

Building resilience to AIDS impacts: “A case study to understand factors that influence effectiveness of agricultural inputs support in HIV and AIDS impact mitigation at household level in Choma district, Southern Province of Zambia”

By

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It is my sincere hope that this report will help provide the desired state of affairs pertaining to the currently modalities of agricultural inputs support implementation, areas of success and weaknesses, and hope it will help in refining future support for better targeting of households.

DEDICATION

To my children; Choonga, Ngweza, Nodoli, my wife Tabby and my mother Regina Mwango Hamazakaza.

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List of Acronyms

AIDS	-	Acquired Immuno-Deficiency Syndrome
ART	-	Anti-Retroviral Therapy
ARV	-	Anti-Retroviral drugs
CATFs	-	Community AIDS Task Force volunteers
CRS	-	Catholic Relief Services
C-SAFE	-	Consortium for Southern Africa Food Emergency programme
CSO	-	Central Statistical Office
DFID	-	Department for International Development
DHS	-	Demographic Household Survey
ECA	-	Economic Commission for Africa
EU	-	European Union
FANTA	-	Food and Nutrition Technical Assistance
FAO	-	Food and Agriculture Organization
FASAZ	-	Farming Systems Association of Zambia
FHH-O	-	Female headed household with orphans
FHH-PLWHA	-	Female headed household with people living with HIV
GART	-	Golden Valley Agriculture Research Trust
HBC	-	Home Based Care
HIV	-	Human Immunodeficiency Virus
IFPRI	-	International Food Policy Research Institute
LCMS	-	Living Conditions Monitoring Survey
MACO	-	Ministry of Agriculture and Cooperatives
MHH-O	-	Male headed household with orphans
MHH-PLWHA	-	Male headed household with people living with HIV
MoFNP	-	Ministry of Finance and National Planning
MoH	-	Ministry of Health
NAC	-	National AIDS Commission
PAM	-	Programme Against Malnutrition
PESTEC	-	Political Economic Social Technological Environmental Cultural
PLWHA	-	People Living with HIV and AIDS
RENEWAL	-	Regional Network on Livelihoods and AIDS
SLF	-	Sustainable Livelihood Framework
SPSS	-	Statistical Package for Social Sciences
SWOT	-	Strengths Weaknesses Opportunities and Threats
UNAIDS	-	United Nations Joint Commission on AIDS
USAID	-	United States Agency for International Development
VCT	-	Voluntary Counseling Testing
WHO	-	World Health Organization

Abstract

Food insecurity being experienced among AIDS affected households is a result of a number of interacting factors. In addition to poverty and climate variability, AIDS is now recognized as an additional shock which is worsening food insecurity among rural households. Key impacts of the AIDS pandemic has been a decline in agricultural production, reduction in sources of livelihoods and erosion of capital assets. In recognition of the importance of strengthening the agricultural production base in mitigating AIDS induced food insecurity in Choma district, rural development organisations including CARE International, have responded through a number of interventions. The principle interventions include agricultural input support for field crops, and vegetables. The underlying objective of the inputs programme has been to help restore household capacity to recover from and cope with AIDS induced food insecurity.

The main aim of this study was to understand factors that have enabled or hindered effectiveness of CARE International supported agricultural inputs based AIDS impact mitigation responses at household level so as to make recommendations that contribute towards rural development organizations' effective targeting of support to build resilience to food insecurity among AIDS affected households.

Data collection involved two research strategies; desk research of existing literature pertaining to the study, and a survey of 24 households fostering AIDS related orphans (12 households for male and female headed respectively), 24 households (12 households for male and female headed respectively) with a member who is living with HIV and 12 households which are AIDS affected but have not benefited from agricultural inputs support.

Among the key factors that positively influenced effective implementation of agricultural inputs was the multi-sectoral response approach adopted by the CARE International inputs support programme. The programme involved key partners whose roles were strategic to the success of the programme. Partners played roles based on their organizational comparative advantage with regard to community mobilization, beneficiary identification, input distribution, monitoring, and beneficiary training. Use of home based care data for community members who have undergone voluntary counseling and testing (VCT) and formed HIV and AIDS support groups facilitated correct targeting as opposed to use of proxy indicators to AIDS such as presence of orphans and unverified chronic illness. Inclusion of short cycle field crops and vegetables helped to assure households with food and income in the short term for immediate household needs. Though targeting by the programme was based on household AIDS status, findings from the study show that household positive response to inputs support is influenced by a number of other socio-economic and environmental factors. Primary factors are associated with labour availability and these include; household size, access to other supportive interventions that compliment inputs support (e.g. Anti-retroviral therapy for PLWHA, livestock). The channeling of the agricultural input support programme through existing farmer support groups also contributed to the strengthening of social cohesion among the targeted households through their active involvement in farmers' development groups. Strengthened social support networks in

which AIDS affected households were supported in terms of accessing labour, food aid, and other supportive inputs facilitated implementation of this programme. Household endowments in terms of labour, agricultural assets (land, livestock, and agricultural implements) played a critical role in effective implementation of inputs support.

Though use of VCT information is the appropriate entry point to ensure that it is the actual AIDS affected being targeted, future programmes should however, recognize that AIDS affected households are not homogenous and need to go a step further in household recruitment by considering important socio-economic and environmental variations between households when designing inputs support programmes.

Agricultural inputs support should not be implemented in isolation of other agricultural activities but instead should be integrated within the existing farming systems and HIV and AIDS interventions. Of critical importance is the strong complementary role between crops and livestock in terms of draught power support and role of livestock in soil fertility enhancement.

The agricultural inputs support programmes should also actively engage existing local farmer organisations in the implementation of the programmes. These have a better understanding of what input types can best suit the environment and the individual households This helps in ensuring right targeting through identification of households that are in most need of support. .

Key Words: Targeting, Agricultural inputs support, HIV, AIDS

CHAPTER 1. INTRODUCTION

This study was a thesis research for the Master in Management of Development at Van Hall Larenstein University of Applied Sciences. The study was designed to contribute towards a better understanding of factors that influence the success of agricultural interventions and approaches focusing on input distribution for HIV and AIDS affected households so that they can cope and recover from AIDS induced food insecurity. The report comprises of seven chapters. Chapter one discusses background information to the study, definition of the research problems, research objectives and research questions. In chapter two, relevant literature to the study is discussed to show the linkage to the study and also key issues and gaps that this study was meant to address. Chapter three outlines the research strategy, that is the study methodology, description of target population, research design, data collection, analysis strategy and ethical considerations taken into account during data collection. Research findings and results are presented in chapter four, whereas chapter five is focused on the discussion of the study results. The last two chapters, six and seven, discuss the conclusion and recommendations of the study.

1.1. Background to the study

Food insecurity being experienced in sub-Saharan Africa is a result of a number of interacting factors. The primary causes of food insecurity in the last two decades include climatic natural shocks especially drought, inappropriate economic policies such as removal of agricultural production subsidies for agricultural inputs and chronic poverty among rural households. Amid such economic and natural shocks, AIDS has been recognised as a growing global concern due to its unprecedented impacts on development. The socio-economic impacts being inflicted by the pandemic have never been felt before and cannot be equalled to past epidemics that have occurred in human history such as the influenza epidemic of 1918. The pandemic is unique in the sense that it is associated with stigma, affects mostly the economically active age group (15-49 years), and leads to household vulnerability in the long term due to erosion of household productive assets, especially labour. In southern province of Zambia, over 75 percent of the rural population is dependent on agriculture as their main source of livelihood. However, though the agriculture sector has in the recent years been experiencing high levels of poverty, economic and climatic natural shocks, HIV and AIDS has proven to be an additional livelihood shock especially to the farming households whose agriculture production is heavily dependent on human labour and external inputs (CSO, 2008). According to the Living Conditions Monitoring Survey of 1998 as quoted in CSO (2003), 70.9% of the rural population who are dependent on agriculture are classified as living in extreme poverty.

The HIV prevalence rate in southern province is currently at 16 percent, almost comparable to the national average of 15.2 percent. Choma district which is the study site for this research has one of the highest HIV prevalence rate in the province of 19.2 percent and 57.1 percent of the people living positively are female (UNAIDS, 2008). In view of the adverse impacts associated with AIDS on agriculture production especially agricultural asset erosion, the high HIV

prevalence in the district has far reaching implications on the district's agricultural households' ability to recover from AIDS impacts if not supported with inputs to restore their agricultural asset base.

Findings from a study by Yamano and Jayne (2004) indicate that household vulnerability to AIDS impacts are varied depending on household socio-economic status at the time the pandemic starts impacting negatively on a household. This study further points out that this variation in household vulnerability to AIDS require a clear understanding of possible interventions and targeting approaches that could help in building resilience to food and nutrition insecurity for the different household types. However, as any rural development organization endeavours into responding to household food and nutrition insecurity, it is critical to take into consideration the element of differential vulnerability to AIDS impacts as it directly affects effectiveness of AIDS mitigation targeting. As Barnett and Whiteside (2006) signify that in exactly the same way as not all people or communities are susceptible to infection, so not all will be affected in the same way or to the same degree. Homogenization of very diverse household types in AIDS impact mitigation results in inappropriate solutions. Because of this, there is a danger that impact mitigation could lead in the wrong direction if it is based upon "simple stories".

1.2. Definition of the Research Problem

The linkages between HIV and AIDS, food security and rural livelihoods have been explored in Choma district of Southern Province with results from the FASAZ/FAO (2003) baseline study attributing a strong decrease in agriculture production to less land cultivated; decreased access to and use of agricultural external inputs mostly improved seed varieties, mineral fertilizers and agricultural chemicals among AIDS afflicted and vulnerable households. Food insecurity for poor and vulnerable HIV and AIDS afflicted households is displayed in form of reduced quantity and quality of food produced and consumed by such households. The overall impact of the AIDS pandemic has been a decline in agricultural production, reduction in sources of livelihoods and a serious erosion of capital assets and coping mechanisms. As a result, the pandemic has undermined agriculture as a source of livelihood.

In recognition of the importance of strengthening the agricultural production base in mitigating HIV and AIDS induce food insecurity especially crop production in Choma district, rural development organisations have responded through a number of interventions. The principle interventions include; agricultural input support (i.e. field crop and vegetable seeds, fertilizers, and agrochemicals), small livestock support, support to income generating activities, food aid, nutritional training, and promotion of labour saving technologies (FAO, 2004). CARE International in collaboration with the agricultural extension department of the Ministry of Agriculture and the district home based care program has responded through provision of agricultural inputs related interventions to help restore household capacity to reduce HIV and AIDS induced food insecurity. This study was focused only on agricultural inputs support.

Agricultural inputs being currently distributed by CARE International to help support food production among vulnerable HIV and AIDS affected households is comprised of two different categories:

1. Field crop inputs meant to contribute to enhancing crop production. These include; seed and fertilizer for the following crops; cereals (maize and sorghum), legumes (cowpea and groundnuts)
2. Vegetable inputs which are aimed at meeting short term household nutritional requirements, food security and income. These include; vegetable seeds (tomato, rape, cabbage, onion), fertilizers, and agrochemicals

In addition to the above inputs support, the programme through the extension department of the Ministry of Agriculture also provided extension training on crop production especially in relation to new improved crop varieties introduced by the programme and current recommendations.

Though the agricultural inputs support had been implemented with the ultimate aim of building household resilience to food and nutrition insecurity, little information existed on lessons learnt from this intervention to help understand strengths, and weaknesses of agricultural inputs support to AIDS mitigation. In addition, with the appreciation of the important role that agricultural inputs support play in contributing to food security among AIDS affected households, it was important to explore opportunities and identify threats that enable or hinder effectiveness of this intervention respectively. As affirmed by the Southern Africa Regional stakeholders workshop report by the Economic Commission for Africa (2005) which revealed that though agricultural inputs AIDS mitigation interventions have been implemented over the years, documentation and dissemination of information pertaining to how these interventions are targeted and how they are helping AIDS affected households in coping with AIDS induced food insecurity remains unclear. The criteria for deciding on what package a household has to receive from the different AIDS mitigation packages, and which intervention is likely to have positive or negative impacts for different household types is not yet well documented. Furthermore, documentation of household experiences on external factors that have influenced effectiveness of agricultural inputs support among targeted households still display a critical information gap in HIV and AIDS impact mitigation. Currently, HIV and AIDS affected households are broadly targeted based on homogenization of affected households using the following criteria; fosterage of orphans, widowhood, and fosterage of chronically ill persons. However, agricultural input support is vulnerable to economic, bio-physical and natural shocks such as climate variability especially drought and floods, crop diseases and pests whose impacts on agricultural input AIDS related support need to be well understood for better planning, design and targeting of these interventions.

This study was therefore, designed to help contribute towards the understanding of critical factors that contribute to effectiveness of agricultural inputs support to AIDS mitigation based on experiences from the CARE International agricultural input support programme. In this study, success in terms of effectiveness of agricultural inputs support at household level was measured on the basis of the following main indicators; increase in food availability associated

with input support, agricultural related assets build up, household ability to purchase own agricultural inputs and expansion in area under crop production. The study also has documented cardinal information pertaining to the weaknesses and strengths of the different agricultural inputs and approaches that are currently being implemented in the study district by the programme for AIDS mitigation.

1.3. Research Objective

The main aim of this study was to understand factors that have enabled or hindered effectiveness of CARE International supported agricultural inputs based HIV and AIDS impact mitigation responses at household level so as to make recommendations that contribute towards rural development organizations' effective targeting of support to build resilience to food insecurity among HIV and AIDS affected households in Choma district.

1.4. Research Questions

The introduction of agricultural inputs support for the economically vulnerable and HIV and AIDS affected households by CARE International has experienced some challenges as well as successes. Lessons from this intervention are important for the implementation of similar programs by other rural development organizations. With this background, the following research questions were developed:

Main Research Question

What are the factors that influence the success of agricultural interventions support and approaches focusing on CARE International input distribution for HIV and AIDS affected household so that they could cope and recover from AIDS induced food insecurity in Choma district?

Sub-questions:

1. What are the targeting criteria for the implementation of the agricultural inputs support at community level for the different household types?
2. In what ways are the HIV and AIDS affected households involved in the design of HIV and AIDS mitigation responses?
3. What are the existing support structures at community level involved in delivery and management of agricultural inputs HIV and AIDS mitigation responses?

4. What agricultural inputs HIV and AIDS mitigation interventions are more responsive to the needs of different AIDS affected households in relation to building household resilience to food insecurity and why?
5. What are the characteristics of households showing resilience to food insecurity as a result of agricultural inputs support?
6. What socio-economic factors hinder effectiveness of agricultural input support to reducing food insecurity for HIV and AIDS affected households?
7. What have been the changes in agricultural related capital assets mostly attributed to agricultural inputs support at household level?
8. What are the implications of the current agriculture input packages and targeting methodology on household ability to cope and recover from AIDS induced food insecurity?
9. How does the level of household vulnerability to AIDS impact relate to type and degree of AIDS mitigation support?

Definition of Key Concepts

Agricultural inputs – In this research study, the agricultural inputs being studied include; seeds for field crops and vegetables, fertilizers, and agro-chemicals received by HIV and AIDS affected households to mitigate AIDS impacts

AIDS Differential Vulnerability - in the context of AIDS impacts, implies that not all AIDS affected households will be socially or economically be adversely affected in the same way or to the same degree

Livelihoods – A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living (Ellis, 2000).

Resilience – ability of a household to resist and overcome AIDS impacts without experiencing worse effects such as food insecurity and distress sale of assets (Loevinson and Gillespie, 2003)

Weaning Strategy – measures put in place to ensure that a household continues leading a normal life without falling back into distress after withdraw of HIV and AIDS related support

Effectiveness of agricultural inputs support – in this study, implies the success of the inputs in reducing HIV and AIDS induced food insecurity and also the positive impacts on household livelihoods in terms of building household capital assets especially financial, social and physical

HIV and AIDS afflicted household – household in which one or more members are either ill or have died of AIDS related causes

HIV and AIDS affected household – household in which members are not affected themselves, but have been affected by HIV and AIDS through the diversion of household resources to support an AIDS afflicted household.

CHAPTER 2. LITERATURE REVIEW

This chapter is a desk appraisal of secondary data on HIV and AIDS impact mitigation interventions, household targeting and food security. The chapter gives a summary perspective of what some researchers and rural development organizations have written or implemented with respect to HIV and AIDS impact mitigation in the agricultural sector, rural communities and households, especially those involved in agriculture inputs related activities. The overall objective of the chapter is to highlight some information gaps for which normative solutions could be designed to assist rural development organizations involved in HIV and AIDS mitigation for smallholder agriculture, household food security and rural livelihoods to implement HIV and AIDS mitigation interventions with informed decisions. While communities and households are different and each context requiring tailor-made interventions that address particular needs, it is hoped that agricultural inputs interventions and approaches that have proven successful in one context can inspire development of similar interventions in other contexts.

2.1. Interaction between Poverty, food security and HIV and AIDS

Poverty and hunger still characterize life for most Zambians. A series of socio-economic studies conducted on poverty in Zambia, document poverty along a number of dimensions, including material deprivation, human deprivation, vulnerability, destitution, and social stigmatization. Poverty, measured in terms of material and financial deprivation is quite high in Zambia. One worrisome aspect about poverty in Zambia is the continued existence of inequality especially in relation to household types in terms of sex of household head, gender, area of residence, and HIV and AIDS status of a household. Since Independence, there have been high levels of inequality between urban and rural areas, and within urban and rural areas due to the dualistic nature of the economy. Thus, despite structural changes in the economy, inequality has remained high at the national level as well as within urban areas. In contrast, Zambia's rural areas appear homogeneous, albeit still remarkably poor. Poverty was estimated at 70-78 percent of the total population throughout the 1990s, based on a series of household surveys (the 1993 Priority Survey, 1996 LCMS, 1998 LCMS II). The recent Poverty Monitoring survey conducted by CSO (LCMS III, 2004) indicates a head count ratio of poverty to be 67 percent for the country; with rural areas taking a toll of 74 percent compared to 52 percent in urban areas.

However, whilst poverty has long existed in Zambia, it is clear that the HIV and AIDS pandemic is fueling more poverty, and is in fact an additional stressor on the livelihoods of the people. According to the latest update, HIV prevalence (between the 15 to 49 years age group category) in Zambia, has reduced by a margin of only 1.4 percent from an average of 16 percent that has been in effect since 2000 (CSO, 2008). Because the HIV prevalence rates have persisted to higher levels between 2000 to date, the implication is that, there are a large number of households that require support now, either in form of agricultural inputs support for the case of rural households to assure food security, Anti-retroviral drugs (ARVs) for people living with HIV (PLWHA) and other resources to keep them alive.

Zambia is part of Sub-Saharan Africa where the coexistence of and the interactions between poverty, food insecurity, HIV and AIDS are more widespread and more severe. It is in this context that UNAIDS (2006), describes it as a global crisis with impacts that will be felt for decades to come. According to the UNAIDS, more than 28 million people have died since the first case was reported in 1981. In 2005, AIDS killed 2.8 million people and an estimated 4.1 million became infected, bringing to 38.6 million the number of people living with the virus around the world; 24.5 million of these people live in sub-Saharan Africa (where in some countries one in three adults are infected) and 8.3 million live in Asia.

In Zambia, the HIV and AIDS pandemic has been proven to be a major threat to agricultural production and productivity, and has to some extent suppressed development at household level. This is true, especially when one considers the fact that, households that are living with HIV, and suffer most are those in the poor bracket of society. The vast majority of Zambia's poor live in rural areas and draws its livelihoods mainly from smallholder production systems centered on agriculture especially crop and vegetable production. HIV and AIDS undermines the capacity of households to utilize adequately assets at their disposal. It diminishes both the quality and quantity of human capital due to illness, death or children dropping out of school. Globally, 75 percent of people who live on less than one dollar a day also live in rural areas and depend on agriculture for a living (World Development report, 2008, Agriculture for Development, 2007).

In a study entitled “**Analysis of Livelihoods and HIV/AIDS in Agriculture; Exploring Effects and Linkages**”, Chingondole, (2008) reveals that agriculture plays a critical role to food and livelihood security of most populations in sub-Saharan Africa and that agriculture related activities are both a key basis for food and income, and a cushion to cope with the impacts of HIV and AIDS. The author further notes that HIV and AIDS weakens livelihood strategies and entrenches poverty because it reinforces erosive coping strategies by weakening the ability of affected households to withstand livelihood insecurity shocks and stresses. As much as poverty makes people vulnerable to risky behaviors for HIV, the loss of the main income earner or earners in the prime of their lives due to HIV and AIDS is pushing many families into poverty and the cycle repeats itself. Barnett and Blaikie (1990), revealed that the impact of HIV and AIDS on nutrition and food security has tended to take a particular form; AIDS causes rural labor shortages because of excess illness and death in the productive age group; this leads to a progressive decline of agricultural production and food availability as a result of reduction of cultivated land area and shrinkage of crop and livestock portfolios accompanied by decay of rural infrastructure and overall reduced rural production and productivity and thus nutritional status of the communities. The HIV and AIDS epidemic is thus as much a development concern as it is a health concern. The increase in morbidity and mortality rates due to HIV and AIDS is limiting overall productivity in both the production and services sectors as well as altering the Zambian population structure, decreasing life expectancy from 50 to an estimated 37 years and heavily impacting the supply of human resources (MoFNP, 2002 -2004).

2.2. HIV and AIDS Impact Mitigation Strategies

The concept of HIV and AIDS impact mitigation on the agricultural sector is one area that has received considerable attention in form of research and analysis. Consequently, a lot of insights about the effects of HIV and AIDS and impact mitigation strategies are increasingly being documented. ECA (2006), for instance, observed that a wide range of strategies are being used by rural development organisation to improve household food production and nutrition in the context of HIV and AIDS in Southern Africa. The strategies include direct support through supply of inputs such as seed and fertilizer, promotion of labour saving technologies, promotion of diversified agricultural production at household level, promotion of vegetable gardens and training of farmers among other strategies. The report further reveals that in Lesotho, a community-based HIV and AIDS project in Berea district provides inputs such as crop and vegetable seed, small scale irrigation equipment and shade netting for erection of vegetable seedling production units. In Zimbabwe some affected families are receiving cattle for draught power from Heifer Programme and donkeys for draught power from YMCA. In Swaziland, the Ministry of Agriculture provides a subsidized tractor hire scheme to vulnerable households. Castleman *et al* (2008) emphasizes that nutrition and interventions for HIV and AIDS affected populations can help break the poverty-HIV and AIDS vicious circle. He notes that carrying out food security assessments for different household types based on HIV status, education, counselling and provision of specialized food products to people living with HIV could help to prevent and manage malnutrition, promote effective treatment and manage symptoms. Agriculture extension, agricultural inputs support, introduction of income generating activities, food assistance, cash transfers and microfinance could help increase availability of and access to food among the HIV-affected households.

The ECA during the 2005 regional stakeholders workshop documented that “inadequate documentation of successful agricultural AIDS mitigation practices for replication is one of the challenges to successful implementation of AIDS mitigation and building of resilience to the pandemic’s impacts”. This workshop furthermore indicated that it is challenging to develop comprehensive policies and mitigation interventions due to lack of documentation at all levels including disaggregated gender data. Not as much information has been disseminated on the current interventions in terms of factors that influence their success or failure to mitigate the impact of HIV/AIDS on smallholder agriculture, food security and rural livelihoods. As such, there is limited information on targeting and effectiveness of agricultural mitigation interventions.

In Zambia, the direct response to HIV and AIDS has been the provision of free anti retroviral treatment to HIV and AIDS patients because it prolongs life and alleviates suffering due to illness. This though being a commendable undertaking may not yield the desired results because of the poor nutritional status of most of the patients on this therapy. Gillespie (2008), highlights the importance of nutrition to a person on drug treatment for AIDS indicating that the drug will always work better on a person who is not malnourished.

The gaps left by the free Anti Retroviral Therapy (ART) are also acknowledged by the International treatment preparedness coalition (2007), arguing that HIV infection could also result in additional expenses, which poor people are least capable of bearing. Even where HIV

treatment services are ostensibly free, patients often remain liable for considerable out of pocket costs in the form of co-payments user fees, transport costs and uncovered items (e.g. medication for opportunistic infections).

In the context of assuring food availability, agricultural inputs support has shown potential to contribute to the much needed food security for ART patients. However, the element of targeting these inputs to ensure their success remains a challenge and need to be well understood. Piwoz and Prebble (2000) in their study of “HIV and AIDS and Nutrition in Sub-Saharan Africa” reveal that the link between food security, nutrition and HIV and AIDS is clear as the duo pinpoint that HIV-negative people with poor diets are more susceptible to infection and have reduced immunity to HIV; HIV-positive people with poor diets develop AIDS more quickly and people with AIDS have increased nutritional requirements. Both malnutrition and HIV and AIDS have a direct effect on the immune system, impairing people's ability to resist and fight infection. But, food security and nutrition interventions to prevent or reverse the weight loss and wasting associated with HIV may help to reserve independence, improve quality of life and prolong survival among the affected. FAO/FASAZ, (2003) reports of the shift in the expenditure pattern of the HIV and AIDS affected households because of the increase in the medical expenses. It states that households can often hardly afford the medical costs and hence resort to borrowing which increases indebtedness both to households and communities. There is loss of labour as a result of adult members who have to withdraw from agriculture to care for the sick. The working days are also lost for funerals and mourning periods.

2.3. HIV and AIDS Impact Mitigation Interventions and targeting

One important factor relating to AIDS mitigation targeting is the appreciation of the element of differential vulnerability of households to AIDS impacts. As Barnett and Whiteside (2006) indicate that in exactly the same way as not all people or communities are susceptible to infection, so not all will be affected in the same way or to the same degree. There is differential vulnerability to the impact of the disease. Thus relative wealth reduces vulnerability at all levels from the individual to the nation. The resources are not purely financial, they may include skilled labour, or access to care, or even a strong, cohesive and compassionate civil society. As Barnett et al (2006) states, homogenization of very diverse situations will result in inappropriate solutions. Because of this, there is a danger that impact mitigation could lead in the wrong direction if it is based upon “simple stories”.

Generalizations about the process in one place drawing on narratives derived from experience from elsewhere are probably unhelpful; policy response based on general statements about ‘famine’, labour saving technologies, scaling up and other such policy jargon are likely to waste resources and fail to meet the needs of local communities (Barnett and Whiteside, 2006). This argument calls for the need to ensure that targeting should be adaptive to situations and not be generalized based on other situations. Consideration for socio-economic, natural and environmental factors at household or community level is critical for effective implementation of interventions especially agricultural related.

Despite so much responses going on in terms of agricultural related AIDS impact mitigation, little is documented on the impact and effectiveness of these responses. Egge and Strasser (2005) for instance indicate that measuring the impact of food aid on HIV and AIDS related groups remains a challenge as there is no documentation on indicators to measure whether there is demonstrable change as a result of food aid. The same study by Egge and Strasser (2005) still show that a range of indicators are being used to monitor progress though C-SAFE staff have not generally taken advantage of this information or systematically applied other (livelihoods or nutrition) indicators to measure whether there is demonstrable change as a result of food aid. Other than just focusing on how food aid is impacting on food security resilience, this argument calls for a thorough understanding of baseline information on socio-economic factors of the target beneficiary (i.e. what was the household wealth status at time of intervention, household demographic composition, household head type, what was the nature of AIDS impact in terms of the person who died) at time of receiving the support as these factors play a row on how a household is going to respond to external support.

The FANTA project (2000) points out that targeting individuals, households and communities for AIDS impact mitigation support is a challenging process and requires flexibility in eligibility criteria and distribution structures. Like other poverty alleviation programs, there are justifiable issues concerning dependency and the possible misallocation of food aid and agricultural inputs support to people without extraordinary need, and these may not be easily resolved in the context of agricultural inputs and food aid for HIV and AIDS mitigation. This report also emphasizes that determining when to intervene with AIDS mitigation response and at what level (e.g. direct to individuals or households) requires established but flexible criteria. The sequential and cumulative impact of HIV and AIDS on households and communities varies. This report also raises a number of valuable questions that could be considered in the design of future HIV and AIDS impact mitigation programmes. These questions include; at what point and for how long would intervention support be most critical for affected households? When would the provision of intervention support be most useful to prevent negative coping strategies? When should intervention support end to households?

A number of AIDS mitigation programmes have under assessed the importance of effective targeting. Darcy and Hoffmann (2003) in their evaluation argue that the narrowness of the humanitarian assessment process is clearly a wider issue. In the context of HIV and AIDS it has several important implications. The focus on food security and HIV and AIDS needs has tended to lead to an emphasis on food aid as a response to the impact of HIV and AIDS on food security, and a relative neglect of a wider range of possible livelihood interventions such as agricultural inputs support.

Some organizations which are already into AIDS impact mitigation tend to target their AIDS mitigation programmes using the conventional targeting methodology such as fosterage of AIDS related orphans and having an AIDS related chronically ill person in a household. The World Food Programme for instance which is one of the largest food aid organizations in the world, focus on geographic zones that are food insecure and that have been particularly affected by the AIDS pandemic and within those zones, on households whose food security is threatened

by the pandemic (Harvey, p., 2004). Harvey (2004) furthermore proposes that the presence of HIV and AIDS, however, does require practitioners to examine existing targeting criteria and expand these where appropriate to include particular vulnerabilities by basing targeting of AIDS impact mitigation interventions at specific household level and degree of vulnerability.

Overall, the HIV and AIDS impact mitigation strategies are normally implemented on the basis of the effects prevailing among the target groups. Agricultural inputs especially field crops, vegetable gardening and small livestock production stand out to be more common mitigation strategies, normally hypothesized to have potential in terms of food, nutrition and income security among the affected households. A study by Chingondole as earlier referred to for instance, confirmed that promotion of agricultural related interventions such as field crop production and vegetable gardening is crucial in increasing household resilience to HIV and AIDS induced food insecurity. In addition, the author notes that provision of agricultural and entrepreneurial skills help to improve rural livelihoods which in turn would assist households to effectively bounce back from shocks and stresses such as illness, death and food and nutrition insecurity resulting from HIV and AIDS. WHO and FAO (2002) observe that implementing organizations are also promoting field crops and vegetable gardens to help vulnerable and affected households get access to crops seeds, fertilisers and vegetable seeds to ensure food and nutrition security in many countries of Southern Africa. Field crops and vegetable gardens are either individually or communally owned to provide households with chronically ill people with improved nutrition throughout the year and is a source of income. Production of specific medicinal plants that have a role in treating HIV related symptoms; improving digestion and stimulating appetite are also being promoted in conjunction with the vegetable gardens.

However, in spite of so many agricultural related interventions being recommended for HIV and AIDS mitigation among the affected households, and being carried out by different organizations, there are a lot of challenges than one could imagine. Firstly, a large part of these mitigation strategies have been tested among the HIV and AIDS affected households but little is known on factors that influence their successes and failures. What is probably apparent is that there is little documentation about the cost effectiveness and efficiency of these intervention strategies. Supporting this view is the Regional Hunger and Vulnerability Program (2008), that contends that the quest for cost-effectiveness has become something of a preoccupation amongst donors and governments funding social transfer programs and that much of the rather polarized debate about the relative merits of different instruments, cash, agricultural inputs and food transfers are judged on their relative cost-effectiveness, as are different methods of delivery. Similarly, sponsors of social programs, and the communities to whom they are accountable, have an obvious and legitimate interest in ensuring that desired program effects justify money spent, and in whether these effects could be enhanced within budgetary constraints or achieved. Secondly, targeting resources to the intended beneficiaries is one of the most challenging aspects facing service providers. The complexity starts with the identification of who is affected by HIV and AIDS, given the existing levels of stigma associated with the pandemic in the country and more also appreciating the aspect of differential vulnerability to AIDS impacts when responding to help sustain food security among HIV and AIDS affected households. Thirdly, the circumstances of the affected are normally diverse . CRS and USAID (2008) for instance, argue that there are no “**one size fits all**” solutions to the problems imposed by the AIDS pandemic. It is also important to point out that our

understanding about impact mitigation on the agricultural sector is still limited by high levels of ignorance. Many of the initial studies of rural societies and the impact of HIV and AIDS were essentially short-term views from which many advocates drew long-range conclusions and generalizations (Rau and Rugalema; Ibid). Drimie (2002) reports that the micro level empirical record on the effects of HIV and AIDS on agriculture is still quite limited but is growing rapidly. The time periods over which impacts are measured are mostly short-run, which probably understate the full impact on households and communities over time. Darcy and Hoffman (2003) also argued that narrowness of the humanitarian assessment process is clearly a wider issue.

In most rural development project interventions, implementing organizations often declare huge sums of financial resources for poverty alleviation but rarely report about the output side of the interventions. For the purpose of achieving project objectives and goals, it is only prudent that some analysis is made on how resources allocated for this noble cause are used in relation to efficiency, effectiveness and sustainability. In relation to measuring project impacts, these concepts are defined as follows; (a) Effectiveness analysis - This compares the actual achievements with the original targets of the project, (b) Efficiency analysis - This measures the household level impact by comparing the benefits that society gets from the intervention and the cost incurred in conducting the intervention transfer programme, and (c) Sustainability - is the capacity to endure, i.e., the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future. The area of focus in this research is the aspect of agricultural inputs effectiveness. The reason for focusing on effectiveness analysis is because the study needed to assess whether the programme objective was met or not and what factors affected programme implementation. Effectiveness of agricultural inputs support in this research was measured in the context of how inputs contributed to food self-sufficiency/availability, and building of household capital assets especially financial, social and physical which have a direct impact on food security. The CARE International agricultural inputs support measured the impact of the programme in terms of improved access to nutritious foods and food crop availability for households with PLWHA and orphans, enhanced capacity of Community AIDS Task Force Volunteers to provide care and support to 1866 PLWHA and their about 9,330 affected HH members, Number of PLWHA (no longer bed ridden) whose health improved during the project period due to improved nutrition and access to ART, increased productive capacity of 1,866 PLWHA and their about 9,330 affected HH members measured through their effective engagement in economic activities meant to supplement household diets, assets and income based on project provided start up capital in form of training and agricultural inputs that enhanced the patients and their family members to engage in production and marketing of vegetables, eggs and chickens.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter discusses the data collection process which was used in this study. Specifically, it outlines key issues pertaining to the research strategy, description of study target population, study design and approach, data collection methods and analysis strategies used.

3.1. Research Strategy¹

This study was a case study of the CARE International Agricultural inputs support programme for HIV and AIDS affected households. The study used two types of data collection strategies; desk review of information pertaining to the research topic and a survey of sixty households. Literature review was conducted to have an overview of the different targeting processes and also learn about the successes, failures and AIDS mitigation targeting implementation gaps. A review of documents from the programme partners especially CARE International, Ministry of Agriculture and the home based care programme also helped in getting more insights pertaining to real field challenges, opportunities and successes for the agricultural inputs support. Household surveys were done to collect household level information on agricultural inputs support in relation to the following variables; targeting criteria, understand how the inputs support has contributed to change in food availability, agricultural asset build up, challenges pertaining to agricultural input support, and also understand factors that positively contribute to effectiveness of agricultural inputs support in mitigating HIV and AIDS induced food insecurity.

3.2. Research Design

The design of this study was based on the Sustainable Livelihoods framework to determine changes in household livelihood assets associated with AIDS mitigation response support and how this translates into resilience to HIV and AIDS induced food insecurity. The livelihoods approach is a useful tool for understanding the opportunities and constraints that households face and for identifying practical priorities for action that are based on the views and interests of those concerned. The Sustainable Livelihoods Framework presents the main factors that affect people's livelihoods and their interrelationships. The research adopted a sustainable livelihoods approach in order to understand the impact of HIV and AIDS on household assets especially human, physical, and social capital assets and the various responses adopted by different households. Data pertaining to changes in household assets particularly agricultural related assets, demographic data and physical capital assets was collected in retrospective for a three year period from 2007 to 2009.

¹ The research strategies used in this study are derived from the research book, "*Verschuren, P. and H. Doorewaard (1999) Designing a Research Project. Utrecht, Lemma*".

O'Donnell (2004) has argued recently that the sustainable livelihood framework could provide a clear basis for understanding how HIV and AIDS can impact on various aspects of livelihoods in many different ways. Such an analysis should reveal intervention points for reducing the risk of HIV infection and mitigating the negative impact of HIV and AIDS, so that preventive measures can be linked to mitigation efforts to address both the causes and symptoms of the disease (Tango International 2003: 4-5).

3.2.1. Livelihoods defined

Livelihoods are defined as the capabilities, assets and activities required for a means of living (DFID, 2000). A livelihood is regarded to be sustainable when it can cope with, and recover from stresses and shocks and maintain its capabilities and assets both now and in the future, while not undermining the natural resource base. The characteristic features of the Sustainable Livelihood are therefore the livelihood assets, strategies and outcomes. Households are regarded as possessing different sets of livelihood assets essential to their livelihood strategies: human capital, natural capital, financial capital, social capital and physical capital. Human capital consists of the skills, knowledge, ability to labour and good health, which are important to pursue livelihood strategies. Natural capital consists of the natural resource stocks from which livelihoods are derived (e.g. land, water, wildlife, biodiversity). Financial capital includes cash and other liquid resources (e.g. savings, credit, remittances, pensions, etc.). Social capital comprises the social resources people draw upon in pursuit of livelihoods such as networks, membership in groups, exchange relations and access to wider institutions in society. Physical capital includes basic infrastructure (transport, shelter, energy, communications and water systems), production equipment and tools that enable households to maintain and enhance their relative level of wealth.

The policies, institutions and principles in the livelihoods framework are the institutions, organizations, policies and legislation that shape livelihoods. A variety of institutions (state, civil society, private sector), both formal and informal, may operate in the community and directly influence the livelihood outcomes of the population. Figure 1 below shows the various factors in the livelihood framework and how they relate to each other. In this study, the study focus in the Sustainable Livelihood Framework below is on the capital assets (human, physical, social, natural and financial) and how the agricultural inputs support has helped to rebuild these assets. On the other perspective, the study also looks at how the household capital assets endowment levels positively or negatively influenced the outcome of the agricultural inputs support.

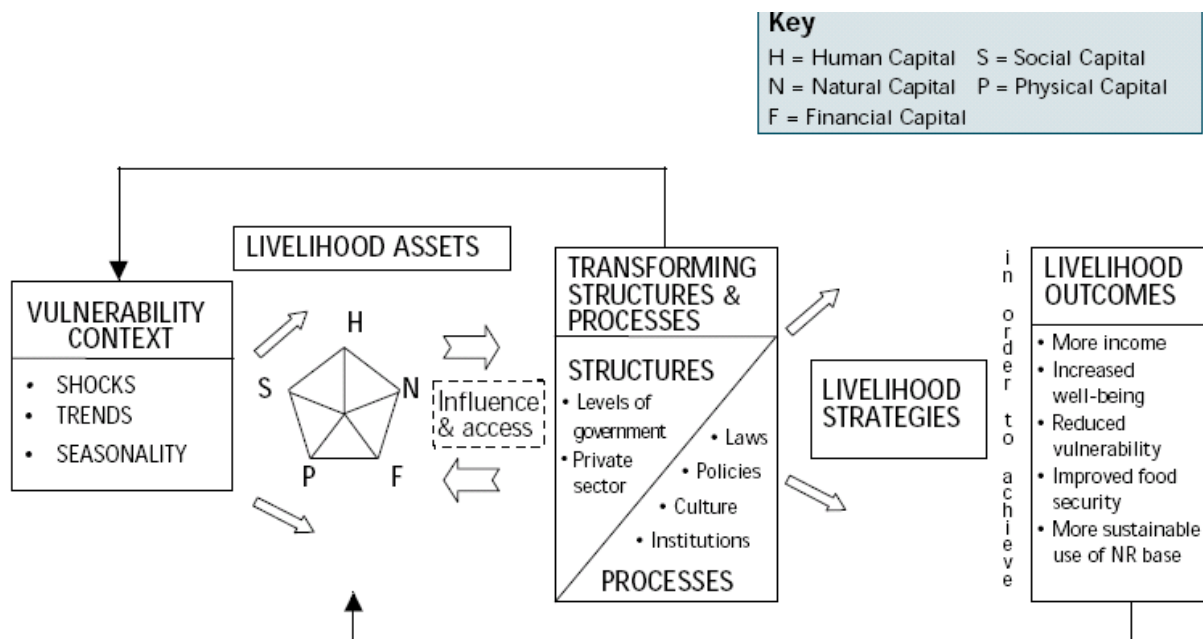


Figure 1. Sustainable livelihoods framework

Source: Adapted from DFID. 1999. Sustainable livelihoods: Lessons from early experience

Households combine their livelihood resources (assets) within the limits of their context and utilize their institutional connections to pursue a number of different livelihood strategies (e.g. agriculture production, off-farm employment, informal sector employment). The Sustainable Livelihoods Approach tries to understand the factors that lie behind people's choice of livelihood strategy in order to reinforce the positive aspects (i.e. factors that promote choice) and mitigate the constraints. In the analysis of livelihood strategies, it is important to capture the types of (sustainable and non-sustainable) coping strategies different households use when normal livelihood options are not adequate to meet household needs.

Livelihood outcomes are the achievements of livelihood strategies. There are a number of measures that capture need or well-being satisfaction, such as nutritional status, sustained access to food, increased income, increased well-being, reduced vulnerability, more sustainable use of the natural resource base.

The rationale for using the Sustainable Livelihoods Approach in this research study was that it would enable analysis and quantification of the changes in the livelihood assets of the households that had been targeted under the agricultural inputs AIDS mitigation interventions. Furthermore, an analysis of the type and quantity of mitigation response support was done for all the study households that received support. To understand how targeting was done at household level, and also establish whether there were variations in the nature (i.e. type and

quantity of agricultural inputs AIDS mitigation support) of the agricultural inputs AIDS mitigation support the different AIDS affected households received, a more detailed analysis of the household asset base, disaggregation of households by gender of household head, wealth status, status of the AIDS infected/deceased person in a household was done. The basic assumption is that these livelihood assets tend to be dynamic with interventions and also tend to determine the effectiveness of an intervention. For this study a positive change in the level of assets possessed by households and also increased food availability due to inputs received from rural development service organizations has been taken to be synonymous with effective targeting and positive impact of the intervention.

3.3. Data Collection

One research assistant was recruited and trained by the researcher prior to questionnaire pretesting and data collection. Questionnaire pretesting was done in a non-study area on 5 households in order to assess the flow of the questions, relevance of questions, identification of key gaps and refine questionnaire sections and questions that needed further attention. Interviews were conducted in the local language though responses were recorded in English in the questionnaires. Data collection took place from mid July to mid August 2009. Data collection was carried by the researcher and the research assistant with support from community based agricultural extension staff, home based care support staff and Ministry of Health staff.

Data collection involved two research strategies; desk research of existing literature pertaining to the study, and a case study on CARE International through a survey of 24 households fostering AIDS related orphans (12 households for male and female headed respectively), 24 households (12 households for male and female headed respectively) with a member who is living with HIV and AIDS and 12 households which are HIV and AIDS affected but have not benefited from agricultural inputs AIDS impact mitigation interventions. On the basis of information on HIV and AIDS impact mitigation support and targeting, existing literature reviewed in this study show that rural development organisations including CARE International have been using broad household categories such as households fostering orphans and households with members who are chronically ill as basis for targeting intervention support. As such, one of the main outputs of this study is to assess whether this strategy of targeting has worked out effectively or not.

This research study was targeted at households that have been affected by HIV and AIDS and received agricultural input related AIDS mitigation support. The selected households are those that fall within the poor category and who tend to be most vulnerable to impacts of AIDS and need external assistance to mitigate HIV and AIDS induced impacts especially food insecurity. Five types of AIDS affected households were studied; (a) male headed households with a member who is living with HIV, (b) female headed households with a member who is living with HIV, (c) male headed households fostering AIDS related orphans, (d) female headed households fostering AIDS related orphans and (e) households which are affected by HIV and AIDS but have not received any support. For each of the five types of households, a total of 12 households were randomly selected from a home based care support register and interviewed.

Therefore, in total 60 households were interviewed in this study. Identification of HIV and AIDS affected household types was done through the joint agricultural extension and home based care program which is implementing the CARE International agricultural inputs support program at community level. Two focus group discussions with a total of 43 (17 women and 26 men) household representatives were conducted in two separate communities within the district, i.e. Kanchele and Mboole communities. Participants in the focus group discussions comprised households that were not targeted for the individual household interviews. The rationale for focus group discussions was to capture in-depth information on community perceptions about agricultural inputs HIV and AIDS mitigation responses, trends in different livelihood shocks that may affect agricultural inputs support such as climatic, bio-physical and socio-economic and policy related factors and shocks.

In addition, the survey also included key informant interviews with CARE International staff, Ministry of Agriculture staff, Community Based Organisations leaders, Mboole Cooperatives Home-Based Care programme, Ministry of health staff, and village committee leaders actively involved in AIDS mitigation programmes in the study site. For the household survey, the tool for data capturing was a quantitative questionnaire, whereas for key informant interviews and focus group discussions, qualitative checklists were used. For household interviews, the households in the target community were listed and stratified into five household types with assistance from village leaders, local health workers, home based care givers, and agricultural extension officers based in the study area. Staff at Kanchele Rural Health Centre helped in identifying households with PLWHA. Households were then randomly selected from each of the strata in the study site.

In the data collection questionnaires for household, key informant and focus group discussions, HIV and AIDS terminologies were not used as not all household members with chronic ill may not actually have AIDS and this also helped in reducing stigma. However, the targeted households were those which are HIV and AIDS affected and which were identified by the home based programme.

3.4.Data Analysis strategy

The analysis of findings in this study was based on the sustainable livelihood framework and multi-stakeholder (by analysing the roles and contribution of other stakeholders such as ministry of agriculture, home based care, community based organisations) analysis approach as noted by Chambers in his working paper 293 (2007) that when looking at societal problems the focus should not only be on one dimension but address other dimensions by looking at different stakeholders. In the area of AIDS mitigation interventions, this study captured information related to the design of the intervention packages, type of packages, organisational structures at community level, household targeting criteria in relation to socio-economic categories of households and policy issues by interviewing different stakeholders to get different views of the stakeholders on how AIDS mitigation is being implemented. The analysis of changes in household assets and livelihoods focused on comparison of asset base between household types that received agricultural inputs AIDS mitigation support. In addition, within households, an analysis was done to assess changes in food security and asset base over time and the

contributing factors for the changes in asset base and food security. Qualitative data was analysed using the following tools; Strengths Weaknesses Opportunities and Threats (SWOT) analysis, and PESTEC.

Data collected from the in-depth household interviews was coded in a computer and analyzed using the Statistical Package for Social Sciences (SPSS) software and Ms excel. At the analysis stage, data was disaggregated according to gender and household HIV and AIDs status in order to reflect the impact of the agricultural inputs AIDS mitigation intervention by household type and also by type of AIDS mitigation intervention received. The dynamics in the livelihood assets in relation to impact on food security at household level provided the means with which effectiveness of targeting and/or undermining factors were assessed. The study examined the statistical significance associated with livelihood assets and food security between the present period (current year 2009) and the time the mitigation measures were implemented. A significant change in either direction was interpreted as effectiveness or ineffectiveness.

3.5. Ethical considerations

HIV and AIDS is a sensitive subject at both individual and household level. Therefore in order to ensure that the study did not breach the research ethics in collecting information related to HIV and AIDS at household level, some important ethical factors when dealing with HIV and AIDS affected households were taken into consideration. These included seeking informed consent from target respondents, detailing target respondents about benefits and risks pertaining to their participation in this study. These ethical considerations were considered and explained in more detail below.

Informed Consent

This research sought information from households with orphans, widows and those with people living with HIV. In light of the sensitive nature of this study, especially its potential to stigmatize and traumatize households with HIV positive living members, prior consent was sought from the respondents through the home based care programme and representatives. To this effect, an informed consent was included as part of the data collection questionnaire at household level. The consent form was translated into local language by the interviewer and the purpose, benefits and possible risks for the research study were explained to enable the respondent make an informed decision to participate in the study or not. The terms HIV and AIDS were not used but instead chronic illness was used.

Risks

The study had minimal if any risks to the study subjects². All data used in the study came from respondents' own experience and no reference to other households or organizations was made and recorded. All names of participating respondents were not included as it was not a requirement and not necessary for the study. All data from the study was kept as strictly confidential despite not having identifiers.

Benefits

Though this study may not have direct benefits to the study subjects, it would tremendously help government and rural development institutions involved in HIV and AIDS mitigation to fully understand and appreciate how the current agricultural inputs HIV and AIDS mitigation interventions are being implemented, bring to light factors that are leading to their effectiveness and ineffectiveness. The study has documented how the different interventions are contributing to household resilience to HIV and AIDS induced food insecurity and show evidence rather than relying on speculative figures. This will also contribute to policy makers' ability to make informed decisions in HIV and AIDS impact mitigation programmes based on agricultural inputs. The study will therefore contribute to the development of better HIV and AIDS response strategies for rural development organizations and government and would also contribute to a more efficient resource allocation.

3.6. Expected Research Outputs

With the view to contribute to HIV and AIDS impact mitigation, building resilience for HIV and AIDS affected households to food insecurity, this study;

- Helps to understand how HIV and AIDS affected households are targeted with agricultural inputs interventions aimed at alleviating their food insecurity.
- Identify strengths and weaknesses of the different agricultural input interventions in addressing food insecurity
- Helps contribute towards documentation of HIV and AIDS intervention practices aimed at improving targeting, synergy among stakeholders and contribute towards identification and development of aid and institutional policies that would facilitate the scaling up of the response to HIV and AIDS induced food insecurity
- Has generated solid evidence based livelihood data for use in socio-economic

² Study subject – refers in this context to study households. Human subject is the professionally accepted terminology for targeted people when dealing with HIV and AIDS studies

interpretations of the implication of HIV and AIDS interventions on the different household types.

- Contributes to generation of information that is important for efficient and effective allocation of financial and material resources in the response to HIV and AIDS and also to effectively develop HIV and AIDS intervention strategies and relevant food security policies that can stand the test of time.

3.7. Constraints and Limitations of the study

- Availability of respondents among households with PLWHA was difficult especially if the patient was the household head. The non-availability of such respondents was attributed mainly to their poor health condition or were away from the homestead on medical treatment or being nursed by other relations. This resulted in a high replacement rate of these household types in the sample and a high rate of call backs. In some cases, other households had to be interviewed in order to ensure that the target number of 24 households with PLWHA was achieved.
- The study was conducted off-season when the field crops had already been harvested, hence the researcher could not verify on the ground the performance of the various crops and relate them to the benefits and constraints (such as poor soil fertility, poor crop management due to labour constraints) mentioned during household surveys.

CHAPTER 4. RESULTS

This chapter discusses the major findings of the study based on the research questions and study objective. The chapter gives a detailed analysis of household capital assets (human, physical and social), role of complimentary AIDS interventions, institutional linkages and programme implementation arrangements and approaches as well as technological factors and conditions that influenced the level of success of agricultural inputs support in mitigating HIV and AIDS induced food insecurity. The chapter also discusses factors that hindered the achievement of the agricultural inputs support objective, principle issues centred around environmental factors, limited livelihood capital assets, inappropriateness of the input packages to suit the needs and ability of particular households to fully utilize the input packages to produce own food crop and improve their food security situation.

To provide guidance in the analysis of findings and assess whether the programme objectives were achieved, the overall objective and purpose of the agricultural inputs support are outlined prior to presentation of study findings as point of reference. The study adopted the PESTEC analysis framework model to analyze institutional, environmental, natural, policy, socio-cultural and economic factors that influence the success of agricultural inputs support programme. Specifically, PESTEC analysis framework was used to understand factors that enabled or hindered the achievement of the programme objective. In addition, the sustainable livelihood framework (SLF) was also used in this study to assess changes in agricultural assets as a result of agricultural inputs support. A positive change in household food availability and capital assets that support crop production has been taken to indicate success in achievement of programme objective. With the guidance of the SLF Approach Model, livelihood assets, which consist of natural, human, social, physical and financial capital assets, were analyzed by comparing data within the 2007 – 2009 period. Livelihoods are shaped by a multitude of different forces and factors that are themselves constantly shifting. People-centred analysis of factors normally begins with simultaneous investigation of people's assets, their objectives and the Livelihood Strategies which they adopt to achieve these objectives (Chambers and Conway, 1991).

4.1. Description of the study site

Geographical Location

This research was conducted in Choma district of Zambia. The district forms the heart of Southern Province not only because it is central in the province by location but also because, it has an important agricultural role in the economy of the province. The district lies, approximately within longitudes 26⁰ and 27⁰ east of the Greenwich, and latitudes 16⁰ and 17⁰ south of the Equator on the plateau of southern Zambia. The district covers a total area of 7,296 Km².

General Demographic Information

A large part of the district population is found in rural areas. According to the CSO (2000), the district population is estimated at 203,305 of which male population is about 99,001 (48.7%) compared to 104,304 (51.3%) females. The number of agricultural households is estimated to be 165,589 of which a total of 16,733 are actively involved in off season crop production for maize and vegetables. The annual population growth rate for the district was estimated to be 1.8%.

Agriculture and HIV and AIDS

Agriculture constitutes the main source of livelihood for the rural population in Choma district, and field crops and off season vegetable production is extensively practiced. The farming systems are typical of mixed farming in which annual crops especially maize is the main staple food crop with cowpea and groundnuts constituting other important food crops. Cattle, chickens and goats are the main types of livestock. Livestock production is integrated with crops especially as source of draught power and manure which are important components in crop production. The farming systems in this district have in the last two decades experienced a number of shocks that have undermined the ability of agriculture to sustain food security in the area. The primary shocks have been; drought and livestock diseases. However, in addition to these natural shocks, HIV and AIDS which also became an endemic problem in the district, worsened the food insecurity and poverty situation. Currently, the district has the second highest HIV prevalence rate of 19.2% in the province with Livingstone the tourist headquarters having the highest at 22% (NAC, 2008).

Rainfall Patterns

The drainage pattern in the district is characterised by a number of active perennial streams, a few scattered marshlands and dams which favour gardening during the dry season from May to October. In terms of climate, the district is semi-arid with temperatures between 14°C and 28°C. The average annual rainfall ranges from 700 – 900mm. There are however, variations in rainfall distribution from year to year and even within seasons. These variations normally have negative impact on crop production in the different zones of the district. This climate variability in the district is intertwined with the current challenging excessive economic decline and the food insecurity challenges brought about by the generalized AIDS pandemic. A study by Drimie (2008) reports that *“for Southern Africa, the link between climate variability and food security is clear and the impacts are more pronounced because of the underlying influence of other socio-economic drivers especially financial poverty and HIV and AIDS which further undermine the household ability to cope and recover from climate induced food insecurity”*. This study gave attention to this variable as issues of climate especially recurrence of drought was frequently reported by a significant number of households as a challenge to crop production and agricultural inputs support.

Figure 2 below reveals that the district has been experiencing exceptional increases in the frequency and magnitude of erratic rainfall patterns above and below the normal rainfall attributable to global environmental changes. The agricultural inputs being distributed to mitigate HIV and AIDS induced food insecurity are predominantly dependent on rainfall and any instability in rainfall patterns has far reaching adverse impacts on this intervention type. In this context, the high frequency of below normal rainfall as displayed in the rainfall graph has according to the households interviewed led to a serious decline in crop production especially maize the main staple food crop.

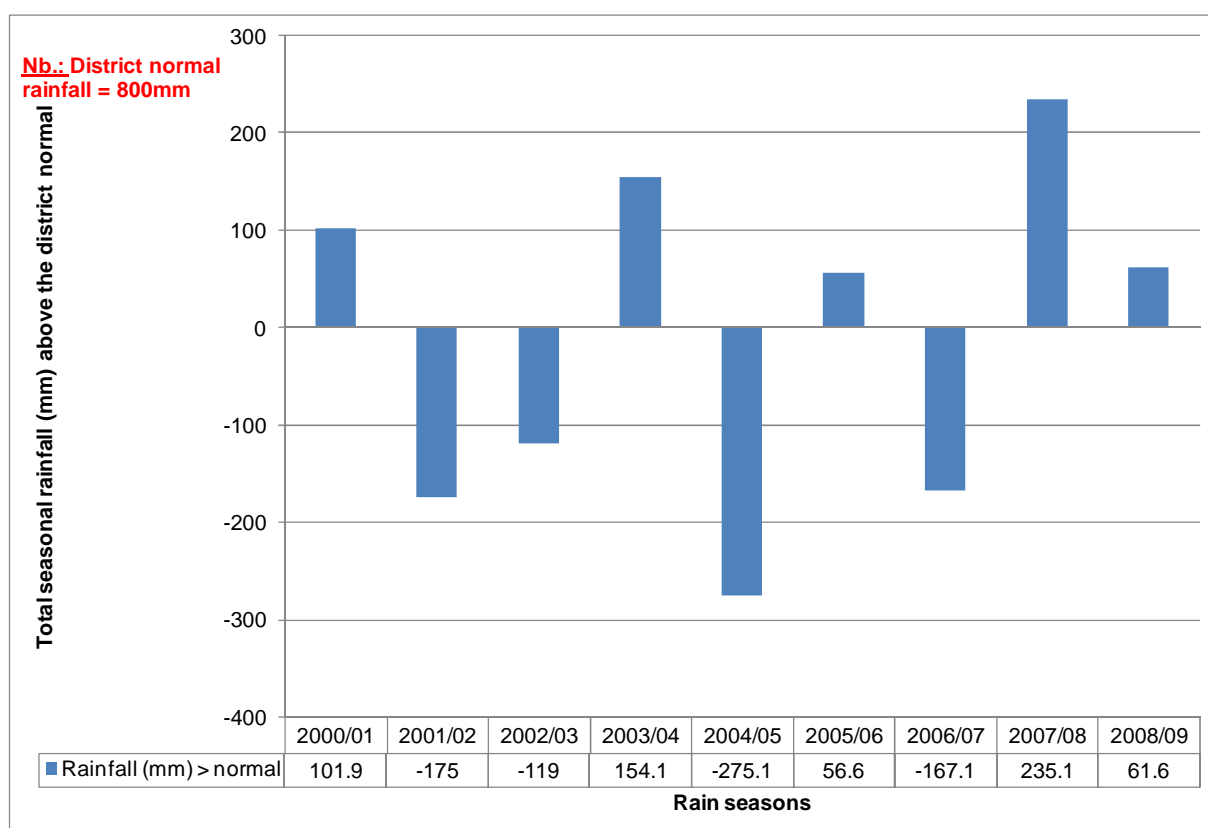


Figure 2. Rainfall distribution above the normal (800mm) in Choma district in the period 2000/01 to 2008/09 season

Source: Department of Meteorology, Choma, 2009

In view of the current climate variability coupled with several years of under investment by government in irrigation programmes, livestock and crops disease control, the impact of adverse weather patterns has severely undermined crop production as the dominant livelihood source for rural households especially the HIV and AIDS affected. As such, the interaction of poor local

economic factors especially poor access to inputs and food insecurity, high HIV prevalence, and drought places many AIDS affected households in a situation of extreme vulnerability.

4.2. Background information about the Agricultural Inputs support programme

The CARE International facilitated “safety nets for HIV and AIDS infected and affected programme” was launched in 2006 under the funding of the European Union (EU). The programme is jointly implemented by CARE International Zambia, Ministries of Agriculture and Health, the Home Based Care (HBC) programme in Choma with support from community based structures such as farmer cooperatives and HIV and AIDS support groups. Coverage includes the rural, and peri-urban resource-poor settings receiving the recently expanded subsidized Anti-retroviral therapy (ART) for HIV infected patients and households with orphans in the district. The overall objective of the programme is increased food security among HIV and AIDS affected households, by integrating a component of food production and income generation.

The specific objective aimed at improving the health and nutrition status of 1,866 HIV patients and their 9,330 affected households. This action endeavoured to provide short-term, locally purchased food and additional support of seed and other inputs for the long-term so as to ensure good and sustainable nutritional practices for HIV and AIDS affected households. The project had three expected results to be realized:

1. **Expected result 1:** Enhanced capacity of Community AIDS Task Force Volunteers (CATFs) to provide care and support to 1,866 PLWHA and approximately 9,330 affected household members
2. **Expected result 2:** Improved access to nutritious food for 1,866 PLWHA and approximately 9,330 affected household members
3. **Expected results 3:** Increased productive capacity of 1,866 PLWHA and their about 9,330 affected household members

4.2.1. Institutional Linkages and Agricultural Inputs Support Programme Implementation Approach

The ultimate goal of the programme was to alleviate HIV and AIDS induced food insecurity among affected households. In order to ensure that these households were correctly targeted with support and ensure that the programme objective was addressed, the input support programme adopted a multi-sectoral response approach to HIV and AIDS impact mitigation. In this regard, the programme involved key partners whose roles were strategic to the success of the programme. These include; the District health management team and Home based care programme, Extension department of the ministry of agriculture, CARE International, local leaders/village leaders, District AIDS Task Force and the Mboole farmers cooperative society. Each partner institution played a specific role towards the achievement of the programme

objective. Table 1 below elaborates on the key partners and their roles and contribution to the programme.

Table 1. Institutional roles on the CARE International supported agricultural inputs support programme

Institution	Role
CARE International	Sourcing and Provision of inputs Overall programme coordination
District Health Management Team	Training caregivers, provision of technical support policy guide lines and drugs ARVs, TB , opportunistic infections , monitoring of Home Based Care services
Home Based Care Programme	Identification of HIV and AIDS affected households Provision of complementary support to HIV and AIDS affected households especially ART for PLWHA
Agricultural Extension Department	Distribution of inputs Beneficiary training on recommended production practices for different crops in input package and crop production monitoring
Mboole farmers cooperatives society	Input sourcing for vulnerable households including HIV and AIDS affected Beneficiary household identification and recruitment
Local leaders	Identification of caregivers and support the programme
District AIDS Task Force	Coordination of HIV and AIDS activities to avoid duplication of activities, double counting and harmonising working relationship among all stakeholders

Source: Safety Nets for HIV/ AIDS Infected and Affected household 2008 annual report

The involvement of agricultural extension department helped to focus extension approaches on the specific field crop and vegetable production information needs of HIV and AIDS affected households. Agricultural extension assured that training materials on HIV, food security, and appropriate agricultural techniques were made available to the target households.

The integration of an existing farmers cooperative society ensured that local leadership was provided and spearheaded the support programmes after the phasing out of external support.

The existence of such structures that have credibility and leverage with households is key to following up on household commitments to community programmes.

The CARE International agricultural inputs support programme approach brings out a new dimension for effective targeting of AIDS mitigation interventions. In this regard, the involvement and channeling of inputs support through the Home based care programme is a critical indication that the AIDS mitigation interventions are reaching the intended target population. In addition, the programme took into cognizant the reality that the success of inputs distribution programme in terms of enhancing food security is influenced by a number of factors. With the AIDS shock being faced by affected households, such households need different types of support such as agricultural training, mobilization and access to other support services such as ART all of which contribute to the effectiveness of agricultural inputs.

4.3. Demographic Characteristics of the study households

This chapter gives an analysis of household characteristics for the sampled 60 households for this study in terms of age of household head, household size, average number of adults and children, economic dependence ratios, number of chronically ill members and age as well as status in household. The disaggregation of data is such that households are broken down into five different household categories to represent the existing vulnerability context of the households. The demographic household characteristics have a bearing on the livelihood strategies and outcomes. Analysis of household demographic composition is important in order to understand the dynamics of human capital assets in the context of HIV and AIDS at household level. In addition, household demographic composition also directly influences the extent to which a household successfully manages agricultural inputs with the basic purpose of enhancing food availability. In this regard, there are a number of household demographic variables that need to be understood and taken into account as one endeavors to establish the linkage between household demography and effective utilization of agricultural inputs support. The analysis below is an attempt to unravel the household demographic variables that either positively or negatively impacted on the agricultural inputs support among HIV and AIDS affected households.

Statistically, study findings show that male headed households with orphans and PLWHA have large household sizes of about 11 members compared to 8 and 7 members for female headed households with orphans and PLWHA respectively. The large household size among male headed households with the corresponding age structure is a proxy indicator that these household types are well endowed with human capital and this implies that there is more labour force available. In terms of implementing agricultural related interventions, this finding suggests that male headed households are more likely to undertake labor intensive activities (in terms of land size) and crop production such as maize and other cash crops compared to female headed households who culturally tend to give priority to subsistence less labour intensive crops and vegetable gardening which is more labour intensive but has quick turn over in terms of income and food security. The differences observed in the household composition draws one to assume that it could be as a result of the traditional and cultural responsibility bestowed in men to take care of their extended family welfare including orphan fosterage that contributes to their family

being larger. By implication this means male headed households are more endowed with human capital assets and are more likely to have more agricultural labour compared to female headed households. The average age of the household head ranged from 51 years for female headed households with PLWHA to 58 years for female headed households with orphans. The older age of female household heads (58 years average) with orphans renders such households more vulnerable and reduces their ability to effectively implement agricultural and labour demanding activities such as agricultural inputs support. Of the sampled households with members who are chronically ill, 63.6% of the respondents among female headed households with PLWHA revealed that the member who was ill was the household head compared to 50% for the male headed households with PLWHA. As Jayne (2004), documented that the ability of a household to cope and recover from AIDS impacts depends among other factors, on the status of the member who either dies or is chronically ill. In this context, the effectiveness to which households with PLWHA utilizes the agricultural inputs support to improve and sustain their food security would differ based on who is ill. To affirm this argument, figure 5 and 6³ (chapter 4.6.3) shows that there were more male headed households with PLWHA (5 out of 12 sampled) who reported maize food crop self-sufficiency of more than 9 months compared to female headed households with PLWHA attributable to input support. This finding is also in line with the socio-cultural and gender roles which argue that women contribute most to agricultural labour force compared to men. In the study sample, most female headed households with PLWHA (63.6%) indicated that it was the woman household head who was chronically ill and this affected effective utilization of inputs. As a result, these recorded the lowest maize area under cultivation (1.56ha) which translated into low yields as shown in table 8.

In rural settings which are agricultural dependent, human capital assets in relation to household labour play an important role in the livelihood of agricultural households. The number of economically active members has a bearing on agricultural production in terms of timely implementation of operations such as planting, weeding, harvesting and processing. In table 2, the study findings show that households with members who are chronically ill had the highest economic dependence ratio. This implies that, despite the burden of taking care of the sick, these households are also faced with a high number of children to look after compared to households with orphans. This scenario, means that in the study site, households with PLWHA have low adult labour (aged between 15-49 years) available to effectively manage crop production activities hence this negatively affect the timely and successful utilization of agricultural inputs especially for crops that are labour demanding such as maize.

³ Trend in maize food crop self-sufficiency for households that received maize inputs in the period, 2007 - 2009

Table 2. Socio-economic characteristics of the sampled households

Household type	Responses by household type									
	Average age household head (years)	Average household size	Average number of children <15 years	Average number of adults ≥15 years	Average economic dependence ratio ⁴	Average number of chronically ill members	Average age of chronically ill member (years)	Total household responses on status of chronically ill member in household		
								Household head	Spouse	Child
Male headed with orphans (N=12)	53.7	10.5	5.2	5	1					
Female headed with orphans (N=12)	58	7.9	3.6	4.2	0.9					
Male headed with PLWHA (N=12)	55.8	10.5	6.2	4.4	2.2	1	46.2	6	4	2
Female headed with PLWHA (N=12)	50.7	6.9	4.2	2.7	3.1	1	38.9	8		4
Non-beneficiary households (N=12)	52.4	9.1	5.2	3.7	1.4					
Total	54.1	9.0	4.9	4.0	1.2			14	4	6

Source: Field survey data, July – August 2009

In understanding the impact of chronic illness on implementation of agricultural inputs in view of AIDS impact on household labour, this study gives an analysis on effective labour available at household level. In this context, table 3 below shows the average number of able bodied members that work in agriculture by household type. Female headed households show the lowest number (2) of available able bodied members, were as male headed households with orphans had the highest of 5 members available.

⁴ The economic dependence ratio has been calculated as the ratio of the sum of children below 15 years and chronically ill persons to the number of economically active (i.e. excluding chronically ill) adult members at household level

Table 3. Average number of able bodied adults that contribute to agricultural labour by household type

Household type	Average number per parameter by household type				
	Total # adults	# males >15 years	# females >15 years	# of chronically ill members	# of able bodied (excluding the chronically ill members)
Male headed with orphans	5	3	2	0	5
Female headed with orphans	4	2	2	0	4
Male headed with PLWHA	4	2	2	1	3
Female headed with PLWHA	3	1	2	1	2
Non-beneficiary household	4	2	2	1	3
Overall Mean	4	2	2	1	3

Source: Field survey data, July – August 2009

Education Level

Education is an important element of human development and is a pre requisite to knowledge and ability to apply formal skills. According to the statistics compiled in table 4 below, there are more household heads who are less educated among female headed households with PLWHA than any other household type. Overall, majority of the household heads across all households have gone up to primary school. Learners who leave school at primary level in Zambia have problems of reading and writing English (the official language). Consequently, this aspect undermines their ability to participate effectively in development programs including HIV and AIDS interventions as well as acquiring formal skills to pursue different livelihood options. Clearly, 13.3% of the household heads are illiterate with a cumulative figure of 55.5% having left school at primary level.

Table 4. Education levels of household head by household category

Household type	Average number of respondents by level of education of household head			
	Illiterate	Primary	Secondary	Tertiary
Male headed with orphans		4	7	1
Female headed with orphans	1	9	2	
Male headed with PLWHA	1	7	3	1
Female headed with PLWHA	4	5	3	
Non-beneficiary households	2	8	2	
TOTAL	8 (13.3%)	33 (55.5%)	17 (28.3%)	2 (3.3%)

Source: Field survey data, July – August 2009

4.4. Type of agricultural inputs, targeting criteria and beneficiaries

The overall objective of the agricultural inputs support programme is to increase food security among households with orphans and PLWHA by integrating a component of food security, nutritional support and labour sensitive options for food production and income generation. The programme was launched in 2006 (CARE, 2008) and had by August 2009 during the data collection exercise reached the targeted 9,330 households and 1,866 PLWHA.

The agricultural input package was designed with the aim of addressing and meeting the food security needs of the HIV and AIDS affected households that are economically vulnerable and needed support to build their resilience to food insecurity. As such, the input distribution approach adopted a combination of cereals, legumes, and vegetables in the input package.

In effort to ensure full realisation of the programme objective and sustainability of the agricultural inputs support, CARE and its collaborators adopted a community targeting approach to enable community based organisations manage the support programme at community level in terms of beneficiary household recruitment and sourcing of inputs. A classic model is the Mboole Home based program in the district being supported by CARE International. The Mboole Cooperative Home based care group is currently supporting 160 households with PLWHAs. This cooperative which was initially designed to manage agricultural input support for farmers has taken up the

responsibility of sourcing extra input support for households with PLWHA from different organizations including CARE and MACO for input support. This cooperative is vested with the responsibility to manage all resources aimed at supporting PLWHAs and also beneficiary selection. Once empowered, community based organizations help in ensuring the long term management of mitigation programs. In this regard, the cooperative society linked 72 households to the Programme Against Malnutrition implemented Fertiliser Support Programme to compliment CARE International Agricultural inputs support.

As a result of hopelessness and stigma associated with HIV and AIDS affected households, exploitation of locally existing HIV and AIDS support groups as experienced from the Mboole cooperative society is a viable practice to ensure effective targeting of agricultural support to affected households. To this effect, interviews with communities and key informants revealed that when considering effectiveness of targeting criterion for new options in terms of livelihood interventions that engage with food security and HIV/AIDS, targeting should be a combination of geographic and household-based targeting with the later being conducted by an established village level local committee using certain set criteria. This scenario could assist in targeting the right beneficiaries for the interventions and efficient resource allocation to the target groups. Example of how local structures could play a role in effective targeting are the Mboole Cooperative society and “Let’s Build Together” local community groups which are managing own home based care groups and have own income generating activities. For these two groups, there is no direct contact between afflicted households that need support and the source of external support. As such, the linking pins are the group committees who know their situation best and are in contact with the external sources of support, know which households are worst vulnerable, and what type of support works more effectively for which type of households. If well engaged, CBOs seemingly show great potential to help facilitate allocation of the ever scarce resources more effectively to the different expenditures needs. This scenario is of high comparative advantage for the poor and un-influential households who may not have the means to link to external sources of support.

In order to have a better understanding of the type and nature of inputs distributed by the programme as well as the programme implementation process in terms of beneficiary selection and targeting criteria, a detailed analysis of findings in terms of field crops and vegetable inputs is given in the next section below.

4.4.1. Field Crop Agriculture Inputs Support

It is commonly acknowledged in most studies (FAO, 2003) conducted in the spheres of AIDS and Food security that the worst impacts of the AIDS pandemic at household level has been erosion of the agricultural asset base, reduced agricultural productivity and production, and

reduced household capacity to generate own income. In recognition of these impacts, the agriculture inputs support was designed with the aim of rebuilding the capacity of AIDS afflicted households to grow sufficient food crops for household consumption and marketing of surplus production. The main components for the field crop input package include; maize as the main staple food crop, legumes (groundnuts and cowpea), sorghum, and fertilizer.

As a result of varying levels of AIDS impacts, household ability to recover from HIV and AIDS induced food insecurity is influenced by the type of inputs received and also availability of other support inputs at household level such as labour and land. In addition, natural factors such as weather patterns, pests and diseases, water availability are factors that influence effective implementation of agricultural inputs. Table 5 reveal that despite about 38 out of the 48 households having received maize seed, only 7 accessed fertilisers which is an important input in maize production in the district. A report by Triomphe, et al (2007) point out that the major maize production constraint in southern province of Zambia is the high degraded soil status which is compounded by reduced farmer access to fertilizers following the 1991 agricultural market liberalization. Therefore, despite majority of the households accessing maize seed, lack of a complimentary fertilizer support package resulted in most households who did not access fertilizer elsewhere to still realize very low maize yields thereby defeating the whole purpose of the agricultural inputs support intervention. Female headed households with PLWHA (91.7%) indicated that poor soil fertility was their major crop production constraint. This finding is supported by the survey data which shows that none of the sampled female headed household with PLWHA accessed fertilizer input in addition to maize seed.

Table 5. Type of inputs received by household type

Household type	Percent response by household type						
	Maize	Sorghum	cowpea	groundnuts	Fertiliser	Vegetable seeds	Overall Mean
Male headed with orphans (N=12)	75.0	0.0	41.7	0.0	33.3	16.7	27.8
Female headed with orphans (N=12)	83.3	8.3	8.3	8.3	16.7	25.0	25.0
Male headed with PLWHA (N=12)	75.0	8.3	16.7	25.0	8.3	25.0	26.4
Female headed with PLWHA (N=12)	83.3	0.0	33.3	0.0	0.0	58.3	29.2

Source: Survey field data (July – August 2009)

4.4.2. Vegetable Inputs

Vegetable inputs were introduced to contribute to short term food security as well as income needs of households with the aim of broadening the economic base of AIDS afflicted households. The intervention on vegetable inputs constituted leafy vegetables (cabbage, rape), solonaceous vegetables (tomatoes) and bulbs (onion). One important finding from this study is that vegetable inputs were distributed as a complimentary package to field crop inputs. In addition to field crop inputs, significant number of sampled female headed households (58.3%) that received field crop inputs also reported that they received vegetable inputs (as shown in table 5 above) despite the fact that some of them reported limitations of agricultural labour force, arable land and water scarcity for vegetable gardening. In spite of this variation in vegetable inputs at household level coupled with differences in labour availability, there was no significant difference in quantities of vegetable seeds received by the different household types as shown in the survey data in table 6 except for female headed households with orphans who received significantly low quantities (27grams).

4.5. Input Distribution Mechanism and Household Targeting criterion

The agricultural inputs support targeting criterion used by CARE is broadly based on the following variables; household orphan fosterage and presence of a chronically ill member. Interviews with individual households and focus group discussions revealed that the degree of AIDS impacts contributed to worsened poverty due to distress sale of agricultural related assets which is not taken into consideration when recruiting households for agricultural inputs support. Survey data reveal that in addition to orphan burden and presence of chronic illness in a household, the degree of poverty should be the primary factor to consider when recruiting households for support as proposed by 53.8% of the respondents. Other (20.5%) respondents indicated that family size and number of dependants especially orphans should be the major factors to consider when selecting beneficiary households for inputs support.

Survey findings show that male headed households with orphans and chronically ill members received more maize seed inputs of 9kg and 7 kg respectively (table 6). There was no variation in quantity of maize seed received (6kg average) between the two types of female headed households despite experiencing different shocks. This finding affirms the argument by Barnett and Whiteside (2006) who argued that *“homogenization of very diverse household types in mitigation results in inappropriate solutions”*. These households are at different stages in terms of experiencing AIDS impacts and need varying levels of agricultural inputs support. In this context, households with orphans have gone through the shock of nursing members with chronic illness, experienced death and also went through distress sale of assets compared to households with members who are chronically ill and have not yet experienced the same level of shock as households with orphans.

Table 6. Quantity of inputs received by household type

Household type	Quantity (kg) of inputs received					
	Maize seed	Cowpea	Sorghum	Groundnuts	Vegetable seeds (grams)	Fertiliser
Male headed with orphans	9	7	0	1	43	100
Female headed with orphans	6	5	5	1	27	100
Male headed with PLWHA	7	5	5	3	53	100
Female headed with PLWHA	6	5	0	0	44	100

Source: Field survey data, July – August 2009

As a result of a high demand for agricultural inputs among the HIV and AIDS affected households, the inputs support programme has only been able to support most households once with an input package. Such package comprises; maize a staple food crop, vegetable seeds and cowpea as a legume crop. As acknowledged by 32 of the 48 (66.7%) of the respondents that they only received inputs support once in the study period 2007 – 2009. During interviews in the field, it was clear that it is risk to support a household with agricultural inputs once and expect to get positive results in terms of meeting the programme objectives. The risks mentioned by key informants and households interviewed include; high likelihood of crop failure due to adverse weather conditions, household labour constraints due to chronic illnesses as the target population are AIDS affected, and lack of complimentary inputs such as livestock and agricultural implements. However, most households have been able to recycle the seeds in the subsequent years, especially for open pollinated maize and cowpea. However, this practice is not recommended for hybrid varieties especially in maize.

For financially constrained households, less fertilizer demanding crops such as cowpea was more responsive to the needs of the households. Despite the highly degraded soils, households reported having harvested some yield compared to maize which is a high nutrient feeder in terms of fertilizer requirements. Additionally, cowpea has been able to escape the short rain seasons being experienced in the district. Data from the Zambia Meteorological department show that the average number of rain days for the last 9 years is about 66 as compared to the expected normal of 150 days. The varieties of cowpea being distributed under the agricultural inputs support programme mature with 60 – 90 days compared to 120-150 days for most maize varieties.

4.6. Agricultural inputs support and household livelihood status

Although the main goal of the agricultural inputs support programme was to improve food security for the HIV and AIDS affected households, the input support also influenced changes in household capital assets. In this study, the main focus is on capital assets that are agricultural related and influence food security (financial, physical, and social).

The major impacts of AIDS at household level in the study area has been erosion of agricultural assets and human capital loss through either chronic illness or mortality. These impacts have long term repercussions such as declining food crop production, loss of knowledge and skills. The study findings show that though the current agricultural inputs support intervention is principally aimed at rebuilding the household capacity to manage own food crop production through access to inputs, the programme has had other benefits as well at household level. Table 7 below, shows that agricultural inputs support have had higher impact among households with PLWHA (66.7%) and female headed households with orphans (50.0%) in terms of reducing household expenditure on food purchases as they are now able to grow own food. A significant number of households also reported other benefits such as; households able to purchase more agricultural inputs and amelioration of medical costs for PLWHA as reported by 50% and 41.7% of male and female headed households with PLWHA respectively. This finding point to the conclusion that agricultural inputs contributed significantly to CARE's expected results number 2 and 3 (in chapter 4.2) in terms of enhancing food security/nutrition and increasing productive capacity of PLWHA and their households. However, most households were not able to hire extra labour for crop production using agricultural inputs support.

Table 7. Direct and Non-direct food security related benefits of agricultural inputs by household type

Household type	Percent response by benefit type					
	Enabled household purchase agricultural assets ⁵	Enabled household reduce expenditure on food purchases	Enabled household meet medical costs for chronically ill members	Enabled household purchase agricultural inputs ⁶	Enabled household hire extra labour for production	Enabled household increase area under crop production
male headed with orphans	8.3	16.7	8.3	25.0	0.0	8.3
female headed with orphans	16.7	50.0	16.7	33.3	8.3	33.3
male headed with PLWHA	33.3	66.7	50.0	33.3	25.0	50.0
female headed with PLWHA	33.3	66.7	41.7	50.0	0.0	16.7
Overall Mean	22.9	50.0	29.2	35.4	8.3	27.1

Source: Field survey data, July – August 2009

4.6.1. Contribution of agricultural inputs to household financial capital

Pressure put on households by poverty and HIV and AIDS related morbidity for households with PLWHA implies that most of such households are experiencing high cash expenditure on medical related costs and may have limited cash for agricultural inputs. To ascertain how the inputs support contributed to enhancing household financial capital base at household level, data on income generated through the inputs support programme was collected. The vegetable inputs under the agricultural inputs support programme was the main intervention aimed at enhancing household income and also indirectly food security. However, it was noted during the field survey that because of the high poverty levels among the targeted households coupled with the culture of dependence on external assistance, most households tended to exaggerate their income poverty levels and underreported the amount of funds they generated from vegetable and field crop production. Therefore, in order to capture reliable financial information,

⁵ Agricultural assets bought include; livestock (cattle, goats), ox-drawn ploughs,

⁶ Inputs primarily comprised of crop seeds (especially maize, vegetable), fertilizer, agro-chemicals

the study solicited information from the CARE reports which gave accurate information which was captured through the project implementation structures in the respective project areas. Quantities of vegetables sold by 87 out of 94 households with PLWHA amounted to ZMK⁷ 26,225,050 (Euro 5.060). The income realized from the sale of vegetables supplemented the household needs for food, medical expenses, assets, school requirements and diversified into other income generation ventures such as livestock. Table 8 below is a summary of vegetable production and income analysis for the households that received vegetable inputs.

Table 8. Vegetable production and Income analysis

Description	Rape	Tomato	Chinese	Onion	Total
Production (Kg)	3,244.2	3,679	5,502	1,606	14,031.2
Income (ZMK)	6,949,200 (Euro 1,341)	8,203,500 (Euro 1,583)	8,573,800 (Euro 1654)	2,498,550 (Euro 482)	26,225,050 (Euro 5,060)

Source: Safety Nets for HIV/ AIDS Infected and Affected household 2008 annual report

One important contribution of agricultural inputs support in relation to food security improvement is the enhancement of household capacity to invest in assets, increase area under production (as reported by 22.9 and 27.1% of respondents respectively in table 7) and other livelihoods that indirectly contribute to household capacity to improve food security. Table 9 below is a review of data from the 2008 annual report for the agricultural inputs support that show the different expenditure patterns and benefits.

Table 9: Analysis of 94 households' expenditure for the period June 2006 to May 2008

# of HH that bought assets	# of HH who supplemented their diets	# of HH that spent on transport to access medical facilities	# of HH that spent on children education	# of HH that spent on clothes	# of HH with savings	# of HH that spent on soap	# of HHs that spent on taking maize for grinding
94	94	80	75	80	16	94	94

Source:. CARE International Safety Nets for HIV/ AIDS Infected and Affected 2008 Annual report

Analysis of household expenditure in table 9 is based on the sampled households giving an indication of improved income which enhanced their capacity and their affected members to supplement their diets. The improved financial base assisted households to acquire basic needs which promoted better living for the targeted households. Therefore, the inputs support programme being implemented in the district demonstrates a strong potential to reduce poverty and strengthen the household capital base.

⁷ ZMK – Zambian Kwacha

4.6.2. Influence of Agricultural Inputs Support on Social Capital for HIV and AIDS affected households

The death or illness of a household head and economically active member tends to disrupt a household's links to their extended family, social support systems and the larger community. As documented in other studies (Mutangadura et al. 1999), death of a male bread winner impairs a household's ability to access community resources. One of the important impacts of AIDS on the infected people is stigmatization and social exclusion by non-affected people which in most cases result in loss of social support both within their family systems and community. Traditionally in Choma district, social capital especially extended family systems and neighbourhood is critical for the labour constrained and resource constrained households.

The agricultural input support programme contributed to the strengthening of the social cohesion among the targeted households through their active involvement in farmers development groups. Study findings show that the HIV and AIDS affected that declared their status were mobilized into groups and affiliated to community based Mboole farmers cooperative society. This enabled the affected households to benefit in terms of easy access of agricultural inputs from CARE International and the Fertiliser Support Programme as discussed in chapter 4.4.1 in which 72 households with PLWHA were linked to PAM. As a result, the programme helped in strengthening the relationships between HIV and AIDS affected and those that are not affected through common group development programmes. Insistence to deal with the farmer cooperative helps positive behavior patterns resulting from close working relationships within the group and community. The same cooperative or farmer group could also be reached not only with AIDS prevention and mitigation messages and practices but also other development programmes which also help in enhancing food security.

An important finding that came out of the Key Informant interviews with community leaders and farmers cooperative was that households with members that could have been forced to migrate due to depleted assets and inability by the household to meet the food security requirements were able to retain the household members as food security was assured through input support. Availability of inputs especially among female headed households helped prevent the potential loss of family labour and to some extent prevented the spread of HIV and AIDS by keeping the household together and occupied in safe livelihood options of agriculture production.

To reemphasize the role and importance of shared labour in the implementation and success of agricultural inputs support in enhancing social cohesion and food security, an extract from Harvey (2004) as quoted by the ECA (2006) report gives this feedback.

Box 1. Feedback on provision of seeds to affected households in Zimbabwe

The Zimbabwe Red Cross provided seeds to clients of its home-based care programmes in both rural areas. The experience of this programme suggests that beneficiaries value the inputs provided. Even if households affected by HIV and AIDS are less productive than non-affected households, the provision of agricultural inputs may still be more cost effective than continuing food aid distribution. Some of the home-based care clients were not able to plant the seeds themselves, but the friends and relatives helped them plant to ensure that they had some harvest. The provision of labour to the affected households helped to strengthen social capital and community-based safety nets thereby reducing food insecurity vulnerability among the labour constrained households.

Source: Harvey 2004.

In the context of food insecurity mitigation resulting from the increase in family sizes due to orphan adoption as well as PLWHA, the agricultural inputs support programme helped in relieving this burden of additional responsibility associated with taking in of extended family members as inputs support assured some better crop harvest and food security. Findings from the study show that there has been an increase in average family size from 9.5 members in 2007 to 10.5 in 2009 for male headed households that adopted orphans and received agricultural inputs support. Though this increase in family size could be attributed to a number of factors such as the socio-cultural responsibility bestowed in men to take care of family members, agricultural inputs support contributed to the alleviation of food insecurity for these households that had to feed more mouths.

4.6.3. Influence of agricultural inputs support on maize staple food crop self-sufficiency

Maize is the main staple food crop in Choma district and constituted the major input in the inputs support package for HIV and AIDS affected households. Household interviews show that 27.1% of the sampled households increased their area under crop production due to access to agricultural inputs support. About 50% and 33.3% of male headed households and female headed households with orphans reported significant increase in area under crop production due to access to inputs support respectively.

Figures 3-6 below are bar graphs meant to show how maize inputs have contributed to maize staple food crop self-sufficiency for the four household types. It is however, noted that the changes in maize harvested is also influenced by a number of other important factors that affect crop management especially labour, physical assets (land, agricultural implements and livestock) which varied across the four study households. From the graphs, it is observed that with the exception of female headed households with PLWHA, there was an increase in maize self-sufficiency from the year 2007 to 2009 among households that had received maize inputs. Relatively more households reported an increase in maize grain self-sufficiency of more than 9

months in the period 2007 - 2009⁸. The higher food security situation among male headed households could be attributed to a number of factors. The principle factors include; (1) these households are more endowed with labour which is attributed to large family sizes, (2) availability of agricultural implements and livestock. On the other hand, a significantly low number of respondents recorded maize self-sufficiency for female headed households with PLWHA compared to those with orphans mainly due to the fact that labour was more of a constraining factor especially that the person who was chronically ill was the household head (refer to table 2). Other factors that influenced maize production and maize self-sufficiency among the targeted households include the aspects of household access to fertilizer input. Among the sampled households, the female headed households partly due to chronic illness of the household head, may have had lost linkage with input sources and none of these households received fertilizer support (refer to table 5) and this could have affected maize production.

⁸ The maize grain availability/self-sufficiency is arrived at for the year 2009 based on amount harvested and household projection on when the crop harvest is likely to last as data was collected before the year ended.

Figure 4. Trend in maize food crop self-sufficiency for MHH-O that received maize inputs in the period, 2007 -2009

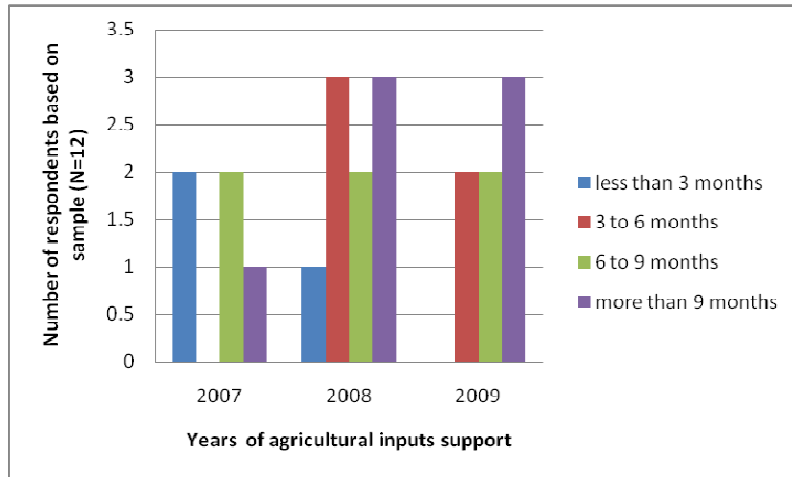


Figure 5. Trend in maize food crop self-sufficiency for MHH-PLWHA that received maize inputs in the period, 2007 -2009

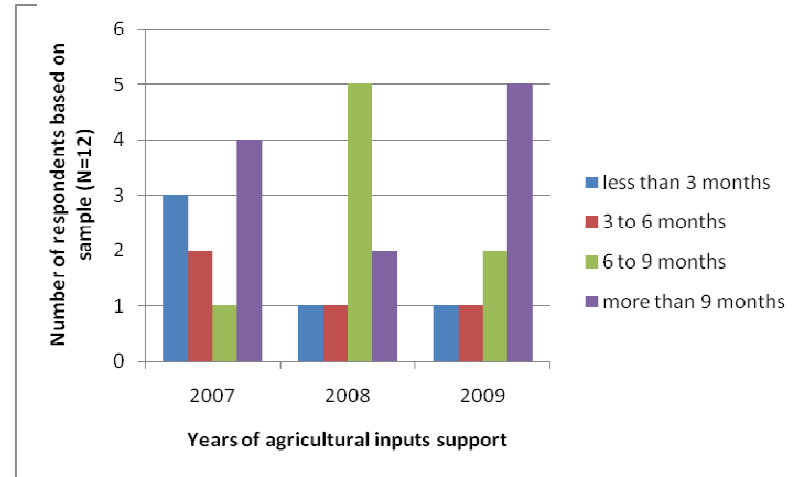


Figure 3. Trend in maize food crop self-sufficiency for FHH-O that received maize inputs in the period, 2007 -2009

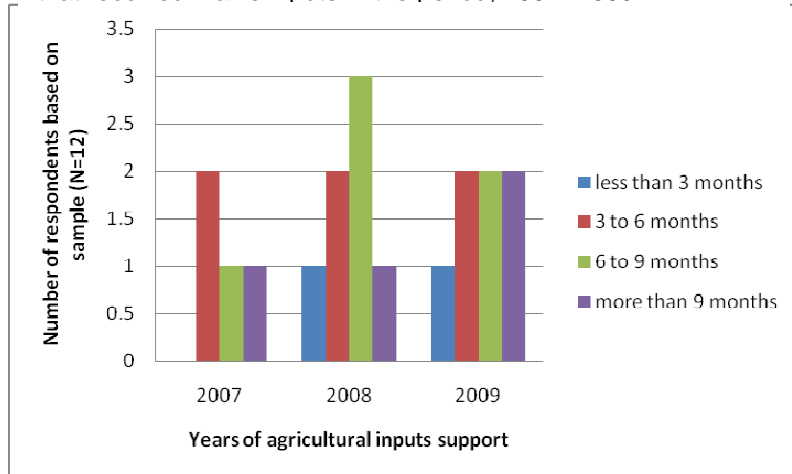
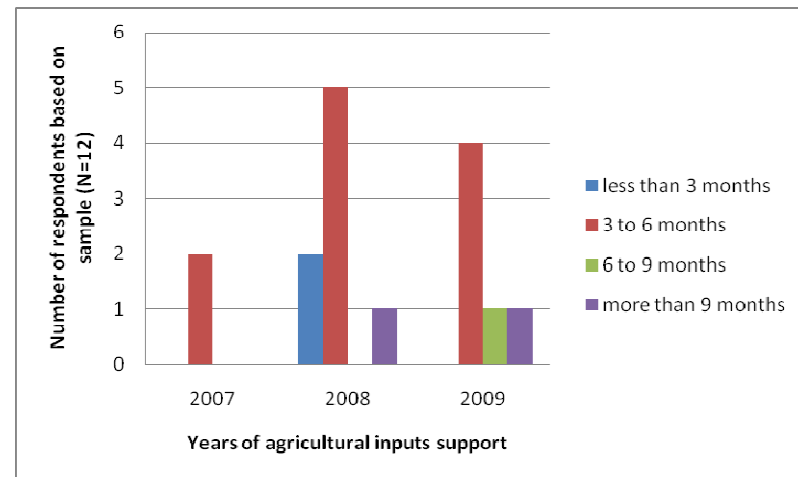


Figure 6. Trend in maize food crop self-sufficiency for FHH-PLWHA that received maize inputs in the period, 2007 -2009



4.7. Influence of physical assets on implementation of agricultural inputs support

In order for agricultural inputs support to be effective in mitigating the HIV and AIDS induced food insecurity, it is of paramount importance that targeted households also access other supportive and complimentary inputs to crop seeds and fertilizers. In this regard, household access to other crop production key inputs such as livestock, land, and agricultural implements is critical for the success of agricultural inputs support.

The household agricultural related asset data (table 10 below), reveals that in terms of assets, the non-beneficiary households were relatively more endowed with small livestock (goats). Availability of small livestock makes them less vulnerable to food insecurity. However, with the importance of vegetable gardening in terms of household livelihoods particularly as source of income and food especially off-season, lack of irrigation implements makes the non-beneficiary households more vulnerable as gardening has shown potential to mitigate impacts of drought, ability to meet short term household income and food needs.

Table 10. Average number of cattle, goats, ploughs and irrigation implements per household

Household type	# of cattle	# of goats	# of ploughs	Irrigation implements (Treadle pumps)
male headed with orphans	6	4	1	1
female headed with orphans	2	4	1	1
male headed with PLWHA	3	5	1	1
female headed with PLWHA	2	4	0	1
Non-beneficiary households	3	9	1	0

Source: Field survey data, July – August 2009

A cross-tabulation (table 11 below) of cattle ownership with (1) area under cultivation, and (2) maize yield, shows higher area cultivated, higher yields and more months of staple crop availability for households endowed with livestock especially cattle. However, non-beneficiary households showed lowest area under cultivation despite having the same average number of cattle as the beneficiary households primarily due to lack of inputs especially maize seed and fertilizer which other households accessed from the support.

Table 11. Influence of cattle ownership on maize area under cultivation

Household type	households with cattle (N=35)		Household without cattle (N=25)	
	Area cultivated (ha)	Maize grain yield (kg)	Area cultivated (ha)	Maize grain yield (kg)
male headed with orphans	3.0	1537.5	3.2	1818
female headed with orphans	2.75	2157	1.25	913
male headed with PLWHA	2.5	2265	2.25	1239
female headed with PLWHA	1.56	781	0.81	295
Non-beneficiary households	1.16	864	0.94	732

Source: Field survey data, July – August 2009

The above finding could be attributed to a number of factors that influence positive results for agricultural inputs support. These factors include the following; cattle ownership helps in mitigating adult labour shortage being experienced most among the female headed households, and access to draught power helps not only in achieving a higher area cultivated but more importantly early planting which is an assurance of a better harvest in the face of the current adverse climate conditions, especially drought. Cattle is also an important source of manure which most households in the district use as an alternative to mineral fertilizer.

4.8. Complimentary roles of food aid and ART to Agricultural Inputs Support

One important revelation in this study is the importance and role of ART on the livelihood and food security situation of households with PLWHA. As Castleman et al (2004) indicates that, “as *ART interventions scale up in resource limited settings, addressing food and nutrition implications becomes a critical component of care and support programs*”. Service providers can help address these implications by working with PLWHA and caregivers to identify the specific food and nutrition requirements of the medications being taken and to develop feasible food and drug plans to meet these requirements. Programs working with PLWHA may need to strengthen human capacity to address nutritional issues, establish linkages to food and nutrition programs, and incorporate information about drug-food interactions into communication materials, staff training and orientation.

In view of the multiple impacts of AIDS at household level, no single mitigation intervention can effectively mitigate AIDS impacts in isolation of other complimentary interventions. In light of this reality and complimentary roles of AIDS impact mitigation interventions, households with PLWHAs were also targeted with food supplements and ART by the inputs support programme as a way of responding to the food requirements of chronically ill patients.

The food supplement package constituted mostly a cereal, legume, cooking oil and High Energy Protein Supplements. However, this type of an intervention is beneficial for immediate household food needs but does not build household capacity to be self sufficient in food production in the long term. Beneficiary communities and households indicated that this intervention plays a critical nutritional role for AIDS patients who are on ART and need food if the drugs they take are to work effectively. However, beneficiaries indicate that quantities of food supplements given (refer to table 12) are low for an average of 7-9 household members as the situation is in the area.

Table 12. Food supplement quantities supplied to AIDS afflicted households per month

Type of food aid	Quantity (kg or liters/month)/household
Maize grain	8.5
Peas	2
Sorghum	8.5
Cooking oil	750ml
Sorghum	25
Beans	2
High Energy Protein Supplement	5

Source:. Focus group discussion – Mboole cooperative society (July – August 2009).

In view of the declining food security situation, food aid should be built within the framework of agricultural inputs support interventions that help build household resilience to produce own food and generate income than always wait for food aid whose supply at times is erratic and does not come timely. The food aid has helped in improving the health of PLWHA and their contribution to agricultural labour. As such the intervention need to be strongly built in the existing home based care programs if the efficacy of ART is to be appreciated and enhanced. A recent study (Sydney, 2008) by the Centre for International Health and Development in the district show that 79% of PLWHA who have been on ART and food supplement in the period 2005 – 2008 have been responding to treatment and able to contribute positively to households labour needs. Currently, the 160 PLWHA receiving agricultural inputs support are part of the over 220,000 HIV patients who are on ART in Zambia. Currently, provision of anti-retroviral drugs is the sole policy intervention that can strengthen resilience by lengthening the productive life of PLWHA and therefore recovery capacity and thus have immediate and long-term effect on food security (Barnett and Grellier 2003). Above all, ART will ensure continuing availability of labour in the rural sector, and continued care of orphans. This scenario presents a window of opportunity for continued labour availability at household level. If this is to work out, food supplements need to be channelled through the Health Centres that are managing ART programs and not through the ministry of agriculture and non-governmental organisations

whose targeting is mostly based on vulnerability to food insecurity and do not take household health status (existence of PLHWA) into account as the case is currently.

Box 2: Mboole cooperative society perception on Agricultural inputs, ART and food security

A focus group discussion with members of the Mboole cooperatives society revealed that of the 160 HIV infected members who are under the home based care programme, 71 have received inputs.

Agricultural inputs support is important because if a patient is put on ARVs and does not have adequate food, the drugs can intoxicate instead. But if a household harvests enough maize, this ensure that the patients on ART get adequate food and respond better to drugs hence most of them regain their physic hence begin to contribute to household agricultural labour again leading to better management of agricultural inputs in the long terms.

Source: Field survey (July – August 2009)

4.9. Factors hindering success of agricultural inputs support

Though agricultural inputs support to AIDS affected households are meant to enhance household food security, a number of external factors hinder the achievement of this objective. Among these factors identified in the area include; lack of knowledge and skills among HIV and AIDS affected households especially for those that have lost household heads, adverse weather conditions, lack of draught power, household labour shortage, poor access to arable land, and loss of land after death of spouse. Below is a discussion of these hindrance factors.

4.9.1. Labour shortage

Labour shortage especially among female headed households was reported as the greatest challenge to agriculture production and effective implementation of the agricultural inputs support programme. Due to high poverty levels among female headed households, a significant number of households (12 out of 24 households, i.e., 50%) interviewed revealed that due to death or illness of a household head, some household members who may potentially contribute to agricultural labour migrated and joined other households especially the resource endowed male headed households for fosterage. As a result, female headed households had smaller household sizes of 4 and 2 economically active adult members (i.e. excluding the chronically ill adults) for female headed with orphans and PLWHA respectively.

4.9.2. Limited access to agricultural assets

- Loss of access to arable land after death of household head was another important constraint to agricultural production among female headed households. The female headed households recorded a low area of agricultural land available for agricultural purposes in the study period (2007 and 2009) which ranged from about 33% - 50% of land available for cultivation for the male headed households. The low cultivated area existing among female headed households was attributed to a number of factors which have manifested themselves over a long period of time. These include, lack of draught power especially cattle, poor access to manure which is an important by product from cattle and goats and also a substitute for the high cost fertilizers, relocation from one area where a woman was married back to her home village after the death of husband. The focus group discussion with women revealed that, when a woman goes back to her home village, she has no choice but to do with what ever little and degraded land she is given by the relatives. These socio-economic factors have deterred female headed households from accessing larger and more arable land which could also be used in programmes such as the agricultural inputs support.
- To reinforce the seriousness of poor women access to land after death of the spouse, the study by the ECA (2006) also recognized the significance of poor women access to arable land as a critical challenge to agricultural inputs AIDS mitigation work. This report made the recommendation that there is need to review, reform and harmonize customary and statutory laws, and legislation to address sources of discrimination against women owning land. This will help ensure that women have access to land and are able to make production decisions in line with international norms. There is need to disseminate information about new laws that promote the rights of women to land so that they are familiar to all stakeholders working on land issues in rural areas. Governments and development partners need to support the training of legal personnel, including those who administer customary law i.e. traditional leaders, on women's land rights issues.
- The background and the nature of the problems emanating from HIV and AIDS and the effects on the effectiveness of agricultural inputs in mitigating food insecurity are compounded by various socio-economic, biophysical and environmental factors. The study findings show that shocks such as drought, poor access to agricultural productive assets (draught power, livestock and livestock products, arable agricultural land), significantly pose huge challenges to agricultural inputs support. The actual situation on the ground is worsened by food insecurity of the affected households and their low economic status, the depletion of labour force at various levels particularly at household level where energetic members are sick and unproductive.

4.9.3. Inappropriate choice of inputs

- Standardization of input distribution over a wide area despite significant variations in terms of socio-economic impacts of HIV and AIDS at household level made some interventions unsuitable for some households
- Other than the HIV and AIDS related impacts (loss of labour, assets) at household level, success of agricultural inputs was also influenced by other factors such as suitability to environment in the context of coping with the adverse weather patterns especially rainfall and land degradation. These factors are very critical in the study site. Therefore, inclusion of crops and varieties that could not withstand these shocks led to failure of some crop inputs.
- The high frequency of adverse weather conditions especially floods coupled with drought in some parts of the district is having some negative effects on the implementation of the agricultural inputs support activities especially on gardening in that households in these flooded areas start gardening late thereby reducing chances of multiple cropping for some households especially the labour constrained female headed. In drought years water scarcity pose a serious challenge to this activity.

4.9.4. Weakened Social Support Networks and Institutional limitations

- Though the project has contributed to strengthening social support systems in the area through provision of inputs through local groups and cooperatives, some households especially those with household heads who were chronically ill were negatively affected in terms of accessing other support services that compliment the inputs distributed.
- At institutional level (e.g. Ministry of Health, Ministry of Agriculture), skilled manpower is equally depleted partly due to HIV and AIDS related chronic morbidity and mortality. A recent study by RENEWAL/IFPRI (2008) reveal that about 50% (13 out of 26 agricultural camps) of agricultural camps in Choma district have fallen vacant in the last 7 years due to AIDS related morbidity and mortality. Furthermore, the PLWHA are faced with long distances to access ART services as only few health centres offer ART in the district. This threatens the health of the PLWHA and their continued contribution to household labour.

CHAPTER 5. DISCUSSION

Differential Vulnerability and household input targeting

Effective targeting is the key ultimate goal for HIV and AIDS mitigation responses. The study findings show that the main targeting criterion being used by the programme in the study districts is limited to the definition of household vulnerability in the context of orphan fosterage, female headed households, and presence of a PLWHA in households. However, in view of the long term intended objective of these responses which is aimed at building household resilience to food insecurity, targeting of households on the basis of broad vulnerability homogenisation based on household types only may not assure achievement of resilience among such households due to the differential impacts of AIDS within the household types. As Barnett and Whiteside (2006) in their study report that one important factor relating to AIDS mitigation targeting is the appreciation of the key element of differential vulnerability to AIDS impacts as not all households in the same category of classification are vulnerable to AIDS in the same way or to the same degree. This argument points to the proposition that targeting criteria should go beyond just household vulnerability in relation to household types but should critically consider the livelihood status of the affected households especially in terms of wealth status, availability of necessary capital assets coupled with ability of the household to productively exploit the support in a much more sustainable manner when designing input support packages. Furthermore, due consideration should be given to other environmental factors (e.g. rainfall patterns, soil types) which are beyond the control of households which significantly influence the success of agricultural inputs support. This scenario could be critical in enhancing sustainability and resilience to afflicted households that receive support.

Household Targeting and Input Package Approach

The debate on targeting criteria is mainly centred around who to target, who needs external support most, and should a program only target AIDS affected households or very poor families or both? The nature of an intervention and AIDS impacts on an individual household should be the driving elements in guiding an implementing agency into decision making in the context of what intervention a particular household need to be supported with. Study findings point to the following; AIDS affected households that are less labour constrained are better off being targeted for maize agricultural input support as this requires management of a bigger area under cultivation. Male headed households which were more endowed with labour showed better response to agricultural input support especially maize the main staple food crop as exhibited by more months of maize availability from seed inputs. Additionally households with more labour are able to grow multiple crops (at least two crops) of vegetables and short cycle cowpea varieties within a year thereby spreading the period of food and income availability over a number of months. For labour constrained households such as female headed households, there could be need to explore possibilities of group targeting or formation of labour exchange groups. Labour exchange group approach for labour constrained AIDS affected households has

shown potential to reduce food insecurity in Uganda (UOSPA, 1995). This model was developed and practiced under the Uganda Oilseed Producers and Processors Association and lessons can be drawn from this programme.

One critical pre-requisite for off-season cowpea, maize and vegetable production which was overlooked by the inputs support programme is the issue of household access to land suitable for irrigation and availability of water sources for irrigation. With the current high frequency of drought in the study area, consideration for water sources for off-season irrigation is critical if AIDS affected households targeted with such support are to benefit from the intervention.

The research also proposes that an “HIV and AIDS Lens” is needed to affirmatively come up with the best mix of crops that particular household types need to be targeted with. It is also observed that agricultural inputs in most cases have been implemented in isolation of other important factors. For agriculture input related support, it is now common knowledge that for sub-Saharan Africa, the link between climate variability and food security is clear and the impacts are more pronounced because of the underlying influence of other socio-economic drivers. A case of climate variability impact on agriculture input support is the 2004/05 drought that adversely affected the AIDS agricultural crop mitigation responses for the district organisations such as PAM, CARE International and Ministry of Agriculture which had distributed agricultural inputs (maize seed, groundnuts) to about 500 farm households. Probably, the better option to reduce risk in such environments would be to diversify the crop types and include drought tolerant crops. Additionally, the study also reveals the importance of the interaction between livestock especially cattle and agricultural inputs. Cattle play multiple roles in the success of crop inputs through provision of draught power which is critical for labour constrained households, and also provision of manure which is an important component for soil fertility improvement. Most households interviewed which are financially constrained substitute inorganic fertiliser with locally available manure.

Therefore, the effectiveness and impacts of these inputs will only be felt if the interaction of multiple stresses of poverty, environmental limitations, climate variability, macro-economic challenges and the AIDS pandemic are well understood and integrated in the HIV and AIDS intervention models. A question that is coming out of this study for agriculture input support is that, how is the issue of extreme weather patterns (increased drought incidences and floods) that affect successful implementation of crop interventions being addressed, how are risks of failure to these adverse conditions taken care of, what are the alternative options. Additionally, can rural development organisations redesign inputs package and have alternative packages which could be suitable for the different household situations based on the different limitations the households could be facing to assure some acceptable level of success from the inputs support.

Agricultural Inputs and Crop Management

In order to ensure some good crop harvest despite the challenges of poor soils in the study site, the agricultural inputs support need to be complimented with locally available manure sources. As indicated in the site description, the farming systems in the district are mixed farming in nature and there is a high complementarity between livestock and crop production in a number of ways. For continued crop production, households need access to organic manure once graduated from fertilizer support. Manure utilization in crop production has been a traditional practice for years in the area. Livestock diseases need to be well managed as most livestock especially cattle and goats have significantly reduced in numbers due to corridor and mange diseases respectively. In addition to these disease shocks, HIV and AIDS has also worsened the situation through distress sale for the affected households. This scenario demands significant levels of training for the HIV and AIDS affected households in crop and livestock management aspects in view of the existing crop production hindrance factors outlined above to ensure that they adapt their crop management to suit the changing environmental factors and their socio-economic circumstances.

Input Package Crops and Key Positive attributes

The inclusion of crop types (legumes) and varieties (Open Pollinated maize varieties) which could be recycled for some years has played a vital role in seed availability among the financially constrained AIDS affected households as acknowledged by 55 (98.2%) out of the 60 respondents in the household survey. It was noted during household interviews that non-beneficiary households also benefited from the recycled seed through other households that had received the input support. Seed availability due to recycling has been the lifeline of crop production in the study area among agricultural inputs targeted poor households. In addition, the combination of cereals (maize or sorghum), legumes (cowpea) and vegetable seeds in the input package has helped in assuring some harvest for beneficiary households who are faced with unpredictable climatic conditions especially erratic and unstable rainfall patterns. Cowpea has been a source of some early crop harvest in the season whereas vegetables have assured continued trickling in of some income to purchase household requirements including food.

The current climate variability being faced at global level, is adversely affecting weather dependent activities such as crop production. Though crop and vegetable production have shown potential to mitigate HIV and AIDS induced food insecurity, unstable and unpredictable weather and changing environmental factors are negatively influencing the achievement of their objectives. The principal agro-climatic factor which has influenced the outcomes of the agricultural inputs support is rainfall. A review of rainfall data (Zambia Meteorological department, 2009) for the past 9 years (2001 – 2009) show that though most maize varieties take 120 – 150 days to mature, the average rain days in the period has been 66 days. This development implies a high likelihood of crop failure due to inadequate rains in relation to

distribution. To avert crop failure for staple food crops such as maize in such circumstances, distribution of early maturing varieties coupled with training of both input beneficiary and non-beneficiary households with water harvesting techniques and recommended crop production practices becomes critical. However, though this proposition could be a more easier solution, most AIDS affected households lack draught power, agricultural implements and adequate labour to enable them prepare their fields and plant early. As shown in table 2, the worst affected in terms of labour constraints and agricultural productive assets are the female headed households. In addition, continued distribution of maize which on average take about 150 days to mature when the average number of rain days in the last nine years is 66 days, increases chances of crop failure of this important staple food crop resulting in failure to achieve the programme objective. However, despite such weather related constraints being faced by the targeted households, early maturing crops such as cowpea, vegetables and drought tolerant sorghum crop have always given the households some harvest. As a learning point, this calls for a review of the input package to put much more emphasis on crops that can escape adverse weather conditions as experienced in the programme. An important revelation during the focus group discussion was that some households have been able to grow multiple crops of early maturing crops such as cowpea and vegetable in a single year which helps in compensating for failure of maize due to bad weather conditions.

Linkages and Access to other support programmes

The current Government supported Fertiliser Support Programme supports households which are classified as vulnerable but viable. In the context of this classification, most HIV and AIDS affected households are disadvantaged with conditions required to access the fertilizer support with the prevailing high levels of poor soil fertility in the district. A study by Jayne and Chapoto (2006) reveal that microfinance inputs programmes biased towards maize inputs may disadvantage HIV and AIDS affected households as other crops and agricultural enterprises may give better returns. The poor harvests due to degraded soils further puts such households into credit burdens which furthermore overstretches their limited financial resources to limits beyond what they can manage. This study further points out a question that, “for HIV and AIDS affected households is maize the best use of their labour?” Or is it better off giving a pregnant goat to a household than a hectare of maize which is likely to fail under poor soil conditions. This finding points to the fact that agricultural inputs support though supported with fertilizer inputs may not universally respond positively and yield the desired results for HIV and AIDS affected households due to environmental factors such as poor soils. In such situations therefore, there is need for flexibility of AIDS impact mitigation support by diversifying beyond just one type of support to include others that may still ensure high chances of success even under adverse conditions which impede success of one type of support.

Redesigning Agricultural Inputs Package

Despite the importance of this intervention, the following observations were made by the research;

- Nutritional value of the maize varieties distributed in the package were not taken into account despite the program targeting a significant number of households with chronically ill persons for whom nutrition was a critical component if the interventions were to make impact. The target households are those nursing chronically ill members and/or fostering orphaned children and for whom nutrition security has been greatly affected by AIDS impacts.
- The seed systems network in the country has developed nutritionally high value maize varieties some of which are Open Pollinated Quality Protein maize varieties and others are rich in vitamin A, and both are critical for the health of the AIDS afflicted households. The critical question could be that; is the seed systems involved in recommendations of varieties for HIV and AIDS interventions to ensure that appropriate varieties are recommended for the package? Or the linkage does not exist between implementers and innovators of technologies.
- Though vegetables are appreciated for their early maturity, food security and income generation among AIDS affected households, nutritional value was not considered in the choice of crops. However, from the nutrition point of view which is critical for the type of target beneficiaries (PLWHA, orphans) this intervention is targeting, some of these vegetables especially cabbage and rape have low nutritional value. There exist a number of high nutritional value vegetables some of which even have some medicinal properties that need to be integrated in the vegetable package. Current studies (GART, 2008) in Zambia are giving some revelations that vegetable crops such as pumpkins have a high selenium content which is a critical element that helps in boosting immunity especially for PLWAs.

CHAPTER 6. CONCLUSION

Based on a survey of 60 HIV and AIDS affected households that received agricultural inputs support from CARE International in Choma district in the period 2007 - 2009, this study aimed to answer the following main research question:

- What are the factors that influence the success of agricultural interventions support and approaches focusing on CARE International input distribution for HIV and AIDS affected household so that they could cope and recover from AIDS induced food insecurity in Choma district?

To contribute to answering this main research question, 9 sub-questions were developed and used as basis for development of the data collection questionnaires and checklists for key informants. These included the following:

1. What are the targeting criteria for the implementation of the agricultural inputs support at community level for the different household types?
2. In what ways are the HIV and AIDS affected households involved in the design of HIV and AIDS mitigation responses?
3. What are the existing support structures at community level involved in delivery and management of agricultural inputs HIV and AIDS mitigation responses?
4. What agricultural inputs HIV and AIDS mitigation interventions are more responsive to the needs of different AIDS affected households in relation to building household resilience to food insecurity and why?
5. What are the characteristics of households showing resilience to food insecurity as a result of agricultural inputs support?
6. What socio-economic factors hinder effectiveness of agricultural input support to reducing food insecurity for HIV and AIDS affected households?
7. What have been the changes in agricultural related capital assets mostly attributed to agricultural inputs support at household level?
8. What are the implications of the current agriculture input packages and targeting methodology on household ability to cope and recover from AIDS induced food insecurity?
9. How does the level of household vulnerability to AIDS impact relate to type and degree of AIDS mitigation support?

On the basis of the analysis of research findings, it is observed that the research questions for this study have been answered. However, areas that need further attention by the programme are discussed in the recommendations chapter.

Agricultural inputs targeting and distribution

The effectiveness of agricultural inputs support in mitigating HIV and AIDS induced food insecurity is influenced by a number of factors. These factors as evidenced from this study range from implementation approach adopted especially; (1) stakeholder involvement based on roles that are drawn from an institution's comparative advantage, (2) socio-economic factors such as degree of vulnerability in the context of poverty, labour availability/constraints which influence household ability to effectively manage the crop, (3) availability of technical services were affected households can access training and technical backstopping for the proper management of the inputs, (4) environmental factors especially suitability of the crop in relation to environmental shocks such drought, floods, poor soil fertility, pests and diseases. In the context of this study, effective targeting was facilitated by factors such as; household ability to provide the necessary inputs required to implement the activity such as labour, availability of arable land, agricultural implements, and knowledge as well as skills to manage the crop or vegetable enterprise. Households which are endowed with labour, arable land, agricultural implements and livestock especially cattle showed a better response to agricultural inputs support. However, the targeting criteria for the CARE International supported agricultural inputs support was primarily limited to household status in terms of, households fostering orphans and households with PLWHA. This aspect of homogenization of HIV and AIDS affected households without critically looking at the household livelihood status result in ineffective responses to AIDS impacts.

Diversification of the agricultural inputs support is very critical in view of the current unstable socio-economic factors, weather patterns and climate variability which has not spared the district. Early maturing legumes and vegetables showed a more positive response due to their ability to escape drought and less demand for external inputs especially mineral fertilizers compared to maize. The current input package has shown the importance of diversification in reducing chances of food insecurity due to failure of one crop as a result of adverse weather patterns and poor environmental conditions, pests and diseases as experienced by some households. Furthermore, the crop labour requirement plays an important role in view of the fact that AIDS affected households are mostly labour-constrained and this variable need to taken into account when designing an input package.

Importance of complimentary interventions

Analysis of research findings brings out the argument that agricultural inputs support cannot effectively be implemented to achieve its objective in isolation of other intervention types. This research has revealed the importance of complementarity between HIV and AIDS interventions. For households with PLWHA, access to ART services and food aid have shown great potential benefits and contribution to effective implementation of agricultural inputs support. In this context, the study has shown that ART services when complimented with food aid help in improving the health of the PLWHA thereby positively leading to increased labour availability at household level to implement agricultural activities.

Stakeholder Involvement and Participation in input distribution

In spite of the variations at household level in terms of livelihood assets, beneficiary households are not involved in the selection and choice of inputs which affected households see as suitable to their environment and household situation and should be included in the input package for their communities and localities. The input distribution has been standardized over a wide area and yet there are significant variations in terms of socio-economic impacts of AIDS at household level and also environmental factors. Lack of involvement of local communities (except for the case of Mboole farmers cooperative model) who have indigenous knowledge about their environment in terms of crop production and associated constraints has put most crops in the input package at high risk of failure as they could not be suitable for the areas. However, the involvement of community based HIV and AIDS support groups such as the farmers cooperatives played an important role in ensuring that AIDS affected households were reached with input support and facilitated monitoring of the programme during implementation. Involvement of local structures such as farmers cooperatives and village management committees in which AIDS affected households are part of the management structures play an important role in ensuring effective response to HIV and AIDS induced food insecurity. These local structures play a dual role; (1) ensuring that the deserving households are identified and recruited for support, and (2) continued monitoring of the programme activities and also linking such households with other support services such as complimentary inputs support services and interventions.

The emanating problems climate variability and inappropriateness crop varieties that influence level of success of the inputs support programme call for the involvement of the meteorological department and the research department of the ministry of agriculture who were not actively involved in this programme.

CHAPTER 7. RECOMMENDATIONS

Agricultural Inputs targeting and distribution

In order to ensure effective agricultural inputs support targeting, it is worth noting that AIDS affected households do not comprise a homogenous category, they involve many variations with respect to poverty level, education, wealth status, agricultural productive resources, household structure, stage of illness progression, dependency ratios, social status, access to assets and the environment in which they are located. The varying levels of response to agricultural inputs support coupled with external factors beyond the control of the households as discussed in the study findings, calls for a mix of approaches rather than a single approach. However, the need to pursue a mix of interventions should not be seen as a deterrent to scaling up the agricultural inputs support as this approach offers the best strategy and assurance of food availability for AIDS affected households that are in high need of food especially those with PLWHA and orphans. Field findings show that the risk of crop failure was high for the AIDS affected households who are prone to a number of shocks such as; crop failure due to adverse weather conditions, household labour availability constraints due to chronic illnesses as the target population are AIDS affected, and lack of complimentary inputs such as livestock and agricultural implements. As such, the study proposes that households need to be supported with inputs for more than one season to help increase chances of household benefiting from inputs support through adequate preparedness for such adverse conditions.

Labour constrained HIV and AIDS affected households need to be targeted with less labour intensive and short cycle crops that assure food availability as well as income within a short period of time. In the case of households that are labour constrained due to chronic illness, provision of ART services and short term food interventions through food aid or supplements should be integrated in the programme as this approach has shown great potential to improve the health of people who are ill thereby making them more productive and increasing their chances of living a productive life, contributing to household labour and growing own food.

Additional information gaps beyond household type need to be taken into consideration when targeting households with input support. These include operational issues such as targeting the right crop and in the right quantity of inputs bearing in mind the variations in relation to; the degree of household vulnerability in the context of agricultural asset base and poverty levels, household structure and size which has a direct bearing on household ability to effectively utilise the inputs, food insecurity levels, access to social support systems and household ability to manage the inputs and grow adequate food to meet its household needs.

The designing and packaging of agricultural input support need to take into consideration key external factors that have an influence on the success of the input programme. Of paramount importance are factors such as environmental especially suitability of the crops in relation to soil type and weather patterns which are factors beyond the control of vulnerable HIV and AIDS

affected households. In addition, other economic factors such as additional inputs requirements such as fertiliser and agrochemicals which have a cost implication should be taken into account when targeting the individual households and assess whether such households could meet other additional requirements by the crop. Linking households to other service providers such as microfinance institutions could help in assuring that the households access other necessary inputs to compliment the inputs support thereby increasing the chances of programme success.

Agricultural inputs support should not be implemented in isolation of other agricultural activities but instead should be integrated within the existing farming systems and HIV and AIDS interventions. Of critical importance is the strong complementary role between crops and livestock in terms of draught power support and role of livestock in soil fertility enhancement.

Stakeholder Involvement and Participation in input distribution

The agricultural inputs support programmes should also actively engage existing local farmer organisations and organisations in the implementation of the programmes. This helps in ensuring right targeting through identification and recruitment of households that are in most need of support. The community based organisations also have a better understanding of what input types/crops can best suit the environment and the individual households.

The agricultural inputs support programme should widen its stakeholder involvement beyond those directly involved in input distribution and mobilization of beneficiary households. With the current high risks of crop failure due to erratic and adverse weather conditions associated with climate change, the meteorological and agricultural research departments need to be fully involved in this department. In recognition of the increased frequency of crop failure, the agricultural research in collaboration with the meteorological department of Zambia have generated a countrywide crop suitability map based on rainfall patterns and soil types. In an effort to ensure success of agricultural inputs support among the already vulnerable HIV and AIDS affected households, it is critical for any rural development organization involved in agricultural inputs support to actively involve these two departments and benefit from their expertise which may assure right choice of crops for specific environments.

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Appendix 1: Focus Group Discussion- Data Collection Checklist

Community experiences on Agricultural inputs HIV and AIDS Impact mitigation interventions

1. What agricultural inputs is the community receiving to mitigate food insecurity?
2. How did you decide on the different inputs for your support packages? (who decided on crop type, what was the role of the community and targeted households with respect to planning of interventions)
3. How is the agricultural inputs distribution programme organized and managed at community level? (i.e. is there a committee, what is the composition by gender, etc)
4. What are the roles and responsibilities of the agricultural inputs support programme committee?
5. What are the conditions for a household to be recruited for agricultural inputs support?
6. Who identifies beneficiaries?
7. What is the household targeting criteria for the different agricultural inputs? (i.e. differentiate the different input types given to the different household types based on their HIV and AIDS status)

Type of agricultural inputs	Criteria for household selection

8. How long has the agricultural inputs programme been running in the community?
9. What are the benefits of the programme to the beneficiary households?
10. Are there some households that have been graduated from the programme?
11. What is the household graduating procedure **(what factors are taken into consideration to determine that a household can stand on its own)**
12. What have been the major challenges and constraints pertaining to agricultural inputs support for beneficiary households to realize full benefits in terms of improving their food availability **(i.e. what are the economic, environmental/natural, technological and bio-physical hindrance factors)**
13. Which agricultural inputs have had the greatest impact (what are the indicators. e.g. food security change, assets, ect) at community and household level in terms of improving food availability? Why? **(Need clear documentation of what has changed in the community/households that received intervention, what made the impact to be felt)**

{document process, any structures at community level that facilitated implementation, nature/appropriateness/relevance of intervention, timing of intervention})

14. Which agricultural inputs have had limited/no impact at community level? **(Need clear documentation of why community feel intervention has had no impact at community/households that received intervention, what made the impact to be felt {document process})**
15. Based on your organizational experience so far, how would you want future agricultural inputs interventions to be done with respect to the following:
 - selection of intervention type,
 - targeting criteria,
 - local/community program implementation

Appendix 2: Key Informant Interviews- Data Collection Checklist

Organizational experiences on agricultural inputs support to mitigate HIV and AIDS induced food insecurity

1. What is the background to agricultural inputs support,
2. Why did organization select this type of intervention for food insecurity mitigation?
3. What agricultural inputs is the programme distributing?
4. How long has the programme been distributing these inputs?
5. Who are the key partners in the programme and what key roles are they playing in contributing towards the programme objective? **(issues to consider:- identification of beneficiary households, community mobilization, design of input packages, etc)**
6. What has been the role of the community and targeted households with respect to planning of interventions?
7. Based on the challenges and experiences the programme has gone through, which other partner/sector currently not actively involved in the agricultural inputs programme do you think should actively get involved and what would be its role?
8. What is the targeting criterion for the different agricultural inputs to the different household types? **(use table format below for data capturing)**

Type of agricultural inputs	Criteria for household selection

9. What agricultural inputs programme management structure do you have at community level to ensure that the target population is effectively reached with support?

10. How many households has the programme supported so far? (Fill in table)

Type of agricultural inputs	When did you start this intervention	How long has this intervention been on the ground (years)	Who are the target household types	How many households have benefited from this intervention since its inception in the district

11. What have been the major successes (what was the goal, purpose, that indicate the success of the CARE project) and constraints faced in the implementation of the different agricultural inputs interventions?

Intervention Type	Achievements	Constraints faced
1.		
2.		

12. Which agricultural inputs have had the greatest impact at community and household level in terms of improving food availability? Why? **(Need clear documentation of what has changed in the community/households that received intervention, what made the impact to be felt {document process, any structures at community level that facilitated implementation, nature/appropriateness/relevance of intervention, timing of intervention})**

13. Which agricultural inputs have had limited/no impact at community level in terms of improving food availability? Why? **(Need clear documentation of why community feel intervention has had limited or no impact at community/households that received intervention, what made the impact to be felt {document process})**

14. What are the most important factors to consider when implementing an agricultural inputs support programme for households with members who are chronically ill or orphans to ensure that their food availability increases?

15. Based on your organizational experience so far, how would you want future agricultural inputs interventions to be done with respect to the following:

- selection of intervention type,
- targeting criteria,
- local/community program implementation

Appendix 3: Household Questionnaire

Consent form

I am a student from Van Hall Larenstein University part of Wageningen University and Research Centre, Netherlands. Am carrying out a study to understand how agricultural inputs received from the home based care programme in Choma district are helping in improving food security for the households. In addition, I would like to understand difficulties that households that received agricultural inputs have been facing in improving food availability despite receiving inputs.

I would like to ask for a little of your time, and ask you basic questions about your family, health of your family, crop production, production assets and any other relevant information. You do not have to answer any question that makes you uncomfortable. The answers you provide will be kept strictly confidential. While there are no direct and immediate benefits to you for providing answers to the questionnaire, the information you provide will contribute towards improving planning for future programmes that are aimed at helping households with agricultural inputs.



Section A: Demographic Information

A1. Village name: _____

A2. Is the household head the main respondent right now? 1 = Yes, 2= No,

A3. Household composition and Characteristics (Fill in table below)

Parameters	Values
Sex of household head	0=male, 1=female
Household head marital status	1=married, 2=widow (er), 3=divorced, 4=single
Age (years) of household head	_____ years
Education level of household head	1=illiterate, 2=primary, 3=secondary, 4=tertiary, 5= other
Total Household size	
# of males <15 years	
# of females < 15 years	
# of males ≥15 years	
# of females ≥15 years	
# of orphans (from other relatives)	
# of male orphans in school	
# of female orphans in school	
# of biological children	
# of boys (own biological children) in school	
# of girls (own biological children) in school	
# chronically ill members	
Status in household of member chronically ill	1=household head, 2=spouse, 3=child, 4=dependant
Age of chronically ill member (years)	

A4. What was the family size 3 years ago (2007).....

A5. If family size has reduced why?

Reasons for reduction in family size	Number of members	Gender 1=male, 2=female
Death of member (s)		
Marriage		
Migration of members for fosterage (orphans)		
Member (s) established own homestead		
Economic migration for income (work/wage labour)		
Others		

A7. If family size has increased, why?

Reasons for increase in family size	Number of members	Gender 1=male, 2=female
Emigration of older extended family members after death of male household head		
Marriage		
Took in members for fosterage (orphans)		
other		

SECTION B: HOUSEHOLD PHYSICAL CAPITAL ASSETS

B1. What major agricultural assets/implements do you have?

Assets	Current Number	Number 3 years ago (2007)	Reason for change in number of assets 1=bought more,2=sold, 3=gift, 4=inheritance, 5=exchanged for other goods, 6=property grabbing, 7=other
a. Ox-drawn plough			
b. Oxcart			
c. Harrow			
d. Ridging plough			
e. Cultivator			
f. Irrigation equipment (i.e. treadle pump, water pump, etc) Other(specify).....			
g. Sprayer			
h. Hoes			
i. Other (specify)			

B2. What major non-agricultural assets do you have?

Assets	Current Number	Number 3 years ago (2007)	Reason for change in number of assets 1=bought more,2=sold, 3=gift, 4=inheritance, 5=exchanged for other goods, 6=property grabbing, 7=other
a.			
b.			
c.			
d.			
e.			

B3. Livestock assets:

Assets	Current Number	Number 3 years ago (2007)	Reason for change in number of assets 1=bought more,2=sold, 3=gift, 4=inheritance, 5=exchanged for other goods, 6=property grabbing, 7=other
a. Cattle (including calves)			
b. Goats/ Sheep			
c. Poultry (chickens, guinea fowls) (including chicks)			
d. Donkey			
d. Other 1 (specify).....			
e. other 2 (specify).....			

B4. Has your household lost assets (i.e. major agricultural or non-agricultural assets) in the 2003 - 2008 due to shocks related to death or nursing chronic illness of a household member,

1=yes, 2=no

B5. If **YES TO B4**, What type of assets (please fill in the table below):

Type of Asset lost	Year asset lost	Estimated value of Asset (ZMK)	Effects household experiencing due to loss of asset
			Some answer codes: 1=reduced agriculture production, 2=unable to pay fees for school children, 3=unable to buy agricultural inputs 4=other (specify).....

Section C: Crop Production Practices and trends in last 3 years (2007 – 2009)

C1. What are the trends in land ownership and cultivation (Fill in table below)

	Current year (2009)	3 years ago (2007)	If there is a change, reasons for the change
a. How much land do/did you own (ha)			
b. How much land do/did you cultivate (ha)			
c. Do/did you hire additional land / plots (1=yes; 0=No)			
d. If yes, how many acres / how many plots?			
e. How much land on irrigation			

C2. Changes in production levels

Crop production levels current year (2009)		Crop production 3 years ago (2007)
Crop	Amount harvested (kg)	Amount harvested (kg)

C4. What have been your major crop production constraints in the last 3 years (tick appropriate responses in table below)

Type of constraints	Tick as appropriate
Lack of financial resources	
Labour shortage due to death of household member (s)	
Labour shortage due to illness of household member (s)	
Lack of draught power	
Distress migration of household members (for economic gain, e.g. seeking work outside)	
Lack of land	
Bad weather conditions - drought	
Bad weather conditions - floods	
Poor soil fertility	
Crop pests and diseases	
Lack of knowledge on agricultural production	
Other (specify) _____	
Other (specify) _____	

C5. Response Strategies in months of food deficit (Please state those you used to ap:

Response mechanism in months of food deficit:		Did household apply this strategy before started accessing agricultural input support? 0 = no, 1 = yes	Did household stop apply this strategy after benefiting from agricultural input support? 0 = no, 1 = yes
1	Relief/Food for work		
2	Get remittances from non-family member		

3	Get remittances from family members in another location		
4	Borrow money from friends and relatives		
5	Reduce the amount of food eaten at meal times		
6	Reduce the number of meals eaten per day		
7	Skip entire days without eating		
8	Relied on consumption of wild foods		
9	Reduce expenditure on non-food items		
10	Traded or sold livestock to purchase food		
11	Sold or traded physical assets to get food		
12	Taken children out of school due to lack of funds		
13	Emigrate to another location		

Section D: Agricultural Inputs Support

D1. Why was your household chosen to benefit from agricultural inputs support? **1=household with orphans, 2=households with member chronically ill, 3=household experienced death of member, 4=Elderly headed household, 5=other (specify)**

.....

D2. Where you consulted on the type of inputs you needed to receive? **1=yes, 2=no**

D3. In **Yes to D2**, did you receive the inputs you needed? **1=yes, 2= no**

D4. If **No to D3**, why?

D5. What agricultural inputs did you receive? **(Fill in table and specify the CROPS or Vegetables or Agrochemicals received)**

Type of crop/inputs received	Quantity received (kg or grams)	Year first received support	Number of years receiving support

D6. Has the agricultural input support helped in increasing food availability in your households? **1=yes, 2=no**

D7. If **YES TO D6**, How has agricultural inputs support contributed to improving food availability in your household in the last 3 years (2007 – 2009)?

	By how many months have agricultural inputs improved on household food availability of the different crops? (i.e. How long (months) did the harvest last for each year/crop due to improved access to agricultural inputs support) (1=less than 3 months, 2=3 to 6 months, 3=6 to 9 months, 4= more than 9months)		
Type of crop/inputs (List only major crops/staples)	2007	2008	2009

D8. Has the agricultural input support helped in improving other household livelihoods in addition to increasing food availability in your households? **1=yes, 2=no**

D9. If **YES TO D8**, How has this agricultural inputs support improved other livelihoods in your household that indirectly contribute to increasing food production **(i.e. what is it that you have achieved due to this support which you could not have achieved if support was not given)**:

Type of benefits realized as a result of agricultural input support	Realised benefits 1=Yes, 2=No
Bought agricultural assets (specify).....	
Reduced expenditure on food purchases	
Able to pay school fees	
Able to meet medical costs for chronically ill members	
Able to buy own inputs	
Able to hire extra labour for production	
Increase area under crop production	
Other (specify)	

D10. Why have the different agricultural inputs support failed to improve food availability in your households? **(Specify the agriculture input type in table below)**

	Type of difficulties experienced that hindered realization of better crop production (TICK AS APPROPRIATE)						
Type of agricultural inputs received	Crop prone to drought/floods	Labour requirement high for package	Poor timing of input delivery in relation to planting	Crop prone to pests and diseases	Crop type/variety not suitable to environment	New crop type/variety imposed on the household (wrong choice of crop)	Other (specify)

D11. What do you propose should be done to improve the delivery of agricultural inputs support in future for households such as yours?

.....

D12. Is there any other type of support which you feel could have been more appropriate for SHOCKED households (i.e., households that have lost members due to death, or are nursing chronically ill person, or fostering orphans)? **1 = yes, 0 = no**

D13. If **Yes to D12**, what type of support do you think is more appropriate?

.....

D14. Why do you propose this type of support in D13: (Please describe fully)

.....

.....

.....

D15. What important factors should organizations consider when distributing agricultural inputs in order to increase food availability in relation to the following (Please describe):

(a) Selection of households.....

(b) Choice of inputs/crops in relation to household types

(c) What environmental/natural factors are important to consider