



**Sustainable response to the impact of AIDS on food security in AIDS afflicted households of rural area: The case of Bereh District, Ethiopia.**

**Masters of Professional Thesis**

**By**

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## **DEDICATION**

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This research work is dedicated to People Living with HIV suffering by stigma and discrimination all over the world.

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## ACRONYMS

ADLI	Agricultural-Development Led Industrialization
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retroviral Treatment
ASE	Agri Service Ethiopia
CGAP	Certified Government Auditing Professional
CIS	CARE International Secretariat
CSA	Central Statistics Authority
FAO	Food and Agriculture Organization of United Nations
FDREFSCB	The Federal Democratic Republic of Ethiopia Food Security Coordination Bureau
Fe/male	Female and Male
FHAPCO	Federal HIV/AIDS Prevention and Control office
FMOH	Federal Ministry of Health
ha	Hectare
HH	Household
HIV	Human Immunodeficiency Virus
Km	Kilometer
MFI	Microfinance Institutions
MoARD	Ministry of Rural Development and Agriculture
MoFED	Ministry of Finance and Economic Development
NA	Not Applicable
NHAPCO	National HIV/AIDS Prevention and Control Office
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PEACE	Poverty Eradication and Community Empowerment
PESTEC	Political, Economic, Social, Environmental and Cultural
PLHIV	People Living with HIV
qt	Quintal
ROSCA	Rotating Savings and Credit Associations
RTI	Royal Tropical Institute
UNDP	United Nations Development Program
UNESA	United Nations Department of Economic and Social Affairs
VCT	Voluntary counseling and Testing
WHO	World Health Organization

## ABSTRACT

This study investigates the sustainable responses of different development partners<sup>1</sup> (see the lists in Appendix III) on the impact of AIDS on food security in different categories of AIDS afflicted rural households. 85% of people in Ethiopia live in rural areas. The rural HIV prevalence in Ethiopia is about 2%. Because AIDS also affected the rural population adequate response was necessary to reduce vulnerability to the impact of AIDS. In the era of Anti Retro Viral Treatment food security had parallel profound importance. The study was conducted in Bereh district located in central part of Ethiopia and the district town, Sendafa is 40Km far to the North of the capital city, Addis Ababa.

It explores the direct effect of AIDS and the community responses particularly in 4 categories. These were female with spouse, female without spouse, male with spouse and female without spouse. Consequently, the impact of AIDS on food production, access and utilization was assessed. The responses of development partners on the impact of AIDS then explored. The actual program and intervention in Bereh district and the national level policy response were assessed chronologically. Both qualitative and quantitative studies were employed through survey and case study. The data was analyzed among the 4 categories of respondents. PESTEC and Venn diagram tools were used to analyze qualitative data. The respondents were selected among ART clients of Sendafa health center through purposive sampling.

The findings indicate that AIDS directly affected labor and cash. All male and female respondents were affected by AIDS. More cash was spent for medical costs and even more so for male respondents than female respondents. The responses to the effect on labor depended on the type of labor affected. If male labor (with spouse or without spouse) affected who engaged in agriculture, hiring labor, crop-sharing arrangement, renting oxen were the responses for the effect. The same works for the female with spouse. Complete shift from agriculture to off-farm activities was found for males without a spouse. If the labor concerned off-farm activities, responses were to reduced working hours and/or days or limited to one type of work. This was mostly observed among male with a spouse. In case of females who were engaged in agriculture and who lost the labor of the spouse they ended up in being dependant or engaged themselves in off-farm activities. To meet for extra cash for medical and related costs to AIDS related illnesses, the sale sheep and oxen were predominant.

The cumulative result of affected labor and cash leads to impact on food security. Crop production declined in almost all categories of households engaged in agriculture. In case of the female with a spouse engaged in agriculture, the production declined if the spouse labor was affected. The crop production among males without spouse was more declined than male with spouse. In the respondents among off-farm activities, the income declined in all categories.

In food utilization, the number of meal per day declined and change in type of crop purchased from the market was observed. A decline number of meal per day observed in female without spouse and male without spouse where the body weight also supported the same finding. Female respondents were difficulty in accessing food while male respondents utilizing the food(in cooking).

The social network such as Debo and Ikub were affected through lack of income or labor to contributed by AIDS afflicted households.

Most development partners in the district engaged in awareness creation pertaining to HIV/AIDS. Some organizations anticipate that HIV/AIDS is the mandate of health sector. Agri Sevice Ethiopia identified the lack of knowledge and skills as constraints to work with people with HIV though its strategy document mentioned HIV/AIDS mainstreaming as a major development goal.

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<sup>1</sup> Development partners for this document are stockholders that have part in ensuring food security for ART clients.

YeNoh Merkeb<sup>2</sup> HIV prevention association worked on direct food support for AIDS patients. The implementation strategies of MFI and agriculture hindered the respondents to participate in development programs. Most development partners in the district did not informed about the national level policies and strategies of the Ethiopia.

In general, the food security of ADS afflicted households impacted different categories of AIDS afflicted households differently. Particularly the female and male without spouses were affected most. The ART program intervention in Bereh district was threatened by food insecurity of the respondents. However, most development partners in the district did not responded to the impact of AIDS on food security. Though the national policy environment was conducive.

There are five national level policies and strategies prepared for multisectoral and food/nutrition responses of HIV/AIDS and food/nutrition security for PLHIV. Particularly multisectoral plan of action for universal access to HIV prevention, treatment, care and support in Ethiopia put to consider HIV as a priority development and emergency agenda in all sectors. Though the policies were not turned in to programs, these policies were not known by Bereh district development partners.

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<sup>2</sup> YeNoh Merkeb is the name of Association working on HIV prevention. The direct translation of English is "Ark of Noah."

## I. INTRODUCTION

### 1.1 Background

About 75% (1.3 billion people) of the world's population live in rural areas and are characterised mainly by dependence on agriculture for their livelihood (Santucci, 2005). The current population of Ethiopia is 73,918,505 (50% Female) and with an annual growth rate of 2.6% (CSA, 2008). About 84 percent of the total population in the country is found in rural areas. The economy of Ethiopia is heavily dependent on the agricultural sector where the workforce for this sector is rural population. However, in many rural areas, agriculture alone cannot provide sufficient livelihood opportunities (Gordon & Craig, 2001). The rural population has a range of interventions that supports diversified agricultural and non-agricultural livelihood strategies (off-farm and non-farm activities).

Although agriculture is essential for household survival, this sector is facing increasing pressure from rapid population growth, environmental degradation and uneven rainfall distribution. The additional impact of AIDS on this agricultural production is severe. The non agriculture livelihood strategies are also being affected by AIDS through diminishing the quality and quantity of labour. AIDS is the unique shock because it is socially invisible, in silence and stigma, it is a long-wave crisis with a very long incubation period between infection and full-blown symptoms during which individuals are infective and kills the most productive members of society. Moreover, due to the chronic nature of the disease, it causes the others drawing from the work to care for the sick. It is also incurable and fatal (Drimie, Getahun & Frayne, 2006).

Ethiopia hosts the 6th largest number of people living with the virus globally. In 2005, it was estimated that a total of 1,320,000 (134,586 children) people were living with HIV/AIDS. Of the total, 634,000 were living in rural areas and 686,000 in urban areas. The national prevalence for Ethiopia in 2005 is 3.5% (urban 10.5% and rural 1.9%). HIV prevalence is higher among females (4 %) than males (3%) (FMOH& HAPCO, 2006).

In rural Ethiopia, where the majority of the population resides, the epidemic has remained relatively stable since HIV prevalence peaked in 1999-2001 (FMOH, 2004). Even though rural prevalence rates are lower than urban rates, they are rising and the potential scale of the rural epidemic requires an urgent response (Bishop-Sam brook et al, 2005 cited in Drimie et al, 2006, 2006).

In rural areas, the current HIV prevalence rate and the threatened food security problem were worsening a disaster. HIV/AIDS intensify the existing vulnerable rural food security problem.

### 1.2 Problem

Inaccessibility of health care, lack of food and inadequate income are key factors in the rapid progression from HIV infection to the onset of AIDS. Consequently AIDS causes people to remain unproductive, stay in sickness and early death of people living with HIV (PLHIV). PLHIV can live a long and productive life by following healthy living, which includes balanced nutrition. People living with HIV/AIDS require 10% more energy when asymptomatic and 20–30% more when symptomatic (FMOH, 2008).

In the health care, recognizing the devastating effect of HIV/AIDS on its population and the positive impact of Anti Retroviral Treatment (ART), the Ethiopian government has responded to the epidemic as a national emergency and imperative to scale up the ART program. The Ministry of Health has been working towards the provision of safe, effective, equitable and sustainable ART services to HIV infected people. In this effort, the country has scaled up its ART programme in all regions and most rural areas - and is planning to decentralize the service further to existing health facilities (FHAPCO, 2007).

On the other hand, current research indicates that good nutrition is important to the efficacy of medical interventions (ART) as it enables peoples' ability to resist and mitigate the infection (Drimie et al, 2006). PLHIV taking ARTs and receiving associated treatments require special nutrition care and support because HIV-related medications can reduce the overall quality of

health. Medications can cause nausea, vomiting, change in or loss of taste or appetite, and diarrhoea, all of which can lead to reduced absorption of nutrients and weight loss. ARTs can also cause metabolic side effects that lead to nutrition-related conditions, such as heart and bone problems (FMOH, 2008).

Many studies dealing with HIV/AIDS impact at household level do not deal explicitly with impact on agriculture in general or food security in particular, but with general economic impact on a household which is measured as a loss of asset (Muller, 2004). But generally it is found that in the incidence of HIV/AIDS, labour can become a serious constraint to households' ability to continue agricultural production and ultimately insufficient food utilization. For instance, Save the Children (UK) commissioned an Ethiopian led study that concluded that the HIV/AIDS epidemic is emerging as a major threat to food security and livelihood in the Sekota district, Ethiopia and thus, created an additional stress to the already poor and vulnerable rural households (Mekonnen et al, 2005 cited in Drimie et al, 2006).

Poor households are the most food insecure households and they are highly prone to shocks. In rural areas, households who do not have land or oxen, or are female-headed, or who are comprised of the elderly are food insecure households. The links between food security and HIV/AIDS are recognized, as poor nutrition will increase the opportunistic infections from HIV/AIDS, while hunger may increase people's vulnerability to the disease. What needs to be emphasised, however, is that HIV/AIDS could aggravate vulnerability leading to worsening food insecurity (Drimie et al, 2006).

The impact of AIDS on food security has tended to take a particular form. But it is not clear whether and how far this story applies everywhere. The dependency of rural society on human labor makes it essential to understand the diversity of the impact of AIDS. The risk is that homogeneity of very diverse situations will result in inappropriate solutions (Barnett & Whiteside, 2006).

As AIDS affected human labor where the rural society depended on, the community might take different responses for the effect of AIDS which leads in to long lasting impact in the household.

### **1.3 Problem statement**

Lack of sustainable response by AIDS afflicted households for agricultural production and access to food.

### **1.4 Objective of the research**

To explore the impact of AIDS on food security and the responses development partners<sup>3</sup> on agricultural production, access to and utilization of food.

### **1.5 Research questions**

**Main question #1:** What is the effect of AIDS and are responses of AIDS afflicted households on production, access to and utilization of food?

#### **Sub questions**

1. What are the changes in resources of AIDS afflicted HH?
2. What measures are taken for changes by the AIDS afflicted HH for production, access to and utilization of food?
3. What is the effect of ART?
4. What are the socio cultural factors that hinder food production, access to and utilization of food for AIDS afflicted HH?

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<sup>3</sup> Development partners for this document are stockholders that have part in ensuring food security for ART clients (see the lists of development partners for this document in APPendix III).

**Main question # 2:** what strategies are employed to make sustainable food production, access to and utilization of food?

**Sub questions**

1. What are the existing community support structures for production and access to food for AIDS afflicted HH?
2. What are the constraining and facilitating factors for male and female for sustainable production, access to and utilization of food?
3. What support is provided by the Sendafa health center, district health office, district agriculture office, Agri Service Ethiopia, microfinance institutions and Yenohe Merilkeb HIV prevention association?

## II. LITERATURE REVIEW

### 2.1 HIV/AIDS global, Sub Sahara, Ethiopia, Oromia, Bereh district

Currently globally there are 33.2 million people living with HIV (15.4 million women), among these 22.5 million are living in Sub Sahara Africa. In addition, the global death due to AIDS has reached to 2.1 million where 1.6 million deaths occurred in Sub Saharan countries (UNAIDS, 2008).

The rapid expansion of HIV/AIDS in Sub Saharan countries has a profound impact on the health sector as well as on the socioeconomic development of the region in general. Sub-Sahara Africa is the most affected part of the world where more than two third of all people with HIV/AIDS are living. In the worst affected countries the pandemic has the reversed the developmental gains of the past few decades. Despite the concerted efforts to control the epidemic in the last few years, the global impact is not noticeable and it seems that the pandemic is continuing unabated in many parts of the world and is still claiming millions of lives (FMOH, 2004).

In 2005, it was estimated that a total of 1,320,000 people were living with HIV/AIDS in Ethiopia. Of the total, 634,000 were living in rural areas and 686,000 in urban areas. In 2005, a total of 137,500 new AIDS cases, 128, 900 new HIV infections (353 a day) and 134,500 (368 a day) AIDS deaths occurred. The estimated total number of persons requiring ART in 2005 was 277,800. AIDS accounted for an estimated 34% of all young adult deaths 15-49 in Ethiopia. The national prevalence is higher among female(4%) than female(3%) (FMOH, 2006).

With respect to regional distribution, Amhara, Oromia, Addis Ababa, and SNNPR accounted for 86.6% of all PLWHA in 2005. Similarly, these four regions share 86.7% of the total estimated HIV positive pregnancies, 85.3% of new infections, 87.9% of new AIDS cases, and 88.2% of AIDS deaths that occurred in Ethiopia in 2005. In Oromia there are a total of 318,382 people living with HIV where 152,118 and 166,264 are found in urban and rural respectively(FMOH & HAPCO, 2006). In the study area of Bereh district, according to the health institution medical data review there are a total of 373 people living with HIV (257women). Currently there are 13,039 are receiving ART in Oromia region (Sendafa health center 2009).

### 2.2 Food security and gender

This study assesses the effects AIDS on food security and the responses by different categories of the AIDS afflicted households. Different category in this study is based on gender perspective in general, female and male with and without are considered separately. The fe/male without spouse could be divorced, widowed or have never been married, this consideration is taken into account. Therefore the concepts of food security and gender as well in relation with AIDS will be part of the literature review. The gender issue is to assess how food security impacted female and female due to sociocultural factors.

#### **Food security**

The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”. Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences (WHO, 2009). This definition is the widely accepted definition. The definition is further elaborated in 4 dimensions according to FAO (2006) which are explained below. In other literature these are commonly known as “pillars”of food security:

**Food availability:** The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

**Food access:** Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

**Utilization:** Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

**Stability:** To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e. g. an economic or climatic crisis) or cyclical events (e. g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

The use of the term food security at the national and global level tends to focus on the supply side of the food equation. The question raised is: is there enough food available, where food is usually interpreted to mean dietary energy? But availability does not assure access, and enough calories do not assure a healthy and nutritional diet. The distribution of the available food is critical. If food security is to be a measure of household or individual welfare, it has to address access. This was widely recognized by scholars and practitioners in the mid-1970s, and food security was defined as access by all people to enough food to live a healthy and productive life (Andersen, 2009).

Ethiopia has one of the world's highest incidences of under nutrition. Approximately 49 percent of the population lacks adequate nutrition, according to the Food and Agriculture Organization). The country has high levels of chronic food insecurity and is further prone to acute food insecurity, primarily during times of drought, environmental degradation, and insufficient access to and availability of food (FAO, 2000 cited in FMOH, 2008).

## **Gender**

Gender is refers to the comparative or differential roles, responsibilities and opportunities for women and men in a given society where as gender relation is ways in which a culture or society prescribes rights, roles, responsibilities, and identities of women and men in relation to one another. Whereas gender equity is Fairness in women's and men's access to socio-economic resources. Example: access to education, depending on whether the child is a boy or a girl. A condition in which women and men participate as equals and have equal access to socio-economic resources (UNDP, 2001).

### **The gender dimension in agriculture**

Men and women have different roles in ensuring food security therefore the crop production defiantly be affected if one or both are not able to participate ,however there is gender division of labor what female and what male do, the outcome therefore be different based on their role. The following elaborate the role of female in insuring food security. This gives the connotation that if female do not involve for any of reasons in the following roles the food security will be affected.

**Food production** women are active food producers. They work on small farms and in urban gardens to produce cash crops. Women work in other aspects of food production such as resource management.

**Food access** women ensure that each family member receives an adequate share of food. Women are primarily responsible for purchasing food, to which they devote their time and their income.

**Food utilization** women are responsible for nutrition in the majority of homes. They decide what food to buy and how to prepare it. In many cases, food preparation involves a substantial amount of time for collecting fuel and preparing ingredients.

**Gender inequality** Legal or social restrictions prevent many women from owning or inheriting land, water rights or livestock, borrowing money or making decisions regarding the use of family assets. This has a direct and detrimental impact on their ability to manage food production and security. (WHO, n.d.). If production and access to food had a gender dimension this ultimately substantiate the health status of the individual, At it had stated by (WHO) 2009 issues such as whether households get enough food, how it is distributed within the household and that food

fulfils the nutrition needs of all members of the household show that food security is clearly linked to health.

### **2.3 AIDS, gender and food security**

Gender norms significantly affect an individual's risk and societal vulnerability to HIV/AIDS because they ascribe distinct productive and reproductive roles to women and men, and because they differently influence women and men's access to key resources such as information, education, employment, income, land, property, and credit (Gupta, Whelan & Allendorf, 2003).

People, usually women, who rely on agriculture and livestock for subsistence and survival, suffer from loss of income, productivity, land, labor, knowledge, and experience when a household is affected by HIV/AIDS (De Waal & Tumushabe, 2003).

AIDS affects primarily the most productive age groups; second, although it strikes most harshly among the poor and marginalized in global terms, AIDS does not spare the elites or middle class; and third, AIDS is not gender-neutral. For an example of the latter, one has only to look at the acute vulnerability of widows compared to widowers in high-prevalence societies. However, no matter what level of prevalence is found in any given country, the impact of AIDS on affected families and communities is of devastating magnitude (Topouzis & Du Gurney, 1999).

The nutritional needs of an individual with HIV are higher than the needs of an uninfected individual. Good nutrition may slow or lessen the effects of HIV. In turn, malnourishment speeds the effects of HIV and increases risk for vertical transmission. Women are the most affected by issues of food security, as they are often the primary caregivers of the sick and of the children in a household. AIDS diverts their labor from income or food generating activities or energy gathering work as they care for the sick. As medical costs increase, household assets are sold and malnourishment becomes an issue for the uninfected as well (Gillespie, Haddad & Jackson, 2001). A study in the United Republic of Tanzania showed that a woman whose husband was sick was likely to spend 45 per cent less time on agriculture than if the husband were healthy. In Kaera, a survey showed that, on average, adults in households that experienced a death spent five hours less on-farming during the previous week than those without a death (Mutangadura, 2000 cited in Memfih 2005).

### **2.4 Anti Retroviral Treatment and food security**

Increased caloric requirements for HIV-positive individuals, undesirable side effects of treatment that may be worsened by malnutrition (but potentially alleviated by nutritional support), and the consequent threats of declines in adherence and increased drug resistance, are all justifications for developing more and better nutrition interventions for individuals on Anti Retroviral Treatment (ART) Such urgency applies to any context where malnutrition and high or rising HIV prevalence coexist (Byron, Gillespie & Nangami, 2008).

In Uganda where famine affecting many part, the success of ART will be greatly affected. Hunger reduces efficacy of medication among people living with HIV/AIDS and often affects drug adherence especially to ARTs, hence poor responses to treatment (Tumwine, 2009).

Clinical care providers, program managers and other stakeholders increasingly recognize the critical importance of nutrition for the treatment of HIV and AIDS. Interventions that link nutritional support to treatment are relatively new (Byron et al, 2008).

### **2.5 The impact of AIDS on food security and responses in terms of gender.**

It needs to be clear that this study address the impact of the AIDS, the terminal stage of the HIV infection. Therefore HIV infection will not be mentioned.

In this paper the effect of AIDS is considered as the one which is directly revealed as the result of the sickness, for example unable to work due to the illness or the additional costs for medical expenses. While the responses are the action which are taken by the households as the result of

the direct effect, in a resource poor country like Ethiopia these are not usually sustainable rather only resolving the immediate problem which in the long term worsen the situation of livelihood in the households. Therefore the impact on food security is emerged as a result of the responses for immediate food problem. The analysis is based on figure 1 and 2 below.

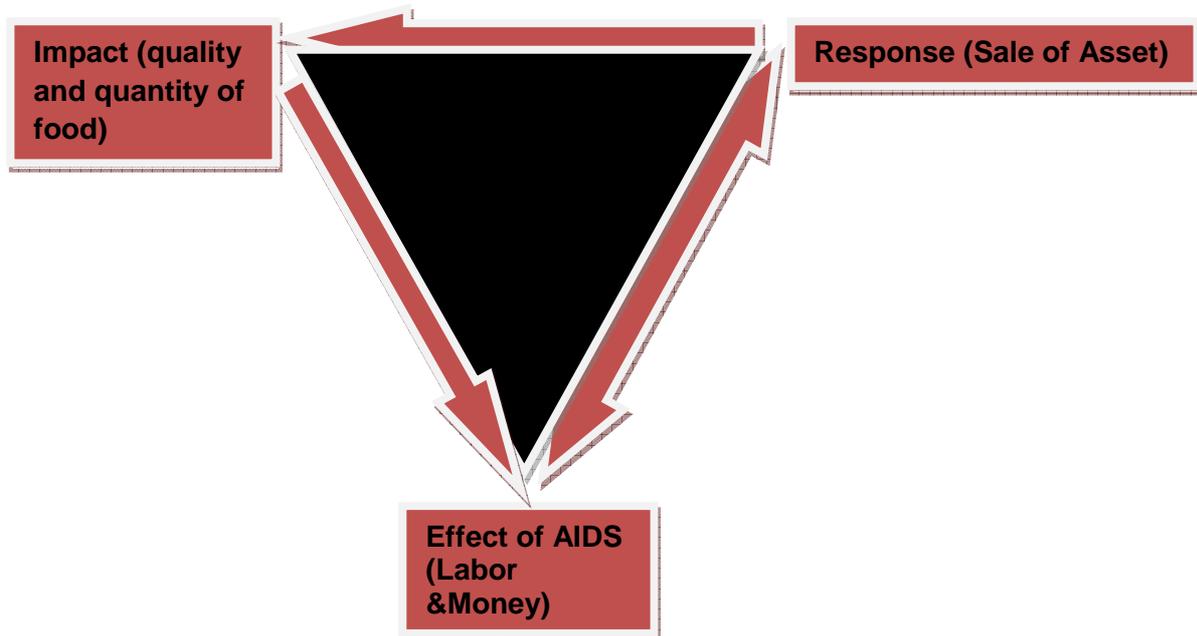


Figure 1: The linkage among effect of AIDS, community response and Impact of AIDS on food security.

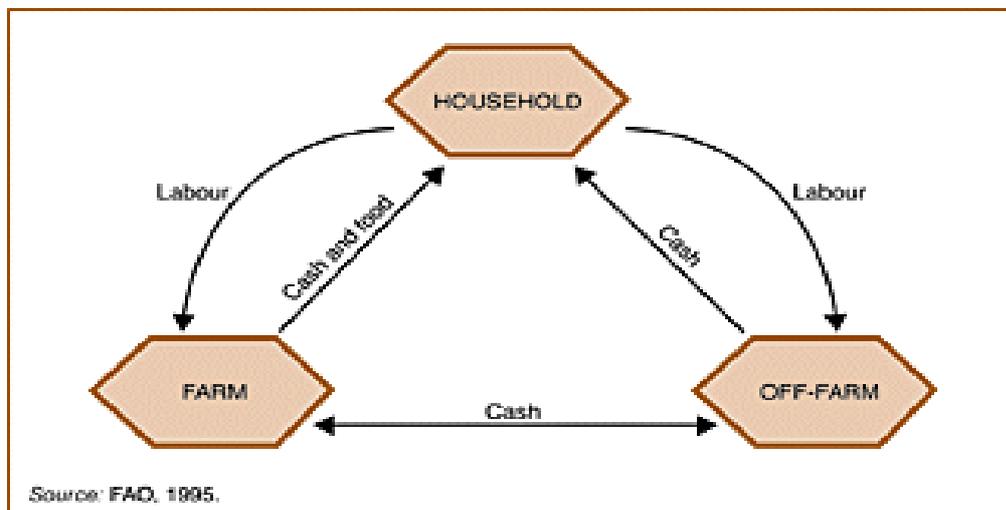


Figure 2: A farm household system  
Adopted from FAO, 1995 cited in Du Guerny J, 1999.p14.

In the era of ART, for the people already impacted by consequence of AIDS, the outcome of the medicine might not be as expected due to the vigorous food insecurity situation.

The terminology response is used alternatively with coping strategies however to say the coping strategies it has not to affect the future livelihood of the household to the worst situation. Coping implies a reversible management strategy. It also somehow suggests that the adoption of such strategies is not too costly. The reality is that many households are forced to make distress sales or change associated with greater livelihood mobility (Gillespie, Haddad & Jackson, 2001).

In the research conducted by Drimie et al (2006) it is believed that households under stress from hunger, poverty or disease will adopt a range of strategies to mitigate their impact through complex multiple livelihood strategies. These entail choices that are essentially “erosive” (unsustainable, undermining resilience) and “non-erosive” (easily reversible). The distinction between erosive and non-erosive strategies crucially depends on a household’s assets (for example, natural capital, physical capital, financial capital, social capital and economic capital), which a household can draw upon to make a livelihood. As an example of the distinction between erosive and non-erosive strategies, the sale of livestock is revealing. Sales of chickens, goats or cattle are classic coping strategies that households throughout sub-Saharan Africa employ. Some level of livestock sales is normal and does not result in increased poverty. At a certain point, however, household livestock holdings reduce to the level where they are no longer sustainable, generally leaving the household with too few animals to regenerate the herd in the post-shock period. At this point, livestock sales become erosive.

The impact then depends up on the resilience of the system and its coping strategies. Disproportionately affect the weakest in society.

Food security is a result of combined factors and also affected by the same factors such as population pressure, education, macro-economy, household wealth status natural resources, access to services, gender and climate are amongst. However the scope of this study is limited into the impact of AIDS assuming other remained constant except gender and little consideration for wealth status and household family size.

The following is about the effect of AIDS in different capitals and it is presented how AIDS affect human, financial and social capital and the possible responses taken by the households and finally the impact on food security shall be described.

**Effect on human capital:** The first effect is on labor and knowledge. These are obviously attacked by HIV/AIDS in human capital. Infected individuals eventually die prematurely. It is also about knowledge, living but infected individuals are rendered less productive once AIDS emerges, due to a series of opportunistic infections because of the labour of healthy individuals is diverted into other crucial activities such as caring for those infected. The striking-down of adults in their prime by HIV/AIDS severely reduces. The ability of individuals to transfer knowledge both within their generation and from their generation to the next inevitably affected. In the most immediate and obvious sense, HIV/AIDS reduces available household labor and undermines the balance between the production and consumption units within a household (Boudreau & Holleman 2002).

## **Response**

**Replacement:** Labour can be found either via social networks or via the labour market. Otherwise less labour intensive livelihood-sustaining ways of farming land have to be developed. Labour market help might not be affordable for families affected by HIV. Moreover, the low labour intensity strategy is by no means guaranteed to be more livelihoods sustaining than the system it replaces (Gillespie , Haddad & Jackson, 2001).

Cultivation of crops that are less labour intensive, but less nutritious (e. g. some tubers) and the fallowing of land. If the family cannot afford to use the land, this will improve its quality for future cultivation. On the other hand, non-use of land may make the family vulnerable to loss of land rights. As highlighted by those with traditionally weaker land rights (e. g. some women and orphans) greater clarity and equity with respect to local property rights is particularly important. In addition, it is important to take into account the current diversity of livelihoods that farmers exhibit and the potential they have to diversify further into non-farm activities that are less labour-dependent (Rugalema 1999a; Topouzis 2000 cited in Drimie et al, 2006).

**Effect on financial capital:** A second direct and compounding effect is that HIV/AIDS increases the expenditure requirements of already-poor households. When health and/or funeral costs rise, households are forced, typically, to divert cash expenditure from other areas such as school fees and agricultural inputs, which decreases the household’s future viability (Topouzi, 1998 cited in Boudreau & Holleman 2002).

## Responses

Families need to find ways to maintain current consumption levels. In terms of financial capital services (credit, savings, and insurance) poor families either have to sell stores of value (e.g. jewellery and livestock), assets (e.g. equipment or tools). The poor invariably are reliant on informal credit at high interest rates or on group-based microfinance products. Unfortunately both of these types of services tend to be spatially concentrated and hence vulnerable to aggregate shocks (Gillespie et al, 2001).

## Effect social capital

The strength of associational life, trust, and norms of reciprocity (relationship involving mutual exchange) may be undermined by HIV do not experience the informal exchanges of knowledge, tools, and animal draught labour that are often embodied in such livelihood activities. Social capital may be weakened through an increased exclusiveness of network membership. The stigma attached to HIV/AIDS is not conducive to the establishment of crosscutting ties across the different strands of social capital (Narayan, 1999 cited in Haddad & Gillespie, 2001).

## The Impact of AIDS

**The HIV/AIDS epidemic has led to significant reductions in food production in AIDS-affected households.** In two villages in Burkina Faso, for example, revenues from agricultural production declined by 25-50 per cent as a result of AIDS households (FAO, cited in UNDESA, 2003). The Government of Swaziland reported a 54 per cent drop in agricultural production in AIDS-affected (Wall Street Journal, 2003 cited in UNDESA, 2003).

**HIV/AIDS has caused shifts of production from cash crops to food crops in AIDS-affected households.** Haddad and Gillespie (2001) stated that 'less labour-intensive crops grown emphasis on meeting food needs first and cash crops later, So there may be a switch into the cultivation of roots and tubers, the raising of small livestock, and a renewed emphasis on food crops as opposed to cash crops.'

The change has resulted in lower household incomes and a lack of funds to buy non-food essentials or non-labour inputs necessary to maintain agricultural yields. Most households in the country no longer grow traditional famine food crops like millet, sorghum, maize, cassava and potatoes. The good tradition of each household with food in store for lean seasons is long gone. The current trend is that the majority of the households grow food crops for their food security. A household can harvest 30 bags of cereal and sell it all. Such households are unconsciously predisposing themselves to food insecurity (Tumwin, 2009).

## 2.6 Microfinance institutions and AIDS

A microfinance institution (MFI) is an organization that provides financial services to the poor. This very broad definition includes a wide range of providers that vary in their legal structure, mission, and methodology. However, all share the common characteristic of providing financial services to clients who are poorer (CGAP,2009). Banking the unbankables is the essence of microfinance: bringing financial services to the poor (Van Maanen , 2004)

There are 3 types of MFI according to CGAP (2009), Formal providers are sometimes defined as those that are subject not only to general laws but also under bank regulation and supervision can be any registered legal organizations offering any kind of financial services examples of formal MFI are development banks, savings and postal banks, commercial banks. Semiformal providers are registered entities subject to general and commercial laws but are not usually under bank regulation and supervision (financial NGOs, credit unions and cooperatives). Informal providers are non-registered groups such as rotating savings and credit associations (ROSCAs) and self-help groups.

MFIs providing financial services are directly affected by HIV/AIDS because their core business depends on serving economically active and productive clients. AIDS affected household reduce or neglect his/ her business operations and diverted to productive assets for consumption

purposes, or reduce the time spent in business because of the impact of HIV/AIDS. MFIs experience higher rates loans when clients which lead the unstable financial sustainability (Achola 2006).

Formal microfinance institutions (MFI) operate on the principle of financial sustainability through cost recovery and make loans based on pre-established loan criteria. As a result, they tend to work with poor households that are relatively economically active and stable, rather than with the poorest of the poor. Yet most HIV/AIDS affected households are poor credit risks precisely because they are economically unstable. Similarly, many new heads of such households, such as widows and orphans lack prior experience undertaking economic activities for themselves and their dependents (CIS, 2002?).

In Togo, previous micro-credit projects for people living with HIV have not worked due to a lack of financial experience to manage the loans. Now with the expertise of the Investor Dans l'Humaine micro-finance institute, they have a successful model for people living with HIV helped with some capital to set up businesses and loan that they would be able to take care of the basic needs of their families and in particular their children. After two years, more than half the borrowing families have paid back their loans in total, and more than three quarters have profited from their new business (Thompson F, 2009).

Most rural people living with HIV had depleted asset and income to meet their basic needs, as the result they less likely to repay back the loan from microfinance institutions. The experience of Togolese micro-finance institute was helping for the basic needs as a direct support and also providing loan for sustainable livelihood. However, in the countries stigma and discrimination was highly practised the effectiveness of small business might be hindered. Because general community might be reluctant to receive products and goods from PLHIV. Despite the fact that MFI were only for profit making, the experience of Togolese micro-finance institute adopts the way of working and involved in humanitarian activities.

Microfinance institutions can adapt their services of credit distribution and savings mobilisation to the specific needs of vulnerable households affected by HIV/AIDS in Zimbabwe for example in order to develop a pilot microfinance loan product to people affected and infected by HIV/AIDS a separate procedure was prepared for people affected and infected by HIV/AIDS(RTI,2004). Accesses to those financial products provide the target population with stable income over time, so that victims of HIV/AIDS have a greater ability to respond to long term economic consequences of the disease. Furthermore, MFI play a role as social cohesion by helping those affected by AIDS to integrate in the community.

Families affected by AIDS who have benefitted from a unique project partnering the Togolese micro-finance institute, Investor Dans l'Humaine, and Jade, an organization providing services for people living with HIV and AIDS in Togo's capital, Lomé. Families were given loans from \$100 to \$1,000 to set up small but profitable business projects through a project funded by Save the Children, Sweden (Thompson F, 2009).

The operational research led in Burkina Faso on integrated HIV/AIDS actions through a partnership pointed out that microfinance can help fight HIV/AIDS at an economical level by strengthening income-generating activities for affected households and, at a social level, by facilitating integration in the community. Credit reimbursement sessions are combined with information actions on HIV/AIDS and micro-enterprise management. Economic agents affected by the disease benefit from services by a special advice unit to better target their need of credit. Implicating members in the different management committees of credit and saving unions helps prevent social rejection for individuals affected by HIV/AIDS. The ongoing research shows that MFI should be supported since they have proved most helpful in the fight against HIV/AIDS, and in particular against the negative impact of the disease and in the improvement of the psycho-social situation of those currently suffering from the disease. Microfinance schemes for individuals and households affected by HIV/AIDS in Burkina Faso (Nassouri, Lievens, Pirotte, Renterghem, 2002).

To break the cycle which fuels the prevalence of HIV/AIDS, micro finance has been regarded as useful as it aims at reducing poverty. It can also be argued that HIV/AIDS negatively impacts on

micro finance in numerous ways. If this risk is not minimized, clients will fail to repay their loans as money from the businesses is used for medical costs, burial expenses, looking after orphans etc (Ed Bbenkele, 2002)

Though access to both credit and savings mechanisms are important for vulnerable households, microfinance institutions have a threat that the repayment will be at risk if the targeted population are people living with HIV/AIDS some micro finance institutions did flexible procedure to make accessible to AIDS affected and afflicted households. Small loans can help vulnerable households manage their livelihoods and cope the impact of AIDS without forcing them to undermine their asset base.

To deal with the (potential) impacts, an MFI may need to consider, discuss and develop an HIV/AIDS policy and mitigation strategy. Strategic and operational change outlines issues that an MFI would need to consider developing an HIV/AIDS mitigation strategy. To expand access to an existing microfinance initiative to women from the poorest households in a region in r in driving objective was to develop an innovative approach to the prevention of HIV by addressing the key structural Factors driving the epidemic, such as poverty and gender based violence and inequalities (Green , Miller, Fraser & Cora ,2004).

Many MFIs have not established HIV/AIDS policies and do not seem to know how to deal with the complexity of the crisis and the numerous dilemmas that exist in relation to the HIV/AIDS problem (RTI,2004).

## **2.7 Policies and programs**

Based on the scope of this study it was worthwhile if gender and microfinance policies also explored separately. Nevertheless, it was focused on agricultural policy.

Agricultural policies can have indirect effects through increasing or reducing the vulnerability to the impact of AIDS to the farm household if are or not designed with the HIV/AIDS epidemics in mind.

By explicitly taking the HIV/AIDS factor into account, agricultural policies would attempt not only to achieve their usual objectives (increase in yield, commercial crop outputs, etc.), but also to reduce vulnerability. For example the policies can make influence by putting access to affordable price of fertilizers and/or improving the farming system the agriculture sector (Topouzis 1998).

According to Topouzis (1998) the following questions can be raised with the aim of reducing vulnerability to the impact of AIDS for agriculture sector:

- Can agricultural policies have a significant impact either on the spread and level of the HIV/AIDS pandemic or on mitigating its impacts?

Agricultural policies can make can play a role in modifying the environment in which the pandemic takes place, thereby also modifying some of the factors that influence the HIV prevalence and its course and impact.

- Should national agricultural policies and programmes be used to combat the pandemic actively?

This can be answered by the countries concerned, but international organizations also play a role as facilitators in defining possible issues for consideration and in exploring the terms and consequences of the debate.

- If yes, what policy instruments would be effective in the field of agriculture?

These can be classified as market-related, resource base-related and institution-related. It should be highlighted that these are macro- and not micro level tools, which means that they can have a more generic impact on vulnerability.

Market-related instruments include minimum wages, interest rates and floor/ceiling prices, among many others. For example, a minimum wage or floor price for a product can guarantee a minimum income to a poor household. Resource base-related instruments such as infrastructure facilities for storage or development of human capital through training, could also reduce

vulnerability. Institution-related instruments, such as promoting the participation of stakeholders in decision-making or improving legislation on property rights, could reinforce existing efforts through empowerment.

Such questions have not yet really been explored, and it is understandable that a sectoral ministry might be reluctant to involve itself in an area that it would feel ill-equipped to deal with and that could be defined as coming under the exclusive authority of the Ministry of Health. It should be clear that no one is proposing that a Ministry of Agriculture be transformed into a health one, but there might be some measures, policies and programmes in its normal sphere of competence that could contribute to the national effort in combating the pandemic.

Based on the assessment above, the agricultural policies and programs can have a great contribution in reducing vulnerability among AIDS afflicted as well as AIDS affected households. The targeting strategies of farmers whom are more vulnerable and ensure that the policies could not exclude them. For example AIDS primarily affects labor (illness or death) during the course of illness labor definitely be constrained in AIDS afflicted households, the policies can promote less labor intensive farming tools to be available at low cost for men and women farmers ,nutritive and short season seed varieties etc.

The policy element can be helped to work in partnership with other development partners such as health sector and gender women's affair sectors.

To establish policy or translate it into practice, political commitment is key for success. Du Guerny (1999) had given emphasis on the need for political commitment for action at all levels cannot be underscored enough. Without the committed support of formal and informal political institutions, neither the resources nor the recognition of why and how the epidemic needs to be addressed across sectors will be forthcoming. Finding ways of establishing and operational inter-sectoral programmes needed for decentralised responses to development problems (poverty, gender inequality, etc.), including the HIV epidemic, is another key step that needs to be addressed.

The political commitment at all level is determine the level of mitigating the impact of AIDS. The international and national community are highly committed to access ART to all who are eligible through universal accessibility principle. However the same commitment should work on food security because ART program will not be successful without proper nutrition.

### ***Definition of terms***

**Afflicted household:** household in which one or more members is/are either ill or has/have died of AIDS related causes (Muller, 2004).

Vulnerability is the likelihood of significant physical, social or economic impact occurring at individual, household, community, institutional or societal level(Muller,2005).

**Non-farm:** 'non-farm' refers to those activities that are not primary agriculture or forestry or fisheries. However, non-farm does include trade or processing of agricultural products (Gordon A. & Craig C., 2001).

**Off-farm:** Gordon & Craig (2001) defined as activities undertaken away from the household's own farm, and some authors (e.g. Ellis, 1998) use it to refer exclusively to agricultural labouring on someone else's land.

### III. METHODOLOGY

#### 3.1 Study area

##### 3.1.1 Location and Administration division

Bereh District is located in the central part of Ethiopia, North Shewa zone, Oromia Regional State. The District capital, Sendafa town is located at a distance of 40 km to the north of Addis Ababa. The total population of the District is totalled 89,851 and resides in 23 rural and 2 urban Kebele Administrations (KAs), out of which 43,300 are males. The rural population accounts for 90.0%. The District is for 90% inhabited by Oromo, and the remaining 10% belong to other ethnic groups: mainly Amhara and Gurage. Two major languages are spoken in the District; Oromoifa (95%) and Amharic (5%)(ASE,2006).

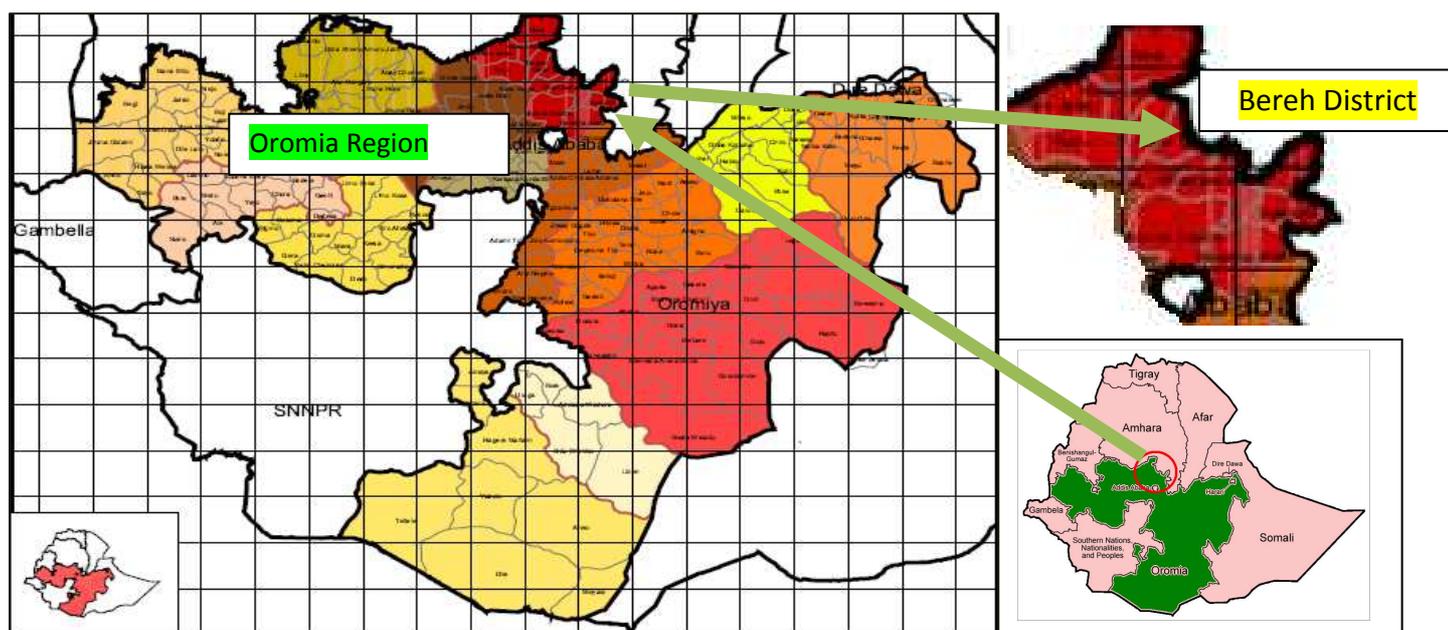


Figure 3: Map of study area.

Source: DPPA, 2006

##### 3.1.2 Population characteristics and land use

The total population of the District is 89,851 and resides in 23 rural and 2 urban Kebele Administrations (KAs), out of which 43,300 are males. The average HHs size in the District is 6.5 and the annual population growth is estimated at 2.9%. The rural population accounts for 90.0%. The District entirely inhabited by Oromo, accounts for 99% and the rest goes to other ethnic groups: mainly Amhara and Gurage. Two major languages are spoken in the District; Oromoifa (95%) and Amharic (5%). With respect to religion, 75% worship Orthodox Christians, while the rest 25% are Muslims (ASE,2006).

##### 3.1.3 Food security situation/means of livelihood

Among the various factors, food production or availability is one of the factors in determining the status of household food security. However, in developing countries, where subsistence economy is dominant, the agricultural sector is mainly dependent on traditional and backward farming method. Due to this fact, the living condition of most rural farmers is limited to hand to mouth cycle (i.e. whatever amount produced is almost consumed). Ethiopian agriculture is a typical example of this condition.

The average size of land owned by a household ranges from 1-2 ha and the major crops grown in the area include wheat, teff, barley, faba beans, field peas, lentil, chickpea, vetch and oilseeds. The productivity of wheat, barley, teff, beans and pea are 7, 6, 6, 4 and 5 qt/ha, respectively. The national average of cereals (11.54 qt/ha) and pulses (6.74 qt/ha) exceed the productivity in the

District by 5.24 and 2.24 qt/ha, respectively. From this one safely concludes that most of the populations suffer from extreme food poverty (ASE, 2006).

The extension approach prevailing in the villages is top-down and entirely depending on High External Inputs Agriculture. However, farmers are not able to afford the escalating prices of the inputs because the prices of agricultural inputs and farmers' product are inversely proportional (ASE, 2006).

The study conducted by Agri Service Ethiopia is indicated that, those periods from October to May were the only seasons when the households could feed themselves from their own production. Similarly, on average, there are periods in a year from June to September when food shortage is highly threatening the life of sample households. The major factors attributed to this condition were, the specified months are the times when almost every farmer totally utilizes the available crop products by consuming and retaining for seed; and resulting from this, the market price of the crops increased beyond the purchasing power of the farmers (ASE, 2006).

The households in the study area are engaged in various activities to enhance their living conditions, and, to fulfil their aspirations for improved and better livelihood outcomes. These different types of activities are both within the agricultural sector and the non- agricultural sector. The survey revealed off-farm and nonfarm employs a combination of source of income. The majority of the households employ farming as the major source of their income (Kitila, 2006).

The wealth status of the community in the programme area is classified into four categories, rich, medium, poor and the poorest of the poor depending on the number of livestock holding. Among livestock ox is the major criterion for classification. The Land holding size not significant to measure wealth according to the community because of the output of lands (crops) is not dependable for once household.

The poorest of the poor category are the one who do not have any livestock but leading their livelihood by selling their labour either in the kebele or outside. Some of them also involved on of farm activities. From the study made 8 %, 18 % 39 %, 35 % of the community are categorized in rich, medium, poor and the poorest of the poor respectively. (ASE, 2001)

Bereh district is food insecure. Various factors attributed to the food insecurity situation of the community. The major ones are, rain shortage and the displacement of the farmers from their farm plot by the afforestation program (Kitila, 2006). The area used to receive bimodal type of rainfall (Belg and Meher) before 10 years. But since 1991, the farming community is mainly depending on the main rainy season (Meher) with very small amount (showering) rainfall. The Meher season extends from June to September and Belg season fall between January and April (ASE, 2001).

### **3.1.4 Health institutions**

According to the Bereh district health office, the district has 2 clinics, 6 health posts and 1 health center. Sendafa health center is the only health institution in Sendafa town. The human resource for assigned in Sendafa health center are totalled 13 (1 health officer, 5 nurses, 3 health assistants, 1 sanitarian and pharmacy technician, 2 lab technicians). Among 5 nurses there were 3 ART providers.

### **3.2 Research design**

Prior to the design of survey and case study, a desk study review of existing literature related to the study was done. This was to help in the refinement of the research methodology and to support the development of research framework. The research included both quantitative and qualitative information and was based on primary data and literature. Data collection was carried out through survey, case study, desk study, and review of the records.

Although the target population of the research is vulnerable households, the survey was aimed specifically at households that are directly affected by AIDS. Specifically the research had initially planned to sample the following four categories of vulnerable households;

-

- Female headed households
- Male headed households
- Child headed households
- Elderly headed households

However, the four clusters above were changed by the following clusters during real survey activities into;

- Female without spouse)
- Male without spouse)
- Female with spouse
- Male with spouse

This is because it was difficult in the field to identify and carry out a survey due to the rampant stigma and discrimination. The AIDS afflicted households were identified through the health institution where they are receiving the Anti retro viral treatment and other related health care services.

The initial plan was to conduct a house to house survey but it was found that the people have not disclosed their HIV status to neighbours, relatives and villagers, which made it a challenge to be interviewed by an external person. This was also confirmed by AIDS clients. As a whole there is silence in the district regarding HIV/AIDS, and people are not willing to bringing the agenda to the personal life. Therefore, the methodology was changed to interview the clients who had appointment at the health institution during the data collection period.

### 3.2.1 Selection of respondents for survey

32 respondents who had an appointment were selected through purposive sampling from the registration book during the study period (16<sup>th</sup> of July-7<sup>th</sup> of August). The respondents who had an appointment each day were known a head of time by health institution. The respondents who had an appointment within the study period were identified based on their household status as male headed, female headed, female with spouse and male with spouse. The inclusion criterion for purposive sampling were the means of livelihood, the marital status of the respondents, sex, the village the respondents. To this end the total of 30 respondents were interviewed. Table 1 indicated the sample study population and the national, regional and district numbers of people living with HIV.

Table 1: People living with HIV and samples for the survey

	National PLHIV	Oromia Region PLHIV	Bereh District PLHIV	Study population PLHIV
Adult women	348,709	91445	257	16
Adult men	285,307	74819	116	14
<b>Total</b>	<b>634,017</b>	<b>166,264</b>	<b>373</b>	<b>30</b>

Sources: FMOH. & NHAPCO , 2006 and Sendafa health center.

Prior to the actual data collection a meeting was held with Agri Service Ethiopia Bereh district program director, head, and vice head of Bereh district health office , and Sendafa health center ART service 2 providers. During the discussion it was revealed that the people living with HIV in the district are taken care of with a great confidentiality and brought the challenges to conduct the household survey at their village because of 2 reasons, the first one was to from ethical point of view disclosing the status 3<sup>rd</sup> person without the knowledge of the client and the second one was even for the clients to be visited by external person considered to be frustrating. In addition the people living with HIV also are saying they are not willing to be visited by external persons due to the fear of the discrimination. One client was saying” *when you come and visit me in my home, my neighbours may imagine what is so special about me and not with them. I rather prefer to give*

*you any information you want here in the health institution, I feel safe here. I am taking care of my HIV status with great confidentiality”*

The data collection process had gone on, while the clients had finished their consultation to the ART providers, they had asked for their willingness for interview. And only the willing once had interviewed. Three clients had refused the interview.

### **3.2.2 Identification of organization/Institutions for case study**

The initial plan was to undertake case study with 2 organizations these are; district agriculture office and Agri Service Ethiopia however during the actual field exercise it was found to be important to add more organization/institutions. The changes in the number of organizations were basis on the findings of the survey, by considering the respondent's output. The ART service provider, microfinance institutions, one local NGO working with People living with HIV (YeNoh Merkeb) were added to enrich the finding. Moreover, the case study with the district agriculture office was done extensive by including more experts to discuss with.

### **3.3 Data collection**

The data was collected in 2 stages: survey interviews followed by case study. The case study was deliberately undertaken in the second stage. The assumption was that the AIDS clients might raise unforeseen issues which are important to be included in the case study.

#### **3.3.1 The survey**

It was carried out with list of structured questionnaire (Refer Appendix I) to enable to asses the impact of AIDS on food security and the responses/measures taken by the households. Moreover, to verify the nutritional status of the respondents, the personal medical records pertaining to the body weight was reviewed. One translator was hired in the course of survey.

#### **3.3.2 The case study**

the case study aimed to assess the program intervention for AIDS clients to enable them ensure food security as well as to verify the responses by rural households to produce, access and utilize food when infected by HIV and afflicted by AIDS. This was undertaken through pre formatted checklist (Refer Appendix II).

### **3.4 Data processing and analysis**

#### **3.4.1 Quantitative data**

All the responses to the survey questionnaire were entered into excel Microsoft office program. Then major socio demographic characteristics, means of livelihood, impact of AIDS on food production, livestock, income according to female headed household(female without spouse), male headed household (male without spouse)female live with spouse and male live with spouse respondents were tabulated. The body weight was also entered to excel Microsoft office program and analysed after grouping in to constantly increasing, constantly decreasing, fluctuating and constant. And also compared with the finding of own interview and with other similar studies.

#### **3.4.2 Qualitative data**

**Data from survey:** The hand written notes and discussions translated into English and grouped and categorize according to similarities and differences of the opinions of female headed household (female without spouse), male headed household (male without spouse) female live with spouse and male live with spouse.

The survey findings from qualitative and quantitative were analysed together. The qualitative data were the supplements for quantitative data. The finding of the body weight was compared with the respondents' food production, accessibility and production also based on sex. The findings are compared among clusters. In the same manner the findings were compared with other similar studies. The influential institutions were analysed through Venn diagram. PESTEC model is used, The PESTEC model helps to categorise the various factors i.e. political, economic, social, technical, environmental and cultural factors that may the impact of AIDS on food security.

**Data from case study** The finding of the case study was qualitative. The finding was compared and contrasted with findings of the survey. The findings were also compared with district and national level policies and programs.

The data collected using interview and case study was first started with the description of the research findings and the analysis among clusters. This allowed assessing the dynamic responses in access to and utilization of food by different sexes. Due to the existing gender inequalities in terms of asset ownership, agricultural role and lack of livelihood skill, men and women differently respond towards in accessing and utilizing food utilization and access. The body weight of each respondents was also compared with the finding of own interview and with other similar studies. Moreover, the Venn diagram and PESTIC were used to analyse the influential institutions/organizations.

### **3.5 Challenges and limitation**

The ART clients selected either could be absenteeism of the respondents on the expected and ART clients who had come without appointment had made the data collection process lengthy and to deviate out from the schedule. The long time taking for interview resulting in waiting respondents losing their patience and to go home. Though maximum effort was exerted to make the information of survey reliable it was valuable to observe (farming land, produce of crops, family size) the actual living condition of AIDS afflicted households.

## IV. RESULT AND DISCUSSION

### 4.1 Basic information about the respondents

As it is indicated in the table 2 below the highest number of respondents were in the age categories of 35 to 39 and 40 to 44, which were 14 and accounts for 46% from the total respondents. As indicated in the report of FMOH and HAPCO (2006), AIDS affects the most productive age group. The least number of respondents (1) was within the age category 50-54. In the age categories of 55-59 and 66-64 were 14% of the total respondents. The average no of children below 14 was 3.4 per house hold and above 15 was 2.3 the average number of number of dependents were higher than the productive age group. The more independent family members directed to “unbalanced between the production and consumption units within a household”(Boudreau & Holleman 2002).

With regard to the sex, 53% were female and the remaining went to male respondents. The national prevalence is higher among female (4%) than male (3%) (FMOH & HAPCO, 2006). The means of livelihood mostly depended on off-farm, but one respondent was depending on both on-farm and off-farm activities. In contrast, 3 respondents were totally depending on their relatives.

*Table 2: Respondents by major socio demographic characteristics. Bereh district North shewa zone, Oromia region July, 2009.*

<b>Characteristics</b>	<b>Category</b>	<b>No</b>	<b>%</b>
<i>Age</i>	25-29	6	20
	30-34	5	17
	35-39	7	23
	40-44	7	23
	50-54	1	3
	55-59	2	7
	60-64	2	7
<i>Sex</i>	Male	14	47
	Female	16	53
<i>Means of livelihood</i>	Off-farm	15	50
	On-farm	13	43
	Others (dependant)	3	10
<i>Average family size</i>	>15	2.3	
	<14	3.4	

Among 16 female respondents, 8 had no spouse and 8 lived with spouse. Among the 8 who had no spouse most were widowed. From the male respondents, the majority were living with spouse (Table 3 below).

*Table 3: Respondents by marital status. Bereh district North shewa zone, Oromia region, July 2009.*

<b>Marital status</b>	<b>Male without spouse</b>	<b>Female without spouse</b>	<b>Female with spouse</b>	<b>Male with spouse</b>	<b>Total</b>
Married			8	8	16
Single	3	1			4
Divorced	3	2			5
Widowed		5			5
<b>Total</b>	<b>6</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>30</b>

Table 4 below indicated that 12 respondents depended on on-farm (agriculture), most were female with spouse. It was observed that there was no female without spouse who depended on agriculture. 16 respondents were engaged in off-farm activities, the most were female without spouse. 3 female respondents without spouse were dependent either on relatives or institutions. Among male respondents none were observed as dependant. The number of respondents for on-farm and off-farm became 31 because one respondent was engaged in both on- farm and off-farm activities.

Table 4: Distribution of respondents by means of livelihood, marital status and sex. Bereh district North shewa zone, Oromia region, July 2009.

	Means of livelihood (food security)			Total
	On –farm	Off- farm	Dependants	
Male without spouse	3	4		7
Male with spouse	4	3	0	7
Female without spouse	0	5	3	8
Female with spouse	5	4	0	9
Total	12	16	3	31

#### 4.2 The effect of AIDS

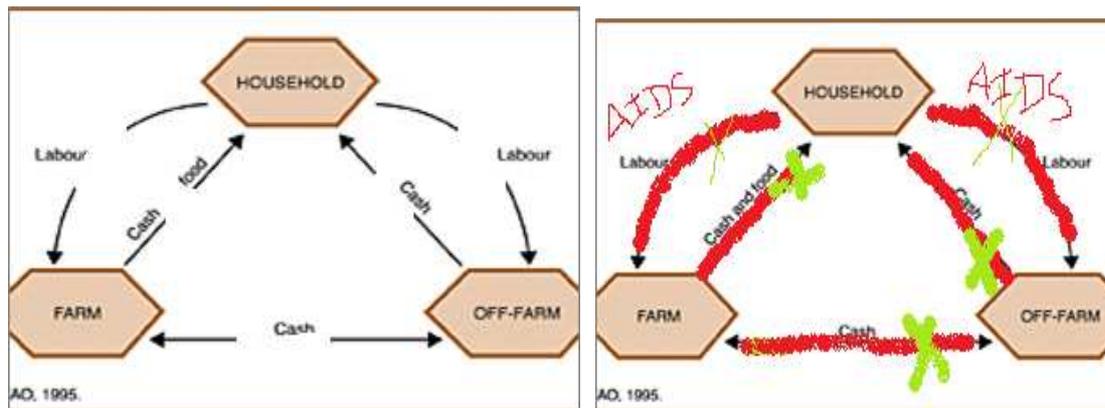


Figure 4 The Effect of AIDS on-farming system. Adopted from FAO, 1995 cited in Du Guerny J, 1999. p14.

AIDS affects the labor through various ways. The person who was sick due to AIDS related illness cannot work either for long period of time or decline in working hours but also the quality of labor is affected and if the person had died the labor is totally ceased.

The effects of HIV/AIDS was felt on two key farm production parameters. First, household labor quality and quantity had reduced, initially in terms of productivity when the HIV-infected person is ill, and later the supply of household labor falls with the death of that person (Baier 1997).

Among the female respondents who were living with their spouse, all of them were fallen sick and they could not work as they used to do. Those who were engaged in off-farm activities declined the no hours per day working compared to before. One female respondent who was engaged in off-farm activities totally stopped her work due to intermittent AIDS related diseases. The spouses of the 3 women who were engaged in agriculture had fallen sick. As a result one woman started other off-farm activity to support the livelihood of the household.

Similarly, all females without a spouse had fallen sick to an AIDS related disease. Women (especially those depending on agriculture) who lost their husband, faced a total loss of labor and ended-up depending on relatives. On the other hand, women who were engaged in off-farm

activities declined the number of working days and hours. Nevertheless, some women stopped what they were used to work and changed their means of livelihood to less labor intensive styles.

The effect of AIDS on labor was equal for all female with spouse and without spouse. However due to gender division of labor between female and male, the female respondents who depended on agriculture and were living with a spouse tended to say they were affected if the spouse was sick for long period of time or died. The female respondents tended to give special emphasis or concern for the sickness/death of the spouse unless they had never married. This was confirmed by the women particularly engaged in agriculture who referred to the sickness of their husband instead of talking about their own sickness. The female respondents entered into this attitude as the result of the impact on the household due to male labor loss. The female developed such thinking because of the socially constructed behavior. It is believed that men's role and responsibility had a greater contribution than that of women. The women themselves undermined their contribution for the betterment of the livelihood.

In a socio-economic survey conducted by Agri Service Ethiopia in Bereh district, the role of men and women on agriculture was identified and preparation, sowing, weeding, harvesting, threshing, and storing were major farm activities accomplished by male. On the other hand, harvesting of crops and animal feed, threshing of crops and livestock management were accomplished by females (ASE, 2001). So what is the relation with AIDS?

The type of labor and means of livelihood matters. If the man's labor on agriculture was affected, the worst effect also went to the women.

There were a total of 14 male respondents. Of those, 13 were sick in AIDS related illness. One man started the medication before he had fallen sick, and the labor was not affected. Among those who were sick, they had observed a shift of labor from agriculture to other daily labor activities. The men engaged in off-farm activities had decreased the length of hours and number of working days due to illness. The spouses of 5 male respondents also fell sick.

Extra expenditure brought to the household due to AIDS related illness. The expenditure was for transportation cost to get medical service or to visit religious institutions, accommodation (food and room). Special food for the sick was also the major cause for extra expenditure. Extra costs incurred due to AIDS related diseases for nine female respondents (2 living with spouse).

Among the 7 female respondents without a spouse, the medical expenditure for one was for the spouse who died a year ago. One female respondent living with spouse also mentioned the extra cost for the spouse. The men who travelled to acquire religious cure through holy water had stayed 3 to 8 months in churches. Holy water is strongly believed in the society to have a healing power for the sick..

*The second factor of household agricultural production that HIV/AIDS will affect is the availability of disposable cash income. During episodes of illness, household financial resources may be diverted to pay for medical treatment and eventually to meet funeral costs. Such resources may otherwise be used to purchase agricultural inputs, such as occasional extra labor or other complementary inputs (Baier, 1997).*

#### **4.3 The response**

The respondents had taken some measures to maintain the livelihood, at initial phases these are the responses. There may be some overlapping between the effect of AIDS and the responses towards overcoming the effect. As the labor was affected according to female respondents with spouse who were engaged in agriculture (though referring the spouse), extra labor had been hired for agricultural activities. Females became engaged in off-farm activities to support their spouse. Due to the loss of their spouses (death), the female respondents without spouse (the widows) ended up depending on others. The remaining female respondents who were engaged in off-farm activities, declined working for days and hours or they totally stopped working. In the same manner, the male respondents with spouse and engaged in agriculture received some labor from neighbors and relatives in law. However, the male without spouse had totally changed

livelihood from agriculture to off-farm. The male without spouse who were engaged in off-farm activities had decreased the length of working hours. The response for the extra medical related expenses was through selling of assets such as livestock and depleting the saving accounts. A male with spouse engaged in off-farm activities was supported by his spouse because she could also generate income.

The female respondent with spouse whom her spouse was sick for long period of time was saying:

*“We had some saving in previous days but now we didn't have because we spent money on hired labor for our farm and medical expense.”*

**The expenditure:** The expenditure was almost similar across the respondents. The major expenditures before the illness were food, agricultural inputs, and clothes. During the illness, the major reasons for the expenditure had transformed to cover the indirect costs related to illness. The most significant cause for expenditure was for the traditionally believed holy water.

#### 4.4 The Impacts of AIDS

The impact is the overall consequence due to the direct effect and responses. As presented in Figure 1 in Chapter 2, AIDS affected the labor and cash. The impact then would be on on-farm as well as any of off-farm activities.

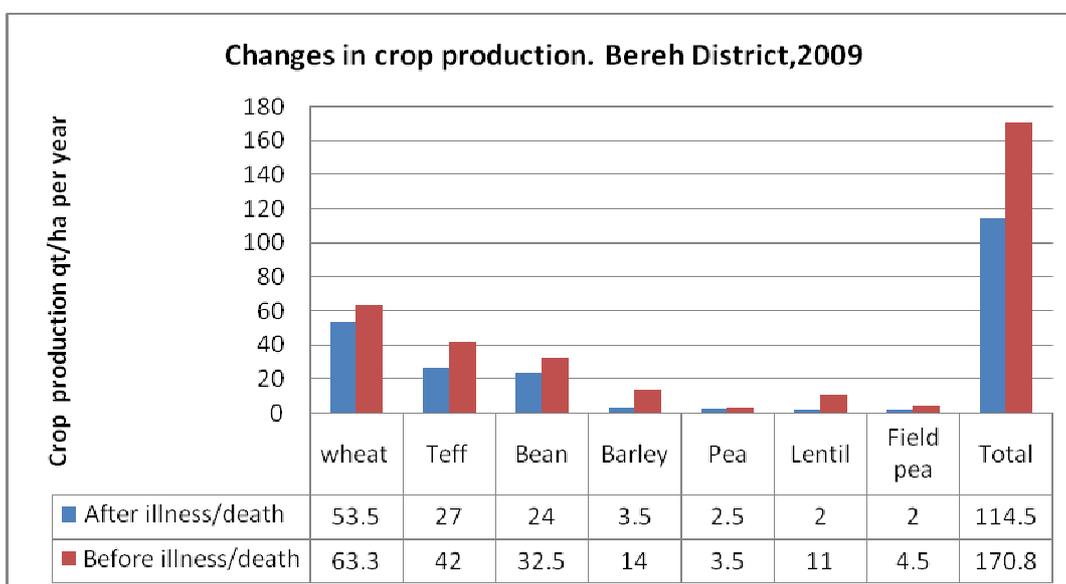


Figure 5 Changes in crop production (qt/ha per year) before and after illness/death in AIDS.

Generally, there was a decline in crop production, access (income decline) and utilization. The features of decline in crop production were two-way: first the particular crop was reduced in production and second a reduction in diversity of crops. According to Kidist, Price Wessele and lerland (2006) crop choice and diversity are important for the food security status of the households due to their influence on the major consumption components as well as some income earnings.

For example wheat, barley and lentil were produced before illness and after the spouse had fallen sick lentil was not produced (See figure 6 above). Lentil is a cash crop in the area.

<sup>4</sup> qt. is stands for quintal. 1 quintal is equivalent to 100 kilogram.

#### 4.4.1 Male Respondents

There were a total of 7 men, (4 married, 2 divorced, 1 single) respondents whom depended on agriculture (Table 4 in section 4.1). The land size under cultivation was reduced by 2ha from 4ha for one male with spouse respondent; the land under cultivation was taken by government for the reasons the respondent didn't know.

It was generally observed that there was low crop production after illness among male with out spouse than male with spouse (Table 5). The major crops produced according to men respondents were wheat, teff, bean, lentil, barley pea and lentil. The crop production was declined by of declined by 4.3 qt/ha/year according to married and 5qt./ha/year according to divorced men.

The decline in crop production had different reasons related to the illness as well as other reasons. The local government took cultivable land for other communal development activities where an alternative for taken land was not provided. The irregular rainfall pattern was also a factor for the decline in crop production.

When man labor was affected due to illness, support was provided from neighbor and relatives, and there was a decline in crop yield, the reason was described as follows:

*“While the support was provided from the neighbor, first they were not concerned about the quality of the work as the ownr. Second the people were giving priority for their farm and sometimes the suitable weather condition was passed by the time when they came to my farm.”*

During the illness, labor was also hired in exchange for cash. The respondents explained that hired labor was the most useful alternative to avoid the already explained drawback of free support from the community. However, the saving money had depleted due to the extra expenditure related to the illness therefore; one was forced to rely on free labor support from the community.

*“I once hired labor while I had fallen sick myself and my wife was following the quality of work while the person was working, and the production was good. Had it been the support from the community you cannot say anything in case you were aware it had not done correctly because it is a free labor support. They can stop supporting you at any point.”*

Those who had oxen (pair) but were not able to get support from the community and unable to hire labor, provided their oxen for rent to various persons for the complete agricultural season.

In some cases if they had a single ox they provide to fellow farmers who also owned a single ox and the person worked for both farms and the agreement was to share the yield equally. In the case when the person had a pair of oxen and rented the product had not shared. In this case, the total production did not declined.

The crop production for some respondents remained the same after the illness. These respondents had enough livestock and saving money compared to those whose production had declined. However, there was another respondent who had explained for unaffected production;

*“I knew my HIV status a year ago while there was a voluntary counseling and testing campaign in our village. The health workers came to our village to test for HIV for volunteer farmers. And I was encouraged to give my blood for testing. And thus I became aware that I had HIV. The health workers invited me to visit the health institution and gave me advice and medical checkup regularly. I was also told about ART. Since I started ART before I fell to the bed my farm was not affected. I have never been sick.”*

The overall impact depended on the wealth status of the households. For some households who had enough assets and savings, the impact was not significant. This was observed particularly for the differences in the ownership of oxen. Respondents who had more than 2 oxen were less impacted compared to those who had 2 or less, because when oxen were sold to cover extra medical costs it also affected the agricultural products since they could neither rent their oxen nor work for themselves.

*Communities are not homogenous, falling into different agro-ecological and economic zones; and economic groups within these communities have different access to assets and livelihood options. Therefore the risks of contracting HIV/AIDS and the ability of households to recover from the effects of HIV/AIDS will vary depending on agro-ecological conditions and wealth (Boudreau & Holleman, 2002).*

With regards to livestock, there was a decline in the number of oxen and sheep among married and divorced male respondents. The total number of oxen declined by 0.6 per household in male with spouse and 1 among male without spouse. With regard to sheep from 9.8 per household among male with spouse and 3 per household with spouse. The two major reasons, which were given for the decline of the livestock, were: they were sold to cover 1) expenses related to the medical expenses and 2) to buy fertilizers and improved seeds. Highest numbers of oxen was sold when compared to the sheep and chicken.

The farmers preferred to sell oxen rather than sheep because it brought better cash than sheep. The burden for the households was the changes in the strategy of agricultural input delivery.

*"This was a double burden for me, there was a new strategy of the government to distribute fertilizer, this year it was given only for cash payment rather than providing by a loan. Therefore I was forced to sell my oxen to obtain money for my medical expenses as well as to pay for fertilizer. I wish I would not use fertilizer for this year but the land never give enough without it. The land was already addicted to fertilizer.*

There were 7 men (4 married, 2 single, 1 divorce) who were engaged in off-farm activities. The activities were mainly daily laborer (carrying different items, construction work) masonry, guard, storekeeper, and driver in government institutions. The overall monthly income had declined among all male respondents, in male with spouse by 536 birr<sup>5</sup>/monthly, 1500 and 300 birr/month among single and divorced respondents respectively. The reasons which were given for the decline of the monthly income were due to inability to work totally or working on and off after the AIDS related illness. One man was working as guard and storekeeper in private agribusinesses. However due to the repeated illness related to AIDS it became working as guard only, and subsequently the monthly income had declined. The driver was saying:

*"When I was healthy, I used to drive long distances to other countries so that I earned additional daily allowance over my monthly salary. These days I couldn't drive long, I was only working in the town. Then my monthly salary did not even cover basic necessities. I wonder what would have happened if my wife hadn't work."*

The male respondents who depended on daily labor had also said they could not work as previous days. The single man who was engaged in carrying agricultural products at nearby business town also said:

*"These days my income is not enough. The prices of food in hotels are increasing daily. If I had a wife the cost for the food would be by far less . I have never cooked for myself, I do not have the skill to do it even..."*

The income of the respondents working in construction was affected not only due to their illness but also due to the close down of construction work over all the country. Hence, during the study period all cement factories had stopped to produce the cement due to the problem of electric power in the country.

*In Kenya, reports indicate that people living with HIV in remote and chronically food insecure areas are having problems accessing basic foods due to high prices (Gillespie, 2008).*

The married men had better support through income of the spouse, which ultimately lead to the impact on their food intake. This was observed by the respondents who were mainly engaged in

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<sup>5</sup> birr is the currency in Ethiopia 1USD=12.57 or 1EUR=17.94.

off-farm activities. In addition, the man who was engaged in agriculture complained about how the lack of skill affected the food security status.

*Table 5 : Distribution of changes in average crop production (qt/ha per year/HH), no. of livestock and income before and after illness/death by AIDS by marital status among male respondents (n=14). Bereh district North shewa zone, Oromia region, July 2009.*

<b>Male</b>	<b>Married (n=8)</b>	<b>Single (n=3)</b>	<b>Divorced (n=3)</b>	<b>Widower</b>
<b>Change in crop production in qt. /ha (n=7)</b>				
crop after illness	13(n=4)	13(n=1)	9.5(n=1)	NA
crop before illness	17.3(n=4)	13(n=1)	14.5(n=2)	NA
<b>Difference after illness</b>	<b>-4.3(n=0)</b>	<b>0(n=0)</b>	<b>-5(n=-1)</b>	
<b>Change in livestock (no./household) (n=8)</b>				
oxen/cow after illness	4.2(n=3)	3(n=1)	2(n=1)	NA
oxen/cow before illness	4.8(n=5)	3(n=1)	3(n=2)	NA
<b>Difference after illness</b>	<b>-.6(n=-2)</b>	<b>0(n=0)</b>	<b>1(n=1)</b>	
Sheep after illness	6.2(n=5)	4(n=1)	3(n=1)	NA
Sheep before illness	16(n=2)	4(n=1)	6(n=1)	NA
	<b>-9.8(n=+3)</b>	<b>0(n=0)</b>	<b>-3(n=0)</b>	
Chicken after illness	3(n=1)	1(n=1)	14(n=1)	NA
Chicken before illness	3(n=1)	1(n=1)	14(n=1)	NA
<b>Difference after illness</b>	<b>0(n=0)</b>	<b>0(n=0)</b>	<b>0(n=0)</b>	
<b>change in Income(birr/Monthly)(n=7)</b>				
Income after illness	439(n=4)	500(n=2)	200(n=2)	NA
Income before illness	975(n=4)	2050(n=2)	500(n=1)	NA
	<b>-536(n=0)</b>	<b>-1500(n=0)</b>	<b>-300(n=+1)</b>	

#### 4.4.2 Female Respondents

In the table 6 above it is indicated that there were 5 women whose livelihood depended on agriculture. All were married. The spouses of the 3 respondents were sick in AIDS related diseases thus the land under cultivation had declined from 3.5ha to 2 ha for the 2 respondent. The two main reasons provided for the decline of the land under cultivation were firstly because it was rented out due to illness of the spouse and secondly, land was taken for other communal development work that was for potable water supply of the villages.

The land under cultivation for the remaining one had not declined since it was cultivated through hired labor. For the last 2 where the status of the spouse was not known, the land under cultivation had remained the same. It was explained by the ART service provider that some females kept secret their of their HIV positive status due to the fear of the blame shift towards women.

The crop production had declined by 3 qt after the illness of spouses. When the production declined, the woman was engaged in daily labor to support the livelihood

The female who lost their spouse totally ceased crop production. The crop production before the death of spouse was 16.5qt (Table 6). The causes for ceasing production were the death of husband consequently the property was grabbed away by relatives in-law and some moved to small towns to engage in other forms of livelihoods. Increased off-farm participation was observed following the death of a spouse from AIDS related illness (Kidist et al, 2006). Moreover, the women also remained dependant on the relatives due to loss of properties.

*” In our culture when the woman marries, she moves to the parents in law to live together in their village. When my husband died, his relative chased me away and I went to my own relatives. I run leaving all properties behind to them. I had a share of land inherited from my father but my brothers already took my share. My sister had applied for the court to see my case but it took long and still I am waiting the legal process”*

Table 6: Distribution of the changes in the crop production in crop production (qt/ha per year), no. of livestock and income before and after illness/death by AIDS by marital status among female respondents (n=16). Bereh district North shewa zone, Oromia region, July 2009.

Female	Married (n=8)	Single (n=1)	Divorced (n=2)	Widow (n=5)
<b>Change in crop production(n=9)</b>				
crop after illness	8(n=5)	NA	NA	0(n=0)
crop before illness	8.6(n=5)	NA	NA	4.1(n=4)
<b>Difference after illness</b>	<b>-0.6(n=0)</b>			<b>-4.1(n=-4)</b>
<b>Change in livestock/ no./household (n=13)</b>				
oxen/cow after illness	3.5(n=4)	NA	2.5(n=2)	0(n=0)
oxen/cow before illness	4(n=6)	NA	4(n=1)	2(n=4)
<b>Difference after illness</b>	<b>-0.5(n=-2)</b>		<b>-1.5(n=+1)</b>	<b>-2(n=-4)</b>
Sheep after illness	5.5(n=4)	1(n=1)	1(n=2)	1(n=4)
Sheep before illness	4.8(n=6)	4(n=1)	0(n=2)	3.75(n=4)
<b>Difference after illness</b>	<b>+0.7(n=-2)</b>	<b>-3(n=0)</b>	<b>+1(n=0)</b>	<b>-2.75(n=0)</b>
Chicken	4.3(n=3)	NA	NA	1.3(n=4)
Chicken	4.3(n=3)	NA	NA	0(n=0)
<b>Difference after illness</b>	<b>0(n=0)</b>			<b>+1.3(n=+4)</b>
<b>Change in Income(Birr/Monthly)(n=12)</b>				
Income after illness	200(n=4)	0(n=0)	160(n=2)	266(n=3)
Income before illness	400(n=3)	300(n=1)	540(n=2)	100(n=1)
<b>Difference after illness</b>	<b>-200(n=+1)</b>	<b>-300(n=-1)</b>	<b>-380(n=0)</b>	<b>-166(n=+2)</b>

In the table 6 above it is indicated that there were 5 women whose livelihood depended on agriculture. All were married. The spouses of the 3 respondents were sick in AIDS related diseases thus the land under cultivation had declined from 3.5ha to 2 ha for the 2 respondent. The two main reasons provided for the decline of the land under cultivation were firstly because it was rented out due to illness of the spouse and secondly, land was taken for other communal development work that was for potable water supply of the villages.

The land under cultivation for the remaining one had not declined since it was cultivated through hired labor. For the last 2 where the status of the spouse was not known, the land under cultivation had remained the same. It was explained by the ART service provider that some females kept secret their of their HIV positive status due to the fear of the blame shift towards women.

The average crop production had declined by 0.6 qt per household after the illness of spouses. When the production declined, the woman was engaged in daily labor to support the livelihood

The female who lost their spouse (widow) totally ceased crop production. The crop production before the death of spouse was 4.1qt per household (Table 6). The causes for ceasing production were the death of husband consequently the property was grabbed away by relatives in-law and some moved to small towns to engage in other forms of livelihoods. Increased off-farm

participation was observed following the death of a spouse from AIDS related illness (Kidist et al, 2006). Moreover, the female also remained dependant on the relatives due to loss of properties.

*" In our culture when the woman marries, she moves to the parents in law to live together in their village. When my husband died, his relative chased me away and I went to my own relatives. I run leaving all properties behind to them. I had a share of land inherited from my father but my brothers already took my share. My sister had applied for the court to see my case but it took long and still I am waiting the legal process"*

*Gender norms significantly affect an individual's risk and societal vulnerability to HIV/AIDS because they ascribe distinct productive and reproductive roles to women and men, and because they differently influence women and men's access to key resources such as information, education, employment, income, land, property, and credit (Gupta et al 2003).*

The number of oxen declined by 0.5 per household but the 2 female with spouse totally lost their oxen. The number of chicken had remained the same according to females with spouse. Oxen and sheep were sold to cover medical expenses and for fertilizer. Married women engaged in agriculture first sold oxen followed by sheep.

Nevertheless, for females whom were divorced and engaged in off-farm activities, the number of livestock had increased. The reason for the increment in the number of livestock was a result of the support through the health center as an income generating activity. On the other hand, among the widow the number of livestock declined as well as change in type of livestock from sheep to chicken for these women who were chased away after the death of their husband.

Female with spouse who were engaged in off-farm activities such as construction work, and serving local beer generated their own income. However, the income declined after they had fallen sick by AIDS related diseases. The highest drop of income was observed among divorced and the least was among widowed however, among widowed and female with spouse there were respondents who never been engaged in off-farm but started to work after the consequence of AIDS. This had observed in one divorced man who shifted from agriculture to off-farm activities. The non illness cause mentioned was for the decline in income was due to the close down of construction work all over the country. The same applied to females who were living alone except for the widow. In some cases when they were chased away from the village, they got engaged in income generating activities.

The female with spouse were in better food security position than the female without spouse supported them particularly if the spouse had not fallen sick in AIDS related illness. Female engaged in off-farm activities were not impacted by AIDS as female engaged in agriculture . In case of female living without spouse, they had only one means of livelihood (themselves). If they fell sick, they will be in the worst situation. In contrast, in terms of responses to ensure food security the case of widow who worked in agriculture entered a situation where they could not fulfill their food security situation. As a result of cultural, economical, and social factors, however, the woman working off-farm and who had their own income was better in mitigating the impact of AIDS as they had developed the to fulfill their food demand. In contrast, the women who lived alone might suffer due to psychological problem, which affects also food utilization through reducing appetite.

The single female was saying with tears in her eyes :

*" My neighbors suspected me that I had AIDS. I heard them gossiping about me. I don't know who told them! No one needs to charm with me. I felt bad since I had no one to talk in my house."*

#### **4.4.3 Food utilization**

Food security is about availability, accessibility, and utilization. People might have had adequate production for availability as well as income to access food. However, the utilization is the

important aspect. It is acknowledged that the type of meal served in the household was not considered though it was important while assessing food utilization. Not only the type of meal but also how the food is prepared, preserved, including the sanitation issues was believed to be important. Nevertheless, this study did not address these detailed aspects of food utilization. Instead, it was tried to capture it indirectly through the type of food purchased for consumption and the food distribution among family members. Water is an important food, which had not similarly addressed by this study. Household food security is about how does the household produce, or acquires food; store, process and preserve the food; share food among the household members (MoRAD and FAO, n.d.).

The food purchased from the market for the household who depended on agriculture differed compared to those who depended on off-farm activities. In agricultural dependent households the most mentioned food items purchased from the market were spices (salt, oil) and vegetables whereas for the households depending on off-farm income the main food items purchased were crops such as wheat, sorghum, teff but vegetables and species were also mentioned.

The changes in the type of food items purchased for consumption at present and before the illness was not significant according to married woman who depended on agriculture. However among the married woman and divorced whom depended on off-farm activities, the changes was on the type of crop purchased, for example from teff to wheat, sorghum and maize. Significant change was observed among widows and singles who became fully dependant on relatives and support organizations (police collage).

In addition, there were widows whom changed in the type of food items from for example teff to wheat and bean. Beef and sheep were rarely mentioned both before and after illness.

With regards to the number of meals per day among married women who depended on agriculture and off-farm income there was no significant change in the number of meals per day before and after the illness, it was 3 times. But among the women who were single, divorced and widowed the was a significant change , they mentioned to eat whenever it was available, while taking ART and also 1 to 3 times per day.

For male respondents, the finding was similar. Most mentioned 3 meals per day before and after the illness. However, there were changes in 3 respondents saying they were eating whenever available and reduced from 4/5 to 3 meals per day among male respondents without spouses. One married man increased the number of meals from 3 to 4/5 after illness.

Concerning to the distribution of meals in the household, all members of the households had served for the food together but if there was a sick person in the household it was given priority . One male married respondent was saying:

*“After it was known the different HIV result of me and my wife, we stopped eating together and we used a separate plate”.*

#### 4.4.4 Antiretroviral Treatment and food security

Table 7: The body weight of respondents.

Sex	The body weight (The last 4 consecutive visits)				Total
	Constantly increasing	Constantly decreasing	Fluctuating	Constant	
Male With spouse	7		1		8
Male Without spouse	3	3			6
<b>Subtotal Male</b>	<b>10</b>	<b>3</b>	<b>1</b>		
Female With spouse	3	1	3	1	8
Female Without spouse	1	4	3		8
<b>Subtotal Female</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>1</b>	
<b>Total</b>	<b>14</b>	<b>8</b>	<b>7</b>	<b>1</b>	<b>30</b>

Source: Medical records of respondents, Sendafa health center, 2009.

Most respondents indicated that though their health status had improved, they still had difficulty to do the day to day activities as they used to do. *“The farmer said sometimes I stopped to plough in the middle of my farm, I felt general body weakness. I was not as I used to work on my farm”* The woman engaged in local brewery preparation said *“The medicine was dangerous if it was taken without food. Whenever I took it with empty stomach I fell sick”* The client’s interval of time that ART had started and the degree of side effect by the medication was not considered. The result might have brought a different picture if the stage of recovery (those who were on recovery and started ART recently or started earlier) or those who were affected by the medication.

The respondents mentioned that the ART clients received the nutrition consultation from the health center. It nevertheless it was hardly to get neutrinos food based on the consultation.

Even though ART was freely accessible in the rural community, the effectiveness of ART without adequate food access becomes a question. According to Byron, Gillespie & Nongame (2008) PLHIV have an increased requirement of calorie intake and if the person was on ART the side effect of the drug is worsened by malnutrition. Therefore food security particularly for ART clients was found to be critical. The ART clients who take their medication regularly might be affected as the result of severe food shortage (Townie, 2009). The AIDS impacted households whose asset and income were eroded are less likely to lead a productive life because of accessibility of ART.

Table 7 above indicates the body weight measurements among male and female respondents.

The medical record of the respondents was reviewed. The last 4 body weight records were taken into consideration to investigate the most recent nutritional status of the respondents.

The results indicated that among the female respondents the total constantly increasing, constantly decreasing and fluctuating 22%, 63% and 86% respectively and the remaining percentile went to male respondents.

It was generally observed that the body weight of most female respondents decreased more compared to male respondents. Most female without spouse lost body weight during the previous 4 consecutive visits. In sub-section 4.4.2 it was stated that the production of females living without spouse was ceased. It was also noted that the females living without spouse were in worse conditions in ensuring food security compared to the female living with spouse.

Among male respondents, more men who were living without spouse decreased weight than men living with a spouse.

Different factors might contribute to the variation in body weight, for example in the period from June to September (section 3.1.3) there was a severe seasonal food shortage in the study area. This might attributed to the variation in body weight of the respondents. Though different findings were observed among female and male respondents.

#### **4.4.5 Support each other in times of AIDS; Stigma and discrimination.**

*Ider, Jigi (Debo),Ikub* were different community support structures in the community .. These were giving monetary, labor and material supports in the community and for the community based on their institutional objectives. Idir is a social institution formed to support finance, materials, and labor for the funeral ceremony. Debo is an institution organized for labor support among members. Ikub is a financial institution organized by members of community where money is collected from each individual and the sum provided for one member at a time. The amount of money contributed is decided by the members. Most of the respondents mentioned that these institutions were useful as long as one could be able to contribute regular fee and labor.

The woman said:

*" I stopped to participate in Ikub since I faced financial constraint these days"*

Particularly in agriculture if the man had fallen sick *Debo* supported a lot. But this worked only if the respondents did not disclosed their HIV positive status to their village members., The support was provided considered the person had other illness.

The man:

*"It was just because I fell sick that they supported me on my farm. If I would have told them it was AIDS they would automatically stop any communication with me."*

The woman said:

*"The village community used to isolate a person who loses weight and heard something of AIDS about that person. Therefore, I was scared to disclose my status in my community to maintain my social network."*

The community support structure exists to support each other. However, due to the fact that the respondents had not been able to contribute a regular fee it might affect their social network. Moreover, the illness by itself was highly stigmatized in the study area. *'The effects of HIV/AIDS on informal rural institutions may create a crisis of unprecedented proportions particularly for the viability of rural institutions and of traditional social safety mechanisms'* (Topazes, 1998).

The community also supported each other by providing loans for expenses of medical cost. But the support was only for a short period.

The man who was sick for a long time said:

*"I got enough loans in the initial period of my illness but when they got aware I couldn't recover in certain period of time they refused to give me a loan. They feared I might die one day without paying their money."*

#### **4.5 Towards sustainable food security**

*How to achieve the sustainable development essential for an effective response to the epidemic under conditions where the epidemic is destructive of the capacities essential for the response (Cohen 2000 cited in Haddad & Gillespie, 2001)*

##### **4.5.1 Support from the organizations/institutions**

10 persons (33%), 1 man and 9 women, received support from YeNoh Merkeb (local association) and the district health office. The respondents received support from one of the institutions or from both. YeNoh Merkeb HIV/AIDS prevention and care association was giving direct food

support such as 5 Kg Wheat/Teff, 1lit Edible oil, Soaps and Matches on a monthly basis, a total of 7 women were supported by this association.

The support, which was delivered through the health sector, was a kind of income generating activity on a revolving basis. The respondents received a lump sum of cash ranging from 1700-3000 birr and returned it back to the institution for use to other AIDS clients. Most clients who received this support had bought sheep and oxen. From both institutions, 1 man and 1 woman were supported.

The Ethiopian police university college supported women, poor and AIDS clients through providing the leftover food. One woman was totally dependent on this college.

#### **4.5.2 The Influential development institutions/organizations**

The most influential institutions for sustainable food security according to the respondents were, the district health office, agriculture office, cooperative union, credit and saving institutions, Ethiopia police university college and YeNoh Merkeb were mentioned. The traditional institutions mentioned were Debo and Ikub.

Though the Ethiopian police institution and YeNoh Merkeb had provided direct food support, which would not necessarily contribute towards sustainable food security, the respondents gave particular emphasis on the contribution of these institutions for their food security.

Among the institutions which greatly contributed to sustainable food security, district agriculture office and cooperative union were identified by male respondents whose livelihood depended on on-farm activities. Male and female respondents who were only in agricultural activities recognized Debo as an influential institution. The female respondents whom depended on off-farm activities identified saving and credit institutions.

#### **4.5.3 Constraints to participate in development organizations/institutions**

Most female involved in off-farm activities and on-farm activities did not know about the existence of saving and credit institutions or they were not aware that they could participate in this institution. Those who had awareness and were familiar with the rules and regulations of saving and credit institutions, they considered themselves, as they could not fulfill the preconditions to obtain a loan. It requests group collateral/guarantee. This mean that a group of 5 women entered into an agreement that if one member could not return a loan, the remaining of the members were responsible to pay back the debt of the colleague.

The female said:

*"I had fallen sick for long period then my villagers suspected that I had AIDS. After I got treatment of AIDS my health improved but the villagers still did not trust me to be a member for them to receive a loan. They do not want to take risk"*

The other respondent said:

*"I heard about saving and credit institutions, however, I was frightened to misuse the money for my immediate needs"*

Moreover the credit institutions need a guarantee of fixed asset such as land, house or oxen. Where in most cases the respondents lost them for the duration of sickness in related to AIDS.

The strategy of delivering fertilizer through cooperative union switched from loan arrangement into cash. This had an impact on the farmers who could not pay in cash as presented as a constraint by respondents.

The improved varieties of seeds were delivered through extension workers of the district agriculture office. To receive the seeds everyone had to participate in education program.

Moreover the land had to be prepared as the extension worker structured to do so. The word of the male farmer was:

*“the seeds provided were giving a better production than the local one. However for the farmers whom did not attend the education program, as well as for those whose land was not prepared they said, the seed wouldn’t provided. This worked for healthy farmers, not for me.”*

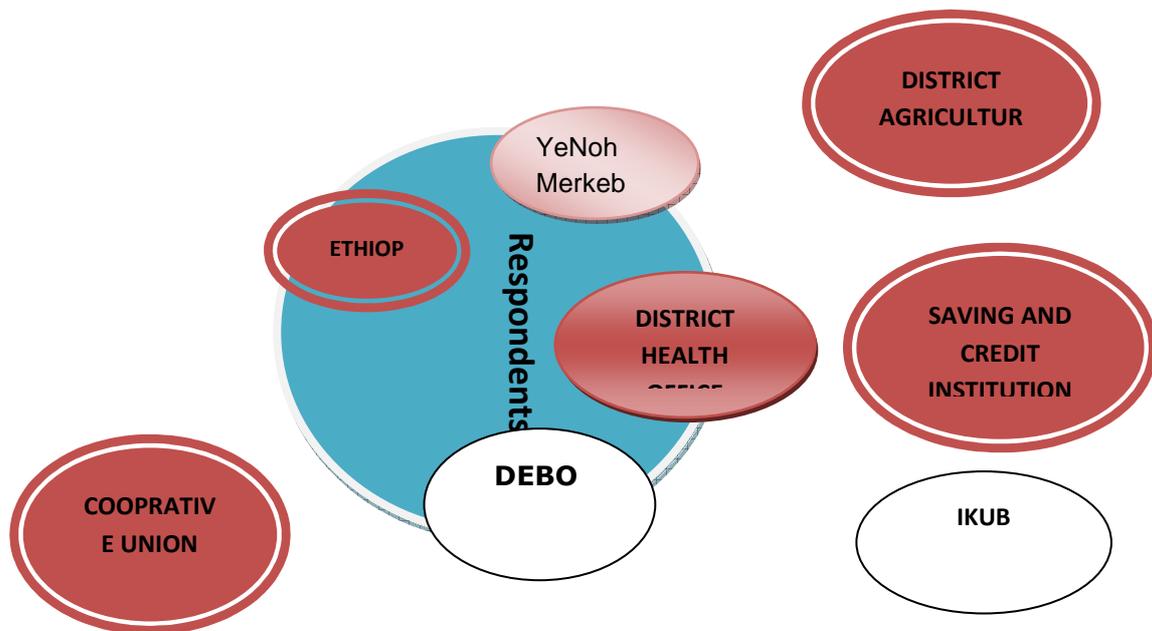


Figure 6 Venn diagram

The Venn diagram is using as a tool to analyze the organizations/institutions, which were important in terms of ensuring food security. The district agriculture office, saving and credit and cooperative union were mentioned as important but were not giving services based on the need of the respondents. In the same manner, the benefit from Ikub was declining. The Ethiopian Police college and Yenohe Merikeb though had limited influence in bringing sustainable food security. They were supporting the respondents by providing direct food support. The district health office and Debo practice contributed in bringing sustainable food security. The district health office provided a sum of money for income generating activity where some women participants benefited from.

## 4.6 The institutional/organizational response

### 4.6.1 Health sector

#### Sendafa health centre

Nutritional counseling was provided in the health center. There was no nutritionist in the health center but the ART service providers gave advice (to take balanced diet, to avoid eating uncooked food). However, the clients forwarded their challenges in accessing food as to correctly apply the advice into practice. The health center did not provide food support except for nutritional counseling. However, there was support through district health office for ART clients.

*“Some of them couldn’t eat even once per day; some were selling to sell their productive assets (like cattle and house equipments) to feed them. It is challenging for us to give counseling where we knew the ART clients did not get it”*The ART service provider.

If the female tested was test positive earlier than the husband, they would carry the burden of promiscuity by their spouse. In some cases, they were forced to divorce. For the woman divorce meant being unable to access food because she had to leave the home. There were many cases with this problem. Very few were going to the legal service though the process took long time to return the asset share. Nevertheless, in case of HIV they are hesitant to go court due to prevailing stigma and discrimination. Some of them did not tell their spouse they were taking ART because they feared to be blamed of promiscuity.

The female clients visited the health center for a number of reasons: to receive family planning service, follow-ups of pregnancy and delivery. This created an opportunity to test for HIV.

However, there are some men who also had problems to feed themselves they said, “I don’t have a wife who cooks for me” which is a good reason for food insecurity though they have sufficient resource.

After the commencement of ART program in the health center the death rate decreased and there was an improvement in the health status of the clients. One of the procedures to follow the progress of their health status was measuring their body weight for each visit. ART clients increased their body weight but it was true for all, particularly female clients, they usually decreased in weight.

### **The District Health Office**

There was a support from different humanitarian organizations, which were streamlined through district health office to ART clients. The support was not on a regular basis. The district health office provided 1500-3000 birr in the form of loan and later revolve among other clients. Some of them bought a cow, sheep etc. The aim was to enable the poorest female to engage in off-farm activities to enable them food insecurity in sustainable manner.

As was discussed in section 4.4.2 the stigma and discrimination was widespread in the study area. Bringing the services based on the need of the clients thus respondents were a benefited however for the health district engaging in income generating activities were additional work burden as well as was not specialized in the terms of profession.

### **4.6.2 Agriculture Sector**

*While HIV/AIDS impacts on household food security and livelihoods in many ways, the agricultural sector can also help to militate against these and other impacts. Agriculture can help rural women and men out of poverty and food insecurity through income generation and sustainable production practices. It can provide nutritious foods to support antiretroviral therapies (ARTs) (Inter agency coalition on AIDS and Development, 2006).*

### **The District Agriculture Office**

There were two departments under district agriculture office; 1) extension, 2) natural resource and productivity improvement. The livestock production and health agency is an independent office.

The targeting strategy (criterion) to reach farmers as a target of agriculture office is: the individual should have farming land and oxen power (farming oxen) otherwise they will not be targeted. The targeting strategy automatically excludes farmers who sold their oxen for AIDS related expenditures. Moreover, the farmers ought to attend basic skill training on basic modern agricultural practices. This also had implications for the sick farmer who could not attend the education session. Consequently, if the farmers applied the knowledge they acquired into practice they were able to receive improved seed. In section 5.2 while discussing the constraint to

participate in development organizations, the farmer raised how the strategy had prevented them to participate in the service provided by district agriculture office.

It was confirmed by the district agriculture office that the fertilizer was provided through cash unlike the previous years. In the previous years, the fertilizer was provided through loan. The strategic change was because of two reasons according to the district agriculture office. The first, one was that most farmers were improving their purchasing power to buy the fertilizer. The living standard of the farmer was improving. The second reason was to protect the farmers from high interest rate, which had cost 12.5% and the current strategy to prevent unnecessary expenditure on the farmer. If they did not have the capacity to buy they can borrow money from the other farmers with or without interest. In contrast, the same strategy identified as respondents as constraint because the respondents had to sell their oxen to earn money to bought fertilizer.

The government identified the district as food self-sufficient and therefore no food security programs were undertaken in the district. However, the reality was not like this, people had food shortage. If the district was food insecure, adequate budget would have been allocated. There was no plan for training related to HIV/AIDS to the staffs of district agriculture office.

There was no activity and budget plan for HIV in the district agriculture office. But the section of home economics was handling the HIV/AIDS awareness creation activity on the way to other activities. For example for this year, 400 farmers have been visited house to house to provide education on HIV/AIDS.

In the 5 year strategic plan there are no specific activities which touched HIV as independent program. Nothing has been mentioned in the 2005-2009 strategic plan of Bereh district agriculture office.

The national HIV/AIDS multisectoral prevention, care and support strategy was not known by the district agriculture office.

Similarly in the natural resource department, it was mentioned that only awareness creation is provided with respect to HIV/AIDS. The department head said

*"we are not fully involved in HIV/AIDS activities because it has its own sector such as health and HIV/AIDS prevention and care office."*

There were communal activities which were conducted at village level under natural resource department. These communal activities were soil and stone band, nursery establishment etc. for the contribution of labor, wheat was provided. The targeting strategies were being poorest farmers, healthy and strong. These were identified through wealth ranking. Strong and health might be frustrating words to the AIDS patients.

### **District agriculture plan and program; and extension unit. The informal discussion**

Also confirmed the sector only involved in awareness creation on HIV/AIDS.

*"We believe there will not be productivity unless there is healthy and productive society that is why we educate farmers to prevent themselves from infection of HIV"*

Though the idea is generally accepted, it had a tendency to exclude those who were already sick by AIDS. It gives the interpretation that once infected on could not be healthy and productive. It had also blocked to initiate efforts to make those productive who were already AIDS patients.

*"The mandate on HIV is for health sector and HIV/AIDS prevention and care and they had also good budget for HIV but in this sector there was budget constraint."*

In the planning and program department, there has never been a plan and report about HIV because nothing was mentioned in the 5 year strategic plan of Bereh district agriculture sector.

The strategic change for delivery of fertilizer from loan armament to cash payment for this year had decided as consequence of delayed repayment of loan for the preceding many years. The district is in debt of millions of birr because of owing loan from fertilizer. This statement was contradicted by the statement of district agriculture office head.

## **The livestock production and health agency**

HIV/AIDS was not taken as an activity in overall strategic direction of the agency. There is no budget allocation for this activity, according to the head of the agency. Training was provided for the staffs once on HIV/AIDS.

*“HIV focal person is assigned but she is not working on practical activity”*

### **4.6.3 Non Government Organizations**

#### **Agri service Ethiopia**

There was no activity on HIV/AIDS because the government health sector has started to work extensively in the area of developing the grassroots health promotion through health extension strategy. Therefore, to avoid duplication of efforts it was not working on HIV/AIDS. There was no budget and human resource allocation on HIV/AIDS. There were no known targeted AIDS affected households in the organization operational area. The strategic document clearly indicates that HIV/AIDS is a cross cutting issue, but the program office was not clear what it meant and was unable to translate it into practice.

#### **YeNoh Merkeb HIV prevention association.**

The purpose of YeNoh Merkeb HIV prevention association is to decrease the spread of HIV/AIDS. Since HIV and poverty are interlinked, the organization was giving holistic support to mitigate the impact of AIDS. The organization head office is based in Addis Ababa but the staff of the organization visits Bereh district twice a week to monitor the activities.

There were different activities in school and out of school. In the school, the organization is facilitating and supporting the establishment of anti AIDS club. Out of school, it is working with commercial sex workers and AIDS affected households. It is mainly through income generating activities.

In Bereh district, it has supported 45 old aged and poor AIDS afflicted households through providing wheat, edible oil, teff, soap etc. House maintaining, home based care were part of the activities.

The organization has faced difficulty in collaborating with government sector offices due to the bureaucratic procedure.

### **4.6.4 Microfinance institutions**

#### **PEACE microfinance institution**

Poverty Eradication and Community Empowerment (PEACE) microfinance institution was the institution mandated to mobilize savings on lending to the clients who were poor and productive but hindered by lack of finance to improve their livelihood. Therefore, this institution was facilitating to organize and empower the poor and productive by giving training on financial management, planning etc. 85% of clients were female. There are 2000 clients (8 male).

The criterion to identify clients were presence of the approval for the resident of the village, free from any debt, recommendation that indicates that the person can work and change him/her self.

Before disbursing the loan, the groups had to save 5 birr twice a month. The institution in the mean time evaluates the members (a group of 3-40).

The member should have a group collateral. But each individual members should have assets (farm land, cattle, house etc) in order to access loan from the institution. This was mentioned in section 5.2 as a constraint to participate in credit and saving institutions.

In relation to HIV/AIDS, awareness creation was given in the village in the sense of “someone will be productive if the health is maintained” (what is the implication for AIDS affected HH). There were no special strategies for AIDS afflicted households.

According to the personal opinion of the head of institution, the PLHIV did not have group guarantee due to the nature of the disease but the institution did not have any strategy for this problem. The institution did not request HIV test nor do rejects if a person disclose the status. It was not prerequisite.

As it is known to qualify for loan provided by commercial banks one has to own an asset, the major criteria of the bank (collateral) and in principle the cooperative societies provide credit only for the members. The methodology deployed to provide credit by MFI is group collateral. This implies that the resource poor farmers and women headed households do not have access to credit due to lack of asset, inability to afford membership fee (cooperatives) and reluctance of better-off farmers to organize in group, respectively

### **Oromia saving and credit company.**

The company does not aim for profit making but for poverty reduction. It is requesting for a group guarantee. The groups organize themselves. The institution requests the asset guarantee. There was awareness creation on HIV/AIDS for the clients of institution. *According to the director of Bereh district Oromia saving and credit company during the discussion of accessing a loan to AIDS afflicted households, we had no policy or strategy to work on HIV/AIDS except awareness creation. Many MFIs have not established HIV/AIDS policies and do not seem to know how to deal with the complexity of the crisis and the numerous dilemmas that exist in relation to the HIV/AIDS problem (RTI, 2004).*

The likelihood of repayment from AIDS afflicted households is very low. Generally we guided by the principle that *“the loan is provided for the individual who is mentally and physically capable.”*

In the lesson learned by Care International it was recognized that the Formal microfinance institutions operate on the principle of financial sustainability through cost recovery and make loans based on pre-established loan criteria. As a result, they tend to work with poor households that are relatively economically active and stable, rather than with the poorest of the poor. Yet most HIV/AIDS affected households are poor and have credit risks precisely because they are economically unstable (CIS, 2002?).

### **4.6.5 The policy Environment**

**A Plan for Accelerated and Sustained Development to End Poverty (PASDEP):** is Ethiopia's guiding strategic framework for the five-year period 2005/06-2009/10. In this document there are 7 crosscutting issues. Amongst these HIV/AIDS education is mentioned (MoFED, 2006).

As a result of the Government's appropriate policy interventions and strategies to address the epidemic in a holistic manner, during the reporting period (2006/07): The number of Voluntary counseling and Testing (VCT) service providing centers increased to 1,898,191. The proportion of health facilities (hospitals, health centers, and private clinics) providing an ART service has increased to 271. The number of PLWHA ever started ART has increased to 97,299 in 2006/07 (MoFED, 2007).

In the PASDEP though worth to mention HIV/AIDS as a cross cutting issue, however it seems the progress report of PASDEP emphasized on the responses of AIDS as clinical aspect of AIDS. This is to mean that despite the fact that HIV/AIDS was indicated as crosscutting issue in PASDEP, it was only reported the direct AIDS interventions rather than what other sectors like agriculture, were contributed to reduce the vulnerability of AIDS afflicted households

**Food Security program:** The long-term development strategy of the government is known as the Agricultural-Development Led Industrialization Strategy (ADLI). ADLI thus focuses on creating the conditions for national food self-sufficiency, which relates to the Food Security Strategy (FSS) with its' focus on ensuring national food security measured at the household level.

An agricultural-led programmed will have to take cognizance of the impact of HIV/AIDS on the sector. The impacts of AIDS on labor, asset depletion and erosion of rights (access to land) may all seriously undermine the effect of the strategy (Drimie et al, 2006).

Food Security program of the coalition for food security in Ethiopia had put a goal in the document to drastically reduce food insecurity faced by vulnerable households. In its program under in the component of objective 3 to Increase immunization, promote HIV/AIDS prevention/control was stated

The Coalition idea reflected a new partnership among government, development partners (donors, UN, NGOs, etc.), civil society, private sector and with maximum social mobilization of the people themselves (FDREFSCB, 2003,). This strategy has a limited response to the realities that HIV/AIDS cause for food insecurity and the bi-directional relationship (Drimie et al, 2006).

**Multisectoral Plan of Action for Universal Access to HIV Prevention, Treatment, Care and Support in Ethiopia for 2007 –2010:** The program objectives in the document are to increase primary health care service coverage from 72% to 100% and provide access to and optimal care and treatment to patients (capacity building). And to ensure that leadership at all levels sustain HIV/AIDS as a priority development and emergency agenda (Leadership and Mainstreaming) (HAPCO, 2007).

**The National Guidelines for HIV/AIDS and Nutrition in Ethiopia:** The Guidelines seek to assist the various categories of people infected with and/or affected by HIV: adults, pregnant and lactating women, adolescents, severely malnourished adults and children, and people on medication (FMOH, 2008).

**Nutritional care and support for people living with HIV/AIDS :** This is a training manual prepared for health workers with the aim of providing comprehensive care and support service to help PLHIV remain healthy; improve the quality of their lives, remain active and economically productive. The number of PLHIV deserving comprehensive care and support including nutritional care is continually growing and their service demand is yet unmet. (MoRAD & FAO, n.d.).

Gender-sensitive and multisectoral rural development policies and programmes are essential elements of any response to HIV/AIDS. The need to develop capacity-building strategies was to improve the planning capabilities of agricultural and rural development institutions (Topouzis, 1998).

The policy environment plays a key role in defining the parameters of and vulnerability to the impact of AIDS epidemic. These strategies and policies had redeveloped in recognition of the fact that HIV/AIDS could have implications for all other sectors (education, agriculture). Despite the policy gaps identified above, these policies and programs could not have been integrated in rural development programs as HIV/AIDS prevention and mitigation programs (Drimie et al, 2006).

#### **4.6.6 PESTEC**

PESTEC is Political, Economical, Social, Technological, Environmental and Cultural analysis and gives an overview of the different macro environmental factors that needs to be taken into consideration. In this thesis report PESEC is used to analyze the influence of the macro environment in the impact of AIDS on food security.

**Political:** This part is assessing policies, legislation and the government interference (at local, national and international level). There are programs of AIDS incorporated in overall programs of the country (PASDEP and ALDI) as well as specifically addressing the nutritional challenges of PLHIV. The policies at national level though recognized that HIV/AIDS have implication on other sectors; there was a limitation to address the bidirectional effect of AIDS on food security. The policies and programs were not going down to Bereh district agriculture office and livestock agency as it was described earlier in section 6.2 and 6.3. Bereh district agricultural input delivery strategy constrained factor for PLHIV in the district. These all had an influence for PLHIV to address their food security.

**Economic:** The general financial and economic resources. The overall economical status influences food security of PLHIV. The majority of Bereh district population is poor. It was stated earlier that 8 %, 18 % 39 %, 35 % of the community are categorized in rich, medium, poor and the poorest of the poor respectively (ASE, 2001).

**Social:** Traditional institutions. The social net work have a significant contribution towards food security in Bereh district. However, the traditional institution were undermined by AIDS. This is related with stigma and discrimination

**Technical:** The traditional farming practice of rural households affects the AIDS patients to ensure food security. AIDS affect labor whereas the traditional farming practices are labor intensive. Labor saving technologies WORD MISSING??promoted in the rural setup.

**Environmental:** Climate, weather, natural resources. The district has a rainfall shortage since 1991.This tremendously affect the food security situation of the area.

**Cultural:** The aspect of gender inequality was hampering females to access to resource. Land is very important resource, which females cannot access due to the cultural problems.

## V. CONCLUSION/RECOMMENDATION

### Conclusion

This study set out to investigate the sustainable responses of the impact on food security in different categories of AIDS afflicted households (male with spouse, female with spouse, male without spouse and female without spouse). To reach the point where the impact of AIDS on food security can be estimated, two stages needed to be explored. The direct effect of AIDS on AIDS afflicted households and 2 the responses given for the effects. The study found out that AIDS affects labor and money in the first place. The labor is affected due to illness of AIDS related diseases or death. In the effect of the labor there was no difference among four categories of households. Except among female with spouse who depended on agriculture, they gave emphasis for the illness of the spouse rather than their own. These female reason out the crop production was dropped if the spouse fallen sick, where the fact is the women also had a role in agricultural productivity. This implied that underestimate their contribution for agricultural production.

Moreover, labor constraint was not observed in the household where ART started before the respondent fallen sick in AIDS related illnesses. Early treatment of ART contributed to food security.

With regard to cash there was a change in expenditure before and after illness. The major expenditures before illness were food, cloths and agricultural inputs, whereas after illness on medical and related expenditure.

The responses towards the effect of AIDS, labor was hired for agricultural activity, stopped to engage in agriculture, hired out the female labor, decreased the duration of hours or no of days for off-farm activities. The female who lost the spouse due to death also got engaged in other off-farm activities in small town and/or became dependent on relatives. It is possible to say that, the loss of male labor affected also female if they were living with a spouse.

The effects and responses were generally leads to asset depletion and a drop in crop production. The crop production either declined in quantity or diversity (both were observed). Generally, a crop production drop of 4.3 qt/ha/year according to married male and 5qt./ha/year divorced men male and 0.6qt./ha/year among female respondents was observed. The decline in crop production among male without a spouse was higher than male living with spouse. This is likely the result of the female contribution on agricultural production. The female who depended on agriculture totally ceased crop production due to the loss of land ownership.

There was a decrease in average income of 536birr/month/HH among male with spouse and 1500 and 300 birr/month among single and divorced respondents respectively. The same among female respondents: there was a drop of income by 200 birr/month/HH for females with spouses and 300 birr/month/HH, 380 birr/month/HH and 166 birr/month/HH for single, divorced and widow respectively. However the female and male with respondents were supported by the income of spouse if they were generating income. Generally a higher drop of income among respondents with spouse was observed compared to respondents without spouse.

The numbers of livestock declined too. For the female without spouse who was engaged in agriculture a total cease of production was observed due to loss of productive assets.

In food utilization, the number of meal per day declined and change in type of crop purchased from the market was observed. A decline number of meal per day observed in female without spouse and male without spouse where the body weight also supported the same finding. Female respondents were difficulty in accessing food while male respondents utilizing the food(in cooking).

In the body weight measurement of respondents most female without spouse and male without spouse either reduced weight or fluctuated in weight comparing with respective female and male respondents. These respondents were the ART clients, and the finding of the body weight measurement can indicate on the effectiveness ART service in the rural area.

The AIDS afflicted households got support from the community in terms of labor and loan in cash. However, the labor contributed were not resulted in productive when compared with own production or hired labor. The traditional support structures such as Ikub seems to be degraded due to the effect of AIDS.

The development partners provided either direct food support or in the basis of income generating activities though not sufficient.

The development partners in the district such as district agriculture office, livestock health agency, microfinance institutions and Agri Service Ethiopia, were either engaged in awareness creation or not involved in HIV related issues. Generally there was a tendency to shift the responsibility to health and HIV/AIDS prevention and control office. There were no strategic plans and no budget allocation. The targeting strategies of agriculture office and microfinance institutions automatically exclude AIDS afflicted households. The input delivery strategy of agriculture office was not convenient for AIDS afflicted HH. The case of Agri service Ethiopia was lack of technical skill to support AIDS afflicted HH. The district health office was engaged in revolving fund activity to reduce vulnerability of AIDS afflicted households .

There are policies at national level to create enabling environment to reduce vulnerability of AIDS in households. The strategies were addressed AIDS as crosscutting issue. There are also multisectoral plans of action which are independently prepared. However Bereh district offices were not aware of any of these strategies. Nutrition and HIV country guidelines and training manuals for HIV target population were prepared.

## **Recommendation**

All development partners need to address stigmatisation and discrimination through behavioural change communication strategy, bring model PLHIV from other place and communicate in public to break the silence about HIV/AIDS in Bereh district.

Establish district level HIV/AIDS prevention and care working force.because there is a need to collaborate among development partners, Sendafa health center, Bereh district agriculture office, PEACE microfinance institution and Oromia saving and credit institution, YeNoh Merkeb, Agri Service Ethiopia, to reduce the vulnerability of to the AIDS among females and males AIDS afflicted households. Encourage PLHIV to be a member of this working force.

Evidence based district level workshop for development partners on the impact of AIDS food on security (This thesis report can be used) and how this affect the effectiveness of ART program intervention.

Design a long term and short term shared strategic plan (can be the outcome of workshop) by the workforce to overcome the immediate food security problem and sustainably for betterment of their livelihood. Bereh district agriculture for sustainable food security program. Revise service delivery strategies by considering the AIDS afflicted HH E.g. arrangement for access to fertilizer and seed.

Promote less labor intensive agricultural practices for male and female such as plough.Prepare a training on gender. MFIs need to assess their policies and strategies to respond to the impact AIDS.

Policies and strategies pertaining with HIV needs to be communicated to Bereh district agriculture, livestock and microfinance institutions

Training on food preparation for male and different agricultural skills for female needs and right women's right issues to be provided by Bereh district agriculture office in collaboration women's affair office

Creast communication channel between the legal sector and development partners to address the loss of land ownership as a consequence of AIDS and provide appropriate and timely service for female.

Bereh district health office important to advocate the need for food security to sector development partners

Further study on the effect of ART in food insecurity set up is needed, further extensive study considering economic status, agro ecological zone, means of livelihood, seasonal food shortage, weather condition will be helpful.

Sendafa health center should promote ART in rural area. In parallel feasible food security strategy in collaboration with Agri service Ethiopia, PEACE microfinance institution Oromia saving and credit company, YeNohe Merkeb needs to be developed

Further study on the constraints of implementation of policies and strategies

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## Appendixes

### Appendix I: Survey Questionnaire

#### I. Demographic characteristics

1. Serial number of household \_\_\_\_\_
2. Village(Kebele) of the respondent \_\_\_\_\_
3. Sex of head of household Male \_\_\_\_\_ Female \_\_\_\_\_
4. Marital status Married \_\_\_\_\_ Divorced \_\_\_\_\_ Widowed \_\_\_\_\_ single \_\_\_\_\_
5. Family size >15 \_\_\_\_\_ <14 \_\_\_\_\_
6. Age of household head \_\_\_\_\_
7. what is the source of livelihood on-farm \_\_\_\_\_ of-farm \_\_\_\_\_ non-farm \_\_\_\_\_
8. Do the ART make a change on your health yes \_\_\_\_\_ No \_\_\_\_\_

if yes, how \_\_\_\_\_

#### II. Illness and death

9. Did someone ill in AIDS related illness in the household? yes \_\_\_\_\_ no \_\_\_\_\_  
If yes, who was ill? The respondent \_\_\_\_\_ The Spouse \_\_\_\_\_ Children \_\_\_\_\_ Relative \_\_\_\_\_
10. Did someone died in AIDS related illness in the household? yes \_\_\_\_\_ no \_\_\_\_\_
11. If yes, who was died? The Spouse \_\_\_\_\_ Children \_\_\_\_\_ Relative \_\_\_\_\_

#### III. Food production access and utilization

##### Land holdings and cultivation/income

###### If on-farm

12. What is land size (Ha.) for agriculture before death/illness? \_\_\_\_\_
13. What is the land size (Ha.) for agriculture today? \_\_\_\_\_  
If there is change, what are the causes pertaining to illness/death?  
\_\_\_\_\_  
\_\_\_\_\_

14. What is size of land under (Ha.) cultivation today? \_\_\_\_\_
15. What is size of land under (Ha.) cultivation before death/illness? \_\_\_\_\_  
If there is a change, what are the causes pertaining to illness/death?  
\_\_\_\_\_  
\_\_\_\_\_

###### If off- farm

16. how many days you work today \_\_\_\_\_
17. how many days you work before illness \_\_\_\_\_  
If there is a change, what are the causes pertaining to illness/death?  
\_\_\_\_\_  
\_\_\_\_\_

18. how much do you earn per month today \_\_\_\_\_
19. how much did you earn before illness \_\_\_\_\_

If there is a change, what are the causes pertaining to illness/death?  
\_\_\_\_\_  
\_\_\_\_\_

##### Agricultural Equipment

20. What are the most three important agricultural equipments today?  
Plough \_\_\_\_\_ Pickaxes \_\_\_\_\_ Sickles \_\_\_\_\_ Other (Specify) \_\_\_\_\_
21. What are the most three important agricultural equipments before illness/death?  
Plough \_\_\_\_\_ Pickaxes \_\_\_\_\_ Pickaxes \_\_\_\_\_ Other (Specify) \_\_\_\_\_

If there is a change, what are the causes pertaining to illness/death?  
\_\_\_\_\_  
\_\_\_\_\_

**Types and yield of crops produced**

22. What are the three main crops varieties you are producing today?

\_\_\_\_\_

23. What are the three main types crops produced for consumption before illness/ death?  
If there is change, what are the causes pertaining to illness/death?

\_\_\_\_\_

24. What is the average crop yield (for the 3 main types) today per year (In Kg)?

\_\_\_\_\_

25. What is the average crop yield (for the 3 main types) of before illness/death per year (in Kg)?

\_\_\_\_\_

If there is change, what are the causes pertaining to illness/death?

\_\_\_\_\_

**Livestock inventory and types**

26. Do you have livestock? Yes \_\_\_\_\_ No \_\_\_\_\_

27. How many and types livestock do you have today?

Oxen \_\_\_\_\_ Donkey \_\_\_\_\_ Sheep/Goat \_\_\_\_\_ chicken \_\_\_\_\_ Other (Specify) \_\_\_\_\_

28. How many and types livestock did you have before illness/death?

Oxen \_\_\_\_\_ Donkey \_\_\_\_\_ Sheep/Goat \_\_\_\_\_ chicken \_\_\_\_\_ Other (Specify) \_\_\_\_\_

If there is change, what are the causes pertaining to illness/death?

\_\_\_\_\_

**Access and utilization of food**

29. What are the main three sources of income today?

Sale of crop products \_\_\_\_\_ sale of livestock products \_\_\_\_\_

Sale of livestock \_\_\_\_\_ other specify \_\_\_\_\_

30. What were the main three sources of income for the household before illness/death?

Sale of crop products \_\_\_\_\_ sale of livestock products \_\_\_\_\_

Sale of livestock \_\_\_\_\_ other specify \_\_\_\_\_

If there is change, what are the causes pertaining to illness/death?

\_\_\_\_\_

31. What is the major cause of expenditure during illness?

Food \_\_\_ Agricultural inputs \_\_\_ health care \_\_\_ Other (Specify) \_\_\_

32. What are the major causes for expenditure before illness/death?

Food \_\_\_ Agricultural inputs \_\_\_ health care \_\_\_ Other (Specify) \_\_\_

33. What are the three main foodstuffs you purchased from the market for consumption today?

\_\_\_\_\_

34. What are the three main foodstuffs you purchased from the market for consumption before illness/ death?

\_\_\_\_\_

If there is change, what are the causes pertaining to illness/death?

\_\_\_\_\_

35. How many meals per day are you taking today?

3 times \_\_\_ 2 times \_\_\_ 1 time \_\_\_ Other (Specify) \_\_\_

36. How many meals are you taking per day before illness/death?  
 3 times \_\_\_ 2 times \_\_\_ 1 time \_\_\_ Other (Specify) \_\_\_
37. Who is eating first in the household before illness?  
 Head of the household \_\_\_ Spouse \_\_\_ children \_\_\_ Other (Specify) \_\_\_
38. Who is eating first when some one is ill in the household?  
 Head of the household \_\_\_ Spouse \_\_\_ Children \_\_\_ the sick person \_\_\_

**Community support structure**

39. What are the traditional support practices in case of food crisis caused by crop loss?  
 Labor support \_\_\_ food support \_\_\_ providing loan \_\_\_ Other (Specify) \_\_\_
40. Are these practice applying in case of AIDS? If no, why?

\_\_\_\_\_

41. What criterions are using to identify the persons/individuals who are eligible for community support?

\_\_\_\_\_

42. Did you organize in groups to support each other? if yes what kind of support?

\_\_\_\_\_

43. What kind of support have you provided from the community (labour, money, and loan)?

**Socio cultural factor that hinder food production access and utilization**

44. What are specific factors for women that hinder production, access, and utilization of food?

- Lack of skill in ploughing
- Lack of land
- Lack of access to agricultural inputs
- Lack of income
- Other (Specify) \_\_\_\_\_

45. What are the specific factors for men that hinder production, access, and utilization of food?

- Lack of skill on food preparation
- Illness
- Other (Specify) \_\_\_\_\_

46. What is the stigma related issues that affect (indirectly or directly) affects food production, access to and utilization?

**Support from district Agriculture office and Agri service Ethiopia**

47. Which institutions are influential to support you on production, access, and utilization of food?

\_\_\_\_\_

48. Are you receiving support from institution for production, access, and utilization of food?

Yes \_\_\_\_\_ No \_\_\_\_\_  
 if yes, what are the supports

\_\_\_\_\_

49. Which factors are hinders you to participate in development programs of district agriculture office ,Agri service Ethiopia or credit and saving institutions?

- Is Lack of access to Land?
- Is Loss of skill?
- Is of asset ?

Is Labor shortage?  
Is Lack of saving and credit service?  
Is Stigma attached to the disease?  
Is inappropriate technology suitable for AIDS afflicted households?  
what other factors?

50. What are facilitating factors for sustainable food production, access to and utilization?  
Appropriate inputs provided by ASE  
Saving and credit service  
other (specify)

**Thank you very much**

- 51. Body weight for the last consecutive 4 visits**

**1** \_\_\_\_\_ **2** \_\_\_\_\_ **3** \_\_\_\_\_ **4** \_\_\_\_\_

## **Appendix II: Case Study checklist**

### **For ART service provider & district health office head**

- Did nutritionists in the districts are trained on nutritional care and support for HIV/AIDS?
- Are front-line clinical staff (nurses, clinical officers and doctors) in public facilities are trained on nutritional care and support for HIV/AIDS?
- In the health sector, identified principles should guide the mainstreaming of nutrition care and support in ART?
- What advises are you giving for the clients?
- What nutritional support are you providing for the ART clients?
- What is the expected weight increment per each visit?
- How do you evaluate the BMI of the clients?
- What are the challenges with regard to food security?

### **For YeNoh Merkeb**

- What is the mission of YeNoh Merkeb?
- What programs do you have related to HIV/AIDS prevention care and support?
- What makes you to start such programs for ART users?
- How do you identify the ART users?
- What are the challenges are you facing while you provide this support?

### **District Agriculture office, Agri Service Ethiopia, District livestock Agency**

1. Program component on HIV prevention, care, and support.
2. The long term strategies and specific activities.
3. What are the constraining factors to support AIDS afflicted HH and HIV positive individuals.
4. Stigma attached to the disease to work with.
5. What is the facilitating factor to support AIDS afflicted households and HIV positive individuals?
6. Budget Allocation on HIV.
7. Human resource on and capacity development for staffs on HIV.

### **Credit and saving institutions**

- What is the name of your institution
- What is your objective
- How many clients you have today(men and women)
- What are the targeting strategies
- What programs do you have for HIV prevention, care and support
- What factors hinders to participate in credit and saving for AIDS affected HH

### Appendix III: List of Development partners and visit conducted

#### List Development partners

ASE Bereh district program office  
 Bereh district Health Office  
 Bereh District Agriculture office  
 Sendafa Health center,ART unit  
 The livestock production and health agency  
 YeNoh Merkeb HIV prevention association  
 PEACE microfinance institution  
 Oromia saving and credit company

Tasks	Remarks
<b>Orientation Meeting</b>	This is the introduction and orientation meeting.
ASE Bereh district program office program director Head of Bereh district Health Office Deputy head Bereh district Health office Sendafa Health center,ART data manger	Case Study
<b>Informants of various institutions/Organizations</b>	
Sendafa health center ART nurse Deputy head of Bereh district Health Office Bereh District Agriculture office The livestock production and health agency Agri Service Ethiopia YeNoh Merkeb HIV and AIDS prevention association.	Case study
<b>The informal discussion</b>	2 men and 1 female
District agriculture plan and program	
Extension department	2 men and 1 female