EFFECTS OF HIV/AIDS ON RURAL WOMEN'S PRODUCTION ACTIVITIES IN MVOMERO DISTRICT

BY

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ABSTRACT

The main objective of this study is to determine how HIV/AIDS affects rural women`s production activities. The data were collected from two Divisions of Mvomero District in Morogoro. The specific objectives were, to identify and characterize the rural women`s production activities, to compare the time spent in household production activities before and after HIV infection, to determine the household production and income levels before and after HIV infection and to asses household expenditure variation before and after HIV infection sixty seven (67) women were interviewed using structured questionnaire. The analysis was carried out using the Statistical Package for Social Sciences (SPSS) computer software where means, frequencies and percentages were established. Chi-square statistics was applied to determine relationships between and among variables. T-test was also run to compare time spent in different activities, expenditure on different items, income levels and production levels before and after sickness. The results show that there is a significant difference in time spent in different activities, expenditure on different items, income and production levels before and after sickness. The study revealed that respondents spent more time in household chores, farm and trade activities before than after, spent less time in patient care before than after, also they cultivated bigger land size before than after, and they earned more money from selling farm produce and from business before than after the sickness. Recommendations made were on women access to land, property, credit and knowledge. Agricultural sector to address causes of pandemic such as rural poverty and food insecurity, introduction of labour serving technologies and practices, as well as fuel efficient stoves to reduce time of collecting fire wood.

DECLARATION

I SPECIOZA LEO KIDUDUYE do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for degree award in any other Institution.

…… Date ……

Specioza L. Kiduduye (MARD Candidate)

The above declaration is confirmed.

…….. Date……

Prof. Msuya, J. M (Supervisor)

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This dissertation is dedicated to my loving parents, my late father Mr Leo B. Kiduduye and my mother Cecilia Mvukiye who laid the foundation of my education. They are the persons behind all my success.

TABLE OF CONTENTS

LIST OF TABLES

FIGURE

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AIDS	-	Acquired Immunodeficiency Syndrom
CTC	-	Care and Treatment Centers
FAO	-	Food an Agriculture Organization
HIV	-	Human Immunodeficiency Virus
ICAD	-	Interagency Coalition on AIDS and Development
IFAD	-	International Fund Agricultural Development
ILO	-	International Labour Organization
IFPRI	-	International Food and Policy Research Institute
NAADS	-	National Agricultural Advisory Services
NACP	-	National HIV/AIDS Control Programme
NMSF	-	National Multi Sectoral Strategic Frame Work
PITC	-	Provider Initiated Testing and Counseling
PMTCT	-	Prevention of Mother to Child Transmission
PRST	-	Poverty Reduction Strategy Paper
SUA	-	Sokoine University of Agriculture
TACAIDS	-	Tanzania Commission for AIDS
TAMWA	-	Tanzania Media Women Association
TAS	-	Tanzanian Shilling
TGNP	-	Tanzania Gender Networking Programme
UNAIDS	-	United Nations Programme on HIV/AIDS

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

The HIV/AIDS pandemic has brought tremendous destructive effect in various social and economic levels, ranging from individual, the family, to a wide range of community. HIV/AIDS has negatively affected all sectors and levels of production, both formal and informal (ILO, 2005). The AIDS epidemic may be the most devastating health disaster in human history (Peter et al. 2006). Tanzania is one of the many countries in sub-Saharan Africa severely affected by HIV/AIDS epidemic (TACAIDS, 2004). According to FAO (2003), HIV/AIDS cases are on the increase to an extent that Tanzania now belong to a group of 25 countries in the world where most severe HIV/AIDS pandemic has been documented. AIDS related deaths among farm workers threaten agricultural production and food security, most notably in southern and eastern Africa. In 25 African countries with high rates of HIV prevalence, the Food and Agriculture Organization (FAO) estimates that 7 million agricultural workers have died of AIDS since 1985, FAO projects that 16 million more agricultural workers in these countries will die because of AIDS between 2000 and 2020 (Peter et al. 2002).

Since agriculture is the backbone of Tanzania's economy and most agricultural workers are in the age of 15-45, the group which is mostly affected by the epidemic, the impact of HIV/AIDS is gradually becoming noticeable as it spreads to the rural communities. Production of food and cash crops is bound to suffer as the labour

force gets reduced and dies from AIDS (ILO, 2005). For example if a woman living in an agricultural community where women are responsible for subsistence farming becomes infected and fall ill, the cultivation of subsistence crop will fall, resulting in an overall reduction in food availability in the household (UNAIDS, 1999). Also HIV/AIDS reduces household income and purchasing power, and reduces food security (FAO, 2001).

The Government of Tanzania URT (2001) and USAID (2005) noted that poverty significantly influences the spread of HIV/AIDS, which ultimately leads to a loss of economically active segments of the society leading to a reduction in income. The human capital loss has serious social and economic impacts in all sectors and all levels. All too often, the high cost of care and burial adds on to the already overburdened households, leaving behind orphans and dependants as well as increased vulnerability to HIV infection.

Widows often lose family assets like land, livestock or fishing equipments after the death of their husbands. This leaves widows without enough resources to continue with farming and earning money and yet they are expected to continue providing nutrition and caring for the sick, orphans and other family members and in most cases they are already ill with HIV related diseases themselves (FAO, 2004). The major concerns of women living with HIV/AIDS are poor nutrition for themselves and their children, education of their children, poor housing, the future of their children, their own health and that of their children (FAO, 2003). After the death of their family members, many find themselves (especially women an youths) without

land or other assets either because they have been sold or it was grabbed (NAADS, 2004). The impact on the family due to the father's sickness or death is severe because he may well be the main income earner, but that of the mother has even wider implication not only because women are the primary care takers in the family, but they are a good source of income at home (ILO, 2005). Women are especially vulnerable in HIV/AIDS-affected households. Usually, they care for the sick and dying in addition to maintaining heavy workloads related to provisioning and feeding the household (FAO, 2001). Further more, FAO (2001) reported that, there is increased spending for health care, decreased productivity and higher demands for care, food production and income drop dramatically as more adults are affected.

There is a clear and critical two- ways relationship between HIV/AIDS and food security in southern Africa. The pandemic is being driven by the very factors that cause malnutrition, poverty and inequalities. The hunger currently experienced by millions across the region increases the risk of HIV as people are driven to adopt risky coping strategies in order to survive. This includes traveling to search for food and additional source of income, migration, engagement in hazardous work and most lethally, women exchanging sex for money or food. Those actions facilitate the spread of HIV, putting individuals especially women and children at risk of infection (FAO, 2003). The challenge now facing the extension workers to create opportunities and conditions that will increase awareness on HIV/AIDS, prevention, care and its impact on households and to promote strategies that would improve food security nutrition and income among rural farmers and their families. Women and men farmers need to stay healthy strong and protected from diseases in order to be able to maintain or increase farming activities for the welfare of their households.

(NAADS, 2004).

1.2 Problem Statement

It is becoming more and more obvious that the AIDS epidemic is increasingly disrupting the family farming and production system of the household by increasing sickness and death especially the among the productive age groups. In homes, women are the major care givers for sick family members. A family member suffering from AIDS experiences frequent illness over a long period of time and therefore requires regular visit to hospital and a lot of physical attention at home. Thus creating additional responsibilities for women in terms of cost and time that limits their engagement in productive activities (NAADS, 2004).

The AIDS epidemic has made people more vulnerable by adopting risky survival strategies such as transactional sex. Poverty increases the vulnerability to HIV infection as some of the women engage in high risk sexual behaviour for survival (URT, 2001). The agricultural sector itself contributes to the risk of HIV transmission due to high levels of mobility. (ICAD, 2004). HIV/AIDS epidemic threaten livelihood and productivity in both urban and rural areas with particular severe effects on women, leading to increased poverty and intensified economic inequalities (ILO, 2005).

There is however insufficient understanding of the linkage between HIV/AIDS and women`s production activities. The study will provide information to different policy makers for formulating policies, programmes and strategies for supporting rural women affected by HIV/AIDS.

1.3 Justification of the Study

The study is in line with the national policy and national multi sectoral strategic-frame work (NMSF) on HIV/AIDS, which protects and supports vulnerable groups and also mitigating the social and economic impacts of HIV/AIDS. The study also links with the millennium development goals on HIV/AIDS which aims to halt and reverse the spread of HIV/AIDS and eradicate extreme poverty and hunger by 2015 (URT, 2002). Furthermore the study links with poverty reduction strategy paper (PRST) currently known as MKUKUTA which aims at reducing the proportion of rural population below the basic needs poverty line from 38.6 percent by 2010, reducing the proportion of rural food poor Tanzanians from 27% to 14% by 2010, increasing agricultural growth from 5 percent by 2010 (URT, 2006).

1.4 Objectives

1.4.1 General Objective

To determine how HIV/AIDS affects rural women`s production activities.

1.4.2 Specific objectives

i. To identify and characterize the rural women`s production activities

ii. To compare the time spent in household production activities before and after HIV infection

iii. To determine the household production and income level before and after HIV infection

iv. To asses household expenditure variation before and after HIV infection.

1.4.3 Research questions

i. What are the rural women`s production activities?

ii. Is there any variation in time spent for household production activities before and after HIV infection?

iii. Are there noticeable variation in production and income levels before and after HIV infection?

iv. Is there any variation in expenditure before and after HIV infection?

1.5 Conceptual Framework

This study assumes that rural women`s production activities are influenced by interplay of independent variables including labour, working capital, poverty and food insecurity (Fig. 1). Indicators for agricultural production include, amount of produce, size of land cultivated, time spent in production and availability of agricultural skills. Coping strategies to families affected by HIV/AIDS including selling of household assets and property, and children pulled out of school to provide the much needed seasonal labour.

The determinant factors to dependant variable include, increased expenditure on care, sickness, death, decreasing food purchasing power, depleted household assets, reduced household food production, loss of agricultural skills and lack of access to land, education and means of production as well as low income.

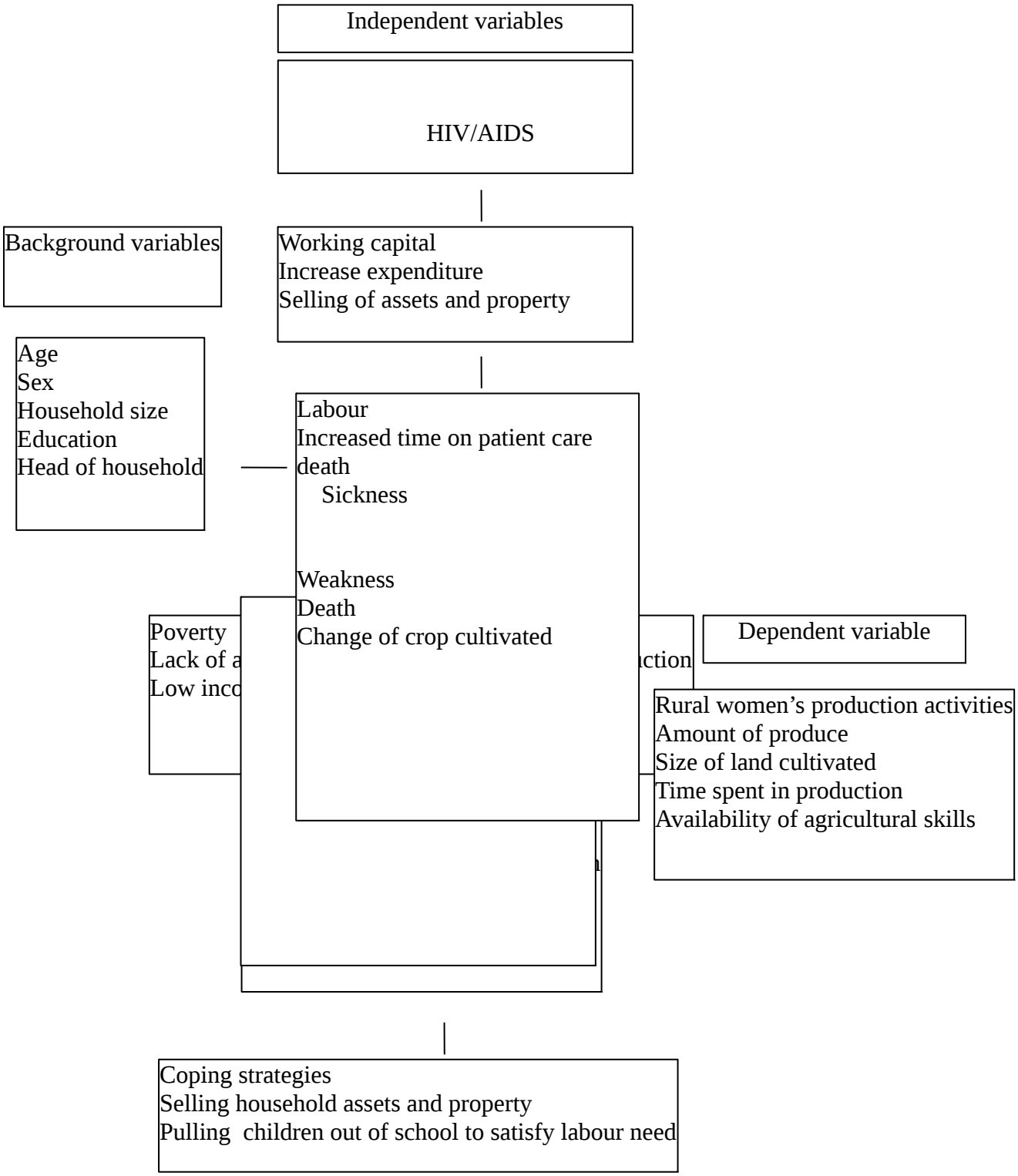
Independent variables
HIV/AIDS
Background variables
Working capital
Increase expenditure
Selling of assets and property
Age
Sex
Household size
Education
Head of household
Labour
Increased time on patient care
death
Sickness
Weakness
Death
Change of crop cultivated
Poverty
Lack of a
Low inco
ıction
Dependent variable
Rural women's production activities
Amount of produce
Size of land cultivated
Time spent in production
Availability of agricultural skills
Coping strategies
Selling household assets and property
Pulling children out of school to satisfy labour need

Figure 1: Conceptual framework showing effects of HIV/AIDS on women`s production activities

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Meaning of HIV and AIDS

Acquired Immunodeficiency Syndrom (AIDS) is the name given to the fatal clinical condition that results from long-term infection with Human Immunodeficiency Virus (HIV). HIV progressively damages the body immune defensive system, preventing body from protecting itself against infections that would otherwise be rendered harmless (Richard and Peter, 1992). When HIV invades the body, it damages or kills the white blood cells and other cells, weakening the immune system and leaving the person vulnerable to various opportunistic infections and other illnesses. These opportunistic infections may develop into illness, which would not normally occur in healthy people (Massele et al. 1991). These opportunistic infections include tuberculosis, kaposis, sarcoma (a tumour primarily affecting the skin), pneumonia, diarrhoea and severe weight loss. Overtime HIV weakens the immune system to the extent that several opportunistic infections are present at once. Death is not caused directly by HIV but one or more of these infections (Richard and Peter, 1992).

2.2 Rural Women's Production Activities

Women in sub-Saharan Africa are the major agricultural food producers (Monyo, 1997). About 90 percent of Third World women depend on land for survival. They are the world's farmers, they grow the crops, gather the firewood, tend the animals and fetch water. Their traditional farming method created the necessity to ensure future harvests, and is passed down through generations (UNAIDS, 2002).

Women contribute a majority of the agricultural labour force in Tanzania (TGNP, 1999). Women perform the lion`s share of work in subsistence economies, toiling

long hours and contributing more to family income than their male relatives, but are vied as unproductive in the eyes of government statisticians, economists, development experts and even their husbands. Generally speaking, men in subsistence economies have fewer responsibilities than women to produce food and other goods solely for household consumption. While a woman labours to produce food for her family, her husband may focus his energies on developing a business or pursuing interests that do not include his wife and children (Jodi et al. 1992).

According to Usch (1992), some 70 percent of all informal sector micro enterprises world wide are run by women. This means that millions of women are generating income through one or more of the many micro-business activities. Some of these activities develop into formal small, sometimes medium, and very rarely, large businesses. A few of these businesses develop into successful big companies. Who are these millions of womens, what do they do, what pulls and pushes them to generate income through self- employment or business instead of getting safe jobs or staying at home and being proper wives and mothers? Most of them belong to the poor, often the very poorest strata of society. They may have been to school for a few years, but most of them are illiterates. Two thirds of the world's illiterates are women; female illiteracy rate in some countries is as high as 90 percent. An increasing number of women earn the main or even the only income of the household. They are the heads of their households in legal terms because there is no one else or infact, because their income is the essential one.

HIV/AIDS frequently has severe consequences for rural widows of AIDS victims. In sub-Saharan Africa and Asia, women contribute to more than half the food

production and are usually involved in the most labour-intensive farming activities (UNAIDS, 2002).

Women contribute a greater deal to the economy and families; not only do they participate significantly in agricultural and industrial labour but also are charged with general household responsibilities (including in some areas, collecting firewood and water), child care and caring for the old and infirm (World Bank 1993).

TGNP (1997) reported that, patriarchal production relations place greater responsibility on women for producing both food and cash crops, whereby for food crops alone the contribution of women is estimated to be 70%.

2.3 The Impacts of HIV/AIDS Related to Rural Women's Production Activities

2.3.1 Reduced labour force

In the 25 years since it was first reported, AIDS has become the leading cause of premature death in sub-Saharan Africa and the fourth largest killer worldwide. More than 20 million people have died around the world since the epidemic began. And by the end of 2004 an estimated 39 million people were living with HIV (United Nations, 2005).

Moreover, as observed by United Nations (2005), 57 percent of the infected people are women in sub-Saharan Africa. Among Africans aged 15-24, the difference is

even more pronounced. In the worst-affected countries, recent national survey shows as many as three young women living with HIV for every young man. Services that can protect women against HIV should be expanded, and education and prevention are needed to counteract the factors that contribute to women's vulnerability and risk.

The consequences of AIDS are loss of the ability to do work, reduction in thinking capacity and ultimate death. Cumulatively a nation loses potential people that would have been used to produce and increase the national economy (IFPRI, 2002).

Peter *et al.* (2002) noted that, because HIV/AIDS affects people in their prime working ages, businesses are suffering severe effects from the epidemic, this is especially true in some sub-Saharan African countries where as much as one-third of the working age population is infected with HIV. Furthermore, the author reported that in high prevalence counties, HIV/AIDS is consuming business profit because of three primary factors namely; increased operating costs, decreased productivity and declining markets. The impact of HIV/AIDS pandemic in our society is catastrophic. Over 70 percent of those infected are aged between 20-29 years and the infection rate is higher among the young in this group. This is the most productive group depended by upon the families and the nation for sustenance production and development, indeed the very future of families and the nation (URT, 2001). In many African countries, farming and other rural occupations provide a livelihood for more than 70 per cent of the population. Hence, it is to be expected that the HIV/AIDS epidemic will cause serious damage to the agriculture sector in those countries, especially in countries that rely heavily on physical labour for production.

In Kenya, a study found that the commercial agricultural sector was facing a severe social and economic crisis caused by HIV/AIDS (Rugalema, 1999). The loss of skilled and experienced labour to the epidemic is a serious concern. However, it was difficult to quantify the impact of the epidemic in terms of increasing costs. In Namibia, worker-deficient households cultivate less land and have fewer cattle and less non-farm-related cash income (Mutangadura and Mukurazita, 1999).

AIDS is expected to have a greater impact in the future. According to estimates by FAO (2001) between 1985 and 2000, in the 27 most affected countries in Africa, 7 million agricultural workers died from AIDS, and 16 million more deaths were likely to occur in the following two decades. In 12 countries, including the 10 most affected African countries; labour force decreases ranging from 10 to 26 percent are anticipated. Namibia is expected to suffer the most in terms of loss of labour force by 2020 (26 per cent of its labour force), followed by Botswana (FAO, 2001).

HIV/AIDS reduces household ability to produce and buy food, depletes assets and reduces the value of social safety networks as in the networks members are adversely affected by HIV/AIDS. Mobidity affect agricultural productivity by permanently removing labour to patient care, reducing productivity of current workers and reducing farm management resources and skills (USAID, 2005).

Bair (1997) outlines that household labour quality and quantities are reduced in terms of productivity when the HIV/AIDS-infected person is ill and later the supply of household falls following the death of that person. The author further noted that,

other household members will devote productive time in caring for the sick persons and traditional mourning customs which can adversely affect labour availability.

The response to labour shortage may be to reduce the area under cultivation for crops. There is also a shift from high labour-intensive to low labour-intensive crops which result into decline in crop yields, reduces ability to control crop pests, loss of soil fertility, shift from cash-oriented to subsistence production and loss of agricultural knowledge and management (Barnett *et al*, 2002).

When the bread winner becomes sick, the household not only has to manage without their labour and income but also with the loss of labour from those who have to care for the sick. AIDS is commonly characterized by repeated period of illness and results in recurrent loss of labour and income as well as increasing health care cost (FAO, 2003).

ICAD (2004) reported that HIV/ AIDS is unique in that it attacks the most productive segment of society, there by reducing household labour availability and impairing inter-generational transfer of local knowledge and skills, as a consequence of decrease in household labour, rural households reduce crop cultivation, shift to less labour-intensive food crops, and delay agricultural operations such as weeding. Moreover, as reported by ICAD (2004) small scale agriculture in sub-Saharan Africa is particularly vulnerable to the adverse effects of HIV/AIDS as it relies almost entirely on family labour, especially that of women.

2.3.2 Increased expenditure

The economic and social consequences of HIV/AIDS disease directly affect the

family. In the absence of well functioning medical care system in African countries, medical costs and caring for sick family members must be borne entirely by the nuclear family or by the extended network. In addition to medical costs, which include the cost of drugs and traditional medical treatment, funeral expenses of family members are a heavy burden on the family budget (Baier, 1997).

However, taking care of a person suffering from AIDS is not only an emotional strain for household members, but also a major strain on household resources. Loss of income, additional care-related expenses, the reduced ability of care givers to work and mounting medical fees push affected households deeper into poverty. It is estimated that, on average HIV-related care can absorb one-third of a household monthly income (Kaiser, 2002).

UNAIDS (2006) reported that, in New Delhi India average monthly expenditure exceed income among families living with a member who is affected by HIV/AIDS partly because of a doubling in purchase of medicines. Families spent fewer resources on children education and entertainment but rather spent more income on care, support and treatment of HIV/AIDS patients. This forced families to sell assets and borrow from many friends and relatives for caring sick persons.

Moreover as observed by Msambichaka *et al*. (1997) cited by Mbonile (2004) HIV/AIDS pandemic disrupts the cash flow of households in several ways that include household engagement to traditional healer, household employ hospital personnel or social workers who normally charge by using the number of contact hours or frequency of visits either to the hospital or at home. Furthermore

Msambichaka *et al.* (1997) observed that in traditional societies it is common for the deceased to be buried at the place of origin of birth. This has compelled households to incur expenses of hiring vehicles to send the sick or deceased to their home areas. Depending on the distance of the place of birth the expenses range from TaS 150 000 to 500 000. HIV/AIDS has caused shifts of production from cash crops to food crops in AIDS-affected households. 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 (FAO, 2001).

HIV/AIDS affected households generally have less access to labour, less capital to invest in agriculture, and are less productive due to these limited financial and human resources (FAO, 2003).

AIDS affected households face significant challenges in terms of the costs of treatment and may no longer be able to purchase important inputs such as fertilizer and improved seed, basic food or nutritious foods supplements (ICAD, 2004).

HIV/AIDS causes pain and suffering to patients and their families, it imposes a heavy financial and social burden of caring for the sick, and it leaves misery and poverty in its wake. HIV/AIDS therefore, has serious implications for households and for national social and economic development (URT, 2001). Jamison *et al.* (2001) reported that, affected households face severe economic constraints because of reduced income and increased health expenditures. The report further shows that the annual treatment costs of HIV/AIDS for household in nine Asian countries were more than twice per capital income in each country. This estimate excludes the cost

of antiretroviral drugs.

2.3.3 Poverty

According to URT (1998); World Bank (2000); Jazairy (1992) and Chambers (1992). poverty is defined as a state of deprivation prohibitive of a decent human life, caused by natural calamities such as drought, floods, HIV/AIDS and man made calamities. Reinforcing factors being, lack of productive resources to generate material wealth, illiteracy, prevalence of diseases and discriminative social-economic and political systems.

Literature describes poverty as a situation that emanates from lack of necessary capabilities and entitlements to satisfy human basic needs, and that, this situation limits a person from acquiring security and assets, or from having power for decision making (IFAD, 1996; Kasimila, 1996).

Globally, about 90% of the worlds poor are in Asia and sub-Saharan Africa. Although the total number of the poor has not changed much in a decade, the regional distribution has changed. Whereas poverty has generally declined in, it has increased in sub Saharan Africa. Poverty is growing at even faster rate in sub-Saharan Africa as a matter aggravated by HIV/AIDS pandemic. Of the total number of poor people living below $ 1 per day, 75% (0.9 billion) live and work in rural areas (Keenja, 2002).

Moreover as reported by Keenja (2002), for most parts of the world rural poor live in less favoured areas that are disadvantaged by difficult agroclimatic conditions,

however that is not entirely the case for the rural poor in Tanzania. Good proportions of the rural poor live in reasonably good agro areas or at least have access to some, but their development is probably hampered by inadequate infrastructure and poor support services (roads, irrigation, markets, research and extension, credits and health).

During the 1990 extreme poverty dropped in much of Asia, fell slowly in Latin America, changed little in Northern Africa and Western Asia, and rose and then started to decline in the transition economies. But in sub-Saharan Africa, which already had the highest poverty rate in the world, the situation deteriorated further and millions more fell into deep poverty (Keenja, 2002).

SUA (2002) reported that the rural poor in Tanzania like a number of other developing countries are predominantly smallholder farmers and landless small agricultural workers. To make things worse, small holder farmers' farms are getting smaller and more numerous, even where farm sizes have not decreased in real terms, workable plots have shrunken at the loss of farm labour to AIDS or migration to urban areas. Furthermore, SUA (2002) reported that, China and India show that rural poverty decline rapidly following increases in agricultural growth and in purchasing power of the rural household. In contrast, in sub-Saharan Africa, where poverty is increasing and food insecurity worsened, agricultural growth has been very disappointing. Poverty is persisting more in rural areas where 80% of total Tanzanians live (URT, 2005).

As it has been reported by Tapan (2006), poverty has proven to be more detrimental to women than men. Poverty has many dimensions, including low income, low

earnings and low level of skills, lack of assets and access to training or education, poor health, malnutrition, lack of support, services, absence of suitable shelter and food insecurity. Moreover the author noted that, the characteristics thus associated with poverty extend beyond low incomes. Women`s poverty is directly related to their lack of access to services, land, education and other means of production as well as societal attitudes. Widespread poverty drives some women into the sex industry, where sexual trafficking and workers rotations promote continued exposure of new sex worker workers (and their clients) to HIV (Peter *et al*. 2002).

In Tanzania as in most of sub-Saharan African countries poverty in 2000 years remain pervasive where about 11.4 million (33%) of Tanzanians are below the basic poverty line compared with 9.5 million (28%) in 1992 (URT, 2002).

Poverty in all its economic social and human facets will be increased by the epidemic. In a heavily affected country like Tanzania, it gets more and more evident that poverty can only be successfully tackled if the epidemic is controlled, but also that epidemic control can only be achieved if poverty can be reduced substantially (URT, 2003).

2.3.4 Food insecurity

Like many other countries in the world, food insecurity continues to be a big problem in different parts of Tanzania (Lemke, 2005). Food security is one among necessary conditions for quality care for PLWHA. However, the HIV/AIDS pandemic has exacerbated this problem because it profoundly reduces ability to earn

income for PLWHA, therefore impair economic growth of a nation (Phaladze, 2005). The ill person is often unable to work, reducing the income availability to the household and/or the output from agricultural activity and any other income generating activities (Gari, 2002). Moreover, as was observed by Gari (2002), economic crisis resulting from the increasing related expenses such as costly medical treatments, extra care, special food and the reduced income because of labour loss aggravate food insecurity to family members.

One of the main impacts of HIV/AIDS on agriculture is its impact on food security. For example, a survey carried out in 1997 in Zimbabwe, a country with an adult prevalence rate of more than 25 per cent, estimated production loss in AIDS-affected households (Kwaramba, 1997). Maize production by smallholder farmers and commercial farms declined by 61 per cent as a result of illness and deaths from AIDS. Those production losses could result from a number of factors, including shifting production patterns. However, according to Kwaramba (1997) at that particular time the Zimbabwe data did not indicate a dramatic switch from cash to subsistence crops.

A study conducted by the United States Department of Agriculture addressed that concern by projecting the impact of AIDS on production (Shapouri and Rosen, 2001). The study found that in the most affected countries in Africa, slow growth in agricultural productivity and the overall economy resulted in growing food insecurity, with a substantial gap between production and needs projected for 2010 in many countries (FAO, 2001). FAO recognizes that HIV/AIDS is slowly eroding food security, ravaging rural livelihoods and exacerbating poverty. If left unchecked,

the epidemic risks undermining all efforts aimed at achieving the Millennium Development Goals of halting the HIV/AIDS epidemic and halving the number of poor and hungry in the world by 2015 (FAO, 2003).

Furthermore, FAO (2003) noted that, households affected by HIV/AIDS, in particular those headed by women, are finding it increasingly difficult to meet their food security needs. In mixed agriculture communities, many small farmers rely on humans as their principal source of farm-power, and labour shortages are a fundamental constraint towards increasing agricultural production. AIDS-affected households have fewer resources and find it difficult to buy additional inputs such as fertilizer and pesticide, which further reduces agricultural productivity. For the majority of these farmers, low inputs result in low outputs.

HIV/AIDS can have devastating effects on household food security and nutrition. Nutritional status is determined by various factors, often categorised into household food security, health and care , all are affected by HIV/AIDS. The specific impact of HIV/AIDS is related to the livelihood systems of affected households and will vary according to their productive activities (agricultural and non-agricultural) and the economic and socio-cultural context in which they live (FAO, 2001).

Food insecurity leads people into very risk behaviour that drives them into HIV/AIDS infection. at the same time, the impact of HIV/AIDS exacerbates food insecurity due to reduction in ability to work and produce (Lemke, 2005; Bachmann, 2003).

2.3.5 Reduced working time

Mutangandura, (2000) reported that 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 as healthy. In Kagera, 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).

Women are more psychologically and economically affected with those suffering from AIDS, since it the women who actually take care of the sick (TAMWA, 2004). In countries or areas heavily affected by the HIV/AIDS epidemic, the time required to care for the sick and seek medical assistance often had an impact on time available for agricultural production. The outcome might be less timely farming practices, resulting in reduced yields and, over time, a general decline in household welfare (FAO, 2001). HIV/AIDS has caused a decline in the supply of labour for food and livestock production. The decline is caused by the illness and deaths of people living with AIDS and by the time spent by household members in caring for sick relatives. Even larger declines have been documented for Ethiopia (FAO, 2001). Moreover, FAO (2001), observed that, in Ethiopia AIDS-afflicted households spent 50-66 percent less time on agriculture than households that were not afflicted. In Tanzania, researchers found that women spent 60 percent less time on agricultural activities because their husbands were ill and by one estimate approximately 2 person-years of labour are lost by the time one person dies of AIDS, due to their weakening and the time others spend giving care (FAO, 2001).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Description of the Study Area

Mvomero is a new district amalgamated from former Morogoro Rural district. Mvomero District Council is among the six councils of Morogoro region. The district boundaries are as follows: to the north is Handeni district, to the east is Bagamoyo to the south is Morogoro municipal and Morogoro districts and to the west is Kilosa district. The district has 4 divisions, 17 wards and 101 villagers. According to 2002 census, total human population in Mvomero district is 260 525 people out of which, males are 131 257 and females are 129 268 in number. The number of households is 58 314.

Mvomero district lies at an altitude of 400m to 2000 m above sea level. The climatic pattern is characterized by bimodal rainfall with short rains starting in November and tapering off around the month of January or early February, and the long rains falling between March and May. Annual rainfall ranges from 600 to 2000 mm and mean annual temperature range from 18-30^{0}C.

The economic mainstay of the area is smallholder farming and livestock keeping, agriculture is the backbone for economic development and 90% of district citizens engage in agriculture. Crops grown are rice, maize, sunflower, beans, sorghum, sugarcane, vegetables, banana, simsim, cassava and yams. Livestock kept are; cattle, goats, pigs, poultry, turkeys and rabbits.

In Mvomero District there are 55 health facilities centers and 5 Care and Treatment Centers. All 55 health facilities centers are providing services for HIV/AIDS victims. Services provided are; Prevention of Mother to Child Transmission (PMTCT), Provider Initiated Testing and Counseling (PITC), and Voluntary Counseling and Testing. The HIV positive ones are referred to Care and Treatment Centers (CTC) for treatment services. Home- based care providers are used to provide services to those who are unable to move.

Geographically the district lies on three ecological zones these are;

i) Highland and mountains zone

The zone occupies about 25% of the district area extending on Nguu mountain ranges. This zone lies within altitude of 1200- 2000 m asl. Occupation in this zone are agriculture, horticulture and marginal livestock keeping, the zone is very potential for growing food crops, cash crops, spices, fruits and vegetables.

ii) Miombo woodland zone

The zone occupies about 20% of the district area with low flat lowland physical features, the rainfall is 600-1200 mm, and occupations in this zone are agriculture, livestock, national parks and forestry. This zone is the best for optimum use of agriculture production and livestock grazing.

Savannah River Basin Line

This zone extends along side the great rivers of Mkata, Wami, Mgeta, Mlali, Divue, Diburuma, Mkindo, Mburuni etc. The zone is potential for irrigation, dry season

cultivation, production of paddy, sugarcane, cotton, vegetables and fishing.

3.2 Research Design

A cross–sectional study design was employed to collect information. This is a method that studies a population at single point in time and data collection is done once. This design is considered favourable when time and resources for collecting data is limited (Babbie, 1990).

3.3 Sampling Procedure

3.3.1 Population of the study

The population from which the sample for this study was drawn involved women in households affected by HIV/AIDS.

3.3.2 Sample size

The sample size for this study was 67 household as derived from the sample size determination formulae (Appendix 1) and these were households with women affected with HIV/AIDS.

3.3.3 Sample unit and sampling frame

The household was the ultimate unit of analysis because a household is considered as a basic unit in poverty analysis studies. Sampling frame was all women affected with HIV/AIDS selected purposively from a list of three care and treatment clinics,

one in Mlali and two in Turiani divisions.

3.3.4 Sampling technique

Purposive sampling technique was employed for selection of women from affected households, and these were obtained from Mlali and Turiani Care and Treatment Clinics, also home based care providers assisted to identify those households affected by HIV/AIDS. It was important to employ purposive sampling technique so as to eliminate the possibility of ending up with households that have no important characteristics as far as this study is concerned.

3.4 Data Collection

3.4.1 Primary data

A structured questionnaire was used to interview respondents to get both qualitative and quantitative data. Open-ended and closed-ended questions were used. The question are formulated in English and translated in Swahili language to allow for easy communication during the interviews. A preliminary survey was done to pre-test the questionnaire and to check relevance and validity of the questions to the intended respondents. This was done under field conditions to ensure that the questions are clear to the respondents thus allowing obtaining of relevant answers.

3.4.2 Secondary data

This was obtained from various relevant sources including Mvomero district offices where documentary analysis was used. Other sources included websites and

published reports and SUA Library.

3.5 Data Analysis

The analysis was carried out using the Statistical Package for Social Sciences (SPSS) computer software where means, frequencies and percentages were established. The chi-square statistics analysis was applied to determine relationships between and among variables. T-test was also run to compare time spent in different activities, expenditure on different items, income levels and production levels before and after getting the sickness.

CHAPTER FOUR

4.0 RESULTS

4.1 Overview

This chapter presents the results of the study conducted in Mvomero district. It is divided into two main sections. Section one presents the socio-economic and demographic characteristics of respondents while section two shows the women's production activities and their characterization.

4.2 Demographic and Socio-economic Characteristics of Respondents

Demographic and socio-economic characteristics in this study include age, education level, household size, occupation, and main source of income of the respondents. It also includes the examination of the patients residing in different households, their main care givers and those who died in different households.

4.2.1 Age

Table 1 shows, the results of age categories. The ages ranged from 23 years to 64 years, while the age categories are evenly distributed, 30-35 years is the largest (29.9%) while the 36-40 years category is the smallest (19.4%).

Table 1: Respondents' age categories

Age in years	Frequency	Percent

23-29	15	22.4
30-35	20	29.9
36-40	13	19.4
41-64	19	28.4
Total	67	100.0

4.2.2 Education level

The results displayed in Table 2 show that the majority (71.6%) of respondents attained primary education only while only 13.4% of the respondents attained post-primary education. About 15% had no formal schooling (or had only attended pre-primary education).

Table 2: Education level of respondents

Education level	Frequency	Percent
No formal schooling and pre-primary education	10	14.9
Primary education only	48	71.6
Post-primary education	9	13.4
Total	67	100.0

4.2.3 Household size

About one third of respondents (34.3%) had households of 4-5 members followed by those with 1-3 and 6-7 members each having about one quarter (Table 3). The smallest category of households had more than 7 members (16.4%).

Table 3: Household size in respondents households

Number of households	Frequency	Percent
1-3	17	25.4
4-5	23	34.3
6-7	16	23.9
>7	11	16.4
Total	67	100.0

4.2.4 Marital status

The results in Table 4 show the marital status of respondents. The majority are either single or married (31.3 % in each) followed by those who were widows (28.4%).The fewest were the divorced (9%).

Table4: Marital status of respondents

Marital status	Frequency	Percentage
Single	21	31.3
Married	21	31.3
Divorced	6	9.0
Widowed	19	28.4
Total	67	100.0

4.2.5 Main occupation

The results in Table 5 show the main occupations of the respondents. While the majority (68.7%) were doing farming as their main occupation, very few (3%) combined both farming and business. Others were involved in business (22.4%) and formal employment (6%).

Table 5: Main occupation of respondents

Occupation	Frequency	Percentage
Farming	46	68.7
Business	15	22.4
Formal employment	4	6.0
Both farming and business	2	3.0
Total	67	100.0

4.2.6 Main source of income of respondents

The results in Table 6 show the main source of income. Most of the respondents (58.2%) depend on farming followed by businesses (25.2%). Few of them depend on daily labor activities and from relatives or children (4.5% in each).

Table 6: Main source of income of respondents

Source of income	Frequency	Percentage
Farming	39	58.2
Business	17	25.4
Salary	5	7.5
Daily labor activities	3	4.5
Gift from relatives or children	3	4.5

4.2.7 Head of household

The results in Table 7 show the heads of respondents' households. Most of the households (59.7%) were headed by a woman while only 35.8% was headed by a husband. Others were headed by either a son (3%) or grand father (1.5%).

Table7: Head of household

Head of the household	Frequency	Percentage
Husband	24	35.8

Woman	40	59.7
Son	2	3.0
Grandfather	1	1.5
Total	67	100.0

4.2.8 Patients in the households

The findings in Table 8 show the person who was sick for a long term in respondent's household. where 74.6% of the HIV/ AIDS affected individuals are the respondents themselves and 3% are son/daughter of more than 15 years old.

Table 8: Reported long term sick persons in households

Sick person	Frequency	Percent
Son/daughter (>15 years)	2	3.0
Respondent herself	50	74.6
Mother of respondent	2	3.0
Respondent and children	4	6.0
Respondent children and husband	3	4.5
Respondent and husband	6	9.0
Total	67	100.0

4.2.9 Length of sickness as reported by respondents

The results in Table 9 show the sickness length of the patients. Their lengths ranged from 1 year to >7 years. The length categories are evenly distributed, the 6-7 years is the largest (25.4%) while those who have suffered for >7 years category is the smallest (7.5%).

Table 9: Length of sickness as reported by respondents

Years	Frequency	Percent
1-2	16	23.9
3	14	20.9
4-5	15	22.4
6-7	17	25.4
>7	5	7.5
Total	67	100.0

4.2.10 Care givers

The results in Table 10 show main caregivers of the patients. The large percent (59%) of respondents are cared for by their mothers and a few (1.5%) are taken care of by their mothers or young sisters, father and young brothers or by their neighbors.

Table 10: Main caregiver to the patient in the household

Main caregiver	Frequency	Percent
Mother and young sisters	1	1.5
Father and young brothers	1	1.5
Mother	40	59.7
Sister	12	17.9
Daughter	4	6.0
Respondent herself	8	11.9
Neighbor	1	1.5
Total	67	100.0

4.2.11 Deaths

The results in Table 11 show those who died in the respondents households after being sick for a long time. The majority (59.7%) of respondents stated that nobody died of HIV/AIDS in their households while in the minority's households (3.0%)

either a husband and children, or son above 15years died.

Table 11: Deaths occurrences as reported by respondents

Person who died	Frequency	Percent
Non	40	59.7
Husband	14	20.9
Children <15 years	5	7.5
Son >15 years	2	3.0
Daughter >15 years	4	6.0
Husband and children	2	3.0
Total	67	100.0

4.3 Characterization of Women's Production Activities

In characterizing the women's production activities, attempt is made to relate the main occupation of respondents with their education, age and marital status. Each is presented separately below.

4.3.1 Main occupation and education level

The results in Table 12 show the relationship between main occupation and education level. The majority of respondents who engage in farming activities attained primary education (69.6%) and only 13.0% attained post-primary education. Business activities were carried out by individuals with primary education (80.0%) while 6.7% of them had attained no formal schooling or preprimary education. Majority of employees (75.0%) have attained primary education and a few (25%) have attained post-primary education. it is therefore difficult to generalize the situation. It appears that perhaps other factors were more important apart from

education in determining the main occupation of a respondent.

Table 12: Distribution of respondents according to their Main occupation and education level

Education level	Farming (n=46)	Business (n=15)	Employment (n-4)	Both farmer and business (n=2)
	%	%	%	%
No formal schooling and pre-primary education	17.4	6.7	0.0	50.0
Primary education	69.6	80.0	75.0	50.0
Post- primary education	13.0	13.3	25.0	0.0
Total	100.0	100.0	100.0	100.0

4.3.2 Main occupation and age

The results in Table 13 show the distribution of respondents according to their main occupation and age. The majority of farmers (32.6%) and those employed (50.0%) were of the age category of 41-64 years. On the contrary, the majority of those undertaking businesses were of the youngest age category of 23-29 years (40%).

Table 13: Main occupation and age

Respondents age category in years	Farming (n=46)	Business (n=15)	Employment (n-4)	Both farming and business (n=2)
	%	%	%	%
23-29	19.6	40.0	0.0	0.0
30-35	30.4	20.0	25.0	100.0
36-40	17.4	26.7	25.0	0.0
41-64	32.6	13.3	50.0	0.0
Total	100.0	100.0	100.0	100.0

4.3.3 Main occupation and marital status

The results in Table 14 show the distribution of main occupation and marital status. The majority of respondents engaged in farming activities (37.0%) were married and widowed were 32.6%.Business activities were dominated by singles (53.3%) At the same time majority of employees (75.0%) were single and those who engaged in both farming and business were either single or widowed (50% in each).

Table 14: Distribution of respondents according to their Main occupation and marital status

marital status	Farmer (n=46)	Business (n=15)	Employment (n-4)	Both farmer and business (n=2)
	%	%	%	%
Single	19.6	53.3	75.0	50.0
Married	37.0	26.7	0.0	0.0
Divorced	10.9	6.7	0.0	0.0
Widowed	32.0	13.3	25.0	50.0
Total	100.0	100.0	100.0	100.0

4.4 Time Spent in Different Activities Before and After Sickness

This section compares the time spent in different activities in the households before and after having a sick person. The respondents mean values were compared using t-

test statistics at p≤0.05. The activities considered include household chores, farming activities, trading and patient caring. Table 15 shows the results of the test. In all the four tested variables, respondents spent longer hours before their households were hit by the pandemic (sickness) than after the sickness, except in caring for the sick. The noted differences are statistically significant at p≤0.001.

Table 15: T-test results of comparing mean values of time spent in various activities before and after sickness

Variable	Mean Value (hours)	Std Dev.	95% C.I difference	t-value	d.f	Sig. Level
Time spent in household chores before sickness	4.3284	1.58963	1.63635- 2.39350	10.626	66	0.000
Time spent in household chores after sickness	2.3134	1.35075				
Time spent in farm activities before sickness	5.7463	2.61895	3.05269-4.64880	9.634	66	0.000
Time spent in farm activities after sickness	1.8955	2.18212				
Time spent in trade before sickness	2.9478	3.78207	1.19964 -2.54663	5.553	66	0.000
Time spent in trade after sickness	1.0746	2.55434				
Time spent in caring the patient before sickness	0.1866	0.73771	-10.26278 –(-6.81185)	-9.879	66	0.000
Time spent in caring the patient after sickness	8.7239	6.96435				

4.4.1 Time spent in household chores

Table 16 shows the distribution of respondents according to time category spent in various activities before and after the sickness. The results show that before sickness majority of respondents (55.2%) were spending 3.1-5 hours per day in household's chores and 1.5% were spending more than 7 hours. After sickness majority of respondent (79.1%) spend only 0.1-3 hours per day and 7.5% spend no time in household chores.

4.4.2 Time spent in farming activities

The results in Table 16 reveal that before sickness the majority of respondents households (29.9%) and (28.4%) were spending more than 7 and 3.1-5 hours respectively per day in farming activities, 6% were not engaging in farming activities. After sickness, majority of households (58.2%) spend only 0.1-3 hours per day and 29.9% of respondent's households are not engaging in farming activities. In other worlds, less time was spent in farming activities after the households were hit by the sickness.

4.4.3 Time spent in trade

In Table 16 the results indicate that before sickness 47.8% of respondents were not engaging in trade, and 13.4% were spending more than 7 hours per day in business. After sickness 77.6% was not engaging in trade and non spend more than 5 hours

per day in trade. Again, it can be said that trading was highly disrupted by sickness.

4.4.4 Time spent in patient care

The findings in Table 16 show that before sickness majority of respondent households (92.5%) spent no time in patient care while after sickness majority of them (43.3%) spend more than 7 hours per day and only few households (10.4%) spent no time in patient care activity. Therefore patient care appears to take a lot of time in households after they were affected by sickness.

Table 16: Time spent in different activities before and after sickness

	Household chores		Farming		Trade		Patient care	
Category of time spent (hours)	Before %	After %	Before %	After %	Before %	After %	Before %	After %
00	00	7.5	6.0	29.9	47.8	77.6	92.5	10.4
0.1-3	25.4	79.1	10.4	58.2	16.4	9.0	6.0	10.4
3.1-5	55.2	10.4	28.4	11.9	16.4	10.4	1.5	19.4
5.1-7	17.9	3.0	25.4	00	6.0	00	00	16.4
>7	1.5	00	29.9	00	13.4	3.0	00	43.3
Total	100.0	100	100.0	100.0	100.0	100.0	100.0	100.0

4.5 Household Expenditures Before and After Sickness

This section compares household's expenditure before and after having a sick person. The respondents mean value was compared using t-test statistics at $p \leq 0.05$. The expenditure considered include medical food, funeral, supports to others, farm,

and trade expenses. Appendix 2 shows the results of the test. In all the tested variables, respondent's households spent more money before their households were hit by the pandemic than after the sickness except in medical and food variables. All the differences were statistically significant at $p \leq 0.01$.

4.5.1 Medical expenditure

Table 17 indicates the distribution of respondents according to medical expenditure category before and after sickness. Majority of respondents households (41.8%) were spending more than TAS 12 000 per month for medical expenses and 19.9% of households' spent TAS 0-3 000 per month for medical expenses. After sickness majority of respondents households (85.1%) spend more than TAS 12 000 per month and only 4.5% of households spend TAS 0-3 000 per month for medical expenses.

4.5.2 Funeral expenditure

The results in Table 17 show that before sickness majority of households respondents (13.4%) were spending more than TAS 6 000 per month for funeral expenses in a village and 10.4% of households were not contributing in funeral ceremonies in a village. After sickness the majority (43.3%) are not contributing and only 6.0% contribute more than TAS 6 000 per month.

4.5.3 Food expenditure

The findings in Table 17 show that before sickness majority of respondents household (47.8%) were spending TAS 30 001-60 000 per month for food expenses and 11.9% of households were spending more TAS 90 000 per month for food

expenses. After sickness majority of them (32.8%) spend TAS 30001 per month and 22.4% of households spend more than TAS 90 000 per month for food expenses.

4.5.4 Support to others

The findings in Table 17 indicate that majority of respondents households (37.3%) were supporting others for TAS >9 000 per month and 17.9% households were not supporting others before sickness. After sickness 7.6% households support others for TAS 1-3 000 per month and 3.0% of households are not supporting others.

4.5.5 Farm expenses

The results in Table 17 reveal that before sickness the majority of households (44.8%) were spending more than 90 000 per season for farming activities and 8.9% of households were spending no money for farming activities. After sickness majority of them (43.3%) are not spending money for farming and only 3.0% of respondents spend more than TAS 90 000 per season.

4.5.6 Trade expenses

The finding in Table17 shows that 22.4% of respondent’s households were spending more than TAS 90 0000 per year for trade and 43.2% households were spending no money for trade before sickness. After sicknesses 14.9% of households spend 1-300 000 per year for trade and 77.6% of households are spending no money for trade.

Table 17: Amount of expenditure on different items before and after sickness

Percentages

Variable		Before	After
Medicalexpenditure (Tshs)	0-3000	19.4	4.5
	3001-6000	7.5	4.5
	6001-9000	3.0	00
	9001-12000	28.4	6.0
	>12000	41.8	85.1
	Total	**100.0**	**100.0**
Funeral expenditure (Tshs)	00	10.4	43.3
	1-1500	14.9	32.8
	1501-3000	23.9	10.4
	3001-4500	17.9	4.5
	4501-6000	19.4	3.0
	>6000	13.4	6.0
	Total	**100.0**	**100.0**
Food expenses (Tshs)	0-30000	32.8	3.0
	30001-60000	47.8	32.8
	60001-90000	7.5	41.8
	>90000	11.9	22.4
	Total	**100.0**	**100.0**
Support to others (Tshs)	00	17.9	82
	1-3000	29.9	89.6
	3001-6000	28.4	7.5
	6001-9000	4.5	00
	>9000	37.3	3.0
	Total	**100.0**	**100.0**
Farm expenses (Tshs)	00	8.9	43.3
	1-30000	15	34.3
	30001-60000	20.9	16.4
	60001-90000	10.4	3.0
	>90000	44.8	3.0
	Total	**100.0**	**100.0**
Trade expenses (Tshs)	00	43.2	77.6
	1-300000	18	14.9
	300001-600000	7.5	3.0
	600001-900000	9.0	00
	>900000	22.4	4.5
	Total	**100.0**	**100.0**

4.6 Household Income Earning Before and After Sickness

This section compares the household income earnings on the affected households before and after having a sick person. The respondents mean values were compared using t-test statistics at $p \leq 0.05$. The income earning considered were those from maize, rice, vegetable, charcoal, clothes, alcohol and bites. Appendix 3 shows the results of the test. In all tested variables respondents earned more money before their households were hit by the pandemic than after the sickness. All the observed differences were statistically significant at $p \leq 0.05$.

4.6.1 Earnings from maize production

The results (appendix 4) reveal that earnings from majority of respondents (71.6%) were more than TAS 200 000 per season before the household were affected by HIV/AIDS pandemic and 10.4% were not earning from maize production. After HIV/AIDS pandemic 43.3% earn TAS 100 001-200 000 per season and 26.9% are not earning from maize production.

4.6.2 Earnings from rice production

The findings (appendix 4) show that majority of respondents (53.7%) were not earning from rice before HIV infection and 4.5% were earning more than TAS 200 000 per season. After HIV infection majority of them (79.1%) are not earning from rice production and 6.0% earn 100 001-200 000 per season.

4.6.3 Earnings from vegetables selling

The findings appendix 4 reveal that majority of households (71.6%) were not earning from vegetable selling and 6.0% were earning TAS 100 001-200 000 per month before being affected by HIV/AIDS. After HIV infection 86.6% are not earning from vegetable selling and 13.4% earn 1-100 000T per month.

4.6.4 Earnings from charcoal selling

The findings appendix 4 show that the majority (97.0%) was not earning from charcoal selling and 3.0% were earning TAS 1-100 000 per month from charcoal before the households were affected by AIDS. After sickness the majority (98.5%) of respondents households are not earning from charcoal selling and 1.5% earns TAS 1-100 000 per month.

4.6.5 Earnings from clothes selling

The results (appendix 4) show that before HIV infections 88.1% were not earning from clothes selling and 8.9% of respondent's households were earning TAS 1-100 000 per month from clothes selling. After infection 94.0% are not earning from clothes selling and 3.0% of respondents' households earn TAS 1-100 000 per month.

4.7 Household Land Size Cultivated with crops Before and After Sickness

This section compares the land size cultivated with crops by affected households before and after sickness. The respondents mean values were compared using t-test statistics at $p \leq 0.05$. The items considered include total land size grown crops, land

size grown maize, and land size grown rice. Table 18 shows the results of the T-test. In all the three tested variables, respondents cultivated larger land before their households were hit by the sickness than after the sickness. All the differences were statistically significant $p \leq 0.05$.

Table 18: T-test results of comparing mean value of land size used for crop growing before and after sickness

Variable	Mean Value (Acres)	Std Dev.	95% C.I difference	t-value	d.f	Sig. Level
Total land size grown crops before sickness	3.2239	2.03107	1.73037-2.45620	11.516	66	0.000
Total land size grown crops after sickness	1.1306	0.97832				
Land size grown maize before sickness	1.8843	1.05289	1.05324-1.52139	10.980	66	0.000
Land size grown maize after sickness	0.5970	0.48647				
Land size grown rice before sickness	0.4739	0.64128	0.21070-0.49079	5.000	66	0 .000
Land size grown rice after sickness	0.1231	0.27308				

The results in Table 19 show that majority of respondents (65.7%) were cultivating 0.1-3 acres and minority were either cultivating >7 acres or not engaging in crop cultivation (6.0% in each). But after sickness majority of them (72%) cultivate 0.1-3 acres and 25.4% are not cultivating crops. In case of rice majority of respondents households (82.1%) were cultivating 0.1-3 acres and 10.4% of households were not engaging in maize cultivation. After sickness majority of respondents households (70.1%) were cultivating 0.1-3 acres and 29.9% of households are not cultivating maize. Also the results shows that 47.8% of households were engaging in rice production and 52.2% of households were not engaging in rice production. But after the HIV/AIDS pandemic 20.9% of households engage in rice production and 79.1%

of households do not engage in rice production. Of those who engaged in rice production they cultivated 0.1 to 3 acres of land.

Table 19: Size of land grown crops before and after sickness

	Percentages					
Land size in Acres	Land size grown crops		Maize		Rice	
	Before	after	Before	After	before	after
00	6.0	25.4	10.4	29.9	52.2	79.1
0.1-3	65.7	72	82.1	70.1	47.8	20.9
3.1-5	20.9	1.5	7.5	0	0	0
5.1-7	6.0	1.5	0	0	0	0
>7	1.5	0	0	0	0	0
Total	100	100	100	100	100	100

4.8 Type of Crop/s Grown Before and After Sickness

This section indicates types of crops grown by respondent's households before and after HIV infection. It also shows percentage of households not engaged in crop cultivating before and after sickness. The results in Table 20 reveal that 44.7% of households were engaged in maize production before sickness and after sickness the number increased up to 58% of households. It can be said that some of the respondents households shifted from both maize and rice production to only maize production.

Only 1.5% of households were engaged in rice production before sickness and after sickness 3%of households engage in rice production. It can be said that for the 47.8% of households who were cultivating both maize and rice, some of them dropped from maize cultivation and remained with only rice cultivation, besides 47.8% of households were engaged in maize and rice production before HIV

infection but after infection the number was reduced to 16.5%. Again it can be said that most of the households failed to cultivate both maize and rice where they remained cultivating only maize. Also the results show that only 6.0% of respondents were not engaging in crop cultivation before sickness but after sickness 22.5% are not engaged in crop cultivation.

Table20: Type of crop/s grown by respondent's households before and after sickness

Crop type grown	Percent	
Crop type grown	Before	After
Maize	44.7	58
Rice	1.5	3
Maize and rice	47.8	16.5
No crop grown	6.0	22.5
Total	100	100

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS

5.1 Overview

This chapter discusses the HIV/AIDS effects on respondent household's production activities in terms of variation in time spent in production activities, production and income levels and expenditure of respondent's households before and after sickness, also the chapter discusses the identification and characterization of women's production activities.

5.1.1 Identification and characterization of rural women's production activities

The results show that, farming is the main production activity undertaken by women in the study area. However these women are less educated. On the other hand results reveal that those who are farmers and the less educated are also the ones who are highly affected by HIV/AIDS; most of them are aged 23-35 and 41-64 years. The findings imply that HIV/AIDS affects most of the productive and working age which is important for the development of the area and the country at large. This also has got an implication to the nation's development level that the nation may continue to be poor. Other studies show that around 98% of economically active

women in rural areas in Tanzania are fully attached to agricultural production (FAO, 1994 cited by Makauki 1999), and they contribute substantially to both subsistence and commercial earnings. Similarly, National Policy on HIV/AIDS, shows that HIV/AIDS pandemic has spread relentlessly affecting people in all walks of life and decimating the most productive segments of the population particularly women and men between ages of 20-49 years (USAID, 2005). Similar findings show that HIV/AIDS have serious implications for household and for national social and economic development (URT, 2001). The findings in the present study also revealed that majority of those who were in business undertakings are of the age between 23-29 years (the youngest group of sampled respondents) and majority of them have attained primary school education. In addition, they were mostly single in their marital status. The implication is that young age and single are free to move as they have little responsibilities in their families as compared to the married ones or widowed. Majority of those who are employees have attained primary education and they are working as office attendants and some of them are nursery school teachers who have attended short courses. The employees were either single or widowed.

5.1.2 Time spent in household production activities before and after HIV infection

The results of the study show that there is significant difference in time spent in household production activities before and after sickness. The time for household chores have been reduced after sickness in respondent's households. The findings revealed that respondent's households spent more time in farming and trade before than after sickness. On average they spent 5.7463 hours and 1.8955 hours per day

(before and after HIV infection respectively) in farming activities. They also spent an average of 2.9478 hours and 1.0746 hours per day before and after, respectively in trading. This implies that HIV/AIDS has actually reduced the working time for women in the study area. A study conducted in Ethiopia showed the reduction in agricultural labor time as a result of HIV/AIDS where by the hours per week in agriculture fell from 33.6 hours in non-afflicted households to between 11 and 16 hours in afflicted households (Black, 1997).

Respondents households spend more time after than before the HIV/AIDS pandemic for patient care (mean value of 0.866 hours and 8.7239 hours per day before and after respectively). This implies that the time which would be used for production activities such as farming and trading is used for caring the sick members of the household. The findings in the study area revealed that women are major care givers for those who are sick in the households. This implies that women production activities have been affected by the pandemic due to most of their time being used for patients caring. SADC (2005) noted that home based care for people living with AIDS is often predicted on women and especially younger and older women bearing additional responsibilities.

5.1.3 Household production and income level before and after HIV infection

The findings revealed that respondent's households were earning more before than after HIV infection from selling of maize and rice which they have produced, also from selling charcoal, clothes, vegetables and fruits. Mean values are TAS 293 805 and 90 597 per season before and after respectively from maize selling, and mean

values of TAS 64 402 and 17 462 per season from rice selling before and after respectively. This implies that there is significant difference in production and income levels before and after sickness that HIV/AIDS reduces the amount and earnings from those produce. Other findings reveal that 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. The Government of Swaziland reported a 54 per cent drop in agricultural production in AIDS-affected households (UNAIDS, 2000).

Other studies show that business and agriculture are suffering a lot from the effect of HIV/AIDS pandemic, this is especially true in sub-Saharan Africa where as much as one third of the population is infected with HIV/AIDS (Lamptey et.al, 2002).

The findings also revealed that HIV/AIDS either reduces size of land cultivated or number of crop types produced. Most of respondent's households have shifted from both maize and rice cultivation to only maize cultivation after sickness. This imply that HIV/AIDS affects women production activities. Loss of labour due to HIV/AIDS leads to shift from high labour intensive to low labour intensive crops. Similar finding by FAO (2003) reported that absenteeism caused by HIV-related ill-nesses and the loss of labour from AIDS-related deaths may lead to the reduction of the area of land under cultivation and to declining yields resulting in reduced food production and food insecurity. Furthermore, FAO (2003) noted that the loss of labour may also lead to declines in crop variety and to changes in cropping systems,

particularly a change from more labour-intensive systems to less intensive systems. A shift away from labour-intensive crops may result in a less varied and less nutritious diets. NAADS (2004) noted that household affected by HIV/AIDS cultivate less land and this was particularly evident in affected female-headed households. In Eastern Africa, AIDS related labour shortage has led to lower crop yield, smaller amount of land being cultivated, and a move from cash crops to subsistence crops (Peter *et al.* 2002).

5.1.4 Household expenditure before and after HIV infection

The findings revealed that there is significant difference in household expenditure on different items before and after sickness. There are increased medical and food expenses after sickness than before, mean values of TAS 10 529 per month before sickness and TAS 27 795 per month after sickness. In food expenses, mean values were TAS 52 156 per month before and TAS 82 931 per month after sickness. Also there is reduced expenditure (or investments) on funeral contributions, supporting others, farming and trade undertakings. Mean values of farming expenses before HIV infection was TAS 107 560 per season and after HIV infection mean value was TAS 25 008 per month. Mean values for trading was TAS 768 388 before and TAS 210 925 per year after the pandemic. This implies that HIV/AIDS affect capital for farm production and trade. That is, expenditure shifts from investments to more consumption.

More earnings are used for special foods and medical expenses than it is used in trade and farming. Similar findings by FAO (2001) reported that there is increased

spending for health care, decreased productivity and higher demands for care. Food production and income drop dramatically as more adults are affected by HIV/AIDS pandemic. Kaiser (2002) reported that taking care of a person suffering from AIDS is not only an emotional strain for household members, but also a major strain on household resources. Loss of income, additional care-related expenses, the reduced ability of care givers to work, and high medical fees push affected households deeper into poverty. Again Kaiser (2002) estimated that on average HIV-related care can absorb one-third of a household monthly income.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

The study investigated the effects of HIV/AIDS on rural women's production activities. From the results and discussions the following conclusions and recommendations can be drawn.

6.1. Conclusions

6.1.1 Women's production activities

Majority of women in affected households were engaged in farming, and few of them were engaged in small scale businesses. Those engaged in farming were aged more than 30 years and most of them were either married or widowed. It is likely that women of these ages engage mostly in farming activities because they need to settle compared to the young and single ones who are free to move with business activities. Those who engage in business are the youngest (of less than 30 years of age), and most of them were single.

6.1.2 Time spent in production activities before and after sickness

The findings indicate that the affected households spent more time in household chores, farming, and trade activities before than after sickness. On the contrary they spent less time in patient care before as compared to after. Also the findings revealed that, women are the major care givers for those who are sick including those affected by HIV/AIDS in the households.

6.1.3 Households production and income levels

The findings revealed that respondents were cultivating bigger size of land before than after sickness. In addition most of those who were cultivating both maize and rice before sickness, dropped and remained cultivating only one crop after sickness, most of them remained cultivating only maize.

The results also revealed that there was significant less earnings obtained from maize and rice production. The drop was also noted for vegetable, charcoal, and clothes selling after sickness.

6.1.4 Household expenditure

The findings of the study showed that there is significant difference in mean values between medical, food, funeral, support to others, farm and trade expenses of the affected households before and after sickness. Respondents were spending more money in all variables before sickness than after, except in medical and food

expenses. Therefore increase in medical and food expenses after sickness has led to decrease in having capital for farming and trade. Also respondent's households fail to contribute money in community ceremonies in the villages, at the same time most of them have no money for supporting others after sickness indicating a reduced social capital and cohesion.

6.2 Recommendations

The study has the following recommendations to make based on the conclusions:

- Agricultural policy formulation and programming should go hand in hand with incorporating women in affected households with an emphasis on women access to and control of land, property, credit, knowledge, agricultural inputs and technology. Stronger efforts by the agricultural sector are needed to address causes of pandemic such as rural poverty and food insecurity. Women in affected households must be recognized when programmes are developed, implemented and evaluated.

- Due to the fact that women are major caregivers for sick persons in households also are in charge of domestic and productive activities, there is a particularly need to reduce the work load of women. Facilitated access to fuel-efficient stoves in combination with agroforestry technologies will reduce time on collecting fire wood, labour serving

food processing systems such as grinding mills and de-huskers, present additional options to reduce the burden on women.

- Labour serving technologies and practices are needed. These include small scale irrigation and water harvesting techniques, ploughs and tools that can be used by children, women and the elderly. Others include use of donkeys as draught animal power, crop diversification and conservation agriculture. The government must make sure that affected women are aware of these technologies and practices and facilitating adoption among them. These can be accomplished through group efforts using participatory approaches such as Farmer Field schools.

- Provisions of loans from different government and non government organizations to women in affected households are highly needed in order to satisfy capital for farming and trade due to high level of food and medical expenses in affected households.

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APPENDICES

Appendix 1: Determination of sample size

Formula: $n = Z^2pq/d^2$

Where: n = sample size when population is greater than 10 000

Z = standard normal deviation, set at 1.96 (in simple set at 2.0) corresponding to 95% confidence level

p = proportion in target population estimated to have a particular characteristic (if not known use 50%)

q = 1.0-p

d = degree of accuracy desired

In this case, p = 4.4% (HIV prevalence rate in Mvomero)

Therefore, sample size n = 2^2x0.044x0.95/0.05^2

= 67

Appendix 2: T-test results of comparing mean values of household expenditures before and after sickness

Variables tested	Mean Value(Tshs)	Std Dev.	95% C.I difference	t-value	d.f	Sig. level
Medical expenditure before sickness per month	10529.8507	10529.8507	-23274.756 67-(-56.58661)	-5.737	66	.000
Medical expenditure after sickness per month	27795.5224	27795.5224				
Funeral expenditure before sickness per month	4471.6418	4471.6418	1604.42069-3703.04200	5.049	66	.000
Funeral expenditure after sickness per month	1817.9104	1817.9104				

Food expenses before sickness per month	52156.7164	52156.7164	-36270.33460-(-78.91913)	-11.180	66	.000
Food expenses after sickness per month	82931.3433	82931.3433				
Support to others before sickness per monthly	9089.5522	9089.5522	5592.13592-10646.61035	6.414	66	.000
Support to others after sickness per month	970.1791	970.1791				
Farm expenses before sickness per season	107560.5970	107560.5970	63192.02417-1913.05046	8.513	66	.000
Farm expenses after sickness per season	25008.0597	25008.0597				
Trade expenses before sickness per year	768388.0597	768388.0597	298471.04839-454.32475	4.297	66	.000
Trade expenses after sickness per year	210925.3731	210925.3731				

Appendix 3: T-test results of comparing mean values of household income earning before and after sickness

Variable	Mean Value (Tshs)	Std Dev.	95% C.I difference	t-value	d.f	Sig. Level
Earnings from maize before sickness	293805.9701	149029.91756	169943.01844-236474.89201	12.196	66	.000
Earnings from maize after sickness	90597.0149	77559.95915				
Earnings from rice before sickness	64402.9851	89181.98277	28216.59827-65663.99875	5.005	66	.000
Earnings from rice after sickness	17462.6866	38879.89601				
Earnings from selling vegetables, fruits before sickness	25895.5224	52648.96164	11016.75449-31490.70820	4.145	66	.000
Earnings from selling vegetables,	4641.7910	15397.46289				

fruits after sickness						
Earnings from charcoal making /selling before sickness	805.9701	6120.60307	-714.23536-2266.29506	1.040	66	.001
Earnings from charcoal making/selling after sickness	29.9403	244.32888				
Earning from clothes (kanga, mitumba) before sickness	33507.4627	154850.89340	1404.85029-34565.29897	2.166	66	.034
Earning from clothes (kanga, mitumba) selling after sickness	15522.3881	89159.09481				

Appendix 4: Income earned from selling different items before and after sickness

Category of Income	Maize		Rice		Vegetables		Alcohol		Charcoal		Bites		Clothes	
(Tshs)	Before %	After %	Before %	After %	Before %	After %	Before %	After %	Before %	After %	Before %	After %	Before %	After %
0	10.4	26.9	53.7	79.1	71.6	86.6	94.0	98.5	97.0	98.5	82.1	92.5	88.1	94.0
1-100000	4.5	25.3	16.4	14.9	20.9	13.4	6.0	1.5	3.0	1.5	16.4	7.5	8.9	3.0
10000-200000	13.4	43.3	25.4	6.0	6.0	0	0	0	0	0	1.5	0	0	0
>200000	71.6	4.5	4.5	0	1.5	0	0	0	0	0	0	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix 5: QUESTIONNAIRE FOR EFFECTS OF HIV/AIDS ON RURAL WOMEN'S PRODUCTION ACTIVITIES

Background information

Questionnaire number …….date ……

Division ……

Ward ……

Village ……..

1.0 General information of the respondent

1.1 Name of respondent

1.2 Age ……year …….

1.3 Education:-
1. No formal education
2. Pre-primary education
3. Primary education
4. Post primary education
5. Others (specify)

1.4 Household head

1.5 Marital status

1. Single 2. Married 3. Divorced 4. Widowed

1.6 What is your occupation

1. Farmer 2. Business 3. Employment 4. Others (specify)

1.7 What is your monthly income Tshs.

1.8 What is your family size ……..persons

1.9 How many are you at the age of

< 18 years	**18 – 64 years**	**> 64 years**

1.10 Referring to question above how many are actively working?

1.11 School dropout rates

How may are going to school	**How many are not going to school**	**Reasons for not going to school**

1.12 Are all members of the family living with you?

1. Yes 2. No.

1.13 If no where are they?

1. Husband/children dead 2. Looking for job 3. Sick 4. Other (specify)

2.0 Background information of the patient

2.1 Have you experience death/sickness in your family?

1. Yes ……2. No……..

2.2 If is death who has died?

1. Husband 2. Children below 15 years 3. Son/daughter above 15 years other (specify)

If is sickness who is sick……

2.3 How long the patient suffered?.....

2.4 Who take/took care for the patient?.....

2.5 Who is a major care given for the patient?.....

2.6 What kind of care do you practice for the patient?.....

2.7 Is there any assistance for patient care from kinship members 1Yes …No…

2.8 If Yes who give/gave you those assistance ……

2.9 Have you ever received any assistance related to patient cost from government/NGOs 1. Yes…….No…….If Yes mention those kind of assistance…….

2.10 What kind of assistance did you receive from kinship members …….

2.11 Are there any costs related to caring of sick person? Yes …….No……..

2.12 If yes what are those costs?.....

2.13 By which means/source of income did you achieve to meet those costs?.....

2.14 is the patient living with you since the begining of sickness? Yes ……No…

2.15 If no where she/he has been before coming to your household? ……...

2.16 Is there any traditional system for burial ceremonies which is still existing?

1. Yes……..No…….

2.17 How many hours per day do you spend for patient care ……

2.18 What kind of those care?.....

2.19 How do you spend your time in carrying out the following activities before and after sickness/death

Activity	**Time/hours**	
	Before	**After**
Household chores		
Farm activities		
Livestock husbandry		
Trade		
Patient care		

3.0 Production activities

3.1 What is your main production activity?

1. Agriculture 2. Trading 3. Employment 4. Others (specify) mention other production activities if you have any ……

3.2 Where did you get capital for the production activities?

1. Selling agricultural produce 2. Loans 3. Own labour 4. Others (specify) …….

3.3 Do you think death/sickness occurred in your household affect your production activities? 1. Yes ……. 2. No……..

3.4 If Yes how?.....

3.5 Indicate types of crops grown before/after death/sickness

Crop grown	Before	After
Paddy		
Maize		
Sunflower		
Beans		
Sorghum		
Sugarcane		
Vegetable		
Banana		
Fruits		
Simsim		
Cassava		

3.6 Is there any variation in agricultural production efficiency before and after death/sickness? 1. Yes…….2. No…….. …

3.7 Indicate technologies/implements used before and after death/sickness

Agriculture technology/implement	**Before**	**After**
The use of hand hoe		
The use of ox-plough		
The use of tractor		
The use of hired labour		
The use of fertilizer		
The use of improved seeds		
The use of herbicides		

4.0 Household income

4.1 What is your major source of income?

1. Salary/wages 2. Off-farm activities 3. Farming activity 4. Others

4.2 Is death/sickness affect your income generating activities (IGA)? Yes…… ……..No…… If Yes how……...

4.3 Apart from the crop farming activities list other activities that bring income into your household ……

4.4 What kind of problems do you encounter in your income generating activities

(IGA) before and after death/sickness.

Problem	**Before**	**After**
1.		
2.		
3.		
4.		
5.		

4.5 Are you satisfied with income earned from your (IGA? 1. Yes …….No…

4.6 If not why don't you diversity/expand your IGA?.....

4.7 Indicate your monthly income from the following IGA before and after death/sickness

IGA	**Before**	**After**
Agriculture/farming activities		
Salary/wages		
Off farm activities		
Casual labour		

4.8 Who owns land in this village?

1. Men 2. Women 3. Both men and women

4.9 Do the traditions and norms allow widows to inherit land, properties left by husband?

1. Yes 2. No.

4.10 Do you own land for agricultural activities?

1. Yes 2. No.

4.11. What is the means of acquiring land ownership?

1. Buy 2. Inhent 3. Given by village government 4. hire 5. Others (specify)

4.12 What is the size of the land owned ……..

4.13 What is the land under crop cultivation ……

5.0 Heath

5.1 Do you have health facilities around?

Yes……..No……..

5.2 What is the quality of the health services?.....

5.3 Do you go for institutional health services when you or your family member is sick? 1. Yes ……No……

5.4 If no why? 1. Too high cost 2. Bureaucracy 3. Poor medical services

4. Other (specify) ……

5.5 Do you think high cost of medical care affects your production activities?

1. Yes ……No……

5.6 If yes how?.....