize cultivation had reduced from 908,750 to 575,000 hectares, a decline of more than 30 percent from 1988. However, maize still accounted for over 86 percent of the domestically consumed cereals and about 35 percent of the total staple food requirements in Zambia (GRZ/UNDP, 2003: 61). In the past seasons, maize production has been consistently failing to meet national self sufficiency, see (Appendix ii).

The poor performance of Zambian small-scale farmers in meeting their maize self sufficiency is reflected at national levels. For example, the country experienced a decrease in its maize sufficiency from 100 percent in 2000 to 80 percent in 2001 and then 60 percent in 2002 (Ibid, 62). Taking into consideration that the ACF research focused on decreases in maize production, for example, there was a decrease from 100 percent to 60 percent in maize production during the 2000/2001 and 2001/2002 farming seasons. It is obvious, as noted in the ACF research, that more remains to be done. However, the findings of the ACF study were critical in highlighting issues regarding maize production that has been continuously unable to meet national food security. This literature is relevant to this study; firstly, it shows that maize is the largest consumed cereal in Zambia. Secondly, high dependence on maize and its availability have a great effect on household and national level food security. This is so because the conditions of weather may vary from one season to another. For example, in one season, there could be good rainfall, while in the other season there could be drought. In some

cases, heavy rains and drought may recur for two or more subsequent seasons. However, ACFs' limitations in relation to this study, is that it focused on maize production in the period when Government was not providing input subsidies to small-scale farmers. In addition to this, the ACF report provided information in the period when there was drought which, to a large extent, contributed to the country's food insecurity.

According CSO (2003), agricultural production in Zambia which was predominantly rainfed, posited five percent growth rate and another 43 percent growth rate in 2004. During the years 2003 and 2004, the country's food security position greatly improved as it moved from an overall deficit of 635,000 metric tonnes of maize in 2002/2003 consumption periods to an overall food surplus of 120,000 metric tonnes and 185,000 metric tonnes of maize in the 2003/2004 and 2004/2005 consumption periods, respectively. In the same period, maize output rose by 92.5 percent as the country became the net exporter of food crops. The export food crops like maize contributed to the growth in non-traditional exports earnings. There have been improvements through the FSP subsidies on fertiliser in terms of increase in both the area under cultivation and production on maize. This literature is relevant to this study in that, firstly, fertiliser subsidies boosted the production of maize. Secondly, maize cannot be ignored as it is a staple food crop that most people rely on. The literature indicates that there have been some improvements after government intervened in form of fertiliser and seed subsidies.

Limitations of CSO (2007) is that, it only gives statistics on increased maize production at national level without actually specifying which categories of farmers, that is, small-scale farmers and/or commercial farmers who produced this surplus.

In his thesis entitled '*Land Tenure, Land Usage and the Historical Development of Agrarian Capitalism in Zambia: The Experience of the Periphery*, Kajoba (1988:189-204) highlighted the significance of cultivation involving the use of indigenous agronomic practices including all traditional staple food crops, such as, maize, sorghum, millet, cassava, and rice through crop diversification, rotation, green and cattle manuring and mixed cropping. This replenishes soil fertility and broadens the food base and ensures relative food security, especially at the household level. In relation to this study, Kajoba's study (1988) helps in the sense that it looks at achieving food security and its sustenance by involving all traditional food crops and use of crop diversification, as well as crop rotation. In addition to this, the literature shows that food security cannot be achieved and sustained only by a single cereal crop like maize in Zambia and other Sub-Saharan African countries (SSA) which is susceptible to changes in the weather patterns. Cultivation of traditional crops is adapted to ecologies of agricultural systems which are still largely viable, in SSA.The major limitations of Kajoba (1988) are that he did not discuss other strategies of enhancing food security such as subsidising farm inputs.

Research conducted by Kajoba (1993) focusing *'Food Crisis in Zambia'*, indicated that people in Samfya district near lake Bangweulu in the Luapula Province, were going back to cassava growing rather than continuing with maize. As a result of the knowledge which the peasantry has acquired through the process of socialisation, it was found in the research that local people found it easier to grow cassava than maize because labour requirements for the root crop were less than those for maize and other cereals. Further, whereas the technological package for cereal crops requires large amounts of expensive chemical fertilisers, which peasants cannot easily afford, the root crop does not require major inputs other than family and other labour. Also, the peasantry have historically found it easier to combine cassava

growing with fishing, which is a major source of proteins and income, rather than combine maize growing with fishing as the demands for labour for the cereal are greater. Furthermore, the dense population in Luapula valley has been best supported by the cassava-millet legumes and fishing culture rather than the maize culture. Cassava-millet have less demands for labour, may not require inorganic fertilisers and they are drought resistant. This literature is relevant to this study because it explains about crops that are culturally accepted by the local people, and this contributes to food security at household level. However, the nature and the extent of the study exhibit some limitations. Mushota's study, like most of the works cited regarding food security in this study brings out issues on small-scale farmers who have abandoned maize cultivation and opted for other traditional crops, such as, cassava and millet among others, but later they have gone back to maize cuiltivation.The use of traditional food crops, despite them being quite drought resistant and less demand for labour both at the household and national levels,they have not been used as an alternative sustainable substitute to maize and the promotion of food security. Maize as a crop has a higher calorific value (energy) as well as attracting high market demands for both local and international buyers. Therefore, the cultivation of maize has remained indispensable over time.

1.5.2 Experiences from other Countries

A research done by (GRM,1992) focusing on *'Agriculture for the period 1988'*,reveals that one of the most significant features of Malawian agriculture is the dominance of maize in the farming system. In Malawi, the percentage of arable land allocated to maize is 70 percent (GRM, 1992). With the decline in farm size, small holders have allocated more of their land to maize. Consequently, many farms are completely dominated by this crop which is grown without fallow or rotation. Livestock numbers are too small and too unevenly distributed to

provide useful quantities of manure for crop production. Not surprisingly, there has been a decline in maize yields over the past decade. This literature is relevant to this Study in the sense that, it shows that in the event of inadequate arable land, small holder farmers should allocate much of that land to the staple food crop such as maize so as to enhance household food security.

Mann (2003) conducted a Study on *'Smallholder Agriculture and Productivity Growth-Starter Pack in Malawi'*, concludes that Malawi's food security has depended on the productivity of fertilised hybrid maize. In the 1980s, fertiliser use was supported by the credit program that provided a universal fertiliser subsidy to primary wealthier small holders deemed eligible for credit. Many bought the subsidised fertiliser, and made a rational decision that the least risk option was to sell this to large-scale farmers. The subsidy program was completed by a stiffer credit recovery effort which collapsed in the wake of a disastrous drought in 1994 and a new political climate. Free distribution of seed and fertiliser in subsequent years prevented immediate famine. By the 1997/1998 farming season, Malawi was facing a dire food crisis. However, improved best bet maize productivity packages were developed, which included economically viable fertiliser doses tailored to regional soil conditions. Within five years of testing in over 1,700 field sites, the maize productivity task force had identified the most cost effective package of maize cropping and rotation practices for each of Malawi's agro climate regions. This literature is relevant to this Study in the sense that, it shows that free distribution of inputs, use of fertiliser tailored to regional soil conditions and planting of hybrid maize seed increased Malawi's food security situation.

A research done by (Levy 2003) focusing on the '*Starter Packs in Malawi'* ,reveals that the Starter Pack Programme (SPP) and its successor, the Targeted Input Programme (TIP) were

implemented by the Government of Malawi with funding assistance from a number of International Donors, starting in the 1998/1999 agricultural season. The initial SPP in 1998/1999 and 1999/2000 farming seasons provided to every rural small-scale farmer household a pack of 15kg of fertiliser, 2kg of hybrid maize seed and 1kg of legume seed. The inputs were sufficient for cultivation of 0.1 hectare according to extension recommendations. Maize and legume varieties depended upon location. From the 2000/2001 the programme was scaled down and targeted the poorest households. The 2000/2001 Programme provided 1.5 million packs, the following season, the packs was further scaled down to 1 million, were distributed. The packs were also modified, by replacing some of the hybrid maize seed with open pollinated varieties. The programme was expanded again to 2 million packs in 2002/2003 farming season. This was with the expectation that each household would gain sufficient extra maize to feed itself for a month in the food shortage season. During this season, Market value for maize in 1998 was estimated at a minimum of Malawian kwacha (M K500) which was more cash income than a poor family would earn in a year. It was estimated that at the national level, 2.8 million households producing 100kg more per household would increase national production of 280,000 tonnes.

The Best Bet inputs and practices were incorporated into the starter packs distributed to 2.8 million small-scale farmers in 1998 and 1999. The packs provided household food security. The packs raised maize production on average by about 125-150kg per household, which was significantly more than was estimated in the project design. Starter packs production in each of those two years was approximately 2.5 million tons, 500,000 tons higher than ever before and 67 percent higher than the twenty – year average. Very few small-scale farmers had the cash needed to purchase even small amounts of the required inputs. This gave rise to the

concept of giving to all small-scale farmers a starter pack of the new inputs. The Universal Starter Pack (USP) was designed to use the promise of the best bet technology to jump-start maize production for all small-scale farmers. This would simultaneously improve food security of all food deficit small scale households and sharply increase the marketed surplus available to urban consumers. It was more robust than a credit program for the poor and reinforced moves to a liberalised market. The vast majority of the small-scale farmers were so short of cash that at that time, they represented no market for hybrid seed or fertiliser. Therefore, giving them a starter pack would not have displaced any commercial purchases. Furthermore, because the package was small, it would stimulate, not diminish the incentive to purchase more inputs. There were evident rewards to good husbandry, especially to timeliness of planting, fertilising and weeding, which provided a strong incentive and reward for using the inputs well. It provided a nationally implemented, but individually operated, technology testing and demonstration program for a small part of each farm, facilitating experimentation by small-scale farmers of promising but not yet widely adopted technologies (Ibid).

The SPP was a focused programme intended to be long – term and aimed at enabling the poorest to access the improved technology they needed to breakout of the vicious cycle of food insecurity in which they were trapped. It provided all small-scale farmers with a highly cost – effective means of testing improved maize seed and fertiliser technology with a complementary legume rotation under their own conditions without the risk inherent in purchasing the necessary inputs. Unlike the blanket fertiliser subsidy (a subsidy on the price of fertiliser that does not take into account or typically ignores the high variation in soil and climatic conditions). Small packs were also seen by the fertiliser industry as the key to protecting (indeed promoting) their commercial sales. Compared to subsidised food aid, the

programme rewarded initiative in good husbandry, encouraging development rather than dependence. Further, the SPP performed extremely well compared to subsidised food import and as a long term development plan, the approach provided a reliable exit strategy.

The Malawian experience provides some very useful lessons to this study in understanding how subsidies on inputs and adhering to appropriate recommended usage were implemented in Malawi. It is very clear that various projects that were undertaken by the Malawian government and the donors enabled the most vulnerable small-scale farmers to access inputs and cultivate their fields. These programmes were very critical in enhancing and contribution to food security at household level. As noted in the Malawian experience, the projects emphasised the need to target many vulnerable small-scale farmers in the country. The programme also provided individuals with improved fertilisers and seed testing and demonstration programs on plots. The Malawian experience, therefore, had significant influence on this study since it involved agricultural extension officers and vulnerable small-scale farmers and this assisted to focus on the content of this investigations relating to food security in Chongwe distict.

Following numerous famines in Africa in the 1980s, and with an interest in addressing the structural causes of food insecurity in Sub Saharan Africa (SSA), the Sasakawa Association for Africa and Global 2000 of the Carter Centre formed a partnership to create a Non-Governmental Organisation (NGO), Sasakawa Association Global (2000) to undertake agricultural projects in Africa (Nubukpo & Galiba, 1999:5). In the 1990s, the Sasakawa Association Global (SG) programme initiated a series of joint programmes with African governments to demonstrate that substantial productivity increases could be achieved when small-scale farmers were given appropriate extension messages and agricultural inputs were

delivered on time at reasonable prices. Pilot programmes were set up typically in relatively productive areas to provide credit, inputs and extension assistance to participants willing to establish half-hectare demonstration plots on their own land. After several years, participating farmers "graduate" from the programme and are expected to continue using the productivity enhancing technical package on their own. Over time, other farmers learn from the participating farmers and adopt their input use and management practices and the technology diffusion process takes off. The SG 2000 began in Ghana and the Sudan in 1986, and the programmes were implemented in a number of SSA countries during the 1990s, including Ethiopia, Mozambique and Uganda. (Ibid).

Yudelman *et al*., (1991) conducted a study on *'An Evaluation of the SG 2000 Project in Ghana:In Africa's Agricultural Development in the 1990s.Can it be Sustained?'*, and concludes that in Ghana, such a programme was established in the mid 1990s between Ghana's Agricultural Development Bank (ADB), private input suppliers, the Department of Agricultural Extension Services and organised groups of farmers who had signed up to participate in the Ministry of Agriculture/SG 2000 crop demonstration programme. The farmer groups approved for input credit by ADB were supplied with the necessary inputs by private dealers who in turn were paid by ADB. After harvest, participating farmers were expected to repay their production loans to ADB. Test yields averaged 3.5 tonnes per hectare for maize for the 3,368 hectare plots. These yields were 300 times higher in plots using the recommended technologies relative to those based on traditional practices (Martinez *et al*., 1991). The 1991 evaluation of the Ghana programme by an external team, estimated that the SG 2000 effort contributed to an increase in total production by 30,000-40,000 tonnes of Maize (Ibid). In 2002, the Ministry of Food and Agriculture of Ghana/SG 2000 consultations

resulted in the increased commitments from local institutions, such as district assemblies and rural banks to finance Extension Test Plots (ETPs).

There was an increase in financing of farmers ETPs by the District Assemblies, other NGOs, rural banks and ADB. During the same season, 5,939 ETPs were planted in three regions compared to 4,200 plots in seven regions in other previous seasons. Over 400 farmers received credit under the Farmers Production Plots (FPP) programme to produce between 0.8 and 2 hectares of Quality Protein Maize (QPM) each. This resulted in thousands of small-scale farmers improving their food crop production to a point where they were regularly producing marketable surpluses, a pre-requisite for ensuring food security in Ghana. The price of grain stabilised and there was a food supply of other basic staples at the market.

The main elements of the SG 2000 in close collaboration with the Ministry of Agriculture, was direct farmers participation in technology transfer and promotion of agricultural intensification with appropriate, financially viable technology. With the combination of these elements, SG 2000 was able to offer a menu of technological package options to farmers. This stimulated the hopes of the farming population for a better life (Sasakawa Africa Association,2002:12)

This literature is relevant to this Study in the sense that, it shows that the Ghana experience, has demonstrated that substantial productivity can be achieved when small-scale farmers are given appropriate extension messages, as well as agricultural inputs delivered on time at a reasonable price. Therefore, lessons from Ghana provided an in depth information and understanding on the benefits of the synergy of various stakeholders in the agricultural system. The synergy by stakeholders brings on board various agricultural activities which

boosts productivity and in turn effectively contributes to sustainable food security. This study has also benefited from the Ghana experience in that, there is no single individual, group or organisation that can embrace all agricultural activities that are needed to meet the needs of a particular community adequately.

A research conducted by Blackie & Albright (2005) focusing on *'Lesson Learning Study of the Farm Inputs Promotions in Kenya: With Special Emphasis on Public-Private Partnership for Input Provision and Possibilities for Regional Up Scaling'*, reveals that millions of small-scale farmers in Africa suffer poverty and food insecurity. This is so because not only are they unable to obtain appropriate fertilisers and improved seed varieties, but they are unaware of the correct inputs required to achieve subsistence yields from increasing depleted soils. Fertilisers are key to alleviating these constraints but must be integrated with other inputs and proper soil managements for their economic potential to be realised (Blackie and Albright, 2005:1). Farm Input Promotions Africa (FIPS-Africa) was a development of an effort which began in western Kenya in 1990. The Sustainable Community-Oriented Development Programme (SCODP), a Kenyan NGO, was established to make the fertiliser readily available in small packages (in an appropriate formulation) to small-scale farmers who previously were unable to use this costly, but potentially productive, technology in an economically efficient manner. The area of focus was Siaya district in western Kenya which was home to some 100,000 farm families. While the area was potentially highly productive, few families produced enough food for their annual needs. SCODP set out to show that fertiliser use (and consequent food security) could be stimulated amongst very poor farmers without resorting to free handouts or setting up expensive credit operations. The objective was to create a self

sustaining farm input supply system which would serve small- scale farmers effectively and at a cost that the poorest could afford.

According to Crawford *et al*., (2006) further conducted a Study on *'Alternative Approaches for Promoting Fertiliser Use in Africa: Agricultural and Rural Development Discussion Paper 22'*, reveals that FIPS Africa achieved widespread impact in Kenya through the dual approach of stimulating the demand for farm inputs. This approach involved the by increasing farmer awareness, while improving the availability of inputs through stockists and private sector partnerships to meet the increased demands. This strategy has reduced four main constraints to fertiliser usage: (i) non availability of appropriate fertilisers, (ii) high unit cost of standard bags of fertilisers, (iii) inefficient fertiliser use, and (iv) private sector unwillingness to invest in development of markets for small-scale farmers. (Crawford *et al*., 2006:28).

To address these four constraints, FIPS-Africa, with the support of the Rockefeller Foundation, DFID and USAID, and in collaboration with the Private Sector fertiliser and seed companies, and the Kenyan Ministry of Agriculture developed and implemented an approach to make the appropriate fertilisers, and improved seed varieties, more accessible to small-scale farmers. The approach was based on the mass promotion of the improved technology through small affordable packs of seeds and fertilisers. Operations in some of the poorest areas had shown that small-scale farmers who were empowered to try out new technology using small affordable packages, returned to their local stockists to purchase larger quantities of inputs. This increased the gain in their livelihoods over a few seasons, and this improved their food security independently of the need for credit of free handouts (Ibid).

Since June 2003, Athi River Mining (ARM) a Kenyan mineral company, collaborated with FIPS-Africa in the development of two new multi-nutrient fertilisers called *Mavuno* – a planting formulation containing various traces of minerals and a top dressing fertiliser supplemented with additional Nitrogen nutrients. *Mavuno* was packaged by ARM in attractively branded 1kg bags, as well as conventionally available 10, 25 and 50kg bags. The 1 kg bags were sold for as little as United States Dollars $0.4 – $0.5 per kg. This encouraged small-scale farmers to experiment with the new fertilisers and see the benefits. FIPS-Africa also solicited 150g mini-packs of seed and improved maize varieties from the commercial seed companies. Demand for inputs was stimulated through demonstrations highlighting fertiliser use, improved seed, and appropriate crop and soil management that enable small-scale farmers to choose the appropriate fertiliser and variety for their farms. Seed Companies were requested to contribute seed of their recommended variety for the particular agro-ecological zone. Promotion of *Mavuno* fertiliser was successful throughout Kenya.

As a result, small-scale farmers were empowered to make informed choices regarding fertiliser purchases, and demand for *Mavuno* fertiliser soon surpassed supply as co-operating companies quickly sold out stocks (Blackie & Albright, 2005:9). It is possible to infer that larger scale outcomes from yield gains and maize sales in Embu and Kirinyaga districts confirm that there was an increase from 8 to 22 bags per acre. In Embu and Kirinyanga districts, farmers increased their yields from 5 to 20 bags per acre. Approximately 10 bags on average were required to achieve household food security (Ibid). For example, sales of Western seed increased from 0 to 60 tons of seed sold through stockists by the fourth season with the majority of small-scale farmers purchasing a 2kg bag, the smallest bag size available. Assuming that 60 tonnes of improved seed was used effectively, it would lead to a substantial yield, sufficient for a family of four to six members for one year.

This literature is relevant to this Study in the sense that, it shows that the Kenyan FIPS-Africa programme promoted availability of appropriate fertilsers tailored to the local soil type, fertilser bags packaged in smaller affordable quantities, efficient use of fertilisers through a learning pilot demonstration project and enhancing the private sector to invest in the development of markets for small-scale farmers. The Kenyan FIPS-Africa lessons, therefore, had a significant influence on the focus of this study with regards to how these developments of a "food security" package enable small-scale farmers concentrate resources on small plots with integrated soil, water, organic matter, and nutrient management to achieve moderate and reliable yield increments within their resource constraint.

Other lessons on food security can be drawn from literature on other African countries.

Gray (1963) analysed on the subsistence crop cultivation among the Sonjo people of Tanzania who inhabit those regions on the East-African plateau, West of Lake Natron (a salt lake in the rift valley). This land is too arid for the cultivation of crops by rainfall alone. However, the land which the Sonjo people inhabit is well endowed with streams and springs which enable irrigation as a base for crop cultivation. The Sonjo people prepare two kinds of fields known as the *Hura* and *Magare*. The *Hura* is prepared in the dry season entirely under irrigation. The principal crops on *Hura* land are sweet potatoes, followed closely by finger millet or bulrush millet, and several varieties of Sorghum. These farmers then intercrop the root crop and the cereal with beans and with two or three kinds of cowpeas which they intersperse in the fields. The second set of sorghum and millet fields which the Sonjo prepare are called the *Magare* prepared during the rain season and normally require irrigation to provide adequate moisture for crops, and relative food security, especially at the level of the household within the Sonjo society.

This literature is relevant to this Study in the sense that, it shows that in an effort to promote sustainable food security, the Sonjo people prepare two fields in one farming season; one which is rain fed and the other one through irrigation. Particularly, it is noted that Grays' study (1963) emphasised on cultivation of food crops (maize, sorghum, millet, cassava, sweet potatoes and groundnuts) in the intercropping and crop rotation system. Of these, maize is the most rainfed, while sorghum, millet and cassava are quite drought resistant and serve as a potential substitute on food security. The lessons from the Sonjo people of Tanzania have demonstrated to this study that sustainable agricultural productivity and attainment of food security, can be achieved through cultivation of various food crops, use of irrigation system and less dependent on rainfed agriculture.

A study by Harms (1974) on the indigenous agronomic systems among the Kuba people along the Kasai River and the Zande people of Zaire (Congo DR) shows that these people have historically evolved agrarian systems involving crop rotation based on the root crop Cassava in rotation with cereals such as finger millet, maize, sorghum, rice, as well as relish crops, including legumes and root crops such as yams and sweet potatoes. This literature of Harms is relevant to this study because it shows that permanent cultivation involving all the traditional staple food crops broadens the food base and ensures food security among households.

The main lessons learnt from the literature on other countries, such as Malawi, Ghana, Kenya, Tanzania and Congo DR is that subsidised input use and consequent sustainable food security in SSA can be achieved by a combination of the following factors: firstly, inorganic and organic fertilisers use must be integrated with other improved seed varieties and proper soil management for their economic potential to be realised; secondly, consideration of the

varying climatic conditions; thirdly, serving small-scale farmers effectively at a cost and availability of smaller packaged inputs that the poorest household could afford and/or provision of affordable credit schemes; fourthly, increasing market access through improved rural infrastructure and other trade-related interventions; fifthly, close collaboration with the Ministry of Agriculture, direct farmers participation in technology transfer and agribusiness stakeholders. Other factors include the promotion of agricultural intensification with appropriate financially viable technology and improvement in agricultural research. Also important is the cultivation involving traditional food crops such as millet, cassava among others as well as crop diversification, rotation, mixed cropping and irrigation (ACF,2002; Blackie & Albright,2005;Crawford *et al*.; CSPR, 2005 CSO, 2007; Gray, 1963; GRZ,2003;GRZ/UNDP, 2003; Harms,1974; IDS, 2005; Kajoba, 1988 & 1993; Levy, 2003;SSA,2002; Yudelman *et al*., 1991)

1.6 Rationale for the Study

Most developing countries, including Zambia, are experiencing major socio-economic challenges, especially enhancing food security among households in rural areas. The practical importance of this study is that its findings would provide insights and strategies that could enhance food security in rural Zambia. The information would also be beneficial to students, researchers and policy makers. The information would equip them and broaden their understanding on factors that could enhance sustainable rural livelihoods, as well as enhancing food security in the country.

Other anticipated beneficiaries on the findings of this study may include the following:

(i) Institutions and individuals tasked with formulating policies and strategies on food security;

(ii) Various United Nations agencies and other donors/lender agencies supporting governments on foods security;
(iii) Sector ministries responsible for designing and implementing food security programmes and/or projects and;
(iv) Non Governmental Organisations (NGOs) and Community Based Organisations (CBOs) implementing various interventions on food Security.

1.7 Methodology

1.7.1 Types of Data and Methods of Data Collection

Both primary and secondary types of data were collected. Primary data were collected by semi-structured questionnaires administered to small-scale farmers in Chongwe district and interview guides were administered to key informants. Secondary data was collected from books, reports, journals and the internet. Qualitative data were collected through interviews with the MACO Officials, Co-operative Officials (CO) and Village Headmen (VH). Quantitative data were collected through administering semi-structured questionnaires to 125 small-scale farmers. The sample had a total of 140 respondents, including key informants.

1.7.2 Location of the Study

The Study was carried out in Chongwe district which is located to the eastern part, about 45 kilometers from Lusaka city, Zambia's Capital. Chongwe district was chosen since the major occupational activity in the area is small-scale farming. The majority of the people are dependent on farming for their livelihood. The researcher had interest in rural districts with high poverty levels and Chongwe district is among such districts. The researcher also had a better understanding of the geography and culture of Chongwe district. This was important as it enabled the researcher to identify various locations, and he was familiar with the use of local language. Further, Chongwe district offered a better location for the study to be

conducted successfully with regard to the fact that the researcher was faced with resource and time constraint.

1.7.3 Sampling Procedure and Sample Size

Chongwe district is divided into five agricultural farm Blocks by the MACO for the purpose of administering agricultural activities. The Blocks are Rufunsa, Bunda-Bunda, Nkhomeshya, Chongwe Central and Palabana. Each Block is sub-divided into Camps. Each Camp is further divided into Co-operative societies (appendix iii & iv). All the five Blocks were picked by the researcher to include respondents from low, medium and high population density settlements in the district. In selecting the sample the researcher wanted all the blocks to be represented.

The actual sample size of small scale farmers was 125. 25 respondents were selected from each of the five cooperative societies.

The following sampling methods were employed. Multi-Stage Sampling was employed. In the first place, the total number of camps was identified in each of the agricultural Block. One camp was selected from each block using a Lot method. In the second stage, on the basis of the first sample, the total number of cooperative societies in each camp was identified. One cooperative society was selected from each of the five camps using the Lot method, again. Finally, from each of the five cooperative societies selected, 25 members (small-scale farmers) were selected also by using the Lot method. Lot method was used at camp, cooperative society and cooperative members (small-scale farmers). The total number at each level was noted. All the numbers at each level, from the first number to the last number were listed on small pieces of paper. For example, if there were five camps, numbers on each piece of paper would begin from 1, 2, 3 and so on until to the last number. Small pieces of paper

were then put in a small box where they were mixed up and shaken many times. After this, one piece of paper was selected randomly representing a camp, cooperative or cooperative member (small scale-farmer).The process was repeated until the required number at each level was attained.

Purposive sampling, also known as judgemental sampling, was employed to select 15 key informants. These included the District Agricultural Co-coordinator (DACO), Senior Agricultural Officer (SAO) and the District Marketing and Co-operative Officer (DMACO). Other key informants were: one Block Extension Officer (BEO), four Camp Extension Officers (CEOs), five Co-operative Officials, and two Village Headmen (VH). The researcher found it necessary to have a MACO Official to be interviewed or included either at Block or Camp level in order to provide official information on the operations of the FSP. The two village Headmen, who were included, apart from being traditional rulers, also sit on the cooperative Boards.

1.7.4 Methods of Data Analysis

Primary data from key informants and secondary data were analysed manually. Primary data from small-scale farmers were processed and analysed using the Statistical Package for Social Sciences (SPSS) computer software.

1.7.5 Limitations of the Study

There were a number of limitations that affected the study. Firstly, inadequate funding made it very difficult for the researcher to hire a research assistant to help with data collection, as well as a vehicle to access some remote places. Funds were also released late, consequently affecting time within which the research could be completed. Secondly, poor record keeping,

more especially at the MACO Chongwe district office, at Block and Camp levels. The record keeping system was not computerised and, therefore, it took long to retrieve information from the files, some of which were in tatters and disorganised. Thirdly, the researcher was unable to collect information on the categories of people who were not entitled to receive the FSP inputs but were benefiting from the programme. Some respondents were also not willing to reveal or disclose the categories of such people while others could have given false responses.

1.7.6 Chapter Layout

This dissertation is structured as follows: after this Chapter, Chapter two presents an analysis of the contribution of the FSP to household food security in Chongwe district. Chapter three examines the timeliness of the delivery of inputs to beneficiaries. Chapter four focuses on the challenges faced in implementing the FSP in Chongwe district. Chapter five summarises, concludes the analyses and suggests recommendations to reinforce long-term food security in Chongwe district in particular, and the nation as a whole.

CHAPTER TWO

2.0 THE CONTRIBUTION OF THE FSP TO FOOD SECURITY IN CHONGWE DISTRICT.

2.1 Introduction

This Chapter examines the contribution of the FSP to food security in Chongwe district.The Chapter has been divided into eight sections. The first section is the introduction and the second section focuses on the composition of the FSP input subsidy for 2006/2007 farming season. The third section focuses on the process of accessing the FSP inputs, while the fourth section discusses cooperative activities and membership. The fifth section presents an analysis on the contribution of the FSP to food accessibility. The last three sections focuses on the FSP contribution to availability, consumption of food and the relationship between the FSP and food security in Chongwe district.

2.2 Composition of the FSP Input Subsidy for 2006/2007 Farming Season

The FSP consists of farming inputs such as maize seed and fertiliser that are provided to farmers by government at a subsidised rate. Since 2002, the FSP has been providing inputs at varying fertiliser and maize seed subsidies ranging from 40 to 75 percent. During the 2006/2007 farming season the subsidy by government was at 60 percent, while each individual farmer contributed 40 percent of the price of inputs. The Input pack consists of eight bags of fertiliser (four x 50 kg basal fertilisers and four x 50kg top dressing fertiliser) and 20kg maize seed to support the cultivation of one hectare of maize. The total cost of a 50kg bag of fertilizer was ZMK 106,650. Out of this amount, farmers were paying ZMK 42,660.In case of seeds, the cost of a 20kg bag of maize seed was K94, 950. Out of this

amount, farmers were paying ZMK 37,980 per bag (Interview with DMACO-Chongwe, 7th October, 2008).

2.3 Process of Accessing the FSP inputs

The process of accessing farming inputs under the FSP starts with the Programme Coordination Office (PCO) at the Ministry of Agriculture and Cooperatives (MACO) Headquarters in Lusaka. The PCO informs the District Agricultural Committees (DACs) of what will be their allocation of inputs (fertiliser and seeds). The District Agriculture Committee (DAC) is composed of farmers elected from the cooperatives or Farmer Organisations in the district, the District Agricultural Coordinator (DACO), District Marketing and Cooperative Officer (DMACO), the District Commissioner (DC) and representatives from the District Farmers Association. The DAC is chaired by one of the farmers who is elected at the Annual General Meeting (AGM) of the DAC. The DAC, based on the allocated target, pre-select in collaboration with the local leadership (MPs, NGOs, village Headmen, among others), cooperatives to participate in the programme. The PCO verifies and approves such cooperatives and other farmer organisations (Interview with DACO, October 2008).

To access farm inputs under the FSP, farmers must be members of a cooperative society or a farmer organisation within an agricultural camp. Farmers themselves initiate the formation of cooperatives or farmers' organisations, while in some cases, agricultural camp officers facilitate the formation of these groups. Members select cooperatives or farmers' organisation committees at an annual general meeting, which are responsible for managing or running the activities of the cooperative or farmers' organisations. Once a cooperative society has been

established, the members elect a Board of Directors headed by a Chairperson. Other board members are the Secretary and the Treasurer. The term of office for Board Members varies from one cooperative society to another. Some have a two year term, while others have a three year term. In addition, each cooperative society has to be registered with the Registrar of Cooperatives at the MACO Headquarters. In the case of a Farmer Organisation, it has to be registered with the Registrar of Societies under the Ministry of Home Affairs. Once registered, cooperatives or farmers organisations qualify to apply for farm inputs.

Before applications can be made, DAC together with the Cooperative Board (CB), the Camp Extension Officers (CEOs) set the date and venue for explaining modalities of the programme to prospective applicants. Also, the Village Farmers Committee, Village Headmen and other local leaderships or representatives are expected to attend the meetings. After applications modalities have been explained, farmers are allowed to apply through their respective cooperatives or farmer organizations to access the inputs. The CEO sits in the meeting of the cooperative Board and is involved in the process of appraising and considering applications. Upon counter checking, the CEO endorses the list of applicants who are to benefit from FSP inputs. The applications are then forwarded to DAC for scrutiny and approval. (Interview with DMACO-Chongwe 7th October, 2008).

After approval of the applications, the Cooperative Boards and Committee of other farmer organisations arrange to collect the required amount of money from all approved applicants and deposit the money in the specified account approved by the Programme Coordinating Office (PCO). In the case of Chongwe District, National Savings and Credit Bank (NATSAVE) is the Bank with which Cooperatives and Farmer Organisations deposit in the

FSP Account. Deposit slips are then taken to the DACO as evidence that funds have been remitted. Thereafter, the DACO issues Authority To Collect (ATC) inputs with a duly signed and stamped deposit slip. The ATC specifies the depot/collection point where inputs will be drawn by each individual farmer with an identity card (Ibid).

The District is also empowered to appoint and hire a Transporter/Local Distributor. A Contractual agreement is signed by the DACO indicating quantities to be delivered and contract price. The transporter has a responsibility upon payment by government to deliver inputs to the shade, depot or warehouse nearest to the cooperative or Farmer Organisation in the locality. The PCO under MACO appoints the Warehouse Manager. The role of the Warehouse Manager is to receive agricultural inputs (fertiliser and maize seed) at the main depot and satellite depots (Ibid).

2.4 Cooperative Activities and Membership

The main activity for cooperatives in Chongwe district is farming. Maize is the main crop grown by these cooperatives. Other crops grown include cassava, millet, sorghum, sweet potatoes, cotton and sunflower, among others. In this case, the cooperatives are made up of farmers, who are required to pay a membership fee. The membership fee ranges from ZMK5, 000 to ZMK50, 000 from one cooperative to another, while the share capital per member is ZMK100, 000. Share capital refers to money realised from the sale of shares in the agricultural cooperative society which is used to fund activities of the cooperatives. The share capital is determined by the number of shares that individuals buy from the cooperative. In this case, each member is required to buy a maximum of ten shares from the cooperative at a cost determined by the cooperative board. Interest that is realised from the activities of the

cooperative is given to shareholders at the annual general meeting. However, some cooperatives are faced with financial problems. This is because some of its members fail to buy shares or few members buy shares.

The members also fail to generate profit from the agricultural activities they are engaged in due to inadequate inputs they receive which affect their maize production. For example, during the 2006/2007 farming season, some of the members in Ikatishani and Anti-Poverty Cooperatives produced less than 10 x 50kg bags of maize. Others did not even have any produce (Ibid).

2.5 The contribution of the FSP to food accessibility

The contribution of the FSP to food security will be looked at from two angles. These are the proportion of small-scale farmers benefitting from the FSP and the number of bags of fertiliser and maize seed received by small-scale farmers.

2.5.1 The proportion of Small-scale farmers benefiting from the FSP

The proportion of small-scale farmers who benefitted from the FSP during the 2006/2007 farming season was small and it was around 28 percent. This shows that majority of the small-scale farmers did not benefit from the Programme.According to the DACO and other key informants, there are about 23,000 small- scale farmers and emergent farmers in Chongwe district (interview with DACO-Chongwe 8th October, 2008). During the 2006/2007 farming season under the 60 percent subsidy, the district only received 26,000 x 50kg bags of basal dressing fertiliser and 26,000 x 50kg bags of top dressing fertiliser (Ibid). According to the MACO Officials, this figure was far below what was required to meet the demand. The total number of bags of fertiliser received altogether was 52,000. The district also received 6,500 x

20kg bags of maize seed. These figures only represent about 6,500 small-scale farmers that received the subsidised fertiliser against the district population of about 23,000 small-scale farmers. Chongwe district has about 90 agricultural cooperative societies. Out of these, only 48 received the inputs during the 2006/2007 farming season (Ibid). Even in these cooperatives, the majority of the members did not receive the inputs. In each of the cooperatives that received the inputs, the number of members that actually obtained inputs ranged from 15 to 25 individuals. In addition to this, some of the members received less than eight bags of fertiliser. In most cases, cooperative societies that did not receive inputs in previous seasons were given priority. Individuals and/or cooperatives that had benefited twice or more before the 2006/2007 farming season were deregistered and could not receive inputs during the 2006/2007 farming season. This standard was used because inputs were too inadequate to cater for all small-scale farmers in the district. Under the FSP implementation manual, small-scale farmers are supposed to benefit from the programme for three continuous seasons, after which they become ineligible (interview with DMACO-Chongwe, 7th October 2008).

2.5.2 Number of bags of fertiliser and maize seed received by small- scale farmers

The number of bags for both basal and top dressing fertilisers was examined by analysing individual responses from small-scale farmers. Respondents were asked whether they received all the eight bags of both basal and top dressing fertiliser under the FSP input for the 2006/2007 farming season at the same time. Table 2.1 below reveals that out of the 125 sampled respondents, 79 (63.2 percent) received all the eight bags of fertiliser, while 27(21.6 percent) of the respondents did not receive all the eight bags of fertilisers. 15.2 percent of the respondents in the "*Not Applicable category"* did not apply for the FSP inputs during the

2006/2007 farming season as they could not raise the 40 percent subsidy requirement to contribute. The 15.2 percent of the respondents in the "*Not Applicable Category*" will be appearing often in the subsequent chapters.

Table 2.1: Farmers' responses on whether they received all the eight bags of fertiliser during the FSP for 2006/2007 farming season.

Response	**f**	*%*
YES	79	63.2
NO	27	21.6
Not Applicable	19	15.2
Total	**125**	**100.0**

Source: field data.

Also, as observed in Table 2.1 above, not all the farmers received all the eight bags of maize. Responses from some farmers indicated that they received less than the eight recommended bags of fertiliser for one hectare maize cultivation. When asked why some farmers got less than the recommended number of bags of fertiliser, they said that in order to allow most members to get some fertiliser, some cooperatives tended to share the consignment by giving members one or two bags of fertiliser.It is evident that from these results, it can be safely concluded that supplies of inputs under the FSP during the 2006/2007 farming season were inadequate as other small scale farmers did not receive the recommended one input pack.However,slightly above 60 percent (63.2 percent) of the respondents received all the eight bags of fertiliser.

Table 2.2 below presents information on the question of whether respondents received the 20kg bag of maize seed during the FSP 2006/2007 farming season. Out of the total number of

125 respondents, 90 (72 percent) indicated that they received the 20kg bag of maize seed, while 16 (12.8 percent) indicated that they never received the 20kg bag of maize. The "*category of the Not Applicable"* (15.2 percent) of the respondents has been discussed under Table 2.1. From the information in Table 2.2, although most of the respondents received the 20kg bag of maize seed, few of the respondents did not receive. It is clear from this information, that almost 13 percent (12.8 percent) of the respondents that were left out, food security situation may have been affected at household level.

Table 2.2: Farmers' responses on whether they received the 20kg bag of maize seed during the FSP for 2006/2007 farming season

Response	**f**	**%**
YES	90	72.0
NO	16	12.8
Not Applicable	19	15.2
Total	**125**	**100.0**

Source: field data.

2.6 Contribution of the FSP to availability of food

Two views will be taken to examine the contribution of the FSP to availability of food.These are maize production, and the sales of maize and income gained before and after the FSP for 2006/2007 farming season.

2.6.1 Maize Production

Table 2.3 below presents information on average number of bags x 50kg for grain maize that were produced before respondents started benefiting from the FSP inputs under the 2006/2007 farming season. Out of the 125 sampled respondents, 84 (67.2 percent) produced bags in the

range of (less than 10 to 50) bags, 25 (20 percent) produced (51 to 100) bags and 16(12.8 percent) produced above 100 bags.

From these responses, it can be concluded that most of the respondents produced bags of maize in the range of (less than 10 to 50) bags. There were few respondents who produced (51 to 100) bags. Further, very few respondents produced above 100 bags.

Table 2.3: Average number of 50kg bags of maize grain produced before respondents started benefiting from the FSP inputs under the 2006/2007 farming season.

Responses	f	%
Less than 10 bags	21	16.8
10-20 bags	32	25.6
21-30 bags	13	10.4
31-40 bags	3	2.4
41-50 bags	15	12.0
51-60 bags	8	6.4
61-70 bags	5	4.0
71-80 bags	4	3.2
81-90 bags	6	4.8
91-100 bags	2	1.6
Above 100 bags	16	12.8
Total	**125**	**100.0**

Source: field data.

Table 2.4 below presents information with regard to the average number of 50kg bags of maize grain produced under the FSP inputs for 2006/2007 farming season. The findings were that: Out of the 125 respondents,50 (40 percent) of the respondents produced maize bags in

the range of (less than 10 to 50) bags, 29 (23.2 percent) of the respondents produced (51 to 100) bags, while 27 (21.6 percent) produced above 100 bags.19 (15.2 percent) of the respondents did not participate in the programme.The *"Not Applicable Category"* is not appearing in Table 2.3 because the question on whether respondents had money to contribute the required 40 percent subsidy to participate in the FSP before the 2006/2007 farming season was not asked.

Table 2.4: Average number of 50kg bags of maize grain produced after respondents benefitted from the FSP inputs for the 2006/2007 farming season.

Responses	**f**	**%**
Less than 10 bags	4	3.2
10-20 bags	13	10.4
21-30 bags	10	8.0
31-40 bags	11	8.8
41-50 bags	12	9.6
51-60 bags	7	5.6
61-70 bags	8	6.4
71-80 bags	8	6.4
81-90 bags	2	1.6
91-100 bags	4	3.2
Above 100 bags	27	21.6
Not Applicable	19	15.2
Total	**125**	**100.0**

Source: field data.

From the two tables above, it can be noted that before the FSP for 2006/2007 farming season, majority of the farmers (67.2 percent) had their maize production in the range (less than 10 to 50) bags. On the other hand after the FSP for 2006/2007 farming season, the proportion of those who produced (less than 10 to 50) bags was only 40 percent.Similarly,looking at those

who produced more than 100 bags, it can be noted that there was an increase from 12.8 percent before the Programme to 21.6 percent after the Programme. From these results, we can deduce that during the same period, there was an increase in food security at household level.

However, in some parts of the farming blocks in the district, there is irregular and poor rainfall distribution and poor topography. These include areas such as Rufunsa, Bunda-Bunda and Nkhomeshya blocks. Agricultural livelihood in these areas is sometimes uncertain and many households lived in a state of transitory food insecurity. After the FSP for 2006/2007 farming season, food security situation for some households in these areas was determined or influenced largely by the pattern of food stock depletion. Further, these same areas were also affected by drought and produced as low as 5 x 50kg bags of maize and consequently experienced food shortages.

After (May-June), there was a very rapid depletion of maize as a staple food. With the onset of the planting season, maize stocks started to go down very rapidly. It was found that by January only few households in these areas had maize stocks remaining. For farmers who depleted their food stocks, food had to be purchased or food intake had to be reduced as a means of coping with household food insecurity during this period.

2.6.2 Comparison of average maize sales and income raised before and after benefiting from the FSP during the 2006/2007 farming season.

This section discuses the sale of surplus maize and utilisation of proceeds to buy foodstuffs other than maize before and after the 2006/2007 farming season.

Table 2.5: Farmers' responses on whether surplus maize was sold before and after benefiting from the FSP inputs for 2006/2007 FSP.

Response	**Before benefiting from the FSP inputs under 2006/2007 farming season**		**After benefiting from the FSP inputs under 2006/2007 farming season**	
	f	%	f	%
YES	60	48.0	77	61.6
NO	23	18.4	29	23.2
Not Applicable	42	33.6	19	15.2
Total	**125**	**100.0**	**125**	**100.0**

Source: field data.

Table 2.5 provides analysis on the sale of surplus maize and utilisation of proceeds to buy food stuffs other than maize before and after the 2006/2007 farming season. There was a total of 60 (48.0 percent) and 77 (61.6 percent) of the respondents who sold surplus maize before and after benefiting from the FSP for 2006/2007 farming season, respectively. The *"Not Applicable Category"* (33.6 percent) of the respondents comprised of those whose stocks of maize harvested were not sufficient to take them to the next farming season and also were not able to sell any surplus maize. From this information in the above Table, it is clear that there has been an increase of the respondents who sold surplus maize after the 2006/2007 farming season. On average, respondents who said that they did sell surplus maize increased by 13.6 percent from 48.0 percent before the 2006/2007 farming season to 61.6 percent after the 2006/2007 farming season. In general farmers' income from the sale of surplus maize was important to meet consumption shortfalls from their own production in some case. In addition to this, households with surplus stocks of maize had the capacity to increase the size of area

cultivated since they were able to hire labour. Therefore, it can be concluded that, farmers in Chongwe district after benefitting from the FSP input under the 2006/2007 farming season produced surplus maize that they were able to sell.

Table 2.6 below, presents information on respondents' income earned from maize sales for the FSP 2006/2007 farming season. The findings were that 8.0 percent of the respondents earned less than K 500, 000, 15.2 percent of the respondents earned from K500, 000 to K1, 000,000. While fewer farmers (0.8 percent), in two categories, earned from K2,500,001 to K3,000,000, and from K3,000,001 to K3,500,000, respectively. *"The Category of Not Applicable" (*41.6 percent) comprised of those who did not participate in the programme and others who did not sell any surplus maize after benefiting from the FSP for 2006/2007 farming season. These respondents also did not raise any income at all.

Table 2.6: Income earned from maize sales under the FSP inputs for 2006/2007 farming season.

Amount	**f**	**%**
Less than K500,000	10	8.0
K500,000 to K1,000,000	19	15.2
K1,000,001 to K1,500,000	12	9.6
K1,500,001 to K2,000,000	8	6.4
K2,000,001 to K2,500,000	6	4.8
K2,500,001 to K3,000,000	1	0.8
K3,000,001 to K3,500,000	1	0.8
K3,500,001 to K4,000,000	8	6.4
Above K4,000,000	8	6.4
Not Applicable	52	41.6
Total	**125**	**100.0**

Source: field data.

Although all the amounts of money stated above seems to be lower in terms of percentage, the amount of money earned was substantial. In addition to this, the information show that most respondents who sold maize earned an income from K500, 000 to above K4, 000,000 during the period. There were, however, fewer farmers (6.4 percent) that earned above K4, 000,000 from maize sales. This information further suggests that maize which is the main staple food and crop grown is, therefore, an important crop from both the food security and income generation points of view. The income was also used by farmers to purchase food stuffs other than maize, not supported by the FSP.

Prices of maize are also important because they determine the demand for food. Policies, therefore, affect food production. Incomes and prices impact on food security. Evidence from many African countries has shown that trying to solve the food security problem from the production point of view overlooking the demand side, does not succeed (Adebayo, 1989).

In Table 2.7 below, 40 percent of the respondents had raised adequate income to buy other food stuffs, built brick houses and bought livestock among others from the sale of maize, while 7.2 percent did not do so before getting the FSP inputs for 2006/2007 farming season. Further, 58.4 percent of the respondents said that they raised adequate income from the sale of maize, while 4.8 percent did not do so after benefitting from during the FSP for 2006/2007 farming season. Furthermore, 52.8 percent of the respondents were in the "*Not Applicable category"* before getting the FSP inputs for the 2006/2007 farming season. This category of respondents also harvested maize stocks which were sufficient to take them to the next farming season, but did not to sell any surplus maize. 38.8 percent of the respondents in the

"Not Applicable category" during the FSP for 2006/2007 farming season, did not sell any surplus maize and therefore, could not raise any income at all.Analysis of information in Table 2.7, show that there was an increase of 18.4 percent in the number of respondents who raised an income that was adequate from 40 percent to 58.4 percent after the FSP 2006/2007 farming seasons. In addition to this, 7.2 percent and 4.8 percent of the respondents indicated that they did not raise adequate income to purchase food stuffs from the sale of maize before and after benefitting from the FSP 2006/2007 farming season, respectively. It can also be observed here, that there were few respondents who did not raise adequate income after the FSP for 2006/2007 farming season compared to the period before the FSP for 2006/2007 farming season. With regards to respondents who sold surplus maize after benefiting from the FSP for 2006/2007 farming season in all the five farm blocks, details are discussed later in the chapter.

Table 2.7: Farmers' responses on whether adequate income was raised from the sale of maize to purchase other food stuffs before and after benefiting from the FSP inputs for 2006/2007.

Response	**Before getting FSP inputs for 2006/2007 farming season**		**After benefiting from FSP inputs for 2006/2007 farming season**	
	f	%	f	%
YES	50	40.0	73	58.4
NO	9	7.2	6	4.8
Not Applicable	66	52.8	46	36.8
Total	**125**	**100.0**	**125**	**100.0**

Source: field data.

The strategy of raising maize productivity through the FSP reduces maize prices and benefits both the producers and consumers of maize. Further, the majority of maize consumers are in some way producers. For these categories of people, food security achieved through increased local production helps to ensure that they access food at reasonable prices. This also ensures that the livelihoods of a large proportion of producers who depend on maize production is thereby sustained.

2.7 Contribution of the FSP to Consumption (Utilisation) of food

Thus far it is clear that, the FSP increased maize production during the 2006/2007 farming season. This in turn contributed to food accessibility and availability.Table 2.10 shows a comparison of the number of meals consumed by households before benefitting from the FSP inputs under the 2006/2007 farming season and after benefiting from the FSP inputs under the 2006/2007 farming season. Less than 1 percent (0.8 percent), 36.8 percent and 62.4 percent households consumed one, two and three meals per day, respectively before benefitting from the FSP inputs under the 2006/2007 farming season. Zero percent, 11.2 percent and 73.6 percent of the respondents were consuming one, two, and three meals, respectively after benefitting from the FSP inputs for 2006/2007 farming season.

Table 2.8: Number of meals consumed by households before and after benefiting from the FSP inputs during the 2006/2007 farming season.

Response	**Number of meals consumed before benefiting from the FSP inputs**		**Number of meals consumed after benefiting from the FSP inputs**	
	f	%	f	%
1 meal	1	0.8	None	None
2 meals	46	36.8	14	11.2
3 meals	78	62.4	92	73.6
Not Applicable	-	-	19	15.2
Total	**125**	**100.0**	**125**	**100.0**

Source: field data.

The information in Table 2.10 above shows us that the number of meals consumed by households after benefiting from the FSP inputs under 2006/2007 farming season increased. The number of households consuming three meals per day increased by 11.2 percent from 62.4 percent before getting the FSP inputs to 73.6 percent after benefiting from the FSP inputs under the 2006/2007 farming season. In addition to this, households consuming two meals per day, decreased by 25.6 percent, from 36.8 percent before getting the FSP inputs to 11.2 percent after benefiting from the FSP inputs under the 2006/2007 farming season.15.2 percent of the respondents in the "*Not Applicable category"* has already been explained earlier in this chapter. *"The Not Applicable Category"* does not appear for the FSP before the 2006/2007 farming season since the question on whether respondents had money to contribute the 40 percent subsidy to participate in the programme was not asked.

Some key informants mentioned that production of maize increased during the FSP inputs under the 2006/2007 farming season due to an expansion in maize cultivation hectarage. Most maize farming households expanded their hectarage to more than one hectare. The Status of livelihood among households improved in Chongwe district under the 2006/2007 farming season compared to the period before farmers were getting FSP inputs. Information that came from the DACO and views of other people interviewed during the 2006/2007 farming season cited the following as visible indicators: (i) the reduction of cases of malnutrition among the under five aged children, (ii) no relief food requests were made in the district, except in Chief Shikabeta's area in Rufunsa where wild animals fed on crops (iii) some few farmers were able to buy cattle for use as draught power, and (iv) a number of farmers built brick houses and few bought vehicles.

In Rufunsa block, Chimusanya Camp was selected and then in turn Ikatishani Agricultural Cooperative was selected which recorded an increase in the number of maize bags taken to the satellite depots during the FSP inputs for the 2006/2007 farming season, as compared to the previous season where farmers did not benefit from inputs under the FSP. Before the FSP inputs were given to farmers, food stocks at household level were not sufficient and stocks were exhausted around December. However, with the provision of the FSP inputs under the 2006/2007 farming season, food stocks among households were able to last longer, and in most cases took them to the next farming season. With this food surplus, people were able to sustain their needs locally and stopped buying maize in nearby Nyimba District. Previously, people in Rufunsa block were buying maize from Nyimba to cover up for the period of the shortfall. In addition to this, farmers at Ikatishani Cooperative were able to build brick houses with iron sheets, able to hire cattle as draught power and tractors to till their fields.

Furthermore, farmers raised some income from the sale of maize and were even affording three meals per day (Interview with Secretary – Ikatishani Cooperative, 1st September 2008).

In Bunda Bunda block, Nyangwena Camp was selected and then Nyangwena Multi Purpose Agricultural Cooperative was sampled. Almost all the cooperative members sold maize to the satellite depot under the FSP 2006/2007 farming season. There was low demand for maize during the month of December 2007 under the FSP in 2006/2007 farming season. Previously, before individuals got the FSP inputs there used to be high demand for maize, but after the FSP 2006/2007 people never bought maize. The cooperative was also recognised by the Food Reserve Agency (FRA) and was allowed to operate a satellite depot. In addition to this, farmers were able to take their children back to school that had earlier stopped school due to lack of funds. Social activities such as marriages became common since individuals had money from maize sales (Interview with Headman – Nyangwena Multi Purpose Cooperative, 1st September, 2008).

At Nkhomeshya block, Lukoshi Camp was selected and then Mabwe cooperative society. Farmers in this cooperative produced sufficient bags of maize that was able to take them to the next farming season. Farmers also produced surplus bags of maize that were sold and earned an income. The FRA also introduced a satellite depot. Further, some farmers at this cooperative were able to buy Tudor pumps for irrigation, ploughs and harrows. Other things that some farmers bought were livestock such as cattle, goat and pigs. In some cases farmers bought vehicles, Television sets and Solar Panels on income earned from the sale of surplus maize (Interview with Mabwe cooperative society Chairman on 2nd September, 2008). It is clear that there was an increase in the food security situation under the FSP during the

2006/2007 farming season. It was also observed that farmers raised adequate income from the sale of maize which they used to buy agricultural implements and household property.

In Chongwe block, Kanakantapa Camp was selected from other camps and then Evergreen cooperative was sampled from other cooperatives. Farmers in this cooperative, during the 2006/2007 farming season, increased the area under maize cultivation which in turn increased maize production in the area. Food stocks were in surplus and sufficient enough to take small-scale farmers to the next harvest season. Small-scale farmers like in other cooperatives also raised an income from the sale of surplus maize. Some small-scale farmers bought livestocks and ploughs that enabled them cultivate larger portions of land easily. In addition to this, farmers were able to build brick houses with modern roofing (Interview with the Camp Extension Officer for Kanakantapa Camp on 5th September, 2008).

In Palabana block, Palabana camp was selected and then Anti-Poverty cooperative society was selected. Under the FSP inputs, during the 2006/2007 farming season, farmers at this cooperative society, like in other cooperatives, produced sufficient bags of maize which sustained them to the next farming season. This was an indication that during the same period the FSP inputs contributed to food security. Small-scale farmers were also able to sale surplus bags of maize. Some farmers were able to buy animals such as cattle and goats. Others also managed to build brick houses and were able to take back their children to school as they could afford their school fees. (Interview with the Chairman, for Anti-Poverty Cooperative, 8th August, 2008).

2.8 The Relationship between the FSP and Food Security in Chongwe District

From the foregoing discussion, it can be noted that there is a positive relationship between the FSP and food security in Chongwe district. This can be seen at three levels.Firstly, there was an increase in the number of people producing more than 50kg bags of maize after the FSP for 2006/2007 farming season than before the FSP for 2006/2007 farming season. This means that the FSP led to an increase among small-scale farmers.Secondly, there was an increase in the percentage of people who could afford three meals per day after the implementation of the FSP for 2006/2007 farming season as compared to the period before. For instance, before the FSP for 2006/2007 farming season, this percentage stood at 62.4 percent, while after the implementation of the Programme it rose to 73.6 percent.Thirdly,there was also an increase on the number of people to get an extra income to buy other food stuffs for their household. For example, the percentage increased from 40 percent to 58.4 percent. This shows that more people were becoming food secure following the implementation of the FSP for 2006/2007 farming season.

CHAPTER THREE

3.0 TIMELINESS OF DELIVERY OF INPUTS TO BENEFICIARIES

3.1 Introduction

This Chapter examines the timeliness of delivery of inputs to beneficiaries in Chongwe district. The Chapter is divided into five sections. Section one is introduction, section two presents an analysis on the delivery of fertilisers,The last three sections focuses on delivery of maize seed, causes of delay in input delivery and lack of, and non-use of satellite depots.

3.2 Fertilisers

There were two types of fertiliser beneficiaries under the FSP during 2006/2007 farming season. One category of respondents received less than eight bags of fertiliser while the other category are those who received all the eight bags.

3.2.1 Timeliness of Delivery for Beneficiaries who obtained less than eight bags of Fertiliser.

Table 3.1 presents information of basal dressing fertiliser delivered to beneficiaries who received less than eight bags. 4.0 percent obtained basal dressing fertiliser in September, 0.8 percent in October, 11.2 percent in November, 1.6 percent in December (2006), while 2.4 percent in January, 2007.Less than 2 percent (1.6 percent) of the respondents could not remember exactly when they received the inputs. 78.4 percent of the respondents in the "*Not Applicable category"* comprised of those who received all the eight bags of fertiliser and some who did not participate in the FSP during the 2006/2007 farming season.

Table 3.1: Responses on the month of the year in which basal dressing fertiliser was received during the FSP for 2006/2007 farming season (for less than eight bags).

Response	f	%
September	5	4.0
October	1	0.8
November	14	11.2
December	2	1.6
January	3	2.4
Could not Remember	2	1.6
Not Applicable	98	78.4
Total	**125**	**100.0**

Source: field data.

This information show that out the total of 125 sampled respondents, only 6 (4.8 percent) of the respondents received the basal dressing fertiliser within the MACO stipulated time, that is, in September and October. Slightly above 15 percent (15.2 percent) overall of the respondents received basal fertiliser after October. From this information, it is clear that some respondents received basal fertiliser late, and this implies that the stipulated time was not being adhered to. This delay affected planting at household level. The farmers mentioned that any delay in receiving farm inputs affect maize yield negatively and therefore triggers shortages, food insecurity poverty and vulnerability among community members.

Table 3.2 below presents information on respondents who received less than eight bags of top dressing fertiliser. Results show that 0.8, 10.4, 4.0, 4.0, and 0.8 percent of the respondents received top dressing fertiliser in September, November, December, all in 2006 and January and February 2007, respectively. Less 2 percent (1.6 percent) of the respondents could not

remember when they received top dressing fertiliser. The 78.4 percent of the respondents in the *"Not Applicable Category"* comprised of those who did not participate during the FSP for 2006/2007 farming season and those who received all the bags of fertilisers.

Table 3.2: Responses on the month of the year in which top dressing fertiliser was received during the FSP for 2006/2007 farming season (for less than eight bags)

Response	f	%
September	1	0.8
November	13	10.4
December	5	4.0
January	5	4.0
February	1	0.8
Could not Remember	2	1.6
Not Applicable	98	78.4
Total	**125**	**100.0**

Source: field data.

Analysis of the information in Table 3.2, show that only 1(0.8 percent) out of a total of 125 sampled respondents, received top dressing fertiliser in time. Altogether, 24 (19.2 percent) of the respondents received top dressing fertiliser late. In some cases, top dressing fertiliser was delivered as late as February, 2007. This delay affected some small scale farmers' plans of planting.

3.2.2 Timeliness of access for Beneficiaries who obtained all the eight bags of fertiliser

When asked if farmers accessed all the eight bags of fertiliser on time in Table 3.3, 4.0 percent of the respondents mentioned that they received on time, that is, October and November. However, (54.4 percent) mentioned that they received the bags of fertilisers after

October and while others as late as March. Further, 7.2 percent of the respondents could not remember when they actually received the inputs. Nearly 34 percent (34.4 percent) of the respondents in the *"Not Applicable Category"* comprised of those respondents who did not participate under the FSP for 2006/2007 farming season as well as those who did not receive all the eight bags of fertiliser.

It is evident from the results in the Table below that few respondents (4.0 percent) received basal dressing fertiliser on time. Nearly 54 percent (54.4 percent) of the respondents received the inputs late, after October. From this information, it can be safely concluded that timeliness in the delivery of fertilisers was not being observed. The above data also confirms that adherence to the stipulated month of October for delivering input was still a challenge.

Table 3.3: Responses on the month of the year in which basal dressing fertiliser was received during the FSP for 2006/2007 farming season(for all the eight bags)

Response	**f**	**%**
September	1	0.8
October	4	3.2
November	30	24.0
December	23	18.4
January	11	8.8
February	3	2.4
March	1	0.8
Could not Remember	9	7.2
Not Applicable	43	34.4
Total	**125**	**100**

Source: field data.

On the question on which month of the year all the eight bags of top dressing fertilisers were received during the FSP for 2006/2007 farming season. Table 3.4 presents the information. Less than 1 percent (0.8 percent) of the respondents received all the eight bags,in October. Almost 57 percent (56.8 percent) received the bags of the fertilizer late between November and March. In addition to this, 8.0 percent of the respondents could not remember when they actually received the inputs. The *"Not Applicable Category"* (34.4 percent) has already been discussed in Table 3.3.

Analysis of the above data shows that very few (0.8 percent) of the respondents received top dressing fertiliser on time, that is, by October. Almost 57 percent (56.8 percent) of the respondents received top dressing fertiliser after October. From these results, it is evident that top dressing fertiliser was delivered late just like the basal dressing fertiliser during the 2006/2007 farming season.

Table 3.4: Responses on the month of the year in which top dressing fertiliser was received during the FSP for 2006/2007 farming season (for all the eight bags)

Response	**f**	**%**
October	1	0.8
November	22	17.6
December	32	25.6
January	12	9.6
February	1	0.8
March	4	3.2
Could not Remember	10	8.0
Not Applicable	43	34.4
Total	**125**	**100.0**

Source: field data.

Further, a comparison of the results above, between Table 3.3 and Table 3.4 above regarding the delivery of basal and top dressing fertilisers shows that the number of respondents who received basal and top dressing fertilisers did not tally. According to the one input pack, the number of bags for basal and top dressing fertiliser supplied should be the same. For example, 24.0 percent of the respondents received basal dressing fertiliser in November 2006, while in the same month 17.6 percent received top dressing fertiliser. In addition to this, there were 18.4 percent of the respondents who received basal dressing fertiliser and 25.6 percent who received top dressing fertiliser, both in December, 2006. There is a slight difference in the figures concerning the time when the two types of fertiliser were received for a particular month. The difference confirms that these fertilisers did not come at the same time. This creates a situation in some cases where farmers recieve wrong inputs at the right time and vice –versa. For example, farmers receive top dressing fertiliser first before receiving basal dressing fertiliser.

On the question of whether respondents received both basal and top dressing fertilisers early enough to apply on their fields, Table 3.5 presents the following results: 36.0 percent of the respondents received fertiliser early enough while 48.8 percent did not. Slightly above 15 percent (15.2 percent) of the respondents belonging the "*Category of Not Applicable"* did not participate under the FSP programme during the 2006/2007 farming season.

Table 3.5: Responses on whether fertiliser was received early enough to apply on the field during the FSP for 2006/2007 farming season.

Response	**f**	**%**
YES	45	36.0
NO	61	48.8
Not applicable	19	15.2
Total	**125**	**100.0**

Source: field data.

Thus far it is clear from the information above that only 45 (36.0 percent) received fertiliser early enough to apply on their fields, while a significant proportion of the respondents 61(48.8 percent) did not. As observed earlier, respondents acknowledged late delivery of the inputs.

Table 3.6 below is a presentation of the information regarding views of the respondents on which month would be the best to receive both basal and top dressing fertilisers.Almost 9 percent (8.8 percent), 21.6 percent, 14.4 percent, 1.6 percent and 0.8 percent indicated that they would like to be receiving both basal and top dressing fertilisers in September, October, November, December and August, respectively. 52.0 percent of the respondents in the "*Not Applicable Category"* are those who indicated that they received fertiliser early enough to apply on their field and those who did not participate under the FSP during the 2006/2007 farming season.

Table 3.6: Responses on the month preferred by small-scale farmers to receive both basal and top dressing fertiliser in a year.

Response	f	%
September	11	8.8
October	27	21.6
November	18	14.4
December	2	1.6
August	1	0.8
Not Applicable	66	52.0
Total	**125**	**100**

Source: field data.

Slightly over one fifth (21.6 percent) of the respondents indicated that they would like to be receiving both basal and top dressing fertilisers in October. Slightly above 14 percent (14.4 percent) of the respondents indicated that they would like to be receiving inputs in November. As observed in Table 3.6 above, most respondents prefer to be receiving fertilisers in October.

According to the MACO implementation manual for 2006/2007 FSP, inputs were expected to be in Chongwe district depots and satellite depots by October. However, one issue that seems to come out prominently regarding timeliness on delivery of inputs is that most small-scale farmers mentioned that inputs arrived as late as March in the outlying satellite depots.

Small-scale farmers also said that delays in receiving the FSP inputs affected maize yields negatively and therefore triggered shortages and food insecurity. Some farmers further explained that local transporters complained to them that it was expensive to transport few bags of fertiliser. Therefore, local transporters found it necessary to wait until there were

adequate numbers of bags to carry to the same destination. Farmers who are far from the district or along main road(s) are the ones who were disadvantaged most by these delays.

3.3 Maize Seeds

Table 3.7 below presents information on respondents who received and those who did not receive the 20kg bag of maize seeds during the 2006/2007 farming season. Majority of the respondents representing 72.0 percent indicated that they received the 20kg bag of maize seed, while 12.8 percent did not. The *"Category of Not Applicable"* (15.2 percent) has already been discussed earlier in chapter two. From these results, it is clear that most of the respondents received the right quantity of maize seed as stipulated in the input pack, though few did not.

Table 3.7: Responses on whether small-scale farmers received the 20kg bag of maize seed during the FSP for 2006/2007 farming season

Response	**f**	**%**
YES	90	72.0
NO	16	12.8
Not Applicable	19	15.2
Total	**125**	**100**

Source: field data.

Table 3.8 presents information on various responses on farmers who did not receive the 20kg bag maize seed. Slightly over 2 percent (2.4 percent) did not have sufficient funds to contribute, 0.8 percent of the respondents refused to collect the poor variety of maize seed and 3.2 percent of the respondents indicated that the maize seed supplied was inadequate. Other respondents, 0.8 percent mentioned that distribution of maize seed was based on the size of

the field cultivated, while 0.8 percent of the respondents used their own seed. Respondents who belonged to the "*Not Applicable category",* (92 percent) are those who received the 20kg maize seed and some who never participated in the FSP for 2006/2007 farming season. It is likely that farmers who did not receive maize seed under the FSP planted ordinary seeds.

Table 3.8: Responses on reasons why small-scale farmers did not receive the 20kg bag of of maize Seed during the FSP for 2006/2007 farming season.

Response	**f**	**%**
Lack of money	3	2.4
Refused to collect poor variety of seeds	1	0.8
Maize seeds were inadequate	4	3.2
Distribution was based on size of field cultivated	1	0.8
Farmers using their own seeds	1	0.8
Not Applicable	115	92.0
Total	**125**	**100**

Source: field data.

Although statistical figures are small on the reason why small scale farmers did not receive the 20kg bag maize seed, it can safely be concluded that supply of maize seed was inadequate under the FSP inputs during the 2006/2007 farming season. Asked why some farmers got less

than the recommended 20kg bag maize seed, they said that in order to allow most members to get some seeds as well. Some cooperatives tended to share the consignment by giving members a 10kg bag maize seed. Other farmers paid for the 20kg bag of maize seed, but when inputs came they were only given a 10kg bag maize seed.

Table 3.9 below presents information on the month of the year in which respondents received the 20kg bag of maize seeds. Slightly above 2 percent (2.4 percent) of the respondents received in September, 5.6 percent of the respondents received in October and 30.4 percent of the respondents received in November. Others were, 20.8 percent, 4.8 percent, 0.8 percent and 0.8 percent who received the maize seed in December 2006, January, February, and March in 2007, respectively. In additional to this, 9.6 percent of the respondents could not remember exactly when they received the maize seed. Almost 25 percent (24.8 percent) of the respondents in the "*Not Applicable category"* are those who never received the 20kg bag of maize seed and some who did not participate under the FSP during the 200/2007 farming season. Similarly, as observed in Tables, 3.1 to 3.4 farmers received the fertilisers late.

Table 3.9 presents responses regarding the month of the year small scale-farmers received the maize seed. Out of the 125 interviewed respondents, only 10 (8.0 percent) of the respondents received the maize seed on time, that is, between September and October. On the other hand, 72 (57.6 percent) of the respondents received the maize seed after October, that is, between November, 2006 and March, 2007. These results confirm that both fertilisers and maize seed were either delivered at the same time or late at different times. This irregular arrangement of supplying inputs affects the planting process.

Table 3.9: Responses on the month of the year small-scale farmers received the 20kg bag of maize seed during the FSP for 2006/2007 farming season.

Response	f	%
September	3	2.4
October	7	5.6
November	38	30.4
December	26	20.8
January	6	4.8
February	1	0.8
March	1	0.8
Could not Remember	12	9.6
Not Applicable	31	24.8
Total	**125**	**100**

Source: field data.

Table 3.10 below presents views of the respondents on whether the time they received the maize seed was early enough to plant on time. Almost 37 percent (36.8 percent) of the respondents indicated that the time they received maize seed was early enough to plant on time, while 41.6 percent indicated that the time they received maize seed was late. Slightly over 21 percent (21.6 percent) of the respondents in the *"Not Applicable category"* comprise of those who did not receive the 20kg maize seed and others who did not participate under the FSP during the 2006/2007 farming season.

The results in the Table show that more respondents received maize seed late than those who received in time, although there was a difference of almost 5 percent (4.8 percent) . Therefore, it can be safely concluded that maize seed was delivered late as observed earlier.

Table 3.10: Responses on whether maize seed was received early enough to plant on time during the FSP for 2006/2007 farming season

Response	f	%
YES	46	36.8
NO	52	41.6
Not Applicable	27	21.6
Total	**125**	**100**

Source: field data.

Table 3.11 below presents information on what would be the best month to receive maize seed. Less than 12 percent (11.2 percent) indicated that they would like to receive maize seed in September, 20.0 percent of the respondents indicated that October would be the best month to receive maize seed, while 9.6 percent indicated that they would like to receive maize seed in November. Slightly above 59 percent (59.2 percent) of the respondents in the "*Not Applicable category"* comprised those who did not receive the 20kg maize seed and others who did not receive the seed early enough to plant on time as well as those respondents who did not participate under the FSP during the 2006/2007 farming season. This information shows that most respondents representing 39 (31.2percent) would like to receive maize seed between September and October compared to 12(9.6 percent) who indicated that they would like to receive maize seed in November.

Table 3.11: Reponses by small-scale farmers on the month they prefer to receive maize seed.

Response	f	%
September	14	11.2
October	25	20.0
November	12	9.6
Not Applicable	74	59.2
Total	**125**	**100.0**

Source: field data.

3.4 Causes of delay in input delivery

There are two main causes of delay in the delivery of inputs to beneficiaries in Chongwe district. Firstly, government delays delivering inputs at the district level. Secondly, the local transporters in the district tend to delay delivery of inputs to the satellite depots, where the farmers get them from. Transporters tend to take long to load their vehicles. According to the MACO Implementation Manual for 2006/2007 FSP, Inputs (fertiliser and maize seed) were expected to be in district depots in Chongwe by October (MACO 2006). It is important to note that the month of October, as indicated earlier in Table 3.6, is consistent with the views of most small-scale farmers who indicated that they would like to receive inputs during the month of October. However, the common experience of small-scale farmers is that inputs arrive in cooperative societies as late as March, 2007. Small-scale farmers also explained that any delay in receiving inputs affected maize yields negatively and, therefore, triggered shortages, food insecurity and poverty among household members.

Local transporters delay taking the inputs to nearby locations. Local transporters feel that it is expensive to transport a small number of bags of inputs and, therefore, find it necessary to

wait until there are adequate numbers of bags to carry to the same destination. Farmers who are far away from the main depot are the most disadvantaged by these delays (interview with DMACO – Chongwe, 7th October, 2008). Late delivery of inputs to small-scale farmers undermines benefits expected from the inputs. Delays in receiving the inputs cause farmers to delay planting and affect the maturity of the crop, since in some cases rains may stop early. Consequently this triggers poor yields and that leads to food shortages and food insecurity.

3.5 Lack of, and non-use of satellite depots

The problem of non delivery of inputs to the nearest point was compounded by non-use of satellite depots. Although use of satellite depots was considered critical to timely delivery of inputs to small scale farmers, these facilities were not being utilised by the FSP during the 2006/2007 farming season. Farmers indicated that the use of satellite depots would reduce transport and travelling time, as well as the waste of time at the district.

To keep the prices under the FSP below the market-determined level, the government has to allocate funds to pay for subsidies. However, government funds are limited, especially in Zambia where part of the national budget is financed by development partners' contributions. As a results, the FSP programme delays in the procurement of inputs for delivery to small-scale farmers. Because the demand for fertilisers is seasonal, *fertilisers delayed are basically fertiliser denied*. For example, in 2003, the government bought 48,000 tons of fertiliser (out of 120,000) tonnes of the total use in the country and distributed to target farmers at one-half price (Gregory and Bumb, 2006:24). Once farmers knew that there was a subsidy, they were justifiably reluctant to buy fertilisers at market prices. This results in fertiliser dealers incurring losses in carry over stocks for a year because fertiliser use is seasonal. Subsidies not

only produce an adverse impact at the micro level (dealers) but also affect import planning at the macro level. Failure by local dealers to sell their products in one farming season, may lead them to stop or curtail orders or supplies from wholesalers or importers. Importers may in turn do likewise. This is because subsidies may be counterproductive to the development of a free market system because of the distortions that are introduced when they are implemented.

Information in Chapter three reveals that inputs were delivered late. Farmers mentioned that maize seed was delivered late. In addition to this, the category of small-scale farmers who received less than eight bags indicated that they received both basal and top fertilisers late. Similarly, the category of small-scale farmers who received all the eight bags of basal and top dressing fertilisers also indicated that they received the commodity late.

CHAPTER FOUR

4.0 CHALLENGES FACED IN THE IMPLEMENTATION OF THE FSP

4.1 Introduction

This Chapter examines challenges faced in the implementation of the FSP.The implementation of the FSP in Chongwe district during the 2006/2007 farming season had some setbacks. This Chapter is divided into four sections. The first section is the introduction and the challenges faced by governments departments. The last two sections discuss challenges faced by local transporters and small-scale farmers

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4.2 Challenges faced by Government Departments

The main challenges faced by government in the implementation of the FSP during the 2006/2007 farming season was to cater for all small-scale farmers and at the same time to ensure its sustainability of the Programme.

4.2.1 *Non Scaling up of the FSP*

The 2006/2007 FSP was supplying fertilisers and seed to small-scale farmers at a 60 percent subsidy. However, out of the 23,000 estimated small-scale farmers, only 6,500 benefitted from the subsidised inputs in the district. The main reason for this shortfall is that government could not cater for all the vulnerable small-scale farmers and expected the remainder to be supported by the private sector.

In addition to this, the main aim of the FSP was to empower viable small-scale farmers so that they could graduate to next farming level (medium-scale farmers) and become sustainable

without further dependency on the FSP subsidised inputs. However, the FSP in its current form in the district operates like an input supply system rather than an asset building strategy. Part of the *'thinking'* is that the FSP is about continuous promotion of subsidised input, provided intended beneficiaries are able to raise the prescribed subsidy.

The situation creates a 'culture' of continued dependence on the FSP subsidy resources instead of building sustainable assets. In Chongwe ditrict, so far, there are no records showing farmers who have graduated to the next level and are sustainable by themselves and have since ceased benefiting from the FSP inputs.

4.2.2 Lack *of Funds for Monitoring and Evaluation*

Monitoring and evaluation is one of the major elements for the successful implementation of a project/programme. At the district level, the District Marketing and Cooperatives Office is responsible for the monitoring and evaluation function of the FSP. Information from the MACO key informants showed that both DAC meetings and the monitoring and evaluation activities are not held due to lack of and/or inadequate funding from government. The current allocation for the activities of the FSP is inadequate. The DAC no longer meet to consider the fertiliser applications and the DACO make decisions regarding the applications. Lack of transport, office furniture and non payment of allowances, such as missing lunch allowance, subsistence allowance, among others, were cited by the MACO key informants as a source of low morale. This situation has obvious consequences for the performance of the FSP. Firstly, it severely restricts the amount of contact time between the MACO officials and cooperative officials, as well as farmers. Secondly, it creates difficulties, such as agricultural administration in general and management of the FSP, for the DACO, DMACO and SAO charged with the responsibilities of supervising BEOs and CEOs. This not only generates

frustration, lack of enthusiasm, and low morale, but also encourages both senior MACO officials and cooperative officials to be 'indoors'. As a result, the FSP is not effectively monitored. Failure to properly keep records and monitor and evaluate the programme creates an opportunity for pilfering. In addition to this, some farmers may lack technical know-how on the use of fertilisers. This leads to low production, which affects food security.

4.2.3 *Political Interference*

Political interference from local Councillors, MPs, and Ministers was common during the 2006/2007 farming season. Politicians were said to be strongly backing certain individuals or farming communities to receive inputs without following the laid down procedures. In some cases, it was reported that politicians themselves wanted to benefit from the FSP inputs. MACO officials were in some instances summoned by local political leadership to lobby for inputs for their supporters. When their requests were unsuccessful MACO officials were intimidated and threatened with transfers to more remote places (interview with DMACO-Chongwe, 7th October, 2008).

4.3. Challenges faced by Local Transporters

While inputs were expected to be in Chongwe district by October, the common experience to small scale-farmers was that inputs arrived in the district and satellite depots as late as march. With regards to local transporters during the 2006/2007 farming season, some farmers felt that some local transporters delayed taking inputs to nearby locations where farmers can lift to their farms.

In the study sites covered, both farmers and key informants mentioned that local transporters

found it expensive to transport few bags of fertiliser and therefore found it necessary to wait until there were adequate number of bags to carry to the same destination.As mentioned earlier, poor feeder roads were also contributing to difficulties in input supply.This seriously affected input delivery on farmers far from the district and the main road and they were the most disadvantaged by these delays.

4.4 Challenges faced by Small-scale farmers

Small-scale farmers encountered several challenges during the FSP for 2006/2007 farming season in Chongwe district. These challenges have been discussed here below, as pointed by farmers and from literature reviewed.

4.4.1 *Crop Marketing and State of Feeder Road network*

Problems of agricultural marketing were identified as the major institutional constraint small-scale farmers were facing (Francis *et al*., 1995; Leavy, 2005). According to a Study by Leavy (2005), on *Zambia's Agriculture and Market Participation,* key factors in marketing participation include: long distances, lack of affordable or appropriate transport and poor feeder roads. While political constraints include the inability of small-scale farmers to influence the terms of their participation in the markets and lack of market intermediaries. Some farmers said that when it comes to sell maize to FRA, it becomes difficult and only those who have connections to political leadership have easy access to sell their crops. Because the majority of rural farmers are scattered and isolated, connecting to both input and produce markets is a major problem and consequently for increasing in agricultural production.

According to the 2006/2007 MACO FSP implementation manual, each district was supposed to have a main depot established for the purpose of distributing agricultural inputs. Each main depot is expected to have an average of eight satellite depots. In addition to this, the average distance from the main depot to each satellite depot should be at about 75 kilometers. About 50 percent of the inputs allocated to each district were supposed to be distributed through satellite depots (MACO implementation manual, 2006:16).It should be noted here that shades, warehouses and satellite depots are used for both receiving inputs and for maize sales.

However, the information in Table 4.1 show that 45 (36.0 percent) of the respondents said that, they belonged to the cooperatives that had satellite depots, while 61(48.8 percent) mentioned that belonged to cooperatives that did not have satellite depots. The *"category of Not Applicable"* (15.2 percent) has been discussed already in chapter two.

Table 4.1: Responses on whether the cooperative society had a satellite depot or not during the FSP for 2006/2007 farming season.

Response	**f**	**%**
YES	45	36.0
NO	61	48.8
Not Applicable	19	15.2
Total	125	100.0

Source: field data.

From this information, it is clear that less than 50 percent (36.0 percent) of the inputs were not distributed through satellite depots as stipulated in the 2006/2007 FSP implementation manual. It might be possible that a good number of farmers had to cover long distances to take their maize produce to other depots. Crop marketing arrangements are characterised by

spatial relations between market points and the locality served by the markets in Chongwe district. The constraints on marketing are also compounded by inadequate transport facilities and poor road conditions.

Table 4.2 below provides information on the quality of the feeder road network in the district. Slightly above 5 percent (5.6 percent), 30.4 percent, 24.0 percent and 24.8 percent of the respondents indicated that the road network was very good, good, poor and very poor; respectively. 15.2 percent of the respondents did not participate under the FSP during the 2006/2007 farming season.

Table 4.2: Responses on the quality of feeder road network in the district during the FSP for the 2006/2007 farming season

Response	**f**	**%**
Very good	7	5.6
Good	38	30.4
Poor	30	24.0
Very Poor	31	24.8
Not Applicable	19	15.2
Total	**125**	**100.0**

Source: field data.

From the results above, it can be safely concluded that a slim majority of the respondents representing 61 (48.8 percent) were of the view that the road network in the district was poor and/or very poor, while 45 (36.0 percent) were of the view that the road network was good and/or very good. The feeder road network is very poor in some parts of the district. The situation is worse especially during the rain season. This creates difficulties in supplying the inputs to places that are 'off the main road'. This forces farmers cover long distances, on bicycles, scotch cart and wheelbarrows to collect inputs from the supply point.

Given the poor condition of the rural roads, and limited transport facilities at the disposal of small-scale farmers, many find it extremely expensive to move their crops to the market points provided by the FRA in the district. As a result, a considerable portion of harvested maize is left unpurchased. This situation in turn tends to discourage many small scale farmers from increasing their agricultural production. Each district has one main depot.The FRA determines the number of satellite depots in the district where farmers deliver their crops in their respective areas. The FRA does not provide any form of transport assistance to farmers to ferry their crop to satellite depots (*Times of Zambia, 2008*). From this situation, it may be concluded that a large quantity of maize in remote areas remains unpurchased by the FRA. For example, some farmers in Lukoshi, Palabana and Kanakantapa camps kept between (50 to and 70) x 50 bags of maize unpurchased during the 2006/2007 farming season.

Lack of personnel and high operational costs all combine to reduce the effectiveness of depots established by the FRA in boosting agricultural production and marketing. Not only are depots costly to maintain, but their number is too inadequate to cater for the needs, thus hindering the development of adequate linkages between production centers and operational points. This problem is further exacerbated by lack of efficient management staff as well as non-availability of the requisite inputs at the right time, in the right place and in the required quantity (interview with DMACO-Chongwe, 7th October 2008). Poor marketing arrangements, low output prices, fewer buyers and poor transport facilities add to the constraints.

Crop marketing and payment procedures under the FSP during the 2006/2007 farming season were not in favour of the small scale farmers in the district. In most cases small scale farmers

received their money late, and when they had the money, inputs were either in short supply or not in stock.

The FRA, the only government mandated agency to purchase maize from small scale farmers, is insufficiently funded. It takes maize grain from small-scale farmers but fails to pay them on time. In addition to this, the prices at which the FRA buys and sells maize are unpredictable, making it difficult for farmers to plan.

Government has in some cases prohibited maize exports, or subjected exports to licensing. It also imposes import quotas haphazardly. There is also uncertainty over the governments' import tariff rates. For example, when the shortfall of maize in 2001 was announced, the Zambian government declared their intention to import maize to be sold at a subsidised price. Fearing that they would have a hard time competing with subsidised government sales, traders were less active in purchasing maize both domestically and from abroad, than they would otherwise have been. It turned out that government was unable to import as much and as fast as it had declared. Shortages ensued (Mwanaumo *et al*., 2003:iv).

4.4.2 *Inadequate Inputs*

Table 4.3 below presents information on various challenges experienced at household level during the 2006/2007 farming season. Almost 17 percent (16.8 percent) of the respondents mentioned that the inputs they received were not enough.

4.4.3 *Lack of Funds*

Nearly 17 percent (16.8 percent) of the respondents were not able to raise the 40 percent subsidy contribution during the FSP for 2006/2007 farming season.

Table 4.3: Challenges experienced in ensuring availability of food security at household level during the FSP for 2006/2007 farming season

Responses	f	%
Inadequate inputs	21	16.8
Lack of funds	21	16.8
Heavy rainfall	20	16.0
Lack of farming implements e.g.ploughs,ADP,tractors	14	11.2
Drought	6	4.8
Termites/grain borer affected the produce	5	4.0
Late delivery of inputs	4	3.2
Sickness (HIV/AIDS)	3	2.4
Received poor seed varieties	2	1.6
No crop diversification	2	1.6
Livestock disease (cattle)	1	0.8
Not Applicable	26	20.8
Total	125	100.0

Source: field data.

Other challenges experienced at household level are also presented in the same Table 4.3 above, 16.8 percent of the respondents indicated that input supplied to them were inadequate. As discussed earlier in Chapter Three, 1.6 percent of the respondents said that they received poor variety of seeds and 3.2 percent indicated that inputs were delivered late.

4.4.4 *Lack of farming implements such as Animal Draught Power, Ploughs and/or Tractors*

Lack of animal draught power, ploughs and tractors for hire by small-scale farmers at a low and affordable fee adversely affected cultivation of maize fields. Some local people provide animal draught power, tractors, or ploughs for hire on charges that were not affordable by many small-scale farmers. Table 4.3 above shows that 11.2 percent of the respondents indicated that they lacked animal drought power and/or ploughs and tractors.

4.4.5 *Non practice of crop diversification*

The evidence in Table 4.3 above shows that 1.6 percent of the respondents indicated that no crop diversification was practiced. Diversification helps to ensure food security by off setting the risks of relying on one crop. For example, in cases of drought, availability of drought resistant food crops could off set the loss of non-drought resistant ones. Few economies rely on one annual rain-fed crop, such as maize.

4.4.6 *Heavy Rainfall and Drought*

For most rural households in Chongwe district and other parts of the country, the cultivation of maize provides their primary source of income, as well as food. In Table 4.3 above, 16.0 percent of the respondents indicated that heavy rainfall was a reason behind the unfavorable food security situation, while 4.8 percent, of the respondents indicated that drought affected

their maize production. Maize is particularly vulnerable to heavy rainfall and drought. In some parts of Chongwe district such as Rufunsa and Nkhomeshya blocks, food production and food security situations were adversely affected as a result of heavy rainfall and/or drought during the 2006/2007 farming season. Drought also had a direct adverse impact on the households' key assets, such as, livestock.

Further, Table 4.3 above shows that 0.8 percent of the respondents indicated that their cattle were adversely affected by the disease. Cattle disease was widespread in some parts of the district. Such as Lukoshi Camp during the FSP for 2006/2007 farming season – hitting households hard. Cattle are also used by small-scale farmers as animal drought power to till the field. Although food availability challenges were driven by a multiplicity of factors, drought remained the most important precursor (Interview with Mabwe Cooperative Secretary-Lukoshi Camp, 8th September 2008).

4.4.7 *HIV/AIDS Pandemic*

The prevalence of HIV/AIDS among some households, though less prevalent in Chongwe district, has had a negative impact on food security as it affects both production and demand. Table 4.3 shows that 2.4 percent of the respondents were ill or took care of their sick relatives. Sickness and death as a result of HIV/AIDS depletes potential agricultural labour in terms of the quality and numbers of the workers available. This is because those infected may be unable to work properly. At times they may not work at all. The quantity of labour is further reduced when caregivers are withdrawn from farm activities to look after the patients. Information from the study sites on impact of HIV/AIDS in the district during the 2006/2007 farming season revealed that villagers had to withdraw labour from farming activities to

attend to funerals within their villages and in the neighbouring ones. These issues not only reduced their farm productivity but also other farm income for food purchases. The overall result was a decline in food for family consumption. In addition to this, 20.8 percent of the respondents in the "*Category of Not Applicable"* mentioned that they never experienced any challenges at household level.

Further, the premature death of household members in some cases resulted in the permanent loss of useful agricultural production skills and knowledge. A common result of the pandemic in the district has been an increase in households headed by orphaned children and grand parents. These were either usually too young to access the FSP inputs or too old to use the FSP inputs effectively during the 2006/2007 farming. This affected household productivity by reducing food available for consumption. As observed in Table 4.3, 99 (79.2 percent) of the respondents experienced various challenges at household level.

As a consequence of these social, economic, and environmental shocks in Chongwe district, the effectiveness of the impact of the FSP in contributing to food security during the 2006/2007 farming season in district was adversely affected.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This Chapter presents the findings of the study on the impact of the FSP on household food security among small scale farmers in Chongwe district during the 2006/2007 farming season. The study was conducted between August and October 2008. The main Objective of the Study was to evaluate the impact and efficiency of the FSP on food security among small scale farmers in rural Zambia. The specific objectives were: to examine the contribution of the FSP to household food security in rural areas, particularly in Chongwe district and to examine the timeliness of the delivery of inputs to beneficiaries. This Chapter has three major sections. These are introduction, summary of the study findings and recommendations.

5.2 Summary of the Study findings

From the findings of the study in Chapter two, the following emerged as factors contributing to food security in Chongwe district during the 2006/2007 farming season; the proportion of small-scale farmers benefitting from the FSP increased, there was also an increase in maize production and the number of bags sold as well income raised from the sale of surplus maize, the number of meals consumed per day by households increased. The study in chapter three also established that inputs were delivered late compared to the FSP implementation manual.

There were several challenges, encountered during the implementation of the FSP for 2006/2007 farming season as well as at household level as shown by the findings of the research in Chapter four. The main challenge was scaling up of the FSP and ensuring its

sustainability. As discussed earlier, the number of the beneficiaries was far too low to increase food production and to contribute to food security among the majority of the vulnerable small scale farmers in the district during 2006 /2007 farming season. Poor crop marketing and storage facilities, poor road network and lack of monitoring and evaluation were also identified as challenges in the implementing of the FSP during the 2006/2007 farming season. Other most serious challenges cited by households during the same period were, inadequate input supply, lack of funds, and heavy rains and drought for that particular season.

The Study concluded that the FSP for 2006/2007 farming season increased food production. The FSP's contribution to food security was moderate and availability of food among small scale farmers in the district during the period under review. However, in some parts of the district some small-scale farmers said that they did not have adequate food since they produced few bags of maize.

Therefore, the impact and efficiency of the FSP to contribute to food production as well as enhancing food security among small-scale farmers to a large extent was somehow affected by the challenges encountered in the district during the 2006/2007 farming season. In addition, the findings imply that timely government support is necessary in the enhancement of food security among small-scale farmers.

5.3 Recommendations

In order to improve the performance and effectiveness of the FSP, it is critical to remove the constraints that hamper the impact of the Programme. A number of recommendations were

suggested by the Programme beneficiaries, key informants and some emerged from the review of literature. Some key recommendations include the following:

(i) The Government should re-capitalise the Nitrogen Chemicals of Zambia (NCZ) so that fertilisers are produced locally to supplement the imported ones. This will also reduce transportation and other logistical costs from imports that might have an adverse effect on the FSP subsidies. This will promote timely supply of fertiliser.

(ii) Government should scale up the FSP in Chongwe district in particular as well as at national level. This will cater for at least most of the farmers who could afford to contribute a prescribed subsidy. The FSP in its current operating form has been leaving out a substantial proportion of small-scale farmers, including those who contributed the subsidy, who were later refunded, during the 2006/2007 farming season.

(iii) Most of the small-scale farmers lack funds and find it difficult to raise funds to contribute to the required subsidy. Therefore, it would be beneficial to reduce the quantity of the inputs-package size of improved seed in 5kg and 10kg while fertiliser bags would be measured to 5kg, 10kg and in 25kg sacks that are easily transportable and affordable to many small scale farmers, rather than more traditional sizes of 20kg and 50kg bags of seed and fertiliser, respectively which may be unaffordable and more bulky.

(iv) Government and the FRA should improve marketing arrangements for maize produce and synchronise input supply with agricultural marketing season. Also, payment to

farmers for farm produce should be done in time to allow the farmers plan for input purchases as well as the need to peg a 50kg bag of maize at a fair price.

(v) The FRA should establish, organise and coordinate satellite depots in some remote parts of district where they do not exist and where large quantities of maize are being produced. This arrangement will facilitate access to markets for small scale farmers' produce within their localities. In addition to this, fertiliser retailers in collaboration with local transporters should facilitate delivery of fertiliser to nearest point to enable small scale farmers with cash to buy from there.

(vi) Government should construct and maintain the rural road network as it plays a key role for efficient delivery of inputs to and from remote areas and help in linking rural communities to towns and market centres.

(vii) The MACO in the district should introduce an efficient and effective monitoring system for the FSP. Continuous coordinated, systematic and period surveillance of the physical implementation of the programme will ensure that its operations and other external factors are proceeding according to plan.

(viii) The government should put in place affordable credit facilities for small-scale farmers to enable them purchase animal draught power (ADP), plough and/or tractors. Also, there is need by government to rehabilitate and construct appropriate water retention structures to enable small scale farmers undertake and practice irrigation systems.

(ix) Zambia needs an efficient "*Early Warning and Disaster Management Capability"* to forecast and plan for risk exposures, such as drought, floods and pests. Early warnings

would enable farmers to make timely decisions and avoid disasters by 'Crisis Management'.

(x) The MACO in the district should continue to encourage conservation farming/tillage methods. This practice enables small scale farmers to spread out their activities during the year as they do not have to wait for the first rains to soften the grounds before initiating the farming process. Less labour is required, and offer an opportunity among small-scale farmers to increase the area under cultivation with very little capital investment.

(xi) Crop diversification must be encouraged, especially drought resistant crops that do not need fertilisers, for example, cassava, sorghum, groundnuts and among others. This will help to enhance food security at household level, since fertiliser application may not be affordable and is sometimes highly risky in terms of economic returns.

(xii) It is recognised that without some sort of support, vulnerable farmers would not be able to purchase inputs to grow food crops to enhance household food security. The conventional alternative is to introduce subsidies. However, subsidies may be counter productive to the development of the free markets and the support of vulnerable farmers. Therefore, interventions should be designed by government to promote the use of fertiliser subsdies to support input-output markets developments as well as interventions without undermining incentives for the private sector.

(xiii) Government should not be in the fertiliser distribution business for the long haul. Public Sector Interventions should be designed with a clear exit strategy, except for few long-run public-goods functions, such as, infrastructural development, research and development on natural resource management.

(xiv) A final consideration is that public interventions designed to promote increased use of fertiliser should also aim to promote vulnerable small scale farmer growth .In exceptional circumstances, poverty reduction and/or food security objectives may be given precedence over efficiency and sustainability goals, if it can be determined that fertiliser interventions are a cost-effective way of addressing these problems.

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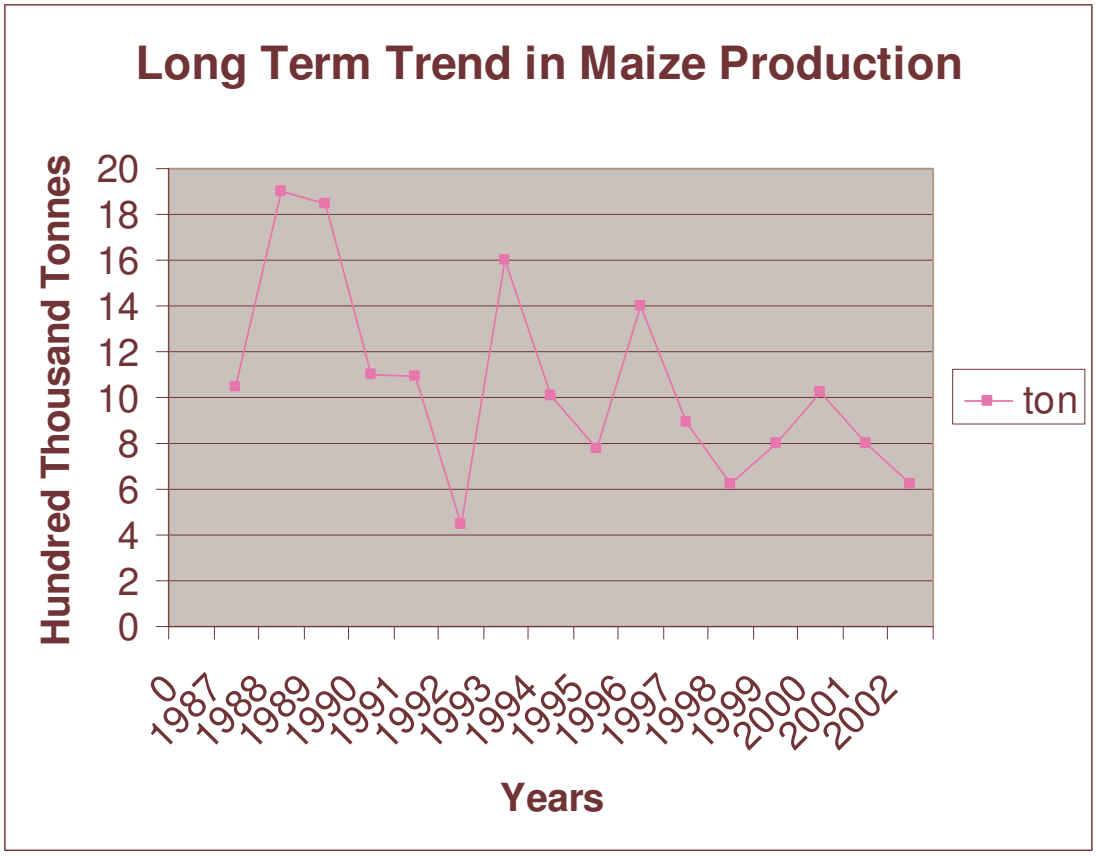
APPENDIX I: Long Term Trend on Maize Production in Zambia



Source: GRZ/UNDP (2003)

APPENDIX II: Map Showing the Location of Chongwe District in Lusaka Province.

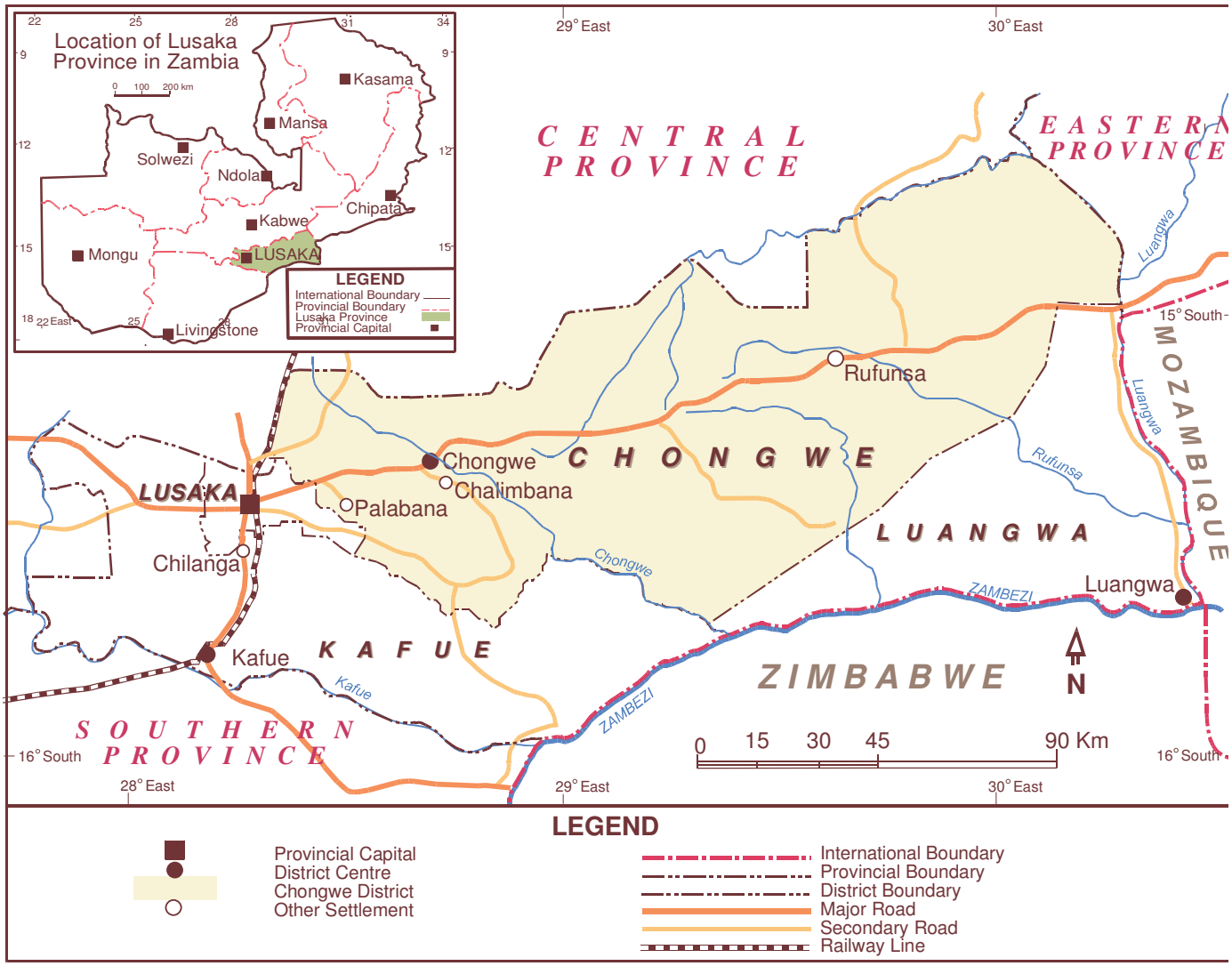


Figure 1: Location of Chongwe District in Lusaka Province

APPENDIX III: Agricultural Blocks and Camp in Chongwe District

1.Rufunsa Block	**1.Bunda-Bunda Block**	**1.Nkomeshya Block**	**1.Chongwe Central Block**	**1.Palabana Block**
2.Camps	**2.Camps**	**2.Camps**	**2.Camps**	**2.Camps**
i.Rufunsa	i.Nangwenya	i.Kampekete	i.Sheleni	i.Palabana
ii.Mphanshya	ii.Chiyota	ii.Lukoshi	ii.Chainda	ii.Njolwe
iii.Shikabeta	iii.Chinyunyu	iii.Lwiimba	iii.Chinkuli	iii.Honda
iv.Chimusanya	iv.Namanongo	iv.Mulalika	iv.Kasenga	
v.Lukwipa	v.Ndubulula	v.Mwalumina	v.Kanakantapa	
	vi.Sinjela	vi.Katoba	vi.Kapete	
	vii.Mwachilele		vii.Ellesdale	

Source: SAO, Chongwe District (2008)

APPENDIX IV: Cooperative Societies in Chongwe District

3.Cooperatives in Rufunsa Block	**3.Cooperatives inBunda-Bunda Block**	**3.Cooperatives inNkomeshya Block**	**3.Cooperatives in Chongwe Block**	**3.Cooperatives in Palabana Block**
i.RufunsaReset	i.Tengama	i.Chibombe	i.Christian Far	i.Njolwe
ii.Mukamanisa	ii.Tusole	ii.Kangame	ii.Mubuyu	ii.Palabana. D
iii.Mankanda	iii.Chakwenga	iii.Kaloba	iii.Chibula	iii.Twikatane
iv.Machechete	iv.Munyeta	iv.Mabwe	iv.Chalololoboka	iv.Waterfalls
v.Kamilulu	v.Kayili	v.N. Lwiimba	v.Evergreen	v.AntiPoverty
vi.Ikatishani	vi.Ndombwi	vi.Ntulemulamu	vi.KOVIPA	vi.Buyuni
	vii.Chitemalesa	vii.Chitumba	vii.O. Kasenga	
	viii.Chinyunyu	viii.Lukoshi	viii.Muulenga	
	ix.Mwalumina	ix.Tweleshe	ix.Lwiikatano	
	x.Chiota	x.Ndashika	x.Muchinga	
	xi.Malambo	xi.Mayoba	xi.Nsunguni	
	xii.Kalungula	xii.Mulusanda	xii.Kapete	
	xiii.Kashimpa	xiii.Kalifumpa	xiii.Kanakantapa	
	xiv.Nyambi	xiv.Manyika	xiv.Kamutonka	
	xv.Mwambashi	xv.Mwachala	xv.Mphango	
	xvi.Mwachilele	xvi.Mumbwe L.	xvi.Kwacha	
	xvii.Kazemba	xvii.Nyabombwe	xvii.Ngwerere	

Cooperative Societies in Chongwe District (continued)

Cooperatives in Rufunsa Block	Cooperatives in Bunda-Bunda Block	Cooperatives in Nkomeshya Block	Cooperatives in Chongwe Central Block	Cooperatives in Palabana Block
	xviii.Chamulimba	xviii.Lwiimba	xviii.Kumboshi	
	xix.Kabulanshinshi	Resettlement	xix.Chainda	
	xx.Mwakapandula	xix.Chiyabale	xx.Mutumbi	
	xxi.Kachelechele		xxi.Chongwe C.	
	xxii.Chamulimba.H		xxii.Ndeke	
	xxiii.Sekelela		xxiii.Mukunya	
	xxiv.Nyangwena		xxiv.Chalimbana	
	xxv.Muchi		xxv.Chinkuli. F	
	xxvi.Itope		xxvi.Susu	
	xxvii.Agro Dev		xxvii.Tuzenje	
			xxviii.Pamodzi	

Source: SAO, Chongwe District (2008)

APPENDIX V: Questionnaire for key Informants

Dear Respondent,

I am Shadrick Matapa Nyamfalila, a Postgraduate Student at the University of Zambia. I am carrying out a research on **The Impact and Efficiency of the Fertiliser Support Programme (FSP) on Food Security among Small Scale Farmers** in partial fulfillment of my MPA Degree program. You have been purposively selected as a respondent to answer this questionnaire.

Your responses to the questions will be purely for academic purposes and will be treated with confidentiality.

Your co-operation will be highly appreciated

Circle the number against the appropriate response or fill in blank space.

1. **Category of the Respondents**

   (i) Village Headmen (VH)

   (ii) Co-operative Officials(COs)

   (iii) Camp Extension Officers(CEOs)

   (iv) Block Extension Officers (BEOs)

   (v) Senior Agricultural Officer (SAO)

   (vi) District Co-operatives Officer (DCO)

   (vii) District Agricultural Coordinator (DACO)

2. Date of Interview: _____

3. Title of key informant _____

Section for CEOs, BEOs, DCO, SAO & DACO

4. What procedures did you follow when disbursing the FSP inputs to the Co-operatives during the 2006/2007 farming season?

_____

_____

_____

5. What procedures did you follow when disbursing the FSP inputs to the Farmers' Organizations during the 2006/2007 farming season?

_____

_____

_____

Section for DCO, SAO & DACO

6. What is the total number of Small Scale Farmers registered with the Co-operatives and Farmers Organization in Chongwe District?

_____

_____

_____

7. Were the FSP inputs for the 2006/2007 farming season distributed to all the Co-operatives that had applied successfully in Chongwe District?

YES (1)

NO (2)

8. How many Co-operatives had applied for the FSP inputs during the 2006/2007 farming season?

_____

_____

_____

9. How many Co-operative applications were approved?

_____

_____

_____

10. Out of the ones that had applied and were approved, how many Co-operatives were actually given the inputs during the 2006/2007 farming season?

_____

_____

11. Were the FSP inputs for the 2006/2007 season distributed to all members of the Farmers' Organizations that had applied successfully in Chongwe District?

YES (1)

NO (2)

12. How many Farmers' Organizations had applied for the FSP inputs during the 2006/2007 farming season?

_____

_____

_____

13. How many Farmers' Organizations applications were approved?

_____

_____

_____

14. Out of the ones that had applied and were approved, how many Farmers' Organizations were actually given the inputs during the 2006/2007 farming season?

_____

_____

_____

Section for VH, COs, CEOs, BEOs, SAO, DCO & DACO

15. How many satellite Depots do you have in Chongwe District?

_____

_____

16. What are the requirements for a Co-operative to qualify to apply for the FSP agricultural inputs?

_____

_____

_____

17. What are the requirements for a Farmers Organization to qualify to apply for the FSP agricultural inputs?

_____

_____

_____

18. Were the FSP inputs during the 2006/2007 farming season given to Co-operative members on time?

1. YES (1)

2. NO (2)

19. If you answered NO to q.18 above,

(a) How long was the delay approximately?

_____

_____

(b) Did the delay affect your Co-operative members negatively?

YES (1)

NO (2)

(c). In which month were the FSP inputs delivered during the 2006/2007 farming season?

_____

_____

_____

20. Were the FSP inputs during the 2006/2007 farming season given to the Farmers Organizations' members on time?

1. YES (1)

2. NO (2)

21. If you answered NO to q.20 above,

(a). How long was the delay approximately?

_____

_____

_____

(b). Did the delay affect your Farmers' Organization members negatively?

YES (1)

NO (2)

(c). In which month were the FSP inputs delivered during the 2006/2007 farming season?

_____

_____

_____

22. How would you describe the procedures for accessing FSP inputs by Small Scale Farmers during the 2006 /2007 farming season?

Very cumbersome (1)

Cumbersome (2)

Easy to follow (3)

Very easy to follow (4)

Other Specify (5)

23. How would you describe the qualifications required for Small Scale Farmers for being eligible to access Inputs during the 2006/2007 farming season?

Very difficult to meet (1)

Difficult to meet (2)

Easy to meet (3)

Very easy to meet (4)

Other Specify (5)

24. What would have been the right time (month) for Small Scale Farmers to receive FSP inputs during the 2006/2007?

_____

_____

25. On the basis of your assessment, did the 2006/2007 FSP improve food security among Small Scale Farmers in Chongwe District?

YES (1)

NO (2)

26. If you answered YES to q.25 above,

(a) To what extent has been the improvement?

To a large extent (1)

To a moderate extent (2)

To a very small extent (3)

Other (Specify) (4)

(b) What factors account for the status of the livelihood among Small Scale Farmers in Chongwe District?

List these Factors (beginning with the most important and ending with the least important).

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

27. If you answered NO to q.25 above,

(a) In your view, why was the FSP not able to contribute to Food Security?

List the reasons (beginning with the most important and ending With the least important.)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

(b). What do you think should be done to improve food Security among Small Scale farmers in your Community?

List Suggestions/Recommendations (beginning the most important and ending with the least important)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

28. To what extent has maize cultivation improved food security among Small Scale Farmers in Chongwe District after the 2006/2007 farming season?

To a large extent (1)

To a moderate extent (2)

To a very small extent (3)

Other (Specify) (4)

29. In your own view, was there adequate monitoring and evaluation of the implementation of the FSP during the 2006/2007 farming season?

YES (1)

NO (2)

30. If you answered NO to q.29 above, what are some of the consequences of inadequate monitoring and evaluation?

_____

_____

_____

31. What challenges did you face when implementing the FSP during the 2006/2007 farming season?

List the Challenges (beginning with the most serious one and ending with the least serious one)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

_____ (Not Applicable) (7)

APPENDIX VI: Questionnaire for Small-scale farmers

Dear Respondent,

I am Shadrick Matapa Nyamfalila, a Postgraduate Student at the University of Zambia. I am carrying out a research on **The Impact and Efficiency of the Fertiliser Support Programme (FSP) on Food Security among Small Scale Farmers** in partial fulfillment of my MPA Degree program. You have been randomly selected as a respondent to answer this questionnaire.

Your responses to the questions will be purely for academic purposes and will be treated with confidentiality.

Circle the number against the appropriate response or fill in blank space.

Your co-operation will be highly appreciated

Code No. | | | |

A. BACKGROUND INFORMATION

1. Age

15 – 20	(1)
21 – 30	(2)
31 – 40	(3)
41 - 50	(4)
51 – 60	(5)
Over 60	(6)

2. Sex: Male (1)

Female (2)

3. Marital Status

Married (1)

Single (2)

Divorced (3)

Widowed (4)

4. What level of education have you attained?

None (1)

Primary School (2)

Junior Secondary School (3)

Senior Secondary School (4)

Tertiary (College/University) (5)

5. What is your main occupation?

Farming (1)

Small Scale Trading (2)

Farming and Small Scale Trading (3)

Other (specify) _____ (4)

6. How many people live with you in the household?

Less than 3 (1)

3-6 (2)

7-10 (3)

11-15 (4)

More than 15 (5)

7. What is the name of the Camp you belong to?

_____

_____

_____

8. What is the name of the block you belong to? (to be filled in by the researcher)

_____

_____

_____

B. Questions related to FSP Contribution to Food Security

9(a) What was your main purpose for becoming a member of a Co-operative or a Farmers Organisation during the 2006/2007 farming season?

To increase your farming Production (1)

To start small scale farming (2)

Only to be obtaining agricultural inputs (3)

Others (Specify) (4)

9(b) Did you apply for the FSP inputs before the 2006/2007 farming season?

YES (1)

NO (2)

9(c) If you answered YES to q.9b above, did you succeed?

YES (1)

NO (2)

10(a). Did you apply for the FSP Inputs during the 2006/2007 farming season?

YES (1)

NO (2)

10(b). If you answered YES to q.10a above, through what type of Organisation did you Apply?

Co-operative (1)

Farmers Organization (2)

Other (Specify) (3)

10(c) If you answered YES to q.10a above, did you succeed?

YES (skip to 10e) (1)

NO (2)

10(d) If you answered NO to q.10c above, why didn't you succeed? (Skip to q.35)

_____

_____

_____

10(e). If you answered YES to q.10c, did you have money to contribute the 40% of the price of Inputs?

YES (skip to q.11a) (1)

NO. (2)

10(f). If you answered NO to q. 10e above, what did you do?

_____

_____

_____

11. If you answered YES to q.10c above,

(a). Did you receive all the 8 bags of both basal and top dressing fertilisers for the 2006/2007 FSP farming season at the same time?

YES (skip to q.12) (1)

NO (2)

(b). How many bags of basal dressing fertiliser did you receive for 2006/2007 agricultural farming season?

None (1)

Less than 3 bags (2)

3-5 bags (3)

7 bags (4)

(c). In which month of the year did you receive basal dressing fertilizer for 2006/2007 farming season?

September (1)

October (2)

November (3)

December (4)

Other (specify)_____ (5)

(d). How many bags of top dressing fertiliser did you receive for the 2006/2007 farming Season?

None (1)

Less than 3 bags (2)

3-5 bags (3)

7 bags (4)

(e). In which month of the year did you receive top dressing fertiliser?

September (1)

October (2)

November (3)

December (4)

Other (specify) _____ (5)

(f). What had been your main staple food before you started benefiting from the FSP Inputs under the 2006/2007 farming season?

Maize (1)

Cassava (2)

Sorghum (3)

Millet (4)

Other (specify)_____ (5)

(g). what had been your main crop before you started benefiting from the FSP Inputs under the 2006/2007 farming season?

Maize (1)

Cassava (2)

Sorghum (3)

Millet (4)

Other (specify) _____ (5)

(h). On average, how many 50 Kg bags of maize grain were you producing before you started benefiting from the FSP Inputs under the 2006/2007 farming season?

_____

_____

_____

(i). How many meals per day were you consuming before the 2006/2007 FSP?

None (1)

1 Meal (2)

2 Meals (3)

3 meals (4)

Other (specify) _____ (5)

(j). Were the stocks of your maize harvested before the 2006/2007 FSP sufficient to take you to the next farming Season?

YES. (Skip to q.O) (1)

NO (skip to q.L) (2)

(k). Were the stocks of your main staple food harvested before the 2006/2007 FSP sufficient to take you to the next farming Season?

YES (1)

NO (skip to q.m) (2)

(l). If you answered NO to q. j, what was the period of the short fall in months?

_____

_____

_____

(m). If you answered NO to q. k, what was the period of the short fall in months?

_____

_____

_____

(n). If you answered NO to questions, j and k during the period of the short fall, what was your main source of food?

Buying	(1)
Begging	(2)
Harvesting wild fruits/tubers	(3)
Food aid	(4)
Acquiring Credit from money lenders	(5)
Selling household goods/assets	(6)
Other (specify)_____	(7)

(o). If you answered YES to q.j, were you able to sell any surplus of the maize grain that you harvested before the 2006/2007 FSP?

YES	(1)
NO	(2)

(p). If you answered YES in q.O, did you raise adequate income from the sale of maize you harvested before the 2006/2007 farming season to purchase other foodstuffs for your household?

YES (1)

NO (2)

(q). What has been your main staple food after you started benefiting from the FSP Inputs under the 2006/2007 farming season?

Maize (1)

Cassava (2)

Sorghum (3)

Millet (4)

Other (specify)_____ (5)

(r). What has been your main crop after you started benefiting from the FSP Inputs under the 2006/2007 farming season?

Maize (1)

Cassava (2)

Sorghum (3)

Millet (4)

Other (specify)_____ (5)

(s). How many 50kgs bags of maize grain did you produce after getting the FSP Inputs under the 2006/2007 farming season?

_____

_____

(t). How many meals per day has the household been consuming after the 2006/2007 FSP farming season?

None (1)

1 Meal (2)

2 Meals (3)

3 meals (4)

Other (specify) _____ _____ (5)

(u). Did you manage to sell any surplus maize after benefiting from the FSP Inputs under the 2006/2007 farming season?

YES (1)

NO (2)

(v). If you answered YES to q.u above, did you raise adequate income from the sale of maize you harvested after 2006/2007 FSP farming season to purchase other foodstuffs for your household?

YES (1)

NO (2)

(w). If you answered YES to q. v above, how much money did you raise?

_____

12. If you answered YES to q.11a,

(a) In which month of the year did your receive basal dressing fertilizer under the 2006/2007 farming season?

September (1)

October (2)

November (3)

December (4)

Other (specify)_____ (5)

(b). In which month of the year did your receive top dressing fertiliser for 2006/2007 farming season?

September (1)

October (2)

November (3)

December (4)

Other (specify)_____ (5)

(c). Did you receive the fertilisers early enough to apply on your field?

YES (1)

NO (2)

(d). Did you receive the 20kg bag of maize seeds during the 2006/2007 farming season?

YES (Skip to q.14) (1)

NO. (2)

13. If you answered NO, to q.12c, which month would be the best for you to receive both basal and top dressing fertilisers?

_____

14. If you answered NO to q .12d, why didn't you receive the seeds?

_____

_____

_____

15. If you answered YES to q.12d above,

(a) In which month of the year did you receive the 20kg bag of Maize seeds?

September (1)

October (2)

November (3)

December (4)

Other specify_____ (5)

(b). Did you receive the seeds early enough to plant on time?

YES (1)

NO. (2)

16. If you answered NO in q .15b, which month would be the best for you to receive seeds?

_____

_____

C. **Questions Related to the Challenges in Implementing the FSP**

17. What type of farming implement did you use most to till your field before the 2006/2007 farming season?

Hand hoes only (1)

Ox-drawn plough (2)

Tractor drawn plough (3)

Other (Specify) (4)

18. The kind of Implements you used in q.17 above, to till your field was it?

Owned (1)

Leased (2)

Borrowed (3)

Other (Specify) (4)

19. What type of farming implement did you use most to till your field during the 2006/2007 farming season?

Hand hoes only (1)

Ox-drawn plough (2)

Tractor drawn plough (3)

Other (Specify) (4)

20. The kind of Implements you used in q.19 above, to till your field was it?

Owned (1)

Leased (2)

Borrowed (3)

Other (Specify) (4)

21. Did the Co-operative you belonged to during the 2006/2007 farming season have a satellite Depot?

YES (1)

NO (2)

22. Did the Farmers Organisation you belonged to during the 2006/2007 farming Season have a satellite Depot?

YES (1)

NO (2)

23. How far did you have to go to the nearest satellite Depot to collect Inputs for the 2006/2007 farming season?

1-5km	(1)
6-10km	(2)
11-15km	(3)
16-20km	(4)
More than 20km	(5)

24. What type of transport did you use to collect inputs during the 2006/2007 FSP farming season?

Bicycle	(1)
Scotch Cart	(2)
Motor Vehicle	(3)
Tractor	(4)
Other (Specify)	(5)

25. Did the kind of transport that you indicated in q.24 above, used to collect the inputs belong to you?

YES	(1)
NO	(2)

26. How is the feeder road network in your area?

Very Good	(1)
Good	(2)
Poor	(3)
Very Poor	(4)

27. Did the Private transporters who delivered fertilizer during the 2006/2007 FSP to your place, complain about anything?

YES (1)

NO (2)

28. If you answered YES to q.27, what did they complain about?

List the Complaints (with the most serious complaints)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

29. Are you aware that there are any people who were not entitled to FSP, but received the inputs during 2006/2007 farming season?

YES (1)

NO (2)

30. If you answered YES to q.29, what categories of these people?

List the Categories of these People.

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

31. In your view, was the distribution of Inputs done in a fair and transparent manner during the 2006/2007 farming season?

YES (1)

NO (2)

32. Did the Camp Extension Officer supervise the collection, distribution and utilisation of inputs for 2006/2007 farming season in your agricultural camp under the FSP?

YES (1)

NO (2)

33. What challenges did you face in accessing the FSP inputs during the 2006/2007 farming season?

List the challenges (beginning with the most serious challenge & ending with the least)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

34. What Challenges did you face in ensuring availability of food in your household during the 2006/2007 farming season?

List the Challenges (beginning with the most serious challenge & ending with the least)

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

35. What do you think should be done to enable Small Scale Farmers in your Community to have enough food for their household?

List Suggestions/Recommendations (beginning with the most important_suggestions and ending with the least).

_____ (1)

_____ (2)

_____ (3)

_____ (4)

_____ (5)

_____ (6)

Thank you very much, for your cooperation.