TARGETING SMALL SCALE FARMERS in the IMPLEMENTATION of ZAMBIA'S POVERTY REDUCTION STRATEGY PAPER (PRSP)

An Assessment of the Implementation and Effectiveness of the Fertilizer Support Programme

CSPR Zambia

Civil Society for Poverty Reduction (CSPR)

May 2005

The Civil Society for Poverty Reduction (CSPR), a network of civil society organisations working around the different faces of poverty, has been closely associated with the process of monitoring the implementation of Zambia's 2002 to 2004 Poverty Reduction Strategy (PRSP). This study was commissioned to enhance CSPRs contribution in dialogue on the performance of the agricultural policies under the PRSP. It is expected that the recommendations from this study can be utilized by various stakeholders in the 2005 review of the PRSP and contribute to discussions in the development of the 2006 to 2010 National Development Plan for Zambia

CSPR acknowledges the dedication and professionalism of the University of Zambia Institute of Economic and Social Research (INESOR) and the research team seconded to undertake the study led by Dr. C.A. Njobvu. Further, we acknowledge the input and guidance of the CSPR Monitoring and Evaluation Programme Management Team, particularly the study task force comprising Muleya Haachiinda (National Association of Small Scale Farmers of Zambia), Mundia Matongo (Zambia Alliance of Women), Prof. Ventekesh Seshamani (University of Zambia), Robert Kelly Salati (Operation Young Vote) and Gregory Chikwanka (CSPR). We would also like to thank the external reviewer of the report, Dr. Hyde Hantuba, for the valuable feedback to the report and finally, but not the least, special thanks to all the small scale farmers that participated in the study and provided the much needed information to facilitate the work of the researchers.

CSPR is grateful for the financial support of its Cooperating Partners and KEPA Zambia, whose financial contributions facilitated the undertaking of the study.

CSPR welcomes all Zambians and Zambia's stakeholders to share its vision of A Poverty Free Zambia, by **Ranking Poverty Eradication 1st for Zambia!**

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May 2005

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Acronyms

CSPR	Civil Society for Poverty Reduction
DAC	District Agricultural Committee
DACO	District Agricultural Coordinator
FSP	Fertilizer Support Programme
MACO	Ministry of Agriculture and Cooperatives
M&E	Monitoring and Evaluation
MEO	Monitoring and Evaluation Officer
MT	Metric Tones
NPC	National Programme Coordinator
NGOs	Non Governmental Organisations
OLO	Operations and Logistics Officer
PACO	Provincial Agricultural Coordinator
PAM	Programme Against Malnutrition
PMU	Programme Management Unit
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Paper
VAC	Vulnerability Assessment Committee

Executive Summary

This report presents the study on the implementation and effectiveness of the Fertilizer Support Programme (FSP). The study was specifically designed to generate information and offer analysis of the implementation and recommendations for improving the impact of the programme on food security and poverty reduction among small-scale farmers in rural areas.

Views and perceptions of beneficiaries regarding the effectiveness of the Programme in reducing food insecurity and poverty were solicited and analysed from a total of one hundred and sixteen (116) randomly selected smallholder farmers from three districts (Kalomo, Mumbwa and Mpika) and in six study sites using a survey questionnaire. In addition, qualitative data was generated from 153 farmers using PRA tools which included semi-structured interviews, focus group discussions, pairwise ranking and scoring, key informant interviews, and direct observations of physical structures.

The analysis of the findings indicates that the Fertilizer Support Programme has very little impact on the food security and poverty reduction. Income effects cannot adequately address the many household needs that communities in rural areas would like to address. Issues of sustainability and adequacy of the amount of fertilizers farmers receive from the programme were raised. Several factors responsible for reducing the effectiveness of the performance of the programme and the farming activities were identified. These included the following:

- Inconsistent supply of inputs and sometimes fertilizers arriving earlier than seed;
- Delays in input supply;
- Few buyers and poor transport facilities;
- Inadequate supply of farm inputs;
- Poor marketing arrangements which includes delays in payment to farmers for farm produce during the marketing season;
- Lack of or non- use of satellite depots;
- Poor record keeping of the fertilizer applicants and delivery records;
- High input prices and low prices for farm produce; and
- Lack of monitoring and evaluation of the programme.

Key suggestions from the analysis of the findings for improving the implementation and effectiveness of the programme include:

- The PMU should improve in the mechanism of input supply delivery, by utilizing or establishing satellite depots and delivering seed and fertilizer at the same time;
- In order to reduce distances from where inputs are collected, government should ensure that satellite depots are established in remote areas;
- Efforts should be made to make improvements in marketing arrangements for both inputs and farm produce and ensuring that input supply, crop marketing and cash payments for farm produce are synchronised so that inputs are supplied when farmers have cash;
- The PMU should improve and ensure that an adequate and effective monitoring system is in place;
- Adequate record keeping must be observed, including at the district, block and camp levels so that farmers who fail to get fertilizer after paying their 50% are refunded in time.
- Government should ensure early announcement of fertilizer prices to help farmers plan and budget for their farming activities.

1. Introduction

1.1 Background

Poverty remains the greatest challenge Zambia is facing. The national average poverty level is estimated at 73% while in rural areas it is at 83% (PRSP, 2002). People suffer immensely from inadequate access to economic and social resources. Vulnerable groups in rural areas, most of whom are women, children and the aged, depend on farming as the main source of livelihood. Limited access to improved seed, fertilizers, agricultural credit, farm produce markets and extension services has generated major concerns among government policy makers, development partners, international and local Non Governmental Organisations. Given that the highest rates of poverty are in the rural areas and agriculture is an important source of livelihood and income for most rural communities, support to agricultural smallholders has been identified as a priority by the Zambian government to reduce poverty and enhance household food security.

Zambia's Poverty Reduction Strategy Paper (PRSP) and its various development partners identified and placed agricultural sector high on the agenda as the potential engine for economic growth required to reduce poverty (PRSP, 2002/2004; World Bank, 2002a; 2004b). The failure of the agricultural sector to provide for livelihoods for the majority of people in rural areas is considered a major factor contributing to rural poverty. A broad range of policy reforms in the agricultural sector were introduced to stimulate growth and improve the performance of the agricultural sector in order to reduce poverty and enhance household food security in the country. These reforms included land reforms, fertilizer and crop market reforms that allow the private sector to participate in input supply and crop marketing, while reducing government participation.

However, there was a recognition of failure on the part of the private sector to provide adequate services leading to the government introducing the Fertilizer Support Programme (FSP) to service smallholder farmers so that they improve farm level productivity, enhance food security and ultimately reduce poverty. The Civil Society for Poverty Reduction (CSPR), a network of civil society organisations from different parts of the country that participated in the formulation of the 2002-2004 PRSP, have been keenly monitoring the implementation of the PRSP and its impact on the poverty situation. To effectively contribute to poverty reduction debate in the agricultural sector, CSPR commissioned a study to assess the operations and effectiveness of the FSP in meeting its objectives under the PRSP so as to inform policy decisions, especially during the 2005 PRSP review and development of the 2006 – 2010 National Development Plan.

1.2 Objectives of the Fertilizer Support Programme

In recognizing that a large proportion of small-scale farmers in rural areas depend on agriculture for sustenance, the "Fertilizer Support Programme and the Food Security Pack" were established under the PRSP as one of the Five Programmes created to increase food production and enhance food security among small-scale farmers by supplying fertilizers and seed at a 50% subsidy (PRSP, 2002/04). The general objectives of the Fertilizer Support Programme and the Food Security Pack were to promote the use of low input and conservation farming technologies among selected target small-scale farmers who meet the criteria; distribute the required enterprise inputs in time; and provide extension messages to support the enterprises.

Specific objectives of the programme (2002/03 and 2003/2004 growing season manual) include the following:

a) Increase private sector participation in supply of agricultural inputs to smallholder farmers and thereby reduce government involvement;

b) Ensure timely, effective and adequate supply of agricultural inputs in the country;

c) Improve access of smallholder farmers to agricultural inputs;

d) Ensure comprehensiveness and transparency in the distribution of inputs and thereby breaking monopolies;

e) Serve as a risk-sharing mechanism for smallholder farmers to cover part of the costs for improving agricultural productivity;

f) Expand markets for private sector input suppliers and increase their involvement in distribution of agricultural inputs in rural areas, thereby reducing direct role of government; and

g) Facilitate the process of farmer organization, dissemination of knowledge and creation of other rural institutions that will contribute to the development of the agricultural sector.

2. Study design, objectives and methodology

2.1 Study design and objectives

The study was conducted in three districts: Kalomo, Mumbwa and Mpika, covering all the three agro-ecological zones. In each of the selected districts, 2 agricultural camps were chosen from which data collection was conducted covering a total of 6 study sites. These are: Kanchele and Malende in Kalomo District; Luchembe and Malashi in Mpika District and Kaindu and Kabulwebulwe in Mumbwa District.

The main objective of the study was to assess the implementation process of the FSP and its impact on food security among the beneficiaries.

The specific objectives of the study were:

i) To examine and assess the timeliness of delivery of inputs (fertilizers, seeds and other issues) to beneficiaries;

ii) To assess the input distribution selection criteria to targeted farmers, by gender and agencies involved;

iii) To examine the extent to which the Targeted Support System has contributed to both household and national food security;

iv) To assess the extent of coverage of the FSP;

v) To assess the nature of participation of beneficiary involvement in management of the programme; and

vi) To identify factors reducing the effectiveness of the programme and make suggestions for improvement.

2.2 Methodology

A multi-stage purposive sampling procedure was used to select the study sites from which members of the farmer groups/cooperatives were chosen for data collection. A broad range of data was collected using both qualitative and household survey methods. The qualitative methods involved use of Participatory Rural Appraisal (PRA) which included use of in-depth interviews with District Agricultural Coordinators, Senior Agricultural Officers, District Marketing Officers, Village headmen, Block and Camp Officers, local transporters and fertilizer dealers. Focus group discussions and pairwise ranking tools were used as well as review of existing literature on FSP. The use of the two tools in information gathering complemented each other to allow triangulation and validation of the information.

Table 1 presents a summary of individual respondents and the focus group discussions. In the individual survey, while a total of 120 farmers were randomly selected. Four were incomplete and therefore only 116 individual respondents are reported in this report. Forty-one (35.3%) were female headed and 75 (64.7%) were male headed.

The focus group discussions and pair-wise ranking and scoring exercises involved 153 (67 female and 86 male) members of farmer groups while in-depth interviews were conducted with key informants which included DACOs, Senior Agricultural Officers, District Marketing Officers, local transporters, as well as the local fertilizer traders in the districts.

Table 1:
Summary of individual respondents and Focus Group Discussions

District	No. of individual respondents			Focus Group discussion participants			
	Male	Female	Total	No. FGDs	Male	Female	Total
Mumbwa	18	10	28	2	22	16	38
Mpika	26	14	40	2	35	29	64
Kalomo	31	17	48	2	29	22	51
Total	75	41	116	6	86	67	153

Field survey, 2005

3. The Findings

3.1 Socio-economic characteristics of sample respondents

This section discusses the social and economic characteristics of the survey and focus group participants. It also presents land ownership, adequacy of land for food production and household needs among rural communities in the study sites. Social characteristics in this include:

- Age and marital status of respondents;
- Education levels of the respondents;
- Land ownership and adequacy;
- Livelihood needs and sources of income.

i) Age and marital status of respondents

Tables 2 and 3 present age distributions and marital status of the respondents. The majority of respondents (69%) were between 36 and 55 years of age, and only 1.7% were between 16 and 25 years of age. 20.7% were above 55 years old. Over 80% of the respondents were married, followed by widowed (11%). And of those married, 69 were male and 24 were female.

Table 2: Age distribution of respondents

Age Range	16-25	26-35	36-45	46-55	Above 55	Total
Male	2	14	24	23	12	75
Female	0	7	13	9	12	41
Total	2	21	37	32	24	116

Field survey, 2005

Table 3: Marital status of respondents

Marital Status	Male		Female		Total	
	No.	%	No.	%	No.	%
Married	69	92.0	24	58.5	93	80.2
Divorced	0	0	3	7.3	3	2.6
Single	3	4.0	3	7.3	6	5.2
Separated	1	1.3	2	4.9	3	2.6
Widowed	2	2.7	9	22.0	11	9.5
Total	75	100.0	41	100.0	116	100.1

Field survey, 2005

ii) Education levels of the respondents

Table 4 summarises educational level of respondents. As seen from the table, 39 respondents did not go to school, 31 completed primary school while 14 and 26 finished grade nine and twelve respectively. One respondent had a certificate and another 5 respondents obtained diplomas. Most of the respondents who went to school were male and, as can be seen in the table, a large proportion of female respondents (68.3%) did not go to school as compared to 14.7% of the male respondents.

Table 4: Educational level of respondents

Educational Level	Male		Female		Total	
	No.	%	No.	%	No.	%
No education	11	14.7	28	68.3	39	33.6
Primary	25	33.3	6	14.63	31	26.7
8-9	11	14.7	3	7.32	14	12.1
10-12	22	29.3	4	9.75	26	22.4
Certificate	1	1.3	0	0	1	0.9
Diploma	5	6.7	0	0	5	4.3
Total	75	100.0	41	100.0	116	100.0

Field survey, 2005

iii) Land ownership and adequacy

From the responses in table 5, it appears that both ownership of land for cultivation and adequacy of land is not a problem among smallholder farmers in the study sites. Out of the 116 farmers who were interviewed regarding ownership, only 5 said that the land they were using for cultivation was not theirs. Those who said they owned the land, 38 were females, and 73 were male. With regard to adequacy of land, 28 said that land was not adequate, of these, 12 were female farmers and 16 were male.

Table 5: Responses on ownership and adequacy of land

Sex	Owned land		Land adequacy	
	Yes	No	Yes	No
Male	73	2	57	16
Female	38	3	29	12
Total	111	5	86	28

Field survey, 2005

iv) Livelihood needs and sources of income

This section describes household needs for smallholder farmers in the study sites and economic activities of communities in the areas. It presents the factors reducing community capacity for reducing food vulnerability and poverty among the community members. The Vulnerability Assessment Committee (VAC-2004) defined livelihood analysis as "the sum of ways in which households make ends meet from year to year and how they survive or fail to survive through difficult times". According to VAC (2004), drought and floods, lack of draught power, livestock diseases, poor infrastructure and poor marketing arrangements are the major sources of food insecurity, poverty and vulnerability. Focus Group Discussions with farmers identified several factors as sources of these problems.

The majority of people in the study sites derive their income from farming. According to the information emerging from both focus group discussions and individual interviews, farming and a mix of both farming and business are the main source of income for people in these areas. As expected, farming and livestock rearing were the main sources of income with 94 (81%) respondents (table 6) mentioning farming as the main source and 20 (17.2%) saying both farming and business was their main source of income. Thirty three (33) of those who mentioned farming as the main source of income were female headed and sixty one (61) were male respondents.

Being the main staple crop and a major source of income in the study districts, maize was grown by the majority of people. Other crops mentioned as grown included cotton, groundnuts, tobacco, sunflower, beans, cassava, sorghum, and soyabeans and to a small extent sweet potatoes are grown while livestock such as cattle, goats, pigs, and chickens and to a small extent, sheep are also kept.

Table 6: Sources of livelihood in the study areas

Response	Number		Total	
	Male	Female	No.	%
Farming	61	33	94	81.0
Business	1	0	1	0.9
Farming and business	13	7	20	17.2
No response	0	1	1	0.9
Total	75	41	116	100.0

Field survey, 2005

3.2 Programme implementation process and functions of various staff

The Ministry of Agriculture and Cooperatives (MACO) through the Project Management Unit (PMU) manage the FSP designed to enable small-scale farmers access farm fertilizer and improved seeds to increase farm level production and enhance household food security. The National Programme Coordinator (NPC) supported by the Monitoring and Evaluating Officer (MEO) and the Operations and Logistics Officer (OLO) coordinates PMU.

Table 7 summarises specific roles, responsibilities and functions of the various staff within the MACO as part of the process of the implementation of the FSP. The activities included providing agricultural extension services to members of the farmer groups. At the provincial level, the Provincial Agricultural Coordinator (PACO) is responsible for providing overall supervision to programme staff in the province and ensure that the programme performs well. The DACO supervises the operations of the programme with the District Marketing Officer as the Monitoring and Evaluation Officer and providing agricultural extension training supported by the Senior Agricultural Officer, Block Extension Supervisors and Camp Officers.

Table 7: **Summary of functions and responsibilities of various staff on the implementation of the Programme**

Positions	Functions and Responsibilities
Camp Officers	Carry out all extensions support to farmers in the camp including conservation farming methods. Disseminate information on the operations of FSP. Certify all applications at the Cooperative Board level. Supervise the collection, distribution and utilization of inputs in his/her area of operation.
Block Extension Supervisors	Carry out all extensions support to farmers in the camp including conservation farming methods. Disseminate information on the operations of FSP. Supervise and guide the Camp Extension Officers in the implementation of the programme. Collect all Block applications from the Cooperatives, check and endorse the applications, submit to the DACO and attend approval meetings.
Senior Agricultural Officer	Provide extension support to the farmers especially conservation farming methods. Supervise and guide Block and Camp officers in the implementation of the programme.
District Marketing & Cooperative Officers	Help Cooperatives become better organised Disseminate information on the operations of the programme Shall be the secretary to the DAC regarding this programme Create a data base of all beneficiaries at the district level.
District Agricultural Coordinator	Provide extension support to the farmers especially conservation farming methods Supervise district agricultural staff in the implementation of the programme Help Cooperatives become more organised Disseminate information on the operations of the programme Shall be member of the DAC Report to the PACO on the operations of the programme on a regular basis
Provincial Agricultural Coordinator	Overall supervision of the programme implementation in the province Call provincial meetings to review progress of the programme

3.3 Farmer involvement in the activities of the programme

To access farm inputs under the 50% FSP, farmers must be members of the farmer group or a cooperative within an agricultural camp. Farmers themselves initiate the formation of farmer groups or cooperatives while in some cases, agricultural camp officers facilitate the formation of these groups. Members select cooperative/ farmer group committees, which are responsible for managing or running the activities of the cooperative or the farmer groups.

Once registered, farmer groups/cooperatives qualify to apply for farm inputs. Applications for farm inputs under the 50% support programme are scrutinised by the District Agriculture Committees (DAC). Together with the Cooperative Board, the Camp Extension Officers set the date and venue for explaining modalities of the programme to prospective applicants. In addition, the Village Farmers Committee (VFC), Village headman and other local leadership or the representatives are expected to attend the meetings.

3.4 Coverage, adequacy and effectiveness of fertilizer distribution

3.4.1 Coverage and adequacy

Tables 8 and 9 present the distribution of beneficiaries and fertilizer under the FSP throughout the country during 2002/03 and 2003/04 growing seasons. Out of about 600,000 small-scale and emergent farmers in the country, only a total of 120,000 (20%) and 150,000 (25%) farmers were covered during 2002/03 and 2003/04 seasons respectively and 48,000 and 60,000 metric tons of fertilizer was distributed over the same period (MACO, 2002/03; 2003/04).

It is expected that the farmers not covered by this programme are either supported by the private sector or covered by the Food Security Pack Programme under the Ministry of Community Development through Programme Against Malnutrition (PAM) or the NGOs system providing farm inputs to small-scale farmers.

Table 8: Summary of fertilizer distribution and beneficiaries during the 2002/3 season (fertilizer MT)

Bene-ficiaries	Central	C/Belt	Eastern	Luapula	Lsk	Northern	N/West	Southern	Western	Total
	16,680	6,840	31,200	6,600	4,140	18,240	5,280	22,800	8,220	120,000
Fertilizer										
Top (M)	3,336	1,368	6.240	1,320	828	3,648	1,056	4,560	1,644	24,000
Basal (M)	3,336	1,368	6,240	1,320	828	3,648	1,056	4,560	1,644	24,000
Total	6,672	2,736	12,480	2,640	1,656	7,296	2,112	9,120	3,288	48,000
% of Tot.	13.9	5.7	26.0	5.5	3.5	15.2	4.4	19.0	6.9	100.0

Field MACO, 2002/3; 2003/4

Table 9: Summary of fertilizer distribution and beneficiaries during the 2003/4 season (fertilizer MT)

Bene-ficiaries	Central	C/Belt	Eastern	Luapula	Lsk	Northern	N/West	Southern	Western	Total
	23,000	13,600	38,500	8,550	10,120	25,060	8,900	16,020	6,250	150,000
Fertilizer										
Top (M)	4,600	2,720	7,700	1,710	2,024	5,012	1,780	3,204	1,250	30,000
Basal (M)	4,600	2,720	7,700	1,710	2,024	5,012	1,780	3,204	1,250	30,000
Total	9,200	5,440	15,400	3,420	4,048	10,024	3,560	6,408	2,500	60,000
% of Tot.	15.3	9.1	25.7	5.7	6.8	16.7	5.9	10.7	4.2	100.0

Field MACO, 2002/3; 2003/4

Tables 10 and 11 summarise fertilizer distribution and the beneficiaries under the FSP in the study districts and the data collection sites. Out of 36,273 smallholder and medium scale farmers in the three districts, 12,725 (35.10%) farmers benefited from the programme during the 2003/04 seasons. In the study sites, out of 5306 farmers, 22.75% of the farmers were provided with fertilizers. However, while farmers felt that the FSP is critical for increasing maize production, the fertilizer given per household was not adequate to make any meaningful contribution to increase maize yields. Most farmers received as little as 3 bags of fertilizer instead of 8 bags.

Table 10: Number of farmers and recipients in three districts

Farmer Category	Number of small-scale farmers		
	No. farmers	Beneficiaries	% Beneficiaries
Kalomo	16188	4725	29.19
Mumbwa	13088	4500	34.38
Mpika	7000	3500	50.00
Total	36276	12725	35.10

Field survey, 2005

Table 11: Number of farmers and recipients in four study camps

Camp	Number of small-scale farmers		
	No. farmers	Beneficiaries	% Beneficiaries
Malende	939	73	7.77
Kanchele	708	96	13.56
Luchembe	565	26	4.60
Malashi	1011	522	51.63
Kabulwelwe	1336	235	17.59
Kaindu	1312	255	19.44
Total	5306	1207	22.75

Field survey, 2005

3.4.2 Participation of working staff as beneficiaries

Staff members in various Ministries are beneficiaries of the FSP. This was common in all the three districts in which the study was conducted. Some staff members from Ministries of Agriculture, Health and Education were found to be members of farmer groups/cooperatives whether at the district level, Block or Camp level and therefore benefited from the fertilizer programme.

While those interviewed at the district, Block and Camp levels indicated that it was necessary for them to produce food, this should be considered as an area of conflict that may create problems of fertilizer not reaching intended beneficiaries.

3.5 The Impact and effectiveness of the programme

Although the FSP beneficiaries are involved in production of a variety of other crops, this assessment focused on the effects of FSP on maize production and whether there has been a reduction in maize shortages among the beneficiaries and enhanced food security. While most farmers appreciated the importance of FSP, they made some complaints about the implementation of the programme and identified a number of factors that are reducing its effectiveness. The main variables used to assess effectiveness and impact of the programme included: i) Timeliness of input supply and number of bags received; ii) level of maize production; iii) level of sales and number of farmers selling maize between 2001 and 2004 growing seasons, iv) beneficiary views and perception on adequacy of maize; v) perception regarding the implementation; and vi) beneficiary views on status of food security.

i) Timing of fertiliser supply and number of bags of fertilizers

Timeliness of fertilizer supply was examined by analysing both individual responses and information generated from the focus group discussions. Analysis of beneficiary views and perceptions regarding timeliness indicates that timing of inputs is not adequately followed. Tables 12 and 13 presents the results of the focus group discussion exercises in Luchembe and Malashi Agricultural Camps in Mpika District.

In Luchembe Agricultural Camp, farmers felt that both late announcement of fertilizer prices and seed and fertilizer not coming at the same time to be major problems that the farmers face. In some cases fertilizer comes before the seed and since they are not sure if the seed will come, they resort to either buying on the market or using the retained seed.

Table 12: Summary of results of the pair-wise scoring exercise in the problems of fertilizer support programme in Luchembe Agricultural Camp

Problem	Scoring	Ranking
Untimely fertilizer distribution	4	2
Distance	0	5
Late announcement of price	6	1
Inadequate input allocation	6	1
Lack of monitoring	1	4
Inputs not coming at the same time	2	3
Low maize prices	2	3

Field survey, 2005

Table 13: Summary of results of the pair-wise scoring exercise in the problems of fertilizer support programme in Malashi Agricultural Camp

Problem	Scoring	Ranking
Late input supply (fertilizer and seed)	14	1
Marketing arrangement	4	5
Scarcity of fertilizer	7	2
Inadequate supply of fertilizer	7	2
Low maize and other crop prices	5	4
High fertilizer prices	6	3
Transport	3	6
Buyers are few and have no respect for farmers	3	6

Field survey, 2005

Focus Group Discussions (FGDs) in both Mumbwa and Kalomo indicated that there are two sources of the loss of time in input delivery. Firstly, government delays in providing inputs at the district and secondly, the local transporters who insist on delivering even when delivery vehicles are full. This means that farmers will have to wait until other farmer groups/cooperatives from the same areas come to collect their consignment. Responses from individual interviews regarding timing of supply show a similar situation. As seen in Table 14, the majority of respondents (72.45%) said that delivery of inputs was in most case untimely while only 26.7% said it was on time.

While inputs are expected to be in the district depots by October, the common experience to the farmers is that inputs arrive in the districts by as late as January. The farmers said that any delay in receiving farm inputs affect maize yields negatively and therefore triggers shortages, food insecurity, poverty and vulnerability among community members. With regards to local transporters, the majority of farmers felt that some local transporters delay taking farm inputs to nearby locations where the farmers can then lift it to their farms.

Table 14: Respondents whether input delivery is done on time

Responses	Gender					
	Male	%	Female	%	Total	%
Yes	17	22.7	14	34.1	31	26.7
No	57	76.0	27	65.9	84	72.4
No response	1	1.3	0	0	1	0.9
Total	75	100.0	41	100.0	116	100.0

Field survey, 2005

Information from local transporters shows that it was expensive to transport few bags of fertilizer and therefore found it necessary to wait until there were adequate numbers of bags to carry to same destination. Farmers who are far from the districts are the most disadvantaged by these delays.

As observed in a similar study on Food Security Packs (Rural Poverty and Vulnerability, P40, 2004), the amounts of fertilizer that farmers receive are in most cases less than the 8 bags recommended for maize production. Table 15 presents the responses regarding number of bags of fertilizer by respondents. The information from the table indicates that 78 (67.24%) of the respondents in 2002 and 2003 received fertilizer during the two growing seasons while in 2004, 55 respondents were able to get fertilizers through FSP.

However, on average, those who received recommended bags of fertilizer during the same period declined from 53 to 38 farmers. Female-headed households declined from 21 to 13 while male households dropped from 32 to 25 respectively. However, analysis of information in the table shows that in 2002, 6 female headed households and 19 male-headed households received less than 8 bags respectively while in 2003, 14 male and 8 female-headed households were given less than 8 bags. In 2004, 11 and 6 male-headed households and female-headed households received less than 8 bags respectively.

Table 15: Responses on number of fertilizer bags from 2002-2004

Sex	2002			2003			2004		
	N/A	1-7	8	N/A	1-7	8	N/A	1-7	8
Male	39	19	32	28	14	33	38	11	25
Female	24	6	21	10	8	23	22	6	13
Total	63	25	53	38	22	56	60	17	38

Field survey, 2005

Asked why some farmers get less than recommended, they said that in order to allow most members to get some fertilizer, some cooperatives tend to share the consignment by giving members one or two bags of fertilizer. In some cases, farmers receive fewer bags because although records show that they registered and paid for their 50% requirement, those who had the capacity to pay did the payment and when fertilizer came they were only given one bag for using their name.

Non-delivery of fertilizer to the nearest point was compounded by non-use of satellite depots. Although use of satellite depots was considered critical for timely supply of fertilizer to farmers, use of these facilities have not been implemented by the FSP. Information from focus group discussions in all the study sites shows that although there are depots in their vicinity, these were not in use. The farmers said that use of satellite depots would reduce transport and travelling time as well as the waste of time waiting at the district.

Table 16: Availability of satellite depots in study sites and distance from the district centre (in kms)

Study site	Distance from district	Availability of depots	Comments
Kanchele	62 kms	1	None operational, but being used for food relief distribution by CARE
Malende	12 kms	2	None operational, may require minor rehabilitation
Kaindu	62 kms	2	None operational, may require minor rehabilitation
Kabulwebulwe	30 kms	2	None operational, may require minor rehabilitation
Luchembe	25 kms	1	None operational
Mpika main	11 kms	1	None operational, may require minor rehabilitation

Field survey, 2005

ii) Level of maize production, sales and beneficiary views on adequacy of maize

Level of maize production, sales and beneficiary views on maize shortages as well as perception on improvements in food security status among households were the main variables used to assess the impact of the programme. Tables 17 and 18 present summary of views of respondents regarding maize shortages between 2001 and 2004. As seen in the two tables, those who experienced maize shortages declined by 6 households, from 52 to 46, while those who did not experience the shortages remained almost the same in the same period.

In 2001, 37 male-headed households experienced maize shortages while 15 female-headed households indicated that they experienced maize shortages. In 2002 the male-headed households who experienced maize shortages declined from 37 in 2001 to 33 in 2002 while female-headed households that experienced maize shortages increased from 15 to 18 during the same period. Between 2003 and 2004, the male headed households experiencing maize shortages dropped from 37 in 2003 to 31 in 2004 and female-headed households declined in the same period from 19 to 15 respectively. One of the major observations from the analysis of the two tables is that the number of female-headed households experiencing maize shortages remained constant between 2001 and 2004 while male-headed households declined from 37 in 2001 to 31 in 2004.

Table 17: Trends of maize shortages among the respondents

Response	2001			2002		
	Male	Female	Total	Male	Female	Total
Yes	37	15	52	33	18	51
No	28	19	47	28	16	44
Non response	10	7	17	14	7	21
Total	75	41	116	75	41	116

Field survey, 2005

Table 18: Trends of maize shortages among the respondents

Response	2003			2004		
	Male	Female	Total	Male	Female	Total
Yes	37	19	56	31	15	46
No	25	15	40	29	17	46
Non response	13	7	20	15	9	24
Total	75	41	116	75	41	116

Field survey, 2005

When asked if the farmers were experiencing some improvements in the status of food security from the time the programme was launched, a large proportion (60.34%) of those interviewed felt that there was a bit of improvement and 14.66% said that there was no improvement while 13.80% and 11.21% said that there was much and a big improvement respectively (see table 19).

Table 19: Farmer responses on whether food security is improving

Response	Frequency			
	Male	Female	Total	%
No improvement	10	7	17	14.66
Improved just a bit	48	22	70	60.35
Improved much	9	7	16	13.80
There is a big improvement	8	5	13	11.21

Field survey, 2005

Table 20: Sources of food shortages

Livelihood sources	Frequency		
	Male	Female	Total
Drought	12	6	18
Lack of capital	5	3	8
Barter system in crop marketing poor	17	19	36
Poor marketing arrangement	4	4	8
Low prices of farm produce	6	4	10
Late delivery and lack of inputs	14	10	24

Field survey, 2005

With regard to maize production levels, tables 21 and 22 present individual responses of the perceptions of whether they had produced adequate maize to sustain food security for the household. Between 2001 and 2004, households that produced adequate maize for the household declined from 41 to 21 respectively. Female-headed households declined from 10 to 7 while the male-headed households declined from 31 to 14 in the same period.

With regards to maize adequacy, table 23 shows that 58 respondents said that maize was inadequate in 2001 while in 2004, 37 felt that it was not adequate. While those who said that maize was adequate increased from 46 households in 2001 to 71 households in 2004 season, which was an increase of 54.34%.

Table 21: Responses on average bags of maize production from 2001-2002

Sex	2001					2002				
	Nil	2-10	11-20	21-50	+50	Nil	1-10	11-20	21-50	+50
Male	31	8	7	23	6	22	9	11	19	14
Female	10	6	7	13	5	5	8	8	13	7
Total	41	14	14	36	11	27	17	19	32	21

Field survey, 2005

Table 22: Responses on average bags of maize production from 2003-2004

Sex	2001					2002				
	Nil	2-10	11-20	21-50	+50	Nil	1-10	11-20	21-50	+50
Male	13	3	16	23	20	14	3	14	27	17
Female	3	7	10	15	6	7	6	6	13	9
Total	16	10	26	38	26	21	9	20	40	26

Field survey, 2005

Table 23: Responses on maize adequacy from 2001-2004

Responses	2001		2002		2003		2004	
	No.	%	No.	%	No.	%	No.	%
Not grown	12	10.3	4	3.4	4	3.4	8	6.9
Adequate	46	39.7	58	50.0	69	59.5	71	61.2
Inadequate	58	50.0	54	46.6	43	37.1	37	31.9
Total	116	100.0	116	100.0	116	100.0	116	100.0

Field survey, 2005

Tables 24 and 25 shows the number of households that sold maize as well as number of bags sold per household. Between 2001 and 2004, the households that did not sell maize among the respondents dropped from 78 to 51 while the number of households that sold between 1-50 bags of maize increased only by 5 from 64 in 2001 to 60 in 2004.

Table 24: Responses on maize sales

Year	2001					2002				
	Nil	1-10	11-20	21-50	+50	Nil	1-10	11-20	21-50	+50
Male	49	9	5	5	7	38	9	10	8	10
Female	29	6	2	4	0	24	7	5	2	3
Total	78	15	7	9	7	62	16	15	10	13

Field survey, 2005

Table 25: Responses on maize sales

Year	2003					2004				
	Nil	1-10	11-20	21-50	+50	Nil	1-10	11-20	21-50	+50
Male	29	8	16	15	7	28	10	7	20	10
Female	23	5	7	7	0	23	4	5	7	2
Total	52	13	23	21	7	51	14	12	27	12

Field survey, 2005

Tables 26 and 2, provide analysis of number of maize sales as well as number of farmers who participated in the maize marketing for 2001 before the FSP was introduced and compared with the 2003 and 2004 seasons. From the analysis of the information in the two tables, it is clear that there has been an increase of

farmers who have not been participating in the maize market between 2001 and 2004. On average, respondents who said they did not sell maize declined by 51.7% from 43.1% in 2001 to 81.9% while those who have been selling during and earning between K30,000.00 and K150,000.00 declined from 18.1% to 2.6%. Those who sold maize and earned between K 151,000.00 and K 1,000,000.00 declined from 24.1% to 11.2% from 2001 and 2004 marketing season.

Female-headed households that participated in maize marketing and earned between K30,000.00 to K150,000.00 dropped from 17.1% to 4.9% while those who received from K151,000.00 to K1,000,000.00 declined from 29.3% to 12.2% in 2004. Male-headed households that sold maize for K30,000.00 and K150,000.00 declined from fourteen (14) in 2001 to one in 2004 while those that sold maize for K151,000.00 to K 1,000,000.00 declined from 21.3% to 10.7% in 2001 and 2004 respectively.

Table 26: Average maize income from 2001-2002 (in K,000)

Average income for crops	2001					2002				
	None	30-150	151-1000	1100-1500	1500+	None	30-150	151-1000	1100-1500	1500+
Male	33	14	16	5	6	30	7	25	5	8
Female	17	7	12	1	2	19	7	13	1	5
Total	50	21	28	6	8	49	14	38	6	13
% of male	44.0	18.7	21.3	6.7	8.0	40.0	9.3	33.3	6.7	10.7
% of female	41.5	17.1	29.3	2.4	4.9	46.3	17.1	31.7	2.4	12.2
Overall %	43.1	18.1	24.1	5.2	6.9	42.2	12.1	32.8	5.2	11.2

Field survey, 2005

Table 27: Average maize income from 2003-2004 (in K,000)

Average income for crops	2003					2004				
	None	30-150	151-1000	1100-1500	1500+	None	30-150	151-1000	1100-1500	1500+
Male	18	8	17	7	15	62	1	8	1	3
Female	17	6	11	1	5	33	2	5	0	1
Total	35	14	28	8	20	95	3	13	1	4
% of male	24.0	10.7	22.7	9.3	20	82.7	1.3	10.7	1.3	4.0
% of female	41.5	14.6	26.8	2.4	12.2	80.5	4.9	12.2	0.0	2.4
Overall %	30.2	12.1	24.1	6.9	17.2	81.9	2.6	11.2	0.9	3.4

Field survey, 2005

iii) Poor marketing arrangements

Problems of agricultural marketing have been identified as the major institutional constraints small-scale farmers are facing (Francis et al; 1997; Leavy, 2005). According to Jennifer Leavy (2005), key factors to marketing participation include: physical, political and structural. Physical constraints include distances, lack of affordable or appropriate transport, poor feeder roads. While political constraints include the inability of smallholder farmers to influence the terms of their participation in the markets and the lack of market intermediaries is the structural problem. Because the majority of rural farmers are scattered and isolated, connecting to both input and produce markets is a major problem for increasing agricultural production.

In the study areas, farmers acknowledged that because of poor marketing arrangements, long distances and lack of buyers of farm produce, they are not only unable to sell their farm produce, but also unable to buy farm inputs since they do not have the money with which to do so. The farmers indicated that while the government has provided the environment for the private sector to participate in the agricultural markets and contribute to agricultural development, the private sector is not adequately servicing the rural communities in remote parts of the country.

In addition, farmers also said that delayed announcements of fertilizer price amounts to dislocating their planning mood for their farming activities. They said that if prices of farm inputs (seed and fertilizers) were known 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.

3.6 Monitoring, Evaluation and likelihood of misuse of fertilizers

Monitoring and evaluation is one of the major elements for the successful implementation of a project. At the district level, the District Marketing and Cooperatives Officer is responsible for the monitoring and evaluation function. Information from the district key informants showed that both DAC meetings and the monitoring and evaluation activities are not held due to inadequate funding. The current allocation for the activities of the fertilizer support programme is inadequate. The DACs no longer meet to consider the fertilizer applications and DACOs make decisions regarding the applications.

By not properly keeping records and inadequate monitoring and evaluation, due to poor funding at the district level for monitoring and evaluation activities, there is a risk of increased rate of pilfering and fertilizers getting into wrong hands.

3.7 The main challenge

The main challenge facing government in the implementation of the fertilizer support programme is scaling up the support to farmers under the 50% programme and at the same time ensure sustainability of the programme. There are about 600,000 small-scale and emergent farmers in need of the support in the country. The government is currently covering about 150,000 and the remainder is expected to be supported by the private sector.

While the private sector is expected to cover the remaining group of farmers, analysis of information from the focus group discussions indicates that the majority of farmers in remote areas do not access fertilizer because the private sector is unable to reach them due to poor feeder roads. In addition, analysis of figures generated from the study show that fertilizers received by farmers is inadequate and unsustainable. One farmer in the focus group discussions in Kanchele said, "in 2002/03 season I sold animals to participate in the 50% fertilizer support programme, but because I lost all my animals due to Corridor Disease, I am not able to participate in the programme during this growing season". Another farmer in the same area said, "the programme is leaving out a large proportion of the farming community because only those farmers who can afford to pay for the 50% can participate in the programme".

This analysis raises issues of the programme sustainability. Unless farmers are able to raise money to meet the 50% obligations, they will not be able to participate and benefit from the programme. Both farmers and local transporters indicated that for farmers to be able to participate in the markets and for local transporters to reach remote parts of the districts, the marketing arrangements need to be synchronised with the supply of inputs and feeder roads need to be maintained regularly.

4. Conclusion and Recommendations

4.1 Conclusion

This report documents the findings of the study on FSP and the views of beneficiaries regarding the implementation process and its impact and effectiveness in reducing food insecurity among small-scale farmers. The study, conducted between January and February 2005 aimed at assessing the effectiveness of the implementation of the programme and its impact on reducing food insecurity among small-scale farmers.

A combination of qualitative and questionnaire survey tools were used to generate data for the study. Participatory Rural Appraisal tools included focus group discussions, pair-wise ranking and scoring, semi-structured interviews, key informant interviews, and physical observations. A total of 116 sample farmers were interviewed and a further 153 participants were involved in the focus group discussions.

Main issues and findings

The key issues regarding the implementation of the FSP were raised from the focus group discussions and individual interviews as well as key stakeholders and farmer groups. These included crop marketing arrangements, input supply arrangements, use of local transporters, monitoring and evaluation, the number of bags of fertilizers that farmers receive, poor record keeping, non-use of satellite depots and long distances from input supply points. These were said to be responsible for reducing the effectiveness of the programme.

It appears from the analysis of the information that there is very little impact of the FSP in terms of reducing food shortages, increasing household income and reducing poverty. A range of factors were identified as responsible for reducing the programme effectiveness:

- *Poor crop marketing and lack of a synchronised system of maize marketing and input supply:*
  Crop marketing and payment procedures are currently not in favour of the farmers. In most cases farmers receive their money very late and when they do, inputs are either in short supply or they are not in stock. In addition, low output prices, delays in cash payments after selling outputs and few buyers and poor transport facilities contribute to poor performance of the programme. Because seed and fertilizers do not come at the time of crop marketing, farmers' capacity to contribute to the 50% payment is reduced.

In some cases, input supply and sometimes fertilizers arrive earlier than seed and in other cases inadequate fertilizer supply, delays in input supply, poor marketing arrangement and high prices of fertilizer were critical issues making the programme less effective. Both late announcement of fertilizer prices and seed and fertilizers not coming at the same time were considered major problems the farmers face. The most common source of dissatisfaction are: inadequate supply of farm inputs, poor marketing arrangements; lack of satellite depots; poor payment arrangements for farm produce; poor record keeping, high input prices and low output prices.

- *Inadequate supply of inputs:* The majority of beneficiaries of the programme get less than what is recommended. This therefore reduces the effectiveness as the yields are reduced.

- *Long distances from the fertilizer collection points and non-utilisation of satellite depots in remote areas:* farmers who are in remote areas find it difficult to collect their fertilizer consignments and this acts as a limiting factor to access the fertilizers.

- *Use of local transporters for fertilizer distribution:* While it is government policy to encourage the private sector in the distribution of farm inputs, the private sector is also focusing on areas along the railway line and avoiding remote areas where the majority of smallholder farmers are found. In the FSP, some local transporters have resisted going into remote areas and have raised concerns over the poor road network, especially remote parts of the districts. In the study sites both local transporters and the farmers felt that poor feeder roads are also contributing to difficulties in input supply. This has seriously affected input supply and disadvantaged farmers in most cases in remote areas.

- *Need for satellite depots:* Satellite depots are critical for the fertilizer support programme to be effective in input supply. Currently, while some of the remote areas have in place depots, these are not in use and farmers have to travel for more than 80 Kms to the district to collect their fertilizer consignment.

- *Poor record keeping and monitoring and evaluation:* inadequate financial resources affect monitoring and evaluation and because of this, DACs no longer meet to consider farmers applications and this has necessitated DACOs to make decisions on behalf of DACs. This has led in some cases to wrong beneficiaries of the programme.

Record keeping has not been observed seriously disadvantaging farmers in cases when they need some refunds due to not receiving their fertilizer. In Kalomo district, for example, some farmers in Kanchele area were not refunded for the payment made in 2002 for the 2003/04 fertilizer needs. While in Mpika transporters charged farmers extra money for transporting fertilizer beyond 30 kilometers.

Analysis of the results clearly shows little impact of the FSP and its effectiveness in terms of increasing maize production and reduction in shortages. The main factors, among others, attributing to this include:

- Poor crop marketing arrangements;
- Delayed input supply arrangements;
- Inadequate number of bags of fertilizers that farmers receive;
- Non-use of satellite depots and long distances from input supply points;
- Poor record keeping; and
- Fertilizers arriving at the district offices before the arrival of seeds.

4.2 Recommendations

To improve the performance and effectiveness of the FSP, it is critical to remove the constraints that reduce the effectiveness of the programme. A number of recommendations emerged from the analysis. Some key recommendations include the following:

- Mechanisms to ensure that input supply delivery is done at the right time be put in place;
- Seed and fertilizer be supplied at the same time;
- Improve marketing arrangements for key farm produce and synchronise input supply with agricultural marketing season. Also, payment to farmers for farm produce should be in time to allow the farmers plan for input purchases;
- Satellite depots should be established in remote areas;
- Local transporters should ensure that they deliver farm inputs at the farmers' nearest point;
- Introduce an efficient and effective monitoring system for the programme;
- Ensure that good record keeping is in place and observed.

Table 28: Matrix of Summary of Recommendations and Responsibilities

Problem	Recommendation	Organisation
1. Delay in input supply delivery	Ensuring that input supply and delivery is done at the right time	Government and Suppliers
2. Seed and fertilizer not coming at the same time	Seed and fertilizer to be supplied at the same time	Government and Suppliers
3. Low prices for farm produce	Improve marketing arrangements for key farm produce	Government/ buyers
4. Long distances from where inputs are collected and lack of transport	Establishment of satellite depots in remote areas	Government and Fertiliser suppliers
5. Poor marketing arrangements for both inputs and farm produce and delays in cash payments after sale of produce	Payments to farmers for their produce should be at the right time	Farm produce buyers
6. Lack of monitoring	Introduce an efficient and effective monitoring system for the programme	Government/Ministry of Agriculture and Cooperatives
7. Farmers receiving less than 8 bags	Increase number of bags to districts	Government/Ministry of Agriculture and Cooperatives
8. Poor feeder roads	Improving feeder roads	Government/Ministry of Transport and Communication

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