AN ASSESSMENT OF THE PERFORMANCE AND THE EFFECTIVENESS OF THE FOOD SECURITY PACK PROJECT IN MANSA DISTRICT

A Research Report Presented to the Department of Agricultural Economics and Extension Education of the University of Zambia

In Partial Fulfilment of the Requirements for the Degree of Bachelor of Agricultural Sciences

BY

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ACKNOWLEDGEMENTS

I'm highly indebted to my supervisor Mr. M. Likulunga for his tireless advisory role and encouragement rendered to me from the start to the completion of this research work. Without his professional contribution, this research work would not have been realised.

I wish to extend my gratitude to the management of PAM-FSP both at the headquarters and Luapula province for granting me authority to use their project beneficiaries as respondents and for availing most the valuable information and literature materials used in this research study.

Thanks to Dr. G. Tembo in particular for his consistent guidance on econometric data analysis and result interpretations. Without his assistance, analysis and interpretation of the research results would have not been possible.

I wish to acknowledge the colleagues who contributed positively towards the compilation of this report morally and academically. This report would not be complete without acknowledging management of Mansa Research Station who provided transport to enable me do the data collection, all the field staff in Mabumba agricultural camp and all those who participated in the survey.

I dedicate this whole work to my beloved wife D. M Mutondo who gave me encouragement and strength in times of difficulties in my career pursuing at the University of Zambia.

TABLE OF CONTENT

LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANOVA	Analysis of Variance
ARPT	Adaptive Research Planning Team
BLUE	Best Linear Unbiased Estimators
CSO	Central Statistical Office
CSPR	Civil Society for Poverty Reduction
DD	Difference in Differences
FAO	Food Agriculture Organisation
FASAZ	Farming Systems Association of Zambia
PAM	Programme Against Malnutrition
FSP	Food Security Pack
GLS	Generalised Least Squares
GRZ	Government of the Republic of Zambia
HIV	Human-Immunodeficiency Virus
MACO	Ministry of Agriculture and Cooperatives
MAFF	Ministry of Agriculture, Food and Fisheries
MCDSS	Ministry of Community Development and Social Services
MoFNP	Ministry of Finance and National Planning
NFSP	National Fertilizer Support Programme
NGOs	Non-Governmental Organizations
OLS	Ordinary Least Squares
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Paper
SPSS	Statistical Package for Social Sciences
UNZA	University of Zambia
VAC	Vulnerability Assessment Committee
VIF	Variance Inflation Factor
WFS	World Food Summit

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

An Assessment of the Performance and Effectiveness of the Food Security Pack Project in Mansa District

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The Report presents the results of an assessment of the performance and effectiveness of the Food Security Pack Project in Mansa District. The assessment was done towards the end of phase one of the Food Security Pack Project (FSP). The Project is an on going activity. The overall objective of the study was to assess the performance and the impact of the FSP on the food security and welfare of the beneficiaries at the end of FSP-phase 1 in Mansa district.

The survey was conducted in Mabumba area in Mansa District of the Luapula Province of Zambia. The study was done on a very small-stratified randomly selected sample of 70 Households out of which 35 Households were that of the Beneficiaries and the other 35 comprised the Non Beneficiaries. Both qualitative and quantitative data were obtained from primary and secondary sources. This was achieved by using triangulation approach in order to ensure consistency in the type of data being collected. The approach involved the use of a structured questionnaire on to the stratified randomly selected households, personal interviews of key informants and participatory rural appraisal techniques. The data was analysed using Statistical Package for Social Sciences (SPSS) and Microsoft excel.

The results however, indicated that the programme partially achieved the objective of improving household food security and livelihoods among the beneficiaries. The beneficiaries had higher crop production levels than the non-beneficiaries in maize and cowpea leading to improved household food security. Between 2004 and 2007, cassava and groundnut production increased thus contributing positively to both the household food security and livelihood. PAM-FSP had positive impact though not statistically significant. Based on beneficiary perception, the programme was effective and performed very well in terms of input delivery. Incomes from crop production was positively influenced by household size, treatment and secondary education and negatively influenced by number of orphans per household.

With reference to the research findings the recommendations were that government should continue and even increase the funding of the FSP program, if poverty reduction among the vulnerable but viable small-scale farmers has to be realized. PAM-FSP should increase the number of crops like cowpea to ensure food availability during the food lean period of the year.

CHAPTER 1

INTRODUCTION

1.1 Background

According to the Central Statistical Office (CSO, 1999), since the 1970s, Zambia has been experiencing economic and social problems resulting in the deteriorating standards of most people. As incomes continued to decline, human sustenance in Zambia became more and more difficult. The Food Agricultural Organisation (FAO, 1998) also noted that most people were affected in areas of food security, health, sanitation, education and employment.

Food security in Luapula province has been threatened by a number of factors. Some of the factors are the changing weather conditions (droughts, floods); population increase, the HIV/AIDS and the liberalization of the Zambian economy. These factors have contributed to the high levels of food insecurity and poverty in Zambia and Luapula province in particular.

In order to address the food insecurity and poverty problems the government came up with the Poverty Reduction Strategy Paper (PRSP). The social safety nets were put in place to cushion the rural people such as the National Fertilizer Support Programme (NFSP) and the contracting of the Programme Against Malnutrition (PAM) to execute the Food Security Pack (FSP).

Programme Against Malnutrition-Food Security Pack (PAM-FSP) has been in operation for almost seven agricultural seasons since the inception in 2000-1 season. The goal of the Food Security Pack (FSP) was to reduce poverty among the vulnerable but viable farmers through improved household food security. To achieve this goal, four programme components were designed including:

1. Diversification and conservation farming;
2. Market entrepreneurship and Cereal/seed Banks development;

3. Alternative livelihood interventions;
4. Programme management and co-ordination.

Non-implementation of any one or more of the above listed components would adversely affect the overall impact of the programme (PAM, 2000-2004).

According to the PAM-FSP Project document (2001) the key monitoring questions of PAM-FSP were:

1 Was the program being implemented according as planned?
2 What system must be developed to monitor program implementation at various stages?
3 Have the intended beneficiaries been selected?
4 Have the inputs been distributed to the selected beneficiaries?
5 Were the packs available at the right time?
6 Were the inputs used for the intended purpose?

1.2. Problem Statement

PAM executed the food security pack in Luapula province to address the food insecurity and poverty problems.

In 2003, Farming Systems Association of Zambia (FASAZ) on behalf of PAM carried out the Mid-Term Evaluation. The evaluation was carried out to assess the programme efforts, effects, change and impact of the food security pack on the target vulnerable but viable farmers. The findings were that:

1 Analysis of two implemented components the Food diversification and Cereal/Seed bank showed that the components achieved modest impact on the livelihood of the vulnerable but viable farmers.
2 The components demonstrated limited identifiable impact in the field in terms of increasing beneficiaries' access to inputs i.e. seed and fertilizers.
3 The components demonstrated limited identifiable impact in the field in terms of increasing food security both at households and community level.
4 Impact at the national level was minimal;

5 The food security and socio-economic conditions of the beneficiaries did not change significantly from the inception to the mid-term evaluation time. This underscored the need to enhance the implementation of the other components that were not implemented but had the potential to make a significant impact on the beneficiaries.

6 The consultative process involving beneficiaries and other stakeholders at community level should be given attention for consensus. This is an important factor for ownership and sustainability of the programme benefits (Mid-term evaluation, 2003).

Since the Mid-Term Evaluation covered the first period of the Food Security Pack of Phase 1 from 2000 to 2003, there is need to assess the second period of the food Security Pack of phase 1 from 2003 to 2006 (Knowledge gap). The study was a follow up to the Mid-Term Evaluation to find out if the there was improvement on the food security and livelihood of the vulnerable but viable farmers and whether the recommendations have been effected.

1.3. The Research Rationale

This research sought to establish whether PAM-FSP really helped the vulnerable but viable farmers in Mansa district to improve household food security and reduce poverty by the end of Food Security Pack-Phase 1. The study is designed to generate information and offer analysis of the beneficiary perception on effectiveness and performance of PAM-FSP, its effects and impact on the beneficiaries. Based on the findings from the End-Term Evaluation of FSP-phase 1, make the recommendations on how PAM-FSP might build upon positive past experience and re-orient future interventions in order to maximize the positive impact of the programme. The information generated will be beneficial to the Programme Against Malnutrition-Food Security Pack (PAM-FSP), Ministry of Agriculture and Co-operative (MACO), the Ministry of Community Development and Social Services (MCDSS), the Ministry of Finance and National Planning (MoFNP), the University of Zambia (UNZA), the Non Governmental Organization (NGOs) and the donor community.

1.4 Study Objectives

1.4.1 The General Objective:

The overall objective of the study was to assess the performance and the impact of the FSP on the food security and welfare of the beneficiaries at the end of FSP-phase 1 in Mansa district.

1.4.2 Specific Objectives

1. To find out if there were differences between project beneficiaries and non-beneficiaries in crop area cultivated and production levels at the end of FSP-phase1 in Mansa district.
2. To assess the beneficiaries perception on the performance and effectiveness of PAM-FSP at the end of phase 1 in Mansa district;
3. To assess whether the interventions improved the food security and livelihoods of the beneficiaries in Mansa district;
4. To assess the impact of the interventions on household food security of the beneficiaries in Mansa district;

1.4.3 Hypotheses (Null Hypotheses)

1 There was no difference between project beneficiaries and project non-beneficiaries;

2 The PAM-FSP did not perform well and was not effective in Mansa district;

3 Implemented interventions did not improve the food security and livelihood of beneficiaries;

4 The interventions had no impact on household food security of the beneficiaries.

1.5 Scope of the Study

The research study focused mainly on the performance and effectiveness of Program Against Malnutrition-Food Security Pack in addressing food security issues as assessed by the beneficiaries.

1.6 Structure of the Report

The research report starts with chapter one that highlights the background information to the problem being studied. It covers problem statement, Rationale of the study, study objectives (General and specific objectives), and hypotheses, the scope of the study and the structure of the report. Chapter two covers literature review, which consists of the conceptual framework, definitions, the extent of insecurity problem, and the empirical literature review. Chapter three looks at the research methods and procedures used for the study. It covers description of the study area, sampling procedures, methods of data collection, types of data collected, and data analysis. Chapter four looks at findings and interpretation of the findings of the study, while chapter five looks at conclusion and recommendations based on the findings. The reference part looks at all the reference materials reviewed in the research process. The appendix covers the questionnaire, the syntax used in the research process.

CHAPTER 2

LITERATURE REVIEW

2.1 Definitions

Food Security: according to the Ministry of Agriculture, Food and Fisheries (MAFF, 1992), food security was broadly defined as access by all Zambians at all times to enough of the right food for an active and health life on a sustainable basis. Agricultural policies have a role to play in ensuring:

1 The dependable and efficient annual production of adequate supplies of cereals and proteins (legume crops, fish and meat) in all regions of the country;
2 That the usual hungry period in rural areas is bridged by either storage or off-season production;
3 That markets exist to channel the surplus to deficit areas;
4 That the farmers have a steady and reasonable income from their production;

Food Security Pack: According to the Programme Against Malnutrition a full pack comprises following components each adequate for a Lima:

1 Cereal (i.e. maize or millet or rice or sorghum),
2 Legume (i.e. groundnuts or beans or cowpeas or soybeans),
3 Roots/tuber (i.e. cassava or sweat potatoes) supported with;
    (a) Fertilizer for beneficiaries of maize and,
    (b) Agricultural lime for beneficiaries in areas affected by soil acidity;

Livelihood: The Vulnerability Assessment Committee (VAC-2004) defined livelihood as "the sum of ways in which the households make the ends meet from year to year and how they fail to survive through difficulty times." According to the Vulnerability Assessment Committee floods and droughts, lack of draughts power, livestock diseases, poor infrastructure and poor marketing arrangements are some of the causes of food insecurity, poverty and vulnerability.

Project beneficiary is term used frequently and interchangeably with project participant, thus expressing hope that anyone who participates in a project may obtain some benefit from participation (Krishna K. et al, 1988).

Vulnerable but Viable Farmers are farmers whom the majority cultivate less than a hectare of land, have inadequate access (availability and affordability) to basic yield-enhancing technologies and their earnings are not adequate to supply a household of six people with staple food for the whole year (PAM-FSP Project document, 2001).

2.2 The Extent of the Food Insecurity Problem

The latest estimates of FAO show that a number of countries have reduced hunger since the World Food Summit (WFS) base line period of 1990-1992. In 19 countries, the number of chronically hungry people declined by over 80 million people between 1990-1992 and 1999-2001. Unfortunately, this is not the situation in most other countries. Across the developing world as a whole, an estimated 798 million people were undernourished in 1999 - 2001; only 19 million were fewer than during the World Food Summit baseline period. Worse, yet it appears that the number of hungry people in developing world is no longer falling but increasing. During the first half of the 1990s, the number of the chronically hungry people decreased by 37 million people. Since1995-1997, however, the number increased by over 18 million (Jacques Dough, 2003).

Worldwide, FAO estimates that 842 million people were undernourished in 1999-2001. This includes 10 million people in the industrialized countries, 34 million people in the countries in transition and 798 million people in the developing countries.

At regional level the number of undernourished reduced in Asia, the pacific, Latin America and the Caribbean. In contrast, the number continues to rise in the sub- Saharan Africa, North Africa and the Near East. Zambia being in the Sub-Saharan Africa is not an exception to this problem. This can be seen from the statistics in the table below:

Table 1: Prevalence of Under Nourishment in Zambia

Year / Variable	1990 - 1992	1995 - 1997	1999 - 2001
Total population (Million)	8.3	9.5	10.4
Number of people undernourished (Million)	3.7	4.4	5.2
Proportion of the undernourished in total population (%)	45	47	50

Source: FAO World Summit Report, 2003

2.3 Empirical Study in Zambia

In order to address the changing problems to improve food security and income for small-scale farmers within the liberalised economy, the Government of the Republic of Zambia developed a Fertilizer Support programme. The fertilizer Support Programme aimed at improving access to agricultural inputs by rebuilding their asset base through direct income transfers (subsidy) to poor small-scale farmers, organized in groups, associations and co-operatives.

In 2003, the Civil Society for Poverty Reduction (CSPR) carried out an assessment of the implementation and effectiveness of the Fertilizer Support Programme. 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 the small-scale farmers in rural areas.

The analysis of the findings indicated that the Fertiliser Support Programme had very little impact on the food security and poverty reduction. Income effects could not adequately meet the many household needs that the communities in rural areas wanted to address. Issues of sustainability and adequacy of the amount of fertilizers farmers received 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:

1 Inconsistent supply of inputs and some times fertilizers arriving earlier than seed;
2 Delays in input supply;

3 Few buyers and poor transport facilities;
4 Inadequate supply of farm inputs;
5 Poor marketing arrangements which includes delays in payment to farmers for farm produce during the marketing season;
6 Lack of or non-use of satellite depots;
7 Poor record keeping of fertilizer applicants and delivery records;
8 High input prices and low price for farm produce; and
9 Lack of monitoring and evaluation of the programme;

After analyzing the data and reporting, CSPR made some recommendations. The CSPR recommended that in order to improve the performance and effectiveness of the FSP, it was critical to remove the constraints that reduced the effectiveness of the programme. A number of recommendations emerged from the analysis. Some of the key recommendations included the following:

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

2.4 Conceptual Framework

The conceptual framework helped to come up with the research design, variables and the econometric model used in this study.

According to Valadez J., 1994, more attention was being paid to the long-term effects of development assistance: whether the investments had achieved their intended impacts and

whether they had benefited the intended target groups. An assessment of developmental projects should use the randomized evaluation design or the quasi-experimental design. Quasi-experimental designs assess the impacts of project interventions by measuring the changes that had taken place in social and economic conditions of project target groups and by systematically isolating the effects of other factors (other projects; changing social, economic and political conditions; climatic and other natural changes, and so on) that might had contributed to the observed changes. A quasi-experimental design can be used to assess the overall impact of projects on target groups, identify the groups that have been most and least affected, and identifies the inputs that produce the greatest impact at lowest cost. The quasi-experimental design can also provide information on the interaction between the project interventions, beneficiary characteristics, and external factors, and the part they play in the impact of a project. It allows the evaluator to observe the intervention group and the control group simultaneously. Pre- and post observations are taken in both groups. The assumption is that other unknown and unexplained factors, in addition to the interventions, may also contribute to changes in the project area. In a well-designed and executed evaluation, the control group detects and adjusts for changes that are unrelated to the project, while the intervention group detects the changes due to the project. Therefore, changes in the intervention group minus the changes in the control group should reveal the impacts attributed only to the intervention. Based on the above reasons the quasi-experimental design was selected for this study.

According to Adaptive Research Planning Team (ARPT, 1992), food availability and stable access are critical to household food security. For this reason, any particular monitoring used for assessing household food security must incorporate food supply / production data, and access / entitlement data as part of its indicator set. Vulnerability to food insecurity is location - specific, therefore, indicators are needed that measure the supply and food entitlement changes at the local level. A number of different indicators can be used for delineating household food security. These can be divided into:

1. Process indicators reflect both food supply and food access and are divided into:

1 **Indicators that reflect food supply** include input and measures of agricultural production, access to natural resources, institutional development and market infrastructure (price).

2 **Indicators that reflect food access** are various means or strategies used by household to meet their household food security needs. These strategies will vary by region, community, social class, ethnic group, household, gender and season. Thus their use as indicators is location-specific.

2. Outcome indicators serve as proxies for food consumption and are divided into:

1 **Direct indicators of food consumption** include those that are closest to actual food consumption rather than marketing channel information or medical status (e.g. household consumption survey).

2 **Indirect indicators of food consumption** are generally used when direct indicators are either unavailable or to costly (in terms of time and money) to collect (e.g. storage estimates, nutritional status assessment)

Hence, in this study included the variables of food supply and food access (such as Yield per ha, Number of crops grown, inputs received, Number of children/household) and the outcome indicators.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Study Design

The quasi-experimental design was selected to assess the impacts of project interventions. It allowed observing the intervention group and the control group simultaneously. Pre- and post observations were measured in both groups using the recall method. The control group (Non-project beneficiaries) detected and adjusted for changes that were unrelated to the project, while the intervention group (Project beneficiaries) detected the changes due to the project. The changes in the intervention group minus the changes in the control group revealed the impacts attributed to the intervention only.

3.2 Description of the Study Area

The research study was conducted in Mabumba Area of Mansa district in the Luapula province of Zambia. Mabumba is situated in the eastern direction of Mansa District about 20 km a long Mansa - Samfya road. It is one of the productive areas of Mansa District. Most of the people in this area get their livelihood from agricultural activities. Majority of the farming households depend on the hoe to till the land. The use of purchased agricultural inputs like improved seed, fertilizers, pesticides, herbicides is limited due to various reasons. Some of the reasons include unreliable supply and inaccessibility and lack of purchasing power.

3.3 Study Population and Sampling Procedure

The research sampling procedure that was employed to carry out an impact evaluation was probabilistic sampling. This involved choosing of one area in the district where the food security pack project has been operating. The sample size included two sets of entities that were selected randomly i.e. the participants and non-participants individuals. A total of 70 individuals were randomly selected such that 50% included the project participants (treatment group) and the other 50% included non-project participants as a

control ("With and without"). This method of sampling facilitated unbiased research, as the entities were more representative.

3.4 Sampling Unit

The sampling unit was a household head for both PAM-FSP beneficiaries and non-PAM-FSP beneficiaries.

3.5 Types of Data Collected

Both secondary and primary data was used in this research. However to consolidate the findings some key informants were interviewed to provide data pertaining to the insight of the project implementation.

3.6 Method of Data Collection

The necessary data and information used in this assessment were obtained through three different ways as follows:

3.6.1 Key Informant Interviews

Key informant interviews were used to gain insight and opinions on the way the FSP operated and its impact. This was achieved by talking to knowledgeable individuals (the key informants), guided by carefully chosen discussion points/checklist. The key informants interviewed included headmen, community development field staff in Mabumba, agricultural field staff in Mabumba, and other knowledgeable individuals in the respective communities; FSP Provincial co-coordinator in Mansa district.

3.6.2 Participatory Rural Appraisal

Several participatory rural appraisal (PRA) techniques and informal discussions were used to obtain a feel of the livelihood systems on a relatively small scale, and the communities' perceptions of the activities and impact of the FSP program. Some of the techniques used to obtain an appreciation of the communities' food and income sources,

patterns of expenses during the PRA included analytical tables with scoring, pair-wise ranking, transect walks, and direct observation.

3.6.3 Closed Ended Questionnaire

Structured in-depth questionnaire–based interviews with a statistically selected sample of about 70 households in Mansa district were conducted. In order to capture all categories of households in this survey, a stratified random sampling technique was used to select the Households from the sampling frame. The households were grouped into two broad categories – FSP participants, and FSP non-participants – each of which were further sub-divided into two strata based on the household's household socio-economic status before and during the FSP.

3.7. Data Analysis

A combination of tables, pie charts, and bar graphs were produced in SPSS and Microsoft excel. For description of background data of the respondents and beneficiary perception of PAM-FSP performance and effectiveness cross tabulations were used.

To determine if there were differences between the beneficiaries and non-beneficiaries in 2007 compare means procedure from SPSS was used to generate ANOVA table and means for crop cultivated area, production and income. Also to determine if there was improvement or increase in food security from 2004 to 2007 compare means procedure from SPSS was used to generate ANOVA table and means.

The Difference in Differences (DD) commonly known as the Double Difference Econometric model was used to assess the impact of the programme on the target beneficiaries. The regression model was generated to estimate the effects and the impact of the project on the target population.

The population linear model regression to estimate was:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 \delta_1 + \beta_6 \delta_2 + \beta_7 \delta_3 + \beta_8 \delta_4 + \beta_9 \delta_5 + \beta_{10} \delta_6 + \beta_{11} \delta_7 + \beta_{12} \delta_8 + \beta_{13} \delta_9 + \varepsilon,$

Where:

Y = Total income from crops;

β_0 = Constant;

X_1 = Interaction between the change in years and the treatment

X_2 = Age;

X_3 = Household size;

X_4 = Orphans kept by households;

δ_1 = Treatment dummy (Beneficiary category); 1 if beneficiary, 0 otherwise.

δ_2 = Change in years dummy; 1 if 2007, 0 otherwise;

δ_3 = Sex dummy: 1 if male, 0 otherwise;

δ_4 = Married dummy; 1 if married, 0 otherwise;

δ_5 = Single dummy; 1 if single, 0 otherwise;

δ_6 = Divorced dummy; 1 if divorced, 0 otherwise;

δ_7 = Primary dummy: 1 if primary, 0 otherwise;

δ_8 = Secondary dummy: 1 if secondary, 0 otherwise;

δ_9 = College dummy: 1 if college, 0 otherwise;

ε = normally distributed random error with mean = 0 and variance =1.

To determine whether the independent variable had an influence or not on the dependant variable the f-statistic was used. The decision rule used to test the significance of a particular estimate was at 99%, 95% and 90% confidence level. If the *p* - value was less than 0.05, then the estimate was significant at 95 % confidence level and if the *P*-value was less than 0.10, then the estimate was significant at 90 % confidence level. If the *p*-value was greater than 0.10, then the estimate was insignificant. The results obtained were used to draw conclusions about the research problem and offer the recommendations.

3.8. Data Collection Limitations

The study was limited by the budget constraints and this forced the researcher to conduct the study in one location Mabumba rather than the whole district, which could have been more ideal. Time was another limiting factor. To carry out an effective research required a lot of time for preparations and implementation but time was not adequate enough.

CHAPTER 4

THE STUDY FINDINGS AND DISCUSSION

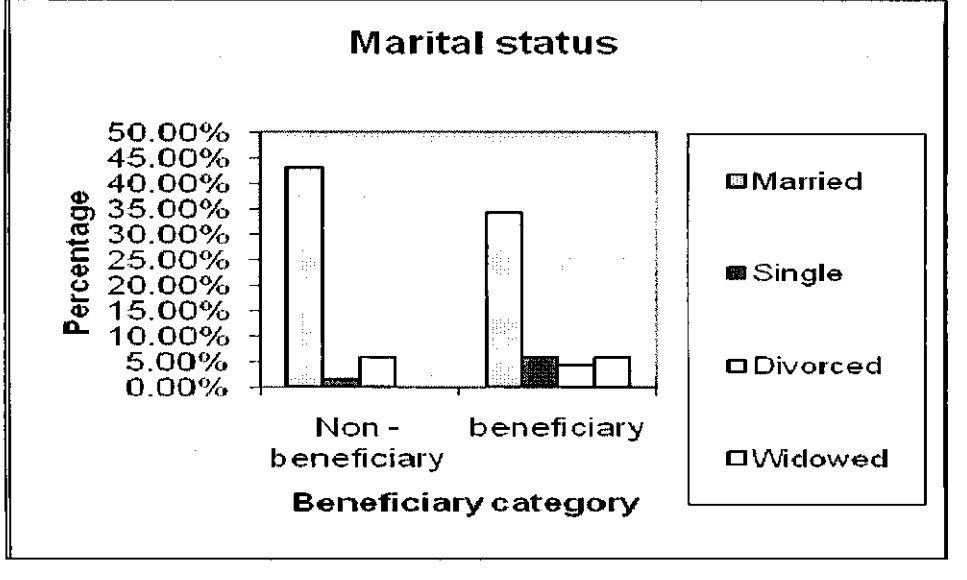
4.1. Background Information

This section gives and discusses the study findings of the respondents' background based on the responses of the beneficiaries and non-beneficiaries. Background information of the households is an important component in providing a contextual framework for better appreciation of the rest of the research results.

4.1.1 Marital Status of Respondents

Most of the respondents in both beneficiary categories were married as can be seen from figure 1. The trend showed that more non-beneficiaries were married than the beneficiaries. The actual percentages were 42.9% for the non-beneficiaries and 34.3% for the beneficiaries. The second largest group in the distribution was the divorced with the beneficiaries at 4.3% and non-beneficiaries at 5.7%. These percentages were calculated within each group and they added up to 50% for each category.

Figure 1 Marital Status of Respondents

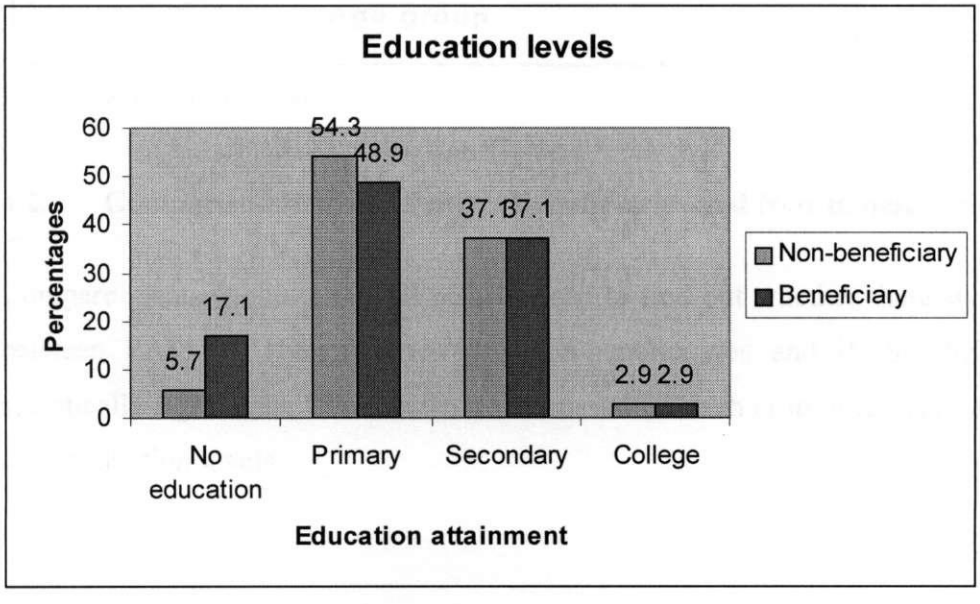


Source: Own research data, 2007

4.1.2 Education Levels of the Respondents

Figure 2 summarises educational level of respondents. The results showed that with no education attainment consisted of 5.7% non-beneficiaries and 17.1% beneficiaries. This was a good trend as it indicated that the illiteracy levels were not very high among the respondents, though the beneficiaries' rate was higher than the non-beneficiaries. Special care and attention is however required to ensure that illiterate households are not sidelined and that participatory communication tools are used in facilitation. For PAM-FSP this was taken care off as can be seen by a higher percentage of illiterate beneficiaries being assisted. Most of the respondents attained primary education level with 54.3 % being the non-beneficiaries and the beneficiaries being 48.9%. Secondary level of education attainment for both the beneficiaries and non-beneficiaries were at par with 37.1 % each. For college attainment level of education both the beneficiaries and non-beneficiaries had 2.9% each. Hence, there it can be seen that the differences are minimal making the comparison between the two groups more reasonable. The education levels of the respondents were moderate to allow for reasonable communication and understanding during interaction with them.

Figure 2: Education Levels of the Respondents

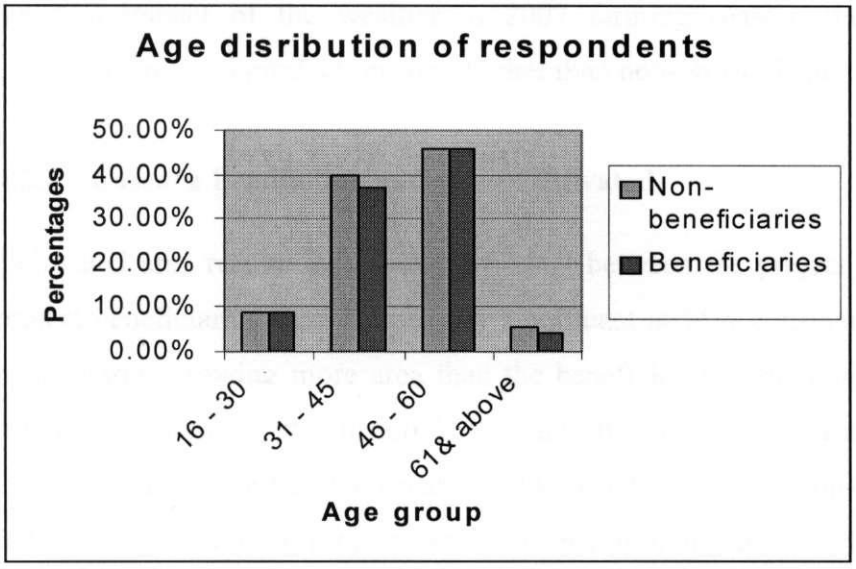


Source: Own research data, 2007

4.1.3 Age Distribution of Respondents

From Figure 3, it can be seen that majority of respondents (45.7%) were between 46 and 60 years of age, and only 38.6% were between 31 and 45 years of age. Very few respondents of about 7.1 % were above 60 years old. The trend showed that the age distribution of both the beneficiaries was almost the same, which made a good base for comparison. In both groups most of the respondents were found in two age classes i.e. 31 to 45 and 45 to 60.

Figure 3: Age Distribution of Respondents



Source: Own research data, 2007

4.2. Comparison between Project Beneficiaries and Non-Beneficiaries

Compare means technique in SPSS was used to find out whether there were differences between PAM-FSP beneficiaries and non-beneficiaries and if the differences were statistically significant. The results are discussed for each crop in terms of area cultivated and production levels.

4.2.1 Maize Production and Area Cultivated

The results for maize production and area cultivated were both statistically significant at 99% confidence level with the beneficiaries having higher cultivated area and production levels than the non-beneficiaries. Hence, in maize there was sufficient evidence of differences between the beneficiaries. The differences observed between the beneficiaries and non-beneficiaries could be attributed to the prohibitive prices of fertiliser and seed maize. Most non-beneficiaries could not afford to raise the money to purchase the subsidised inputs from the National Fertiliser Support Programme (NFSP) thus giving the beneficiaries an upper hand both in maize area cultivated and production. Despite the negative impact of the weather in 2007 farming season, the beneficiaries' maize cultivated area and production were higher than non-project beneficiaries.

4.2.2 Cassava Production and Area Cultivated

Cultivated area results for cassava by 2007 between the project beneficiaries and non-project beneficiaries were statistically significant at 95% confidence level with the non-beneficiaries growing more area than the beneficiaries. This confirmed that there were differences between the beneficiaries and the non-beneficiaries in area of cassava. Cassava is a food and cash crop among the beneficiaries and non-beneficiaries. This was not consistent with the project aspiration of improving food security through increased production and area cultivated.

All project consequences are not visible within a few years of implementation. Many variables particularly those involving changes in consumption patterns, nutrition, social and economic inequalities may take along time to develop sufficiently to allow a realistic assessment. Cassava among the crops under consideration follows the same trend. Cassava requires a long period of time to grow. The quantity of cassava supplied by PAM-FSP did not have the significant impact because the period was short to get such effects and impact. It would require a lot of time to multiply planting material and produce cassava so that it could plant large areas among the beneficiaries

4.2.3 Cowpea Production and Area Cultivated

The results for cowpea production and area cultivated were statistically significant at 99% confidence level with the beneficiaries having higher cultivated area and production levels than the non-beneficiaries. Hence, in cowpea cultivated area and production there was sufficient evidence of differences between the beneficiaries. The reason for this was that the non-beneficiaries do not grow cowpea as a cash crop but as a minor crop that is not sold. Both the beneficiaries and non-beneficiaries confirmed that cowpea had no good market and faced low selling price. Hence, the non-beneficiaries had no incentive in growing the crop because of the above-mentioned problems. The beneficiaries had to grow cowpea since they received it. It was a good choice by PAM-FSP to include cowpea as a food crop because cowpea is in stock during the food deficit period when other food legumes have run out. Other food legumes run out of stock because they are easily bartered or sold leaving cowpea as an alternative food legume available. Table 2 gives the mean comparison of various crops discussed above that were statistically significant.

Table 2: Crop Cultivated Area and Production Means in 2007 Farming Season

Crop	Means			
	Beneficiaries	Non-beneficiaries		
Maize cultivated area (ha)	0.411	0.234	0.245	0.002***
Maize Production (Kg)	1007.14	508.57	706.22	0.003***
Cassava cultivated area (ha)	0.460	0.595	0.234	0.014**
Cassava production (Kg)	1536	1327	878.76	0.323 ns
Cowpea cultivated area (ha)	0.018	0.000	0.267	0.004***
Cowpea Production (Kg)	7.430	0.000	12.03	0.009***

Source: Own research data 2007
*Significant at 95% level of confidence
**Significant at 90% level of confidence
***Significant at 99% level of confidence
Ns Not significant

4.3 The Beneficiaries Perception on the Performance and Effectiveness

Although the FSP beneficiaries are involved in production of a variety of other crops, this assessment focused on the effects of FSP on maize, cassava, soybeans, beans, groundnuts and cowpea production. However, the success of growing these crops depended very much on the input delivery system. Hence, beneficiary perception on input delivery

system was assessed and a number of factors were assessed to get the perception on the performance and effectiveness of the programme.

4.3.1 Beneficiary Perception of Input Adequacy per Unit Area

The perception and views of the beneficiaries about the adequacy of input distributed by PAM-FSP in Mabumba area of Mansa District were as shown in table 3. Most of the beneficiaries (82.9 %) perceived that the quantity of the inputs provided by PAM-FSP were adequate for a given area.

4.3.2 Beneficiary Perception of Time Inputs were Received

Most of the beneficiaries (94.3 %) said that the inputs were received on time, which was very good for agricultural activities to produce good results. This meant that the farmers planted the crops on time and did other management activities on time too. The timely delivery of input action by PAM-FSP was important for crop production as the production of good crops depends on timely provision of inputs. The timely distribution was also confirmed in the PAM-Luapula Province Annual report for 2007. According to the report the rain fed packs were received timely in October 2006 and onward distribution was done within October 2006 and completed early November 2007. The timing of supply and distribution compared well with the previous season that received its packs in October and distribution completed in the first week of November 2005 respectively. (P.14). The review of PAM-FSP 2007 Annual Report gives crosscheck of consistency and reliability of farmers' responses. For the few who said responded that they received the inputs late it could be due to local problems between the committee and the recipients.

4.3.3 Times Beneficiaries Benefited

According to the PAM-FSP Recovery Utilisation guidelines (p.3) beneficiaries will be weaned-off after benefiting for 2 seasons as per resolution of the National Stakeholders Workshop of October 2002. This variable was measured to find out if there were people who benefited more than twice as opposed to the stipulated in the guidelines. From the

responses it clearly showed that most of the beneficiaries (91.4%) sampled had benefited twice while a few benefited once. Those who benefited once were to benefit the following season so that eventually they would graduate. None of the beneficiaries benefited more than twice. This was an indication of impartiality in handling input distribution.

4.3.4 Full Pack Distribution among Beneficiaries

The majority (94.3%) said received the full pack while a handful said they did not receive the full pack. Those who did not receive the full pack (5.7%), it was because of the reduction in quantities received for distribution especially in 2005. This was acknowledged by both the area community development field officer and the chairman of Mabumba PAM beneficiary community during the key informant interviews that the inputs received were less than the expected or planned for distribution. The PAM-FSP Luapula Annual Report for 2006/07 the did confirm that the rain fed cropping packs received during 2006/07 were on the lower side at 1,911 packs compared to 4,212 packs distributed during 2005/06 season. The drop was by 2,301 packs representing a 55% reduction in a year (p.13). Distribution of these same packs to beneficiaries was very challenging given the over whelming number of people that were in need.

Table 3: Beneficiary Perception of Programme Performance and Effectiveness

	Beneficiaries' responses on perception (%)		
	Yes	No	
Input delivery	94.3	5.7	Inputs were timely delivered.
Input adequacy	82.9	17.1	Inputs were adequate.
Full pack distribution	94.3	5.7	Most received full pack.
Times benefited from PAM-FSP	91.4	8.4	Most benefited twice.

Source: Own research data, 2007

4.3.5 Sustainability of Activities after the Project Ends

The research finding on sustainability of the activities after the project ended showed that most of the project beneficiaries 51% would able to sustain themselves after the intervention and 49% would not able to sustain themselves after the intervention. This was an indication that at least the project had a positive effect on those that said they would be able to sustain themselves in their farming activities after the program came to an end. According to the PAM-FSP Recovery Utilisation guidelines (p.3), the weaned-off beneficiaries comprised of 2 categories, Graduated and dropped beneficiaries. Graduated beneficiaries were those who were able to stand on their own after being weaned. Dropped beneficiaries were those are not able to stand on their own after being weaned. From the results of the survey it can be safely stated that the sample surveyed in Mabumba area consisted of 51.4% graduated beneficiaries and 48.6% dropped beneficiaries based on guidelines.

4.3.6 Beneficiaries' Distribution by Sex

Gender refers to the social differences between men and women that are learned, changeable over time and have wide variations within and between cultures. It is a socio-economic variable used to analyze roles, responsibilities, constraints opportunities and the needs of both men and women in any context. Sex, on the other hand refers to biologically determined differences between men and women that are universal. The sex structure affects productivity in societies where job allocation is according to sex. Women are known for doing much work than men not only in the domestic cycle but also in food production. Many interventions to address rural problems are targeted towards men leaving out women who provide about 75% of labour in agriculture and produce about 95% of subsistence food. This study looked at participation in PAM-FSP by sex and the results indicate that 54.3% were females and 45.7% were males. This implies that women were not marginalized in PAM-FSP programmes, as they are most vulnerable group in society.

4.4. Improvement in Food Security and Livelihoods of the Beneficiaries

Compare means technique in SPSS was used to find out whether PAM-FSP interventions improved the food security and livelihoods of the beneficiaries in Mansa district and if the improvement were statistically significant. Compare means technique identified the crops that contributed positively to food security and livelihood. If crop production increased and was significant, then it was presumed food security and livelihood improved. The results of crops in which significant improvements were recorded are tabulated in table 4.

4.4.1 Maize Hectarage and Production Comparisons

There was a significant increase in area cultivated for maize for the beneficiaries from 2003 to 2007 from 0.34 ha to 0.41 ha per farmer. However, there was no corresponding increase in maize quantity produced and income raised for maize. This is could be an indication of low productivity in maize and could be attributed partially to poor rainfall distribution in 2007.

Table 4 Rainfall Data for 2007 Farming Season.

District	Normal rainfall in mm	Actual rainfall received in mm	Rain days	Rainfall departure from normal in mm	Actual rainfall received against expected in %
Samfya	1,200	1,298.7	79	98.7	108.2
Mansa	1,134	1,197.2	100	63.2	105.6
Nchelenge	1,150	1,313.1	54	163.1	114.2

Source: PAM-FSP Luapula Provincial Report 2006-2007

According PAM-FSP Luapula Province Office 2007 annual report rice performed very well in that season because of too much rainfall received in December 2006 and January 2007. On the other hand maize was negatively affected partially due to the long dry spell experienced in February in most parts of the province. Beans crop was the worst affected by the dry spell. From Table 4 above, it can be seen that rainfall was enough and was

above normal rainfall but the problem was the distribution. The dry spells could have occurred when the maize crop was tassel ling and silking.

4.4.2 Cassava Hectarage and Production comparisons

From table 5 Cassava productions among the beneficiaries showed an increase that was statistically significant at 10% level of significance. This is could be an indication of increase in production efficiency among the beneficiaries in cassava production, which lead to increase in income from cassava production. According to PAM-FSP Luapula province 2006/7 Annual Report Cassava cuttings were procured locally in all districts but with funding from Lusaka. Procurement and planting commenced late December 2006 up to first week of February 2007. The crop was well established by the time the rains were phasing out. This has been the trend in cassava production of planting early and once crops establish they are not prone to drought and dry spells during the season.

Table 5: Crop Cultivated Area and Production Levels in 2004 and 2007

Crop	Means		Standard Deviations	Significance (*P*-Values)
	2004	2007		
Maize cultivated area (ha)	0.343	0.411	0.163	0.082*
Maize production (kg)	805.55	1007.14	527.57	0.111^{ns}
Cassava cultivated area (ha)	0.411	0.460	0.254	0.422^{ns}
Cassava production (kg)	1144.5	1536.00	944.83	0.083*
Groundnut cultivated area (ha)	0.245	0.332	0.335	0.278^{ns}
Groundnuts production (kg)	49.86	87.51	69.67	0.380**

Source: Own research data 2007
*Significant at 95% level of confidence
**Significant at 90% level of confidence
^{Ns} Not significant

The results of compare means suggest that cassava production contributed to improved food security and livelihood in Mansa District by the end of phase-1. This was in line with the programme expectation of improving the household food security and livelihood of the beneficiaries.

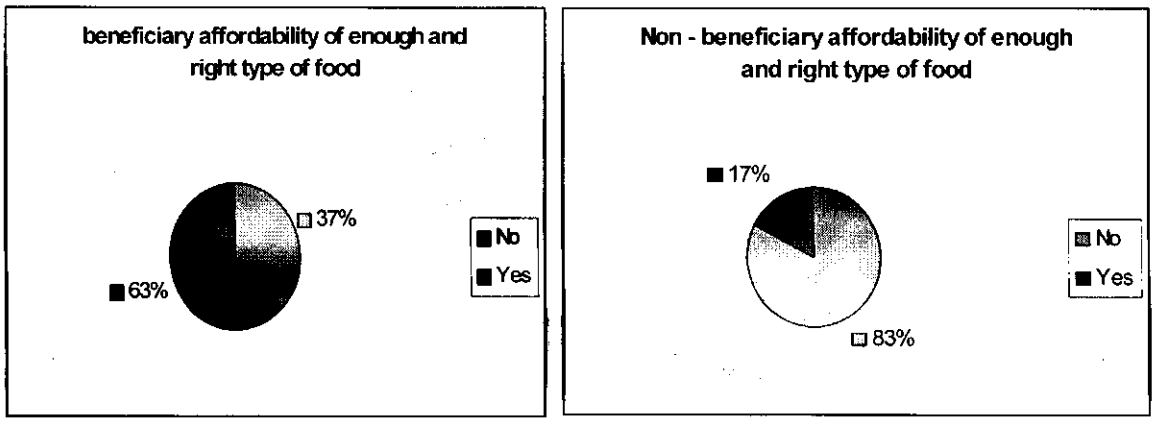
4.4.3 Groundnuts Hectarage and Production Comparisons

From table 5 on the previous page, it can be seen that there was increase in production of groundnuts among the beneficiaries from 49.89 Kg in 2004 to 87.51 Kg in 2007 and this increase was statistically significant at 5% level of significance. This produced the same effect on incomes from groundnuts sales. This gives an indication that there was enough evidence to say there was improvement in food security and livelihood on the beneficiaries due to groundnuts production. This was consistent with the programme expectation of food security and livelihood improvement.

4.4.4 Land Adequacy

From the results got it appeared that adequacy of land was not a problem among smallholder farmers in the study area. Out of the farmers who were interviewed regarding ownership, only 9% said that the land they were using for cultivation was not enough while 91% said that land was adequate among the non-project beneficiaries. Among the beneficiaries 17% indicated that the land for cultivation was not adequate while 83% gave the indications that the land for cultivation of crops was enough. Hence this give an indication that land was generally enough for farming activities. Land is basic asset, which is very critical in farm production of food crops, cash crops and livestock thus its availability and adequacy is very important. Any programme dealing with food security should take into account this issue seriously as PAM-FSP did to provide inputs to vulnerable but viable farmers with land to cultivate on.

Figure 4: Quantity and Type of Food



Source: Own research data, 2007

Food security takes into account two variables availability of enough or adequate food and availability of the right type of food for all the people at all the time. From figure 4 above, most non-beneficiaries (83%) indicated that they did not have adequate and the right type of food through out the year while a handful (17%) indicated otherwise.

The opposite was true for the project beneficiaries. Most project beneficiaries indicated that they had enough and the right type of food available through out the year. This effect could be due to the fact that beneficiaries received inputs to grow enough food for consumption and some for sale to raise income to pay for other goods and services.

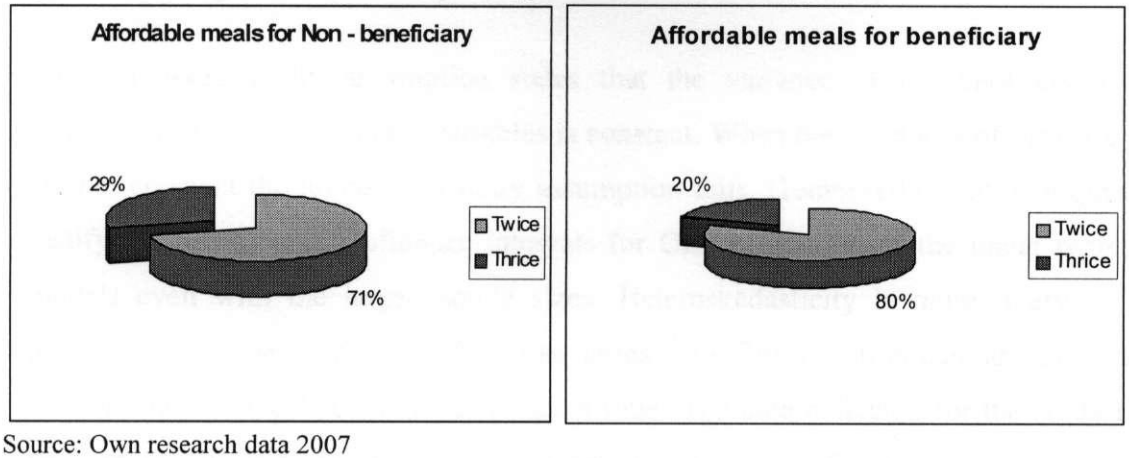
4.4.5 Meals Afforded by the Respondents

The number of meals can be an indicator of the food availability or adequacy. The results in figure 5, from the study site indicate that most the project beneficiaries (80%) and non-beneficiaries (71%) had two meals per day that is lunch and super. A few said that they had three meals per day.

During the group discussions the participants said that they usually take two meals to save on time in the morning when they have to go to fields. For them to prepare breakfast in the morning was time consuming such that by the time they reached the field it would be too hot and they would not work as much as they would if they went without eating

breakfast. Hence, having of two meals by the respondents should not be taken as a sign of food shortage or food insecurity.

Figure 5: Affordable Meals of the Respondents



Source: Own research data 2007

4.5 Impact Assessment of the Interventions on Household Food Security

The multiple linear regression model was run to assess the impact of the project on the project participants and non- project participants. To effectively assess the factors influencing total household income there was need to collect data for crop production, animal production, value of assets sold and non-farm income. Unfortunately, most data on these variables were only collected for 2007 and missed out 2004 the base year thus making data invalid for double difference regression analysis. Only data from crop production was amenable to multiple double difference regression analysis. The crops play a big role in providing most food and income to the households in Mansa district. Hence the total crop income was used as the dependent variable with several independent variables some of which were the dummy variables.

4.5.1 Testing and Correcting for Multicollinearity

The ordinary Least Square model was run and tested for Multicollinearity. Multicollinearity was tested using variance inflation factor (VIF). The model had some variables with very high VIF figures of more than 10 and that was an indication of presence of Multicollinearity. One variable, number of children in the household was

highly related to the household size. Upon removing the variable, the VIF figures dropped below 5 and thus Multicollinearity was corrected.

4.5.2 Testing and Correcting for Potential Heteroskedasticity

The homoskedasticity assumption states that the variance of the unobserved error conditional on the explanatory variables is constant. When the variances of the error term are not constant the homoskedasticity assumption fails. Homoskedasticity is required to justify the F-tests and confidence intervals for OLS estimation of the linear regression models even with the large sample sizes. Heteroskedasticity is more likely to be a problem in cross-sectional data than time series data. Cross-section data are data on one or more variables collected at one point in time. The data collected for the study being cross-sectional data, Breusch-Pagan technique of testing for heteroskedasticity was employed. The decision rule is that if calculated theta is greater than the tabulated chi-square at respective degrees of freedom, then heteroskedasticity is present. On testing for heteroskedasticity it was found that theta calculated (197) was greater than tabulated chi square [Chi-sq (k-1) = Chi-sq (11)] = 19.6751 at alpha = 0.05 confidence level. In this case the cross-sectional data collected had heteroskedasticity and thus there was need to correct the data for heteroskedasticity.

The method of Feasible Generalized Least Squares (FGLS) was used to correct for heteroskedasticity. FGLS is a procedure of transforming the original variables in such a way that the transformed variables satisfy the assumption of homoskedasticity of the classical model and then applying Ordinary Least Square (OLS). OLS variables were transformed using FGLS so that OSL variables satisfied the standard least squares assumption of homoskedasticity. The Weighted Generalised Least Square estimators got were Best Linear Unbiased Estimators (BLUE).

4.5.3 Coefficient of Determination (R^2)

Table 6 gives a summary of regression model with the coefficient of determination of 0.24. This means that independent variables included in the model explained about 24% of the variability of the total household crop income variation.

Table 6: Regression Model Summary

Model	R	R-Squared	Adjusted R Square	Std Error of the estimate
1	0.55	0.31	0.24	1.85

Source: Own research Data, 2007

4.5.4 Analysis of Variance (ANOVA)

Table 7 ANOVA table summarises the significance level of the whole model. The joint F-Test with a value of 4.70 rejects the null hypotheses that the explanatory variables had no effect over the dependent variable. In this case, the explanatory variables had an effect on the dependant variable total household crop income.

Table7: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192.81	12.00	16.07	4.70	0.00
	Residual	434.59	127.00	3.42		
	Total	627.40	139.00			

Source: Own research Data, 2007

4.6. Coefficient Estimates

The variables that had significant individual effects over the dependent variable the household size, number of orphans per household, beneficiary category (Treatment effect) and secondary level of education are discussed below;

4.6.1 Double Difference- Measure of Project Impact

The interaction between the treatment and the change in year (Double difference) is a measure of the project impact. The results from Table 8 indicate that there was a positive impact K138, 745 of PAM-FSP on the project beneficiaries; however, the impact was not

significant statistically. Economically, this difference of K138, 745 between the project and non-project beneficiaries was significant especially in rural areas where small-scale farmers found it very difficult to raise almost the same amount to buy subsidised inputs from the National Fertiliser Support Programme (NFSP).

4.6.2 Household Size Effect

Household size is an important factor which influences the incomes levels. A multi-person household will develop specialised functional roles. This results in increased crop production and finally increased incomes due to household size. A large household with more productive members than unproductive (old and infants) will result in having a high-income earning power. The beneficiary households probably had more the productive members than non-productive members. A large household size with more productive members is an advantage in agricultural production as it provides good source of labour required for production. The results from table 8 give an indication that household size had a positive effect on the beneficiaries of K37, 169 higher than non-project beneficiaries and was statistically significant at 90% level of confidence. The mean value of household size is consistent with the programme expectation that many beneficiary households would improve the revenues from the crop production sales.

4.6.3 Number of Orphans per Household Effect

HIV/AIDS is rapidly becoming the number one constraint to economic development in general and the agricultural sector in particular. The disease has a negative impact on agricultural production (National Agricultural Policy, 2004). HIV/ AIDS is one of the major contributors of increased number orphans in the households among other diseases that affect crop incomes negatively. Increase in the number of orphans' results in high dependency ratio consisting mostly children who are in the unproductive members of the extended family. This affects crop production and incomes negatively. The results from the research in Table 8 indicate that number of orphans kept by households negatively influenced total crop income by K69, 543. The project beneficiaries' households that kept orphans got less income from crop production than the non-beneficiaries. The number of

beneficiaries' households that kept orphans got less income from crop production than the non-beneficiaries. The number of orphans kept by the household was statistically significant at 90% confidence level. The results were consistent with the National Agricultural Policy of HIV/AIDS claims on negative impact on agricultural production and finally income. Table 8 summarizes the coefficient estimates of the variables included in the model.

Table 8 Regression Coefficients

		Unstandardized Coefficients	**T-test statistic**	**Sig. (*p*- Values)**	**Collinea ty Statistic**
Model					
	B	Std. Error			VIF
(Constant)	419737.6	321652.727	1.305	0.194 ^{Ns}	
Interaction between Treatment and change in years	138745.5	210435.276	0.659	0.511 ^{Ns}	3.426
Household size	37169.09	21156.133	1.757	0.081 **	3.109
Orphans kept	-69543.1	39980.217	-1.739	0.084 **	3.091
Beneficiary category	393717.6	149338.344	2.636	0.009***	2.158
Year dummy, 1 if 2007, 0=otherwise.	215346.6	163939.322	1.314	0.191 ^{Ns}	2.637
Sex dummy, 1 if male, 0=otherwise.	192615.1	135391.114	1.423	0.157 ^{Ns}	1.844
Married dummy, 1 if married, 0=otherwise.	278977	213216.41	1.308	0.193 ^{Ns}	4.156
Single dummy, 1 if single, 0=otherwise.	124521.7	244430.847	0.509	0.611 ^{Ns}	3.76
Divorced dummy, 1 if divorced, 0=otherwise.	-71951.5	282326.355	-0.255	0.799 ^{Ns}	2.059
Primary, 1 if primary, 0=otherwise	-23025.7	144816.682	-0.159	0.874 ^{Ns}	2.113
Secondary dummy, 1 if secondary, 0=otherwise	373669.4	173171.515	2.158	0.033 *	2.248
College dummy, 1 if secondary, 0 otherwise	249658.9	336647.309	0.742	0.460 ^{Ns}	1.235

Source: Own research Data 2007

*Significant at 95% level of confidence

**Significant at 90% level of confidence

^{Ns} Not significant

4.6.4 Treatment Effect

The treatment (project beneficiary category) had a positive effect on total crop income and was significant at 99% confidence level. From table 8 results on this variable gave an indication that the project had achieved the intended effect on the target beneficiaries. It was expected that after project implementation the beneficiaries should be better off and this was what the results showed. The project beneficiaries got K393, 717 higher than non-project beneficiaries. Hence, it was more beneficial to participate in PAM-FSP programme. This can also be an indication of good project performance and effectiveness of programme implementation.

4.6.5 Secondary School Education Dummy Effect

Secondary dummy influenced total crop income positively and was significant at 95% level of significant. Those with secondary education were getting K373, 669 than those without secondary education level regardless of participation.

This gave an indication that education attainment influenced the level of understanding of developmental issues and thus a higher educational probably leads to faster and higher adoption levels. In this case secondary dummy was more important in influencing crop incomes of the households than primary and non-attendance of school. Since PAM-FSP focused on improving the food security by a way of assisting the vulnerable but viable farmers with inputs, the level of education of the beneficiaries was likely to impact on their responsiveness to crop production and incomes. That in turn influenced the success of PAM-FSP interventions in Mansa district.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The objective of the study was to assess the performance and the impact of the FSP on the food security and welfare of the beneficiaries at the end of FSP-phase 1 in Mansa district. From the analysis of data it can be concluded that the programme partially achieved the objective of improving household food security and livelihoods among the beneficiaries. The beneficiaries had higher production levels than the non-beneficiaries in maize and cowpea leading to improved household food security. Between 2004 and 2007, cassava and groundnut production increased thus contributing positively to both the household food security and livelihood. PAM-FSP had positive impact though not statistically significant. Based on beneficiary perception, the programme performance was good and effective. Incomes from crop production was positively influenced by household size, treatment and secondary education and negatively influenced by number of orphans per household.

5.1.1 Recommendations

Based on the research findings the following recommendations were made:

1. Since perception of the beneficiaries of the project effectiveness and performance that the project was well implemented and effective, hence there is need for government and other stakeholders to give the programme more support so that the programme can support the vulnerable rural majority.
2. Cowpea with low price and market availability was available during the lean period of food availability making cowpea the most reliable alternative food legume available. More food crops like cowpea should be included in the programme, as they will ensure food availability when the other food crops have been sold off.
3. Research survey was done in one camp due to budgetary constraints, there is need to do research on a wide area to see whether the results are area specific or general to all areas.

REFERENCES

American Agricultural Economics Association (1980), **American Journal of Agricultural Economics,** Kentucky, USA

Andrew Speedy (2002): **Developing World Agriculture**, Christ Church, Oxford

Central Statistical Office (CSO, 1999), **Living Conditions in Zambia, Preliminary Report.** Lusaka, Zambia

Civil Society for Poverty Reduction (2005): **Targeting Small Scale Farmers in the Implementation of Zambia's Poverty Reduction Strategy Paper (PRSP): An assessment of the fertilizer Support Programme.**

Food Agriculture Organization (2003): **The state of food insecurity in the World 2003, Monitoring Progress towards the World Food Summit and Millennium Development Goals.**

Food Agriculture Organization (FAO, 1998), **Rural Women and Food Security: Current Situation and Perspective,** Rome, Italy.

Farming System Association of Zambia (2003): **The targeted Food security Pack for vulnerable but viable Farmers FSP, Mid-Term Evaluation Final report prepared for Programme Against Malnutrition (PAM),** Lusaka, Zambia.

International Institute for Land Reclamation and improvement (1982): **Monitoring and Evaluation of Agricultural change,** Wageningen, The Netherlands.

Kalaba J. (2005): The effect of Relief food on Household Food security for female headed households in Lisitu, Siavonga District, UNZA, Lusaka, Zambia. (Unpublished)

Kumar Krishna, Dennis J. Casley (1988): **The Collection, analysis and use of monitoring and Evaluation Data. World Bank Publication**

Ministry of Agriculture and Co-operatives (2002): **Participatory Extension Approaches, Implementation Manual, First edition 2002**, Lusaka, Zambia.

Ministry of Agriculture and Co-operatives (2004): **National Agricultural Policy (2004-2015),** Lusaka, Zambia.

Ministry of Agriculture, Food and Fisheries (1992): **The Challenge 2000 and beyond,** Lusaka, Zambia.

PAM (2001): **Targeted Food Security Pack For vulnerable But Viable Farmers In Zambia: 2000-2004, The Poverty Reduction through Improved Household Food Security**, Lusaka, Zambia.

PAM, Provincial Coordinator (2005): **The Targeted Food Security Pack Project 2005/06 Growing season: Annual Report September 2005-August 2006**, Luapula, Province.

PAM, Provincial Coordinator (2006): **The Targeted Food Security Pack Project 2005/06 Growing season: Annual Report September 2005-August 2006**, Luapula, Province.

PAM, Provincial Coordinator (2007): **The Targeted Food Security Pack Project 2005/06 Growing season: Annual Report September 2005-August 2006**, Luapula, Province.

PAM, (2004): **The Targeted Food Security Pack Project: Implementation and Impact (2000-2004)**, Lusaka, Zambia.

Tembo G. et al (2005): ***Ex-post*** **Impact of the Economic Expansion in Outlying Areas (EEOA) Programme in Zambia: Lessons for effective Programme Design: The Embassy of Sweden, Swedish International Development Agency (SIDA),** Lusaka, Zambia.

Valadez Joseph and M Bamberger (1994): **Monitoring and Evaluating Social Programs in Developing countries, A Handbook for Policymakers, Managers, and Researchers,** EDI development Studies, World Bank Washington D.C., USA.

APPENDICES

Appendix 1: Questionnaire

Section 1: Background Information

Date.....

Name..... Sex..... Age.....
Camp..... Block.....
Village.....

1.1 Education level
1. No education,
2. Primary,
3. Secondary,
4. College,

1.2 Marital status
1 Married,
2 Single;
3 Divorced,
4 Widowed

1.3 Number of children.....

1.4 Number of orphans .....

Section 2.Project Participation (Beneficiary category)

2.1 Were / are you a beneficiary of PAM-FSP?
0 No Go to Section 4.0
1 Yes

Section 3 Input distributions

3.1 Approximately how many times have you received inputs from PAM-FSP?
1 one time
2 Two times
3 Three times

3.2 Which crops were you are assisted with inputs (Seed, fertilizer, and training) under PAM-FSP?

Type and Quantity of Inputs Received

Years and crop	Crop	Inputs received	Remarks
2004	**C02**	**I03**	**R04**
MAIZE			
Cassava			
Soya beans			
Beans			
G/nuts			
Cowpea			
2007			
MAIZE			
Cassava			
Soya beans			
Beans			
G/nuts			
Cowpea			

IO3		R04	
1	Fertiliser	1	Adequate
2	Lime	2	Not adequate
3	Training		
3	Seed		

2.4 Did each one of you receive a full food security pack from PAM- FSP?

0 No
1 yes

2.5 Were inputs received on time?

0 No
1 Yes

2.5 Once you stop receiving inputs from PAM-FSP, are you able to support farming activities?

0 No
1 Yes

Section 3: Cereal / seed bank

3.1 Did you manage to pay back the contribution to the Seed / Cereal bank?

0 No
1 Yes

3.2 If no what are the reasons? [Please tick]

1 Poor yields
2 Bad weather
3 Produce stolen
4 Inputs not used

3.3 If yes to question 4 above state the type of crop and quantity paid back to the Seed / Cereal bank.

Crop and Quantity paid back

Crop	Quantities	Estimated Value in Kwacha

3.4 Have you benefited from the Seed / Cereal bank (revolving fund)?
1 No
2 Yes

3.5 Is it a good idea of contributing to the Seed / Cereal bank?
1 No
2 Yes

3.6 Who controls the Seed / Cereal bank activities?
1 PAM- FSP
2 Community

Section 4: Food security and Livelihood

4.1 Do you own land for farming activities?
1 No
2 Yes

4.2 Is land adequate for your farming activities?
1 No
2 Yes

4.3 What are your sources of income? [Please tick]
1 Sale of beer
2 Sale of livestock
3 Sale of crops
3 Sale of fish

4.4 How do find your food? Please tick the food sources.
1 Own production
4 Cash purchases
5 Barter
6 Relief
7 Piecework

4.4 If you produce your food, is what you produce enough for the whole year?
0 No
1 Yes

4.5 Do you have enough food and the right type of food for the household?
0 No
2 Yes

4.6 How many meals do you afford per day?
1 One
2 Two
3 Three

Section 5: Production

5.1. Crop production

Tear and Crop	Area cultivated	Quantity harvested	Quantity stored	Quantity sold	Quantity cereal/ seed bank	Estimated selling price
2004						
Maize						
Cassava						
Soya beans						
Beans						
G/nuts						
Cowpea						
2007						
Maize						
Cassava						
Soya beans						
Beans						
G/nuts						
Cowpea						

5.2 Livestock Production

Livestock type	Number kept	Number sold	Estimated selling price

5.3 Income from non- farm activities

Activity	Quantity purchased/ produced	Quantity sold	Quantity consumed	Estimated selling price