

**FACTORS THAT AFFECT FOOD SECURITY OF WOMEN
WITH HIV/AIDS IN TETU DISTRICT, CENTRAL
PROVINCE, KENYA**

By

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL
FULFILLMENT FOR THE AWARD OF THE DEGREE OF MASTER
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UNIVERSITY OF NAIROBI.**

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DECLARATION

This is my original report and has not been presented in any other university for the award of a degree.

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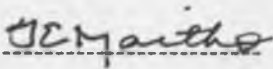
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DEDICATION

This research project is dedicated to my sons Dennis Mugambi and Brian Gitonga for being the source of joy and inspiration throughout the research work. May the good Lord shower his blessing upon them all the days of their lives.

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ABBREVIATIONS AND ACRONYMS

AIDS: Acquired Immune Deficiency Syndrome

APHIA II: AIDS Population & Health Integrated Assistance II

CBO: Community Based Organization

CD4: Cluster of Differentiation 4

FAO: Food and Agriculture Organization

FBO: Faith Based Organization

GROOT: Grassroots Organizations Operating Together

HIV: Human Immunodeficiency Virus

ICAP: International Center for AIDS care and treatment Programs

MDGs: Millennium Development Goals

NACC: National AIDS Control Council

NEPHAK: National Empowerment Network of People living with HIV/AIDS in Kenya

SWAK: Society for Women and AIDS in Kenya

SPSS: Statistical Package for Social Science

TOWA: Total War against AIDS

UN: United Nations

UNDP: United Nations Development Program

UNICEF: United Nations Children's Fund

WHO: World Health Organization

ABSTRACT

Kenya is the world's leading exporters of tea, coffee and vegetables. Despite its high-production capacity, many of Kenya's 32 million people live on US\$1 per day and suffer poverty and malnourishment. Limited or no access to independent food production resources and the effects of the HIV/AIDS pandemic put additional pressure on people's ability to lead healthy and productive lives. It is for this reason that the researcher has paid special attention to study food situation of these women living with HIV/AIDS in Tetu district. Descriptive survey design was used and a sample of 16 support groups was selected through stratified and simple random sampling methods. The respondents in the study included officials or members of sampled support groups, the divisional Health and Agricultural officers and the local chiefs as opinion leaders. Questionnaires with closed and open ended questions were used to collect data, as well as observations and interview methods. The data was analyzed using Statistical Package for Social Sciences (SPSS). The study found out that small land sizes and lack of access and control of family resources make women HIV positive unable to achieve food security. The burden of HIV/AIDS rests entirely on women because of their triple gender roles of productive, reproductive and society. Women give quality care and nurture to members of family when they are sick. Yet women do not receive similar treatments from family when they are sick. The study recommended Tetu community to participatory device strategies to surmount gender stereotyping and disparity in the fight against socio-economic impact of HIV/AIDS. Food security can be achieved through participation, involvement and empowerment of all players to build synergetic approaches and avoid duplication of efforts. The information obtained in the study is useful to extension service providers in formulating responsive packages for women with HIV/AIDS in Agricultural high potential areas of Central Province in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The attainment of food security is an exclusive goal for most of the developing countries even in countries that at one time were wholly or partially food sufficient. The ability to feed oneself and family adequately is a human right. The right to adequate food is realized when every woman, man, and child alone or in a community with others have physical and economic access at all times to adequate food or means for its procurement (Karger, 2005). Access to adequate food means that the families and individuals are able to acquire through their own production, bartering for food for work, purchase, gift, food aid, or loan, enough food to provide the right nutritional content and quality (FAO, 2005)

Human body is conditioned by the way it is provided with food. Therefore people need sufficient knowledge and skills to grow, purchase, process, prepare, eat and feed their families with a variety of foods in the right qualities and quantities. Adequate nutrition is therefore fundamental to human development and can only be achieved if there is food security. Nutrition status is exacerbated by lack of nutrition knowledge. Access to adequate quantities of wide varieties of safe quality of nutritious food by a household is a core element of the concept of food security (FAO, 1988). Food security is a situation in which all persons in a household (men, women, girls, boys, and youths) at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. Hence depend on availability, accessibility and ability to utilize (through selection, integration, combination and preparation) from the

food diversity within their vicinity. Food availability is achieved when sufficient food both in quality and quantity are consistently within reach to all persons in a household. Food accessibility is a situation when a household and all persons in them have adequate resources to obtain appropriate foods for a nutritious diet. Access depends on income available to the households, the distribution of income within the household and affordability of food (USAID, 1999)

Food utilization is the proper biological use of food which requires a diet that provides sufficient energy and essential nutrients, adequate portable water, sanitation and knowledge within the household of food combinations, processing, storage, and preservation techniques, basic principles of nutrition; and proper hygiene and illness management (Bonnard et al, 2002). Nutrition is the process of food ingestion (taking in), digestion (breaking down in simpler components), and absorption (taken up by the body) to provide the body with required nutrients. A nutrient is a substance or components of food including carbohydrates, proteins, fats, vitamins, minerals and water (Nutrition and AIDS training manual).

1.2 Statement of the problem

Castleton, (1997) in his research Cote d'Ivoire recognized that data on prevalence of malnutrition and dietary intake in HIV-infected persons in Africa setting is lacking. There is no data available on factors affecting achievement of food security for women living with HIV/AIDS in Tetu district. It is for this reason that the researcher embarked on doing research to identify the factors that influence attainment of food security for these women.

1.3 Purpose of the study

The purpose of this study is to investigate the factors that influence attainment of food security among women living with HIV/AIDS in Tetu district.

1.4 Objectives of the study

Specifically, the study will be based on the following objectives

- 1) To establish how socio- economic factors affect food security of women with HIV/AIDS in Tetu district.
- 2) To examine the influence of gender and eating habits on food security of women with HIV/AIDS in Tetu District
- 3) To determine how health status of HIV positive women in Tetu district affects their food security

1.5 Research Questions

- 1) In what ways do socio-economic factors affect food security of women with HIV/AIDS in Tetu district?
- 2) How do gender and eating habits influence food security of women with HIV/AIDS in Tetu district?
- 3) How does health status of HIV positive women in Tetu District affect their food security?

1.6 Significance of the study

According to Ellen Bortei, 2007, inability to attain of food security remains a significant international problem, with developing regions of the world enduring most of the burden. The impacts of food insecurity are felt mostly by the vulnerable groups of persons such

as the displaced, the HIV/AIDS patients, orphans physical challenged and the aged. HIV/AIDS reduces a household's ability to produce and buy food. Adults with HIV are less able to work on their land or earn income from other labour intensive activities. Increased health costs require money that is needed for food (Kenya National Guidelines on Nutrition and HIV/AIDS, 2007).The capacity of an affected or infected to obtain an adequate amount of variety of food and to adapt or adopt appropriate health and nutrition response to HIV/AIDS especially for the already vulnerable ones, is grossly reduced. The study has generated data which will benefit extension officers, health workers and researcher to fill-up the gaps left during normal service delivery. They will device ways and means to deliberately target women of age 18 to 45 years living with HIV/AIDS. The generated information is also useful to policy makers, extension and health officer on food security when making strategic plans to target vulnerable groups of persons; particularly women living with HIV/AIDS in Tetu and other areas in Kenya

1.7 Scope of study

The scope of this study includes assessments of impediments to food security of HIV positive women living in agricultural high potential areas of Tetu district in Central Province, in Kenya. Proposed adjustments for future changes in food security situation will be recommended. This study is limited to HIV positive women of age 18 to 45 years who are members of 16 psycho-social support groups within Tetu district.

1.8 Limitations of the study

The study envisaged some limitations and consequently mitigated them. The most important expected limitations included failure of respondents to response adequately due to the stigma associated with HIV/AIDS, organizations' reluctance in to avail some

documents for confidential reasons, difficulty in reaching some women with HIV/AIDS for interviews and some respondents taking too long to respond to the questionnaires due to ethical reasons. Language barrier would occur especially to the respondents of low literacy level since the questionnaires are framed in English. Other limitations were time and financial constraints.

To overcome the above limitations, the researcher explained to the respondents the purpose and importance of the research. As part of the ethical principles in the social science research, the researcher gave a guarantee of and ensured the confidentiality of the respondent's identity and of the confidential documents during the analysis and dissemination of the finding. The researcher upheld clients' dignity and built their self esteem by ensuring face to face interactions. The researcher used only local research assistants who were well trained on ethical considerations. Questionnaires were used as the last result for those organizations, leaders and women living with HIV/AIDS who were unavailable for focused group discussions and interviews.

The researcher took annual leave from duty to create time and as well organized for financial support through savings and stakeholders contributions.

1.9 Delimitations of the study

Tetu district presents a good case to study because it is accessible through all weather roads, high potential area in a rural setting. According to the data from Constituency AIDS Control Council, Tetu district has 398 persons living with HIV/AIDS found in 16 Psycho-social support groups. 287 out of the 398 persons with HIV/AIDS are women at reproductive age 18 to 45years who are targeted for the study. The 16 support groups are spread in the 8 locations of Tetu West and East divisions of Tetu district.

Women in the support groups take after Agikuyu culture and are aware of the socio-economic and socio-cultural dynamics which they encounter as they strive to attain their households' food security.

1.10 Assumptions of the study

This study assumed that the respondents provided reliable and valid data and used it to make conclusions in relation to the study. The study also assumed that the variables remain constant. Finally it assumed that the questionnaires would be returned in time duly completed.

1.11 Definition of Significant terms

Acquired Immune Deficiency Syndrome (AIDS) This is a sexually transmitted human disease.

Agro-ecological zones This is a measure of agricultural potential of an area to support certain biodiversity, cropping pattern and livestock rearing.

Clusters of Differentiation 4 (CD4) cells They are specialized white blood cells that are part of the body's immune system, used as a marker for HIV progress

Climate This is the average weather conditions of a given location observed over a period of 30 years

Climate change This is a permanent shift in the traditional patterns of climate outside the normal range of natural climatic variability.

Culture This denotes the way of life of a certain community. Culture is what shapes the beliefs, norms, mores, attitudes, perceptions and behavioral patterns of that community

Eating habits This is the food selection and preparation methods to make up a socially accepted meal that is eaten and enjoyed by all persons in a household.

El Nino This is an episode of prolonged heavy rainfall which causes flooding, and soil erosion.

Epidemic It refers to as the rapid spread of disease affecting people at the same particular community

Food security This is considered in the context of food availability, accessibility and utilization to/by all individuals in a household. It is a situation in which, all persons in a household (men, women, girls, boys, and youths) at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.

Food utilization This is the proper biological use of food which requires a diet that gives all food component or nutrients.

Gender Socially learned expectations and behaviors associated with members of each sex. It is socially construed role of men and women in a society

Gender roles The expectation that prevail in a society about the activities and behaviors that may or may not be engaged by men or women

Gender disparities This will refer to inequalities based on the sex of the individual. The nature of gender disparities will be examined in terms of access and control of resources and quality of feeding, care and nurturance men or women receive or give.

Health This is a state of complete physical, mental and social well being and not merely an absence of disease or infirmity

Health status This is a measure of the level of physical, mental and social wellbeing of an individual.

Human Immunodeficiency Virus (HIV) This is a human virus that causes AIDS.

Household This is defined as a person or group of people related or unrelated to each other who live together in the same dwelling unit or compound, share cooking arrangements and identify the same person as head

Immunity Ability of the body to fight infections and illness

La Nina Extreme prolonged drought episode which causes water scarcity, crop failure and death of livestock

Morbidity How often one is sick, or rendered inactive by disease

Nutrient These are substances or components of food including carbohydrates, proteins, fats, vitamins, minerals and water.

Nutrition This is the process of food ingestion (taking in), digestion (breaking down in simpler components), and absorption (taken up by the body) to provide the body with required nutrients

Nutrition status This is a measure of how well fed an individual is in terms of his/her physical appearance and health status

Nourishing This is the art of providing all the required nutrients to a person through diet.

Pandemic It refers to as the rapid spread of disease affecting people over a whole country or a whole region.

Socialization This is a process by which a society transmits its values to its members. It is the process of equipping individuals with values, knowledge, and skills to perform prescribed roles in a society.

Socio-economy factors In this study family income, land tenure, size and land management as well as social support systems are considered as socio-economic factors.

Susceptibility This refers to the individuals, and general society predisposition to infection. This includes the speed and extent of spread of infection.

Stigma Forms of social discriminations and mal treatment by the society to persons infected or affected by HIV/AIDS. These come in many guises like alienation, marginalization and usurping their legal, human rights and dignity.

Vulnerability This refers to those features of the social or economic entity that make it more or less likely that the excess morbidity and mortality associated with the disease will have adverse impact upon that entity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter aims at identifying what other researchers have done in the area of food security. It also touches on the interplay of culture, health, HIV/AIDS, and socio-economics aspects on women's food security. The review also enhances an understanding of the previous contributions to the problem. The findings of the review helped the researcher to note the gaps in knowledge and create an entry point for the study. It also sharpen and deepen the conceptual framework of the research by assessing certain challenges that had possible influence on the food security of HIV/AIDS positive women

2.2 Food security situation in the world

Millions of people worldwide suffer from hunger and under nutrition. A major factor contributing to this international problem is food insecurity. This condition exists when people lack sustainable physical or economic access to enough safe, nutritious, and socially acceptable food for a healthy and productive life. Food insecurity may be chronic, seasonal, or temporary, and it may occur at the household, regional, or national level. The United Nations estimates there are 840 million undernourished people in the world. The majority of undernourished people (799 million) reside in developing countries, most of which are on the continents of Africa and Asia.

In developing countries, the root causes of food insecurity include: poverty, war and civil conflict, corruption, national policies that do not promote equal access to food for all, environmental degradation, barriers to trade, insufficient agricultural development,

population growth, low levels of education, social and gender inequality, poor health status, cultural insensitivity, and natural disasters. In the United States, the primary cause of food insecurity is poverty, low levels of education, poor health status, and certain disabilities also increase the risk of food insecurity for individuals and households. Globally, certain groups of people are more vulnerable to food insecurity than others. Vulnerable groups include: victims of conflict (e.g., refugees and internally displaced people); migrant workers; marginal populations (e.g., school dropouts, unemployed people, homeless people, and orphans); dependent populations (e.g., elderly people, children under five, and disabled and ill people); women of reproductive age; ethnic minorities; and low literacy households. For food security to exist at the national, regional, and local levels, food must be available, accessible, and properly utilized. Food insecurity affects millions of people around the world; the number of under-nourished people is actually growing in most developing regions.

Ellen Piwoz et al, (2000) states that malnutrition in African adults and especially among women of childbearing age is also a serious problem, with an estimated 42 percent of African women as a whole, and half of pregnant women suffering from anemia (iron deficiency). Between 10 to 20 percent of African 20 to 49 years of age are underweight and nearly 50 percent of the African population is at risk of iodine deficiency disease.

2.2.1.1 Influence of family Income levels on households' food security

The characteristics and resilience of a household strategy are key determinants of its food security. The World Bank estimates that nearly 1.2 billion people live on less than one dollar a day, which is the internationally recognized standard for measuring poverty. Another 2.8 billion live on less than two dollars a day (Bettmann & Corbis et al 1999)

Bettmann& Corbis et al 1999, indicates that for food to be accessible, individuals and families must be able to afford the food prices on the market.

The family's food purchasing power depends on availability of strategy which directly or indirectly brings financial resource to them. For example disposal of assets and farm produce, earning from employment or use of saving accruing from surplus financial resources, income generated in exchange of labour, knowledge transfer, overall family entrepreneurial productivity, and knowledge to buy right quality and quantity of food.

Market infrastructure affects food distribution to the targeted consumers along supply chain. Availability of food items at nearest retailers, wholesalers, broker's outlets determine their prices. Price affects affordability. Hence accessibility depends on supply-demand forces and the nutritional knowledge to purchase right food items.

The world economics dynamics such as global recession and liberalization of trade greatly affected cost of producing agricultural products in Kenya such as milk, sugar, flour, fruits and vegetables. Skyrocketing prices of inputs (fossils fuel, fertilizer and agrochemicals) coupled with inflation has made foodstuffs relatively unaffordable to most households (UNDP, 2006)

2.2.1.2 Influence of Social factors on household's food security

These are factors which strongly influences ones behavior to accept or reject certain food components. They include food selection, preference and taboo which impacts either positively or negatively on community's food security. Globally, certain groups of people are more vulnerable to food insecurity than others. Vulnerable groups include: victims of conflict (like refugees and internally displaced people); migrant workers; marginal populations (like school dropouts, unemployed people, homeless people, and orphans);

dependent populations (like elderly people, children under five, and disabled and ill people); women of reproductive age; ethnic minorities; and low literacy households. However, food availability does not ensure food accessibility. Government policies must also contribute to equal distribution of food within nations, regions, and communities. The breakdown of social fabric which imparted people with traditional knowledge on socially acceptable and food taboos has impacted negatively on food security.

Traditional lifestyle of the Agikuyu people provided individuals with strong psychosocial support networks and co operations for acquisition of food and inter- or intra-house food distribution. Socially healthy persons were said to have both the appetite and hope of food supply from the relatives or friends in times of need. However, their contemporary lifestyle orientation is capitalistic or individualistic where everyone has got their own life to lead; including their own livelihood strategy to ensure food security.

Adoption to new lifestyles and changing eating habits has lead to consumption of large quantities of conveniently processed or junk foods in their diets which pose health hazards to people.

Modern time has brought new food habits and even several new crops. The plants from which traditional foods were obtained are now suffering a double tragedy: genetic erosion and loss of traditional knowledge on how to grow and use them. Food resources from indigenous forests and wetlands are threatened by modern agriculture and urbanization. This is similarly endangering our biodiversity resulting to extinction of specific edible plants and animal species (Maundu, 1999).

The United Nations' definition of food security concentrates only on the globally acceptable foodstuffs and components as rice, maize, oils, beans, lentils, and powder milk

During the times of shortage or disaster, food aid or relief is in form of maize, beans rice oil and powder milk (USAID, 1999). Hence, imputes inferior notion towards our tradition foodstuffs like sorghum, arrowroots, yams, millets, sweet potatoes and pumpkins.

Other factors like peer pressure influences the range of options from which socially acceptable food items can be selected. Level of education also affect ones nutrition knowledge and level of adoption to new eating habits, including integration of food items (fish, mushrooms, rabbit, and termites) which was not eaten before into the diet..

2.2.1.3 Influence of Individual's health status on household's food security

Individual's health status is a measure of one's complete physical and mental wellbeing and plays a key role in the attainment of food security. Physiological impairment due to presence HIV/AIDS and other diseases affects ones ability to ingest, digest and absorb food to meet their body demand. Psychological disorders like stress, depression and trauma can also results to decreased appetite (anorexia), poor digestion, poor bowel movements which may cause diarrhea and vomiting (*Kenya Nutrition guide, 2005*)

Poor health leads to high morbidity causing preferential diversion of a household's financial, energy, time resources towards paying for medical care and provision of palliative care. At times a household may even sell the land, or other productive equipments (UN, Impact of AIDS, 2000).

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Ibid, 2005 showed that poor health can eventually increases mortality rate of most productive cohorts 18- 45 years leaving behind widows and orphan and vulnerable children. Widows and orphans are susceptible to loosing rights of their husband's or parent's property like land, real estate, assets through disinheritance by greedy relatives

2.2.1.4 Influence of Gender and eating habits on household's food security

Culture definition adopted at the World Conference on Cultural Policies (Mexico, 1982) is the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or a social group. It includes not only arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions and beliefs. Culture is part of the fabric of every society, including our own. It shapes the way things are done and the understanding of why it should be so. Cultural attributes also determines what is socially acceptable food habits and diet patterns. The target group takes after Agikuyu culture, who are patriarchal meaning decision making, right to access and control of food producing asset like land and livestock is the prerogatives of men. Traditionally men as heads of households ensured that the households' food security is safeguarded at all times. Steady supply of all family's food requirements was maintained through hunting, gathering or cultivating, bartering or raiding the neighboring communities. Diversity of drought tolerance staple crops like roots, cereals, legumes, vegetables, fruits were planted. Provision of meat through slaughtering or hunting was predominantly male roles. Women fed the family by acquiring or preparing food and rations through gathering, farming, preservation, harvesting, combining, receiving donations from relatives (Nyeri district *Socio-economic profile*, 2007)

According to Ministry of Agriculture annual report of 2009, Tetu district population comprises 97% of the Agikuyu people who are agricultural oriented. They practice mixed sedentary farming and livestock keeping in their diminishing land sizes. The average land parcel is about 2.0 acres per household. Western culture, modern science and technology have encroached on traditional practices, hence eroding local knowledge of edible

biodiversity. Hence this research is intended to assess the local knowledge of edible food stuffs and women levels of participation in the decision making at the family.

Shift from subsistence to cash crops has led over 95% available land covered with tea or coffee, hence leaving minute land sizes under food crops. Decision making on what portion of money generated from cash crop farming should go to purchase of foodstuffs in most families is the prerogative of the men. Intra and inter-family resource distribution deprives women of their right to food security (Ministry of Agriculture annual report, 2007).

2.2.1.5 Influence of climate on household's food security

Soil fertility and climatic conditions of an area determine its agro-ecological zone. Agro-ecological zone is a measure of agricultural potential of a given area. Different zones support different cropping patterns and biodiversity from which food can be made available, accessible or utilized. Climate change has resulted in variations of traditional weather patterns such as rainfall, temperatures and humidity. The variations in weather patterns have resulted to shorter and unpredictable rainfall as well as the occurrence of extreme weather events such as frequent and prolonged droughts, floods and other environmental disasters. In addition, changing weather patterns disrupts crop and livestock production; hence reducing both quantities and qualities of yields. This has adverse effect on food security due to reduced food availability and increasing prices leading to hunger and starvation in most parts of the world. It is therefore very difficult to predict the seasons. (State of Environment report Kenya, 2006/07).

Extreme weather conditions like the El Niño (excess rainfall) experienced in 1997 and October 2009 to January 2010 or La Niña (drought episode) in the Eastern and southern

Africa in 1999-2000. It also reoccurred in January- March 2006, also experienced in Kenya recently in 2008 to 2009, wrecking havoc in farmlands. Excess rainfall causes flooding, soil erosion, and water logging which are predisposing factors to crop diseases, soil exhaustion, and soil acidity or alkalinity. Drought episode disrupt food availability in the food chain within a certain ecosystem. Disrupted crop maturation, vector lifecycles, and predator-prey imbalances result to food insecurity outcomes (NEMA, 2009).

2.2.2 Special dynamics between HIV/AIDS and food security:

AIDS (Acquired Immune Deficiency Syndrome) was first recognized as a disease in the early 1980s. Since then it has spread throughout the world. According to World Health Organization (WHO) 1999 Annual world Health report, AIDS is now the leading cause of death in Africa responsible for one in every five deaths. Globally it is the fourth most common cause of death. However there is a considerable variation in the pattern of epidemic spread between, within countries and even locally. Consequently there is also variation in the impact of the resulting illness and premature deaths, in the richer countries of the world rate of infection is low and advances of treatments means that people can live with AIDS, although for how long and what state of health is still unclear. The burden of the epidemic falls on the world poorer countries and also on poorer communities in some richer countries (WHO, 1999)

In Kenya, HIV/AIDS pandemic has taken an economic and social toll. It is estimated 1.4 million adults are infected with HIV according to the preliminary results of December 2007 Kenya AIDS Indicators Survey (KAIS). The survey also indicated that 7.4% of all adults aged 15-64 years are infected with the HIV (Human Immunodeficiency Virus) that cause a disease called AIDS. Women continue to be disproportionately infected with HIV

(8.7%) compared to men (5.6%). It also showed that young women between 15 to 34 years are more likely to be HIV infected compared to young men in the same age group. HIV/AIDS is predominantly a sexually transmitted disease (KAIS, 2007).

By affecting the sexually active, HIV/AIDS affects the most active cohorts of the population broadly speaking 15- 50 years of age. HIV/AIDS damages the society just as it does the human body: it begins by killing those parts responsible for building the society, the women and breadwinners who sustain the society as a whole(*UNDP, Africa renewal, 2005*). HIV virus attacks the immune system and ultimately makes it ineffective. Most people die of secondary infections and cancers against which they might not have died.

By depleting human, financial and physical capital, HIV/AIDS increases the societal vulnerability to other shocks such as food insecurity, poverty, drought and conflict. Food insecurity leads to hunger and malnutrition (USAID, 1999). Food insecurity may increase risky behaviors such as commercial sex work, migration to seek casual employment and conflict.

HIV/AIDS is also a long-term phenomenon meaning there is a time lag between infection and symptoms stages. It also creates additional nutritional needs due to fever, diarrhea, vomiting and malfunctions of body. It also occurs on a larger scale (national, regional, continental) than other shocks, hence has a wide range of impact.

2.2.3 Relationship between nutrition and health

Health is a complete physical, social and mental well being of a person and not necessarily absence of disease. This ideal state of health comes partly from the food that we eat. Jill Davies et al 1988 showed that the food a person eats provides the raw material out of which all the body processes are supported and maintained. Food helps us stay healthy by providing us with all our nutrient requirements. Carbohydrates give us energy to go about the business of living, helping us enjoy our work and leisure activities. Proteins help in building and repairing our muscles, blood, bones and teeth and by providing the basic building materials protecting our health and keeping us, as free as possible from diseases and strengthening our immune system. Many foods contain vitamins and mineral. We need vitamins and minerals to prevent and correct vitamin and mineral deficiency diseases and to give us optimum health. These are required in very small amounts for many different normal body functioning.

Water is an essential nutrient to the existence of humans. It carries most nutrients, gases and enzymes and wastes of body processes. It also has a role in regulating the body temperature. Fats are the body's source of storage energy. Fats have got two times more energy compared to protein and carbohydrate. This means that eating fats and oils help gain weight. Foods with fat include butter, margarine, oils, animal fats and fish oils. Fat also help in hormone production. Some common fat brands such as Kimbo and Blue band are fortified with fats soluble vitamins A, D, E, and K. Fruits are good sources of complex carbohydrates, which are used by the body for energy. They are called complex because besides providing energy, they also contain fibre, protein, vitamin and minerals. Whole grain foods are good sources of complex carbohydrates. Sugar and honey are good

sources of simple carbohydrates, but they provide little of fibre, vitamins and minerals (Cooking explained, 1988).

2.2.4 Characteristic of a healthy person

Although everyone knows how to eat, not everyone knows how to nourish themselves. Making decision on what, when and how much to eat; is a complex process. Factors like the food scarcity, taste, appetite, how much money and time we have all influence the food we eat. A well nourished person, provided she/he exercises regularly and follows a consistent program of a healthful living, possess the following characteristics: Abundant vitality meaning his/her facial expression radiates well being, eyes appear clear and alert, and hair is smooth and glossy. Should also have a well formed bones structure meaning has steady arms and legs, a straight back, well shaped head and chest, and well formed teeth. His/her muscles are well developed and strong, has good posture when sitting or walking, movements are graceful, and he/she seems to find pleasure in physical activity. The contour of his/her body is pleasing; has sufficient fat beneath his/her skin to pad the underlying bones and muscles but is not over weight. Her/his body functions efficiently. He/she enjoys food and his/her organs of digestion and elimination function normally , sleeps soundly and awakens refreshed, has good endurance, is not irritable or and makes rational decisions.

Bettmann& Corbis indicated that enough safe and nutritious food either domestically produced or imported from the international market however, does not ensure food accessibility. Government policies must also contribute to equal distribution of food within nations, regions, and communities. In addition, for food to be accessible, individuals and families must be able to afford the food prices on the market. Finally,

food must be properly utilized. Proper utilization depends on proper food storage to guard against spoilage, appropriate handling to avoid disease transmission, and proper preparation to ensure nutritiously balanced meals.

Amazingly, a high percentage of persons even in lands of plenty like Tetu district are actually not well nourished. This may have been worsening by HIV/AIDS pandemic. The study intends to examine how food insecurity interacts with poverty status to influence important health outcomes and overall quality of life of women living with HIV/AIDS. The results will address this fundamental issue, i.e., the association of food insecurity with health and well-being in addition to the association between poverty and low socioeconomic status of women living with HIV/AIDS. This study will specifically focus on HIV positive adult women of age 18-45years in Tetu district of Central province in Kenya.

2.3 Social inequalities resulting from HIV/AIDS epidemic

In the context of the Kenyan HIV epidemic, indications of specific deprivation among the urban poor and women are clear: lack of control of human capital, rights, assets and information, and denial to entitlement to inheritance and to equality of opportunity such as access to education and care. The HIV epidemic has also deepened elements of deprivation in the context of conflict of social systems and structures (Society for International Development 2004)

Social exclusion limits and sometimes entirely prevents peoples' voices and participation within their communities in shaping, implementing, monitoring and evaluating actions that are likely to have a considerable impact on their lives. For example, the failure of both the urban and rural poor to access services, or to access social capital for support

and social protection, compound vulnerabilities to infection. For instance, if widows or orphans are disinherited and become landless, they may be forced to undertake high risk activities, such as transactional or commercial sex work, and even remarrying to escape destitution. Equity and right focused approaches require that interventions promote social inclusion (Kenya National AIDS Strategic Plan 2009)

2.3.1 Gender and food supply

However given the nature of family relationships and decision making as who get what in terms of food, gender as a concept become crucial in the study of Nutrition and HIV/AIDS. Gender roles and gender decisions in families particularly in developing countries will in one way or another determine our health (illness, diseases and well being. From the economic point of view and access to food, women have lesser power socially; which means taking into account population, religion, education, awareness, we find that women are disadvantaged particularly in rural areas on lack of knowledge.

In our socio-culture, gender plays a very important role in terms of who gets what, how and when. The issue of inequality is more pronounced where women are disadvantaged from birth. African concept of women – men relationship is always one of discrimination. A study done in 10 focal development Areas in former Nyeri, Nyandarua, Thika, Kirinyaga and Maragua districts by Central Kenya Dry Area Project in 2005/6 showed that higher percentage of men made decision on sale of farm produce, well women solely made decision on food consumption as shown (table 2.1) in the next page .

Table 2.1: Family Decision making

Making decision on Activity	Percentage of Decision makers		
	Men	Women	Both
Food consumption	0	100	0
Sale of crops	60	20	20
Sale of livestock	60	10	30

Source: *Nutrition survey in Central Kenya dry Area Project area, 2007*

Land ownership and other resources are controlled by men with women having very little voice but a lot of work when it comes to work on land or in agricultural work generally.

In many homes girl-child and mother eat last and in very deep culture, they eat less and more so less value nutrition food. Therefore their bodies do not withstand the number of infections because of availability of nutritional foods, but because their biological make up. Diseases such as HIV/AIDS require a constant supply of food which has high nutritious value, therefore their availability is crucial.

2.4 Culture, food security and HIV

However, as tradition demands most women do not get proper attention from the families. With the HIV/AIDS today majority of the women are affected because they have no voice and in many families in rural areas women have not been empowered to make decisions concerning their health including access to nutrition (USAID, 2003). At the micro and macro level, many of the underlying vulnerabilities to HIV remain strong. Kenya remains deeply unequal nation in terms of income disparities and gender norms, roles and reactions. While the country has a marginal decline in poverty in recent years.

large income disparity remain and they are worsening. Despite weak link between poverty and HIV risk, socio-economic disparities lead to social exclusion- the denial of some groups like women with HIV; of their full voice and agency within community and the society-with stronger apparent correlation to HIV risk (Kenya National AIDS Strategic Plan 2010-2013).

2.5 Effect of HIV/AIDS on food security

In parts of Africa where farming is primary occupation and nutritional requirements are usually met through local food production, HIV/AIDS in agricultural workers is affecting farm incomes, food productivity, and nutritional status. A study conducted by FAO in Malawi, Rwanda and Tanzania in 1991 predicted that by the year 2000, up to 25 percent of farm households could be affected by AIDS (Norse, 1991). In Zimbabwe the data indicated there has been a 61% reduction in maize production in vegetable production, a 49% reduction in vegetable production, and a 37% reduction in ground nut production as a result of HIV/AIDS (Futures group, 1997).

HIV/AIDS-related illness and mortality affects household food security through these mechanisms: The loss of adults' on-farm or off-farm labor reduces household income. As a result, household savings, assets and remittances are reduced. There is usually an increase in household expenditures for medical treatment, transportation, and other care-related needs. At the same time the number of dependents relying on fewer productive household members for survival is increased (Topouzis and Hemrich, 1996)

The impact of HIV/AIDS on food security is expected to be especially severe in female-headed household, and in areas where farm labor is already scarce (Hunter and Williamson, 1998; Barnett and Hal swimmer, 1993).

2.5.1 Food insecurity, its risk factors and consequences

Campbell (1991) elaborated a conceptualization of food insecurity, its risk factors and consequences. She indicates two sets of potential consequences of food insecurity. These include the typical physical and physiologic symptoms of suboptimal nutritional status. Nutrition status is a measurement of the extent in which an individual's body need for nutrients is being met. Consequences of poor nutritional status; includes compromised health, social and mental well-being as well as physical appearances and overall quality of life. Campbell makes the very important point that food insecurity can affect health and quality of life either directly or indirectly through nutritional status. She points out that the consequences of food insecurity must be distinguished from the consequences of its common risk factors such as poverty.

2.6 Gender disparity in HIV/AIDS infection, and food security

The Declaration of Commitment adopted at the UN General Assembly's special session on diseases in 2005 stated that, 'In the fight against AIDS, intensified efforts are needed to challenge the gender stereotypes and attitudes, and gender inequalities in relation to HIV/AIDS, encouraging the active involvement of men and boys. At the same time 'empowerment of women is fundamental for reducing their vulnerability to infections. Especially, this should include 'the elimination of all forms of discrimination, as well as all forms of violence against women and girls, including the harmful traditions and customary practices, abuse, battering, rape and other forms of sexual violence, battering and trafficking in women and girls. The declaration also cited discrimination in inheritance. In many parts of Africa, there are no effective legal provision for women to inherit land and assets from the deceased husbands, leaving widows destitute. Legal

reforms backed by implementation mechanism would go a long way toward preventing the downward spiral into poverty that makes women and children even more vulnerable to infection (UNDP Africa Renewal, 2005)

2.6.1 Gender and feeding

Devautifun, (1999) in her picture of family eating viewed feeding as gendered work. Her study showed how female's work of provision and preparing of food sustains family in ways that both rewards and oppress female. Feeding reward female through a mixture of emotional contacts and social acceptance: by providing food female affirms family relationship and achieve recognition as female and mothers.

Feeding oppress women because it involves subservience to men and (even when male are not present) to a social and economic systems that are disempowering female and poor people. In the effort to provide nourishing and grafting meals, women fail to live up to vague standards. Women almost never receive the kind of nurturance they provide for others.

2.7 Relationship between socio-economic status and mental health

Poverty or low socioeconomic status have well-documented relationships to poor health status (Link and Phelan, 1996). A study by Christopher G Hudson, PHD (*Test of social causation and selection hypothesis*) was done to answer whether socio-economic status affects mental status of a person. He examined a database of 34000 patients within two or more psychiatric hospitals in Massachusetts during 1999-2000. The research found that unemployment, poverty, and housing un-affordability were correlated with risk of mental illness (stress, acute stress, and depression). The poorer ones socio-economic condition is the higher the risk of mental disability and psychiatric hospitalization. Socio- economic

status in basis of community income and occupation status determine the economic stress a person may be undergoing. Economic stress was determined by how much the local income was below federal poverty level, the rate of unemployment and as an index of rental housing un-affordability.

Results of the study also suggest that socio-economic impacts on the development of mental illness directly or indirectly through its association with adverse economic stressful conditions among low income group. Mental illness, prevention and intervention strategies therefore should pay attention to the impact of unemployment, economic displacement, housing, and homelessness.

2.7.1 Impacts of HIV/AIDS on economic growth

Economic growth is dependent on a sustained increase in productive capacity and real output resulting in a growing national income. The most critical factors that determine economic growth are labour, capital and technical progress. HIV and AIDS slow economic growth by their effect on labour and capital investment. The HIV/AIDS pandemic slows or reverses growth in labour supply and it affects mainly the most productive members of the population. It also reduces the productivity of the infected workers. This problem is exacerbated and economic growth is reduced if those dying of AIDS are skilled persons. Increased medical costs associated with HIV/AIDS reduce the level of domestic savings and investment that are crucial for capital formation. Furthermore, reduced income and increased poverty in the household imply decreased purchasing power of the household, which translate to deficient demand for goods and services, hence undermining economic growth (AIDS in Kenya: Trends, interventions and impact

A study done in Cote d'Ivoire by , Bechu, Delacroix and Guillane in 1997 on impact of HIV/AIDS on household income indicated a significant reduction in monthly income and monthly consumption per capita as well as level of savings in households with PLWAS compared to the case in general population. The results are tabulated below.

Table 2.2 Impact of HIV/AIDS on household income

Income in Fracas	General population	Households with PLWAS
Monthly income per capita	25,000	7,500
Monthly consumption per capita	223,000	12,500
Savings / inability to savings	4,500	-4950

Source: Cote d'Ivoire, Impact of AIDS of household income. 1997

2.7.2 Psycho-social health consequences of food insecurity

Bettmann & Corbis (1999), showed that food insecurity, may also result in severe social, psychological, and behavioral consequences in adults, youth and children. They argued that food-insecure individuals may manifest feelings of alienation, powerlessness, stress, and anxiety, and they may experience reduced productivity, reduced work and school performance, and reduced income earnings. Household dynamics may become disrupted because of a preoccupation with obtaining food, which may lead to anger, pessimism, and irritability. Adverse consequences for children include: higher levels of aggressive or destructive behavior, hyperactivity, anxiety, difficulty with social interactions such as more withdrawn or socially disruptive, increased passivity, poorer overall school performance, increased school absences, and a greater need for mental health care services. For example, depression and of suicidal behavior are more common among food insecure population.

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2.7.3 Gender and Behavioral response to stress

Taylor et al. in Psychological review journal of July, 2000 refuted the 'flight or fight' behavioral pattern as the case for women under stress. Taylor coined the 'tend –and befriend' to describe a very different pattern her research group found. It seemed early research of flight or fight was not engendered; was done on males only.

Taylor found out that females even of some animal species respond to stress differently from males. Females under stress nurture themselves and young (tending) and forms alliances with others (befriending). Flight and fight seems to be present in women under acute stress or depression. Taylor pointed out that many researchers in the past had been very quick to study behavior like aggression, anorexia and withdrawal but had failed to notice affiliation behavior. For example women call sister or mum when stressed. But men often show aggression when stressed.

This is an explanation for affiliations to 16 psycho-social support groups by women living with HIV/AIDS in Tetu district. If this behaviour pattern is taken as a mitigation opportunity, then the socio-economic impact of HIV/AIDS can be reduced through strategic and tactic empowerment of these support groups. There are 5 organizations which are giving practical gender needs to the women living with HIV/AIDS in Tetu district. However, these groups should focus more towards addressing strategic gender needs of these women so as to ensure a more resilient livelihood strategy to address food insecurity.

2.7.4 Effects of HIV and AIDS on nutritional status, and dietary intake of a person

Castleton. (1997) in their research recognized that while data on prevalence of malnutrition and dietary intake in HIV-infected persons is widely available in industrialized countries, it is often absent in Africa setting where endemic malnutrition and lack of nutrition management are common. A cross-sectional study was undertaken in Cote d'Ivoire, to evaluate nutritional status and dietary intakes of 100 adult HIV-infected outpatients at different stages of infection. Outcome measures included weight; height triceps skin fold, arm circumference, body mass index, muscular circumference, and weight loss. The 24-hour recall method was used to evaluate dietary intake. Two – thirds of the patients were malnourished according to the body mass index values. Anthropometric values were lower in symptomatic patients (classified by WHO system) and in patients with CD4 cell counts less than 200. Weight loss was greater in symptomatic patients but was unrelated to the CD4 cell count. Appetite problems were below recommended levels for healthy adults for protein and energy. Patients with chronic diarrhea had lower intake of protein, carbohydrates, and fats. Clinical events associated with malnutrition and weight loss included chronic diarrhea, chronic fever, loss of appetite and pulmonary tuberculosis. The research concluded that health status (due to secondary infections) adversely affect dietary intake and nutritional status of people living with HIV/AIDS. (Castleton K, Kadio A, Bondurand A et al 1997)

2.8 Impact of HIV/AIDS on agriculture sector

A study done in by UNAID,1997 in Kwaramba area of Zimbabwe recorded significant reduction of crop yields in households after HIV/AIDS deaths as tabulated below

Table 2.3 Reduction of crop yields in households after HIV/AIDS death

Type of crop	Percentage reduction in yields
Maize	60
Cotton	45
Vegetables	48
Groundnuts	35

Source: *UNAID report on effects of AIDS on crop yields, 1997, Kwaramba in Zimbabwe.*

According to the Kenya National AIDS Strategic plan, 2009/10 to 2012/13, the impact of HIV/AIDS on Agriculture is visible through lowered productivity in farming areas due to illness, absenteeism, death and subsequent loss of farming skills. These translates into less land under cultivation, less labour – intensive crop production, less livestock variety and less livestock production. Family time is also diverted to care for the sick and attend funerals, which also contribute to loss of household income and farm assets. The end results are decline in agricultural income, food production and food insecurity (Fox et al. 2002). HIV/AIDS-affected households in Kenya generally have less capital. Women and children especially are liable to be disinherited of their land rights, and the family may face disintegration.

Ibid, (2004) found that although the national magnitude of impact has not been quantified, empirical evidence points to the adverse effect of HIV/AIDS on agriculture in

Kenya. Labour productivity is reduced by HIV/AIDS in a commercial farming setup.

This is also applicable to subsistence farming.

Rugalema et al found out that HIV and AIDS have been associated with decrease in acreage under cultivation, loss of income and increased in food security in smallholder farming in Nyanza and Eastern province.

2.9 Review meeting of millennium Development Goals progress

During this meeting review progress on the Millennium Development Goals (MDGs), to be hosted by the United Nations Secretary-General Ban Ki-Moon in September, 2010, academics, civil society organizations and UN officials met in New York on 25th January, 2010 to develop an action agenda to contribute substantially to the Review process, and the final internationally-agree outcome. Emphasis was on the MDGs which have been achieved so far, and what is needed to accelerate progress by focusing on issues like civil society, communities and families, and individual capabilities and equity.

Mary Robinson, keynote speaker and President of Realizing Rights called for focus on the things that work to achieve sustainable and equitable development for people around the world. She articulated the importance of eliminating gender inequality, ensuring access to information so that citizens can scrutinize development programs and hold their governments to account for results, and ensuring more decent work opportunities for all. She said these and other rights-based approaches have brought about positive results needed to get the priority they deserve.

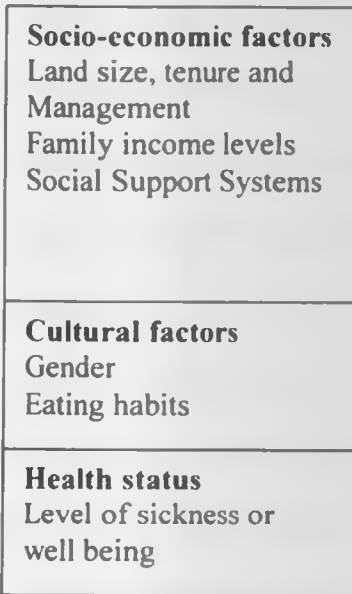
Selim Jahan, the director of the UNDP Poverty Bureau also noted the global economic crisis has threatened progress on the MDGs. He said, we can be the generation that ends extreme poverty and hunger.

Dr Andy Sumner, pointed out that accelerating progress will depend on what kinds of policies nations pursue, their budget priorities, their ability to enact governance improvements, and investments in filling crucial gaps. He also emphasized a global MDGs coalition and partnership. The contributors call for stronger links between the human rights agenda in the Millennium Declaration and the MDGs; and better attention to the inclusion of pro-poor and social justice issues.

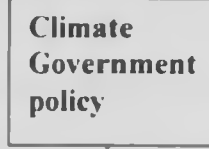
Collections of academic articles contributed by the African Child Policy Forum (Ethiopia), the Institute of Development Studies (UK), the Institute of Social Studies (the Netherlands), the New School (USA), the Norwegian Centre for Human Rights, the Norwegian Minister for Environment and International Development, the Overseas Development Institute (UK), the Pan African Development Centre (Ethiopia), Realizing Rights: The Ethical Globalization Initiative (USA), the University of Manchester (UK) and the United Nations reveal the urgent need for renewed political momentum if the Goals are to be achieved by the 2015 deadline (*UNDP, 2010*).

2.10: Conceptual Framework

Independent Variables



Moderating Variables



Dependent variable

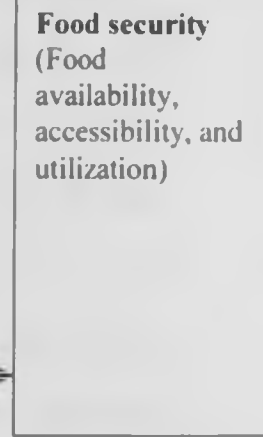


Figure 1: Conceptual Framework

Variables of the study

Food security is conceptualized in this study as dependent variable, while socio-economic factors like family land size, level of awareness, family income levels and social support systems are independent variable. Other independent variables include cultural factors namely eating habits and gender roles. Existence of unequal power relationships between men and women is viewed as an impediment to food availability, and accessibility by the target group. Health status is conceptualizes as another independent variable affecting both household food security and the socio-economic factors that determine it. Moderating variables in this study is climate and government policy which influences independent variables and attainment of food security by the HIV positive women.

2.11 SUMMARY

Family income was earned mainly from casual labour and agricultural enterprises like horticulture and dairy, poultry in a farm that is well managed. Income was also supplemented if members of the family were employed in other sectors. To know its impact on health of an individual woman with HIV/AIDS, feedback was got through discussions.

Family's socio-economic factor like family land size, tenure and management as well social support systems (networks and co operations) and educational levels influences household's food availability, accessibility and food utilizations. Food security also influences health status of Women with HIV/AIDS. Food availability accessibility and utilization are to some extent of economic and psychological considerations of women with HIV/AIDS because in some instances the attitudes towards food may be influenced by individual behaviour and health status of that individual.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives an outline on how the study was carried out. It describes the research design, the target population, the sample size and sampling procedure, research instruments, validity and reliability of instruments, and data analysis procedures

3.2 Research design

A descriptive survey design was used to assess the factors which affect food security among HIV positive women in Tetu District. Descriptive survey design is used in preliminary and exploratory studies to allow the researcher to gather information, summarize, present and interpret it for the purpose of clarification (Orodho, 2002). Kothari (2003) also recommends a descriptive design as it allows the researcher to describe, record, analyze and report conditions that exist or existed before. This design allowed researcher to generate both numerical and descriptive data which assisted in measuring correlation between variables. Descriptive survey research produced statistical data on food security which will interest policy makers.

3.3 Area of Study

The study was carried out in Tetu district of Central Province in Kenya. Tetu district had two divisions namely Tetu East and Tetu West while Tetu East division had three locations namely Aguthii, Gaaki, and Karundu. Tetu West division had five locations namely Thengenge, Huhuini, Muhoyas, Kimathi, and Tetu.

3.4 Target population

The target population comprised of HIV positive mature and married women of between age 18 and 45 years. This group was attractive because they are productive and do not understand nutritional value of local foods in rural areas and their health status. While some literature had mentioned about traditional foods and nutrition, no study had been done on this aspect in Tetu district.

There were 16 support groups of people living with HIV/AIDS. All of 398 (287F, 111M) members of these groups had publicly disclosed their sera-type status and had surmounted stigma associated with HIV/AIDS. Support groups are distributed in the 8 locations: each location with 2 groups. The venues where these groups met were also accessible through all weather access roads. Public transport or matatus were readily available. Five Ministry of Agriculture and five Health officers in Tetu district were included in focus group discussions and 8 chiefs from the 8 locations served as opinion leaders.

3.5 Sample size

The representative sample of the study included 96 HIV positive women out of 287 women in 16 support groups. They comprise 5 Ministry of Agriculture officers out of 11 officers; 5 Ministry of Health Officers out of 10 officers, and 8 chiefs as opinion leaders.

3.6 Sampling procedure

The study adopted a stratified Random Sampling procedure. This is because the 16 support groups of women living with HIV/AIDS are scattered in all 8 locations in the 2 divisions of Tetu district and each and every group in all locations was given an equal chance of being studied. In this case stratified sampling ensured that all the 16 support

groups with 287 female members in the locations were studied. Each stratum represented administrative location, from which the researcher selected at random thirty per cent (30%) of all women members which is about 12 women (6 women per group). According to Corchran (1977), a sample size of 30% of the population is sufficient for a descriptive study. The officials of the groups were selected purposively in order to fill questionnaires as they understand food security situation in the area and its effect on women members. Through purposive sampling, the researcher selected 10 officers; 5 from the divisional Ministry of Agriculture and Health officers as respondents since they understood community food security, socio-economic and cultural aspects. These included subsistence and cash crop farming eating habits, crop diversity, morbidity and health status of the population. According to Mugenda and Mugenda (1999), purposive sampling is used when information required can only be obtained from a specific source. This is supported by Kombo and Tromp (2006) who observed that the power of purposive sampling lies in selecting information rich cases for in-depth analysis related to the central issues being studied.

To cross-check on the information given the researcher required the opinion of key informants. In this case the 8 chiefs were purposively selected as they have an overall understanding of food security challenges, socio-economic and cultural dynamics that impact on women living with HIV/AIDS in the area.

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3.7 Data collection procedure:

Questionnaires with adequate instructions and easy to understand language were hand delivered to the already identified samples of the population by the researcher and the researcher assistants. These included committee of HIV/AIDS women support groups, divisional agriculture and health workers, and opinion leaders.

Dates of collecting the filled questionnaires were agreed upon on the points of delivery and followed-up by phone during the process.

Observations were done by the researcher while traveling to the research sites to compare with answers given or filled in the information gaps in the study. For example, the researcher observed land sizes, types of food and cash crops mix, prices and types of foodstuffs in the local markets, kitchen gardens and technologies, cooking fuel, will be recorded and will be used. Through observation, the researcher got the first hand information and status quo for authenticable situational analysis.

Both primary and secondary data was collected for the purpose of the study. The primary data was collected through the questionnaires, while secondary data was collected from the office of divisional agriculture and health officers and also written reports.

3.8 Research Instruments

The study used questionnaires as instruments of gathering information from committee members of HIV/AIDS support groups, Ministry of Agriculture and Ministry of Health officers at the divisions and opinion leaders. Questionnaires with both open and closed ended questions were used to collect the primary data. Open ended questions were used to seek in-depth information (see Appendices 2,3.&4).The researcher also used field

observations to enrich responses and fill in the information gaps. A focused group discussion for local and opinion leaders was also done.

3.9 Validity

Mugenda and Mugenda. (1999) defines validity as the accuracy and meaningfulness of inferences which are based on the research results; it is the degree to which results obtained from analysis of data actually represent the phenomenon under study. In order to improve validity, the researcher ensured that the research instruments were accurate by making the necessary adjustments after conducting a pilot study on 6 volunteers at Kenya Network of Women with HIV/AIDS rescue center at Kiawara in Nyeri town. They filled up questionnaires. Four community care givers were engaged in focus group discussion. The researcher checked if the questions were getting the right response to measure what was intended. Information gathered was crosschecked with other sources to ensure authenticity and accuracy. The researcher also used triangulation, which is the use of different data collection methods to gather same information. Observation, focused group discussions, and questionnaire were used.

3.10 Reliability

Mugenda and Mugenda. (1999) also defines reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability is important because it enables the researcher to identify misunderstandings, ambiguities, and inadequate items in the research instruments and make the necessary adjustments so that data collected can have more reliability. This was achieved through test-retest method and making necessary changes to the research instruments. A pilot study on 6 volunteers at Kenya Network of Women with HIV/AIDS rescue center at

Kiawara in Nyeri town was done. The respondents filled up questionnaires. Four community care givers were engaged in focus group discussion. The questions were reframed to make them better understood, necessary instructions was given, and the language was simplified to ensure correct interpretations are made.

3.11 Data analysis techniques

The data collected were analyzed using descriptive statistics. After collection, raw data was processed to eliminate unwanted and unusable data which can be contradictory or ambiguous. The researcher organized the data to ensure that the raw data has been edited to free it from inconsistencies and incompleteness. This involved scrutiny of the completed instruments in order to detect and reduce as much as possible, errors, incompleteness, misclassification and gaps in the information obtained from the respondents. Then the data was coded to establish how possible answers will be treated by assigning to them numerical and string values. The data will be stored in both electronic and paper formats. Qualitative data generated from questions was organized into themes, categories and patterns pertinent to the study. This helped to identify information that is relevant to the research questions and objectives.

Data was tabulated and classified in sub-samples for common characteristics with responses being coded to facilitate basic statistical analysis. Ordho, (2003) argues that the simplest way to present data is in frequency or percentage tables, which summarizes data about a single variable. Both Microsoft Excel spreadsheet and Statistical Package of Social Science (SPSS) were used to analyze the data which was represented using frequency tables and percentage charts.

Table 3.1: Operational Definition of variables

Objectives	Variables	Indicators	Scale	Data analysis Method
1) To establish how socio-economic factors affect food security of women with HIV/AIDS in Tetu District.	Independent 1.Socio-economic factors <i>i) Land tenure, size, and management</i>	-land tenure system -Conservation of water and soil -Acres under food and cash crops -Level of farm management	Ordinal Nominal	Descriptive
	<i>ii) Family income levels</i>	-Sources of family income -Monthly income per household	Ordinal Nominal	
	<i>iii) Social support systems</i>	-Affiliation to social networks and co-operations -Quality of support from family and community -Type of support from organizations	Ordinal	
2) To examine the influence of gender and eating habits on food security of women with HIV/AIDS in Tetu District.	Independent 2.Cultural factors <i>i) Gender roles</i>	-Roles of family members in food production, purchase, marketing, and utilization -Decision making in family -Access and control of land and other resources	Interval Ordinal	Descriptive
	<i>ii) Eating habits</i>	- Number of food crops that are consumed in Tetu district Types of foodstuffs that are grown in Tetu district - Number of food crops that are grown in Tetu district but not locally consumed -Food taboos, perceptions and attitude -Number of under –utilized foodstuff in Tetu district	Nominal Ordinal	Descriptive
3) To determine how health status of HIV positive	Independent 3. Health status	Level of morbidity among the women - In-patient cases in 6	Nominal	Descriptive and quantitative

women in Tetu district affects their food security		months - Out-patient cases in 6 months -mortality among the PLWAS		
4) To assess food availability, accessibility and utilization among HIV positive women in Tetu district.	Dependent 1.Food security	-Quantity of food in pieces, bags, or kilogram available in the store at household level - Quality of the diversity of foodstuffs -Prices and distribution of foodstuff in the market within Tetu district -Nutrition knowledge	Interval Ordinal	Descriptive

3.11 Ethical considerations

This research has contributed to the knowledge on how to overcome challenges of food insecurity among women living with HIV/AIDS. Utmost confidentiality of respondents was maintained during the study. All the respondents were given a free will to participate and contribute voluntarily to the study. Necessary research authorities were consulted and permission sought while due explanations were given to the respondents before commencement of the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings on factors that affect food security of sampled women living with HIV/AIDS who are already in support groups in Tetu district of Central Province, Kenya. Out of the targeted 114 respondents that the study had targeted, all the 114 responded. This is a 100% of the target group. The data was interpreted according to the research questions. The analysis was done through descriptive statistic and findings of the study were presented in form of frequency tables, percentage charts and pie chart. The discussion of the outcome is based on the outputs from Statistical Package for Social Sciences (SPSS)

4.2 Results and discussions

This section provides results, interpretations of the findings and data analysis of the study. The discussions are linked to the research objectives in assessing the factors affecting food security of women living with HIV/AIDS in Tetu district.

4.2.1 Response rate

The questionnaire response rate is as tabulated in table 4.1 below.

Table 4.1: Questionnaires response rate

Title of respondent	No of questionnaires issued	No of questionnaires returned	Percentage
HIV positive women	96	96	88
Divisional Agriculture officers	5	5	4.6
Divisional Health officers	5	5	4.6
Opinion leaders	8	8	7.3
Total	114	114	100.0

Out of the 114 respondents, 96 were the HIV positive women in the support groups representing an overall response of 84.2%, 5 Ministry of Agriculture and 5 Ministry of Health officers representing each 4.4% while 8 were opinion leaders representing 7.0% respectively. There were more responses from women living with HIV/AIDS than in the other categories but this was because more questionnaire were administered to them since they were the main category of the study respondents as proposed by the researcher. However, the response of divisional Ministries of Agriculture and Health officers; and the opinion leaders was low that is 4.4%, 4.4% and 7.0% respectively based on the numbers of the questionnaires issued. The table further shows that the rate of all the questionnaires stood at 100%. HIV positive women's response in particular was of great

importance to this study because they can best articulate their food situation, and how the interplay of economic, social, cultural, physiological and psychological factors affects their food security. Hence determine the direction of policy formulation in provision of responsive extension messages and compassionate technology by various service providers when targeting PLWAS. The table above shows the number of respondents as per their categories.

4.2.2 Marital status of the respondents

The marital status of the respondents is shown in table 4.2 below.

Table 4.2: Marital status of the respondents

Marital status	Frequency	Percentage
Married	26	27.1
Divorced	19	19.8
Separated	12	12.5
Widowed	24	25
Unmarried	15	15.6
Total	96	100

The study revealed that 27.1% of the respondents were married, 19.8% divorced, 12.5% divorced and only 15% unmarried. The same is illustrated by table 4.2 below. Marital status may affect ones land tenure system or access to land as a basic factor for food production. Marital status may also affect personal security and ones psycho-social support systems.

The study revealed that marital status is determined by age of respondents.

4.2.3 Age of respondents

The age of the respondents is shown in table 4.3 below.

Table 4.3: Age of respondents

Age in years	Frequency	Percentage
18 -20	3	3.1
20-30	12	12.5
30-40	36	37.5
40-45	31	32.3
Above 45	14	14.6
Total	96	100

The study revealed that 69.8% of all respondents were between the ages of 30 to 45 years. Only 3.1% were between 18 to 20 years of age, and 12.5% were about 20 to 30 year. The age of the respondents could affect their food security in the following ways. Women of age below 20 years may be still in school, hence lack access to land and, the experience to manage their farms. The study revealed that HIV/AIDS affects the most active cohorts of age 30 to 45 years who engage in economical activities like farming and casual labour to fend for their families.

4.3. Land tenure system

The land tenure system in Tetu District is indicated in table 4.4 below.

Table 4.4: Land tenure system

Land tenure system	Frequency	Percentage
Land owned by woman herself	20	20.8
Land owned by the Household head	65	67.7
Land Leased	10	10.4
Land donated by well wishers	1	1.0
Total	96	100

The household land tenure may determine their ability to manage and make relevant decisions that appertains to farm enterprise mix, food diversification and intensification. Land tenure system could affect ones ability to access credit from micro-financiers who demand land title deed as collateral. The study revealed that out of all respondents, 67.7% of land is owned by the Household head who in most cases are men. Only 20.8% of these women own land. This means women do not own and control land as a factor of food production.

This could be because the respondents take after Agikuyu culture that is patriarchal. Land and other capital assets are owned by men with women whose role is to feed the family, only making use of it to produce food.

4.3.1 Land size and management

The household's cultivated land size is indicated in table 4.5 below.

Table 4.5 Land size in acres

Cultivated land in Acres	Frequency	Percentage
None	6	6.3
Less than 0.25	26	27.1
0.25 -1.0	30	31.3
1 – 2	30	31.3
Above 2	4	4.2
Total	96	100

The study looked at land as a major factor of food production both in quality and quantity. Land size may quantitatively influence amount of food the family can produce to meet their physiological and metabolic demand. Land management involves intensification and diversification of crops and livestock so as to improve overall productivity per unit area. Land management entails farm planning, conservation of natural resource base, good enterprise mix, and proper crop husbandry to reach maximum productive potential.

A total of 58.4% of respondents own small land parcels with 27.1% having less than 0.25 acre and 31.3% with about 0.25 to 1 acre. The study also revealed that 42.7% of the

respondents have less than 0.25 acres of land under cash crops; while 34.4% has about 0.25 to 1 acre. It also reveals that 51.0% has less than 0.25 acres of land under food crops, while 36.5% has about 0.25 to 1 acres. Cash crops namely tea, coffee, flowers preferentially occupy bigger portions of land compared to food crops. From observations, land under cash is well conserved with terraces renovated or embarked with cover crops. Substantial amount of inputs (fertilizer and pesticides) is supplied to cash crops unlike in the case of food crops like maize, beans, sweet potatoes.

4.4 Sources of family income

Various sources of family income are given in table 4.6 below.

Table 4.6: Source of family income

Source of income	Frequency	Percentage
Sale of farm produce	42	43.8
Formal employment	4	4.2
Well wishers	1	1.0
Family business(retail shop, kiosks, boutique)	1	1.0
Casual labourer	41	42.7
Sale of farm produce and family business	7	7.3
Total	96	100

The study looked at source of family finance resources within the sampled women living with HIV/AIDS in Tetu to establish whether it affects their accessibility to food the study shows that 43.8% get income through sale of farm produce, while 42.7% through casual labour. The results are as tabulated below. HIV and AIDS burden affects the physical

health of women and also quality of their farm labour. Quality labour is essential in food production or in exchange for cash as casual labourers. It was revealed during focused group discussion that in Tetu district, the community prefers men labourers to women. In providing casual labour, men earn Kshs. 200-300/= per day compared to women who earn Kshs. 120-170/= per day respectively

Poor health may affect women's farm managerial and entrepreneurial skills since family resources are diverted to foot medical bills and other expenses.

4.4.1 Monthly savings

The average family monthly savings are shown in table 4.7 below.

Table 4.7: Average monthly family savings

Savings range in Kshs	Frequency	Percentage
Less than 1000	62	64.6
1000- 2000	21	21.9
2000- 4000	10	10.4
4000-8000	3	3.1
Total	96	100

The respondents construed monthly income to mean amount of money left after deducting all the monthly expenses. The study revealed 64.6% of all respondents makes a monthly savings of less than Kshs.1000/=. Only 21.9% made a monthly savings of between Kshs.1000 to 2000/=. Low Per capita could be due to increased health expenditure and lowered productivity of women living with HIV/AIDS.

4.5 Psycho-social support systems

Below in table 4.8 are psycho-social support systems for PLWAS.

Table4.8: Institutions and organization that support PLWAS

Institution/Organization	Type of support
Ministry of Health	Comprehensive Care Centres for ART
Mathira Mission hospital	ART, food supplements
Ministry of Agriculture	Extension services, farm inputs, relief food
Provincial Administration	Relief food, security,
TOWA	Funds
CACC	Funds ,food
KENWA	School fees, food, rescue centre, ART, and talk therapy
APHIA II	Funds , palliative care
SWAK	ARV, Funds, food
NEPHAK	Training, funds
ICAP	Funds, training, ARV
GROOT Tetu	Rights and advocacy
PLWAS networks	Palliative care, Psycho-social

The respondents are affiliated to various institutions and organizations for support systems which are as shown in table: 4.8 above.

4.5.1 Reasons for affiliation to groups

The reasons for affiliating to support groups are given in table 4.9 below.

Table 4.9: Reasons for affiliation to groups

Reason	Frequency	Percentage
Psycho-social support	67	69.9
Monetary gain	8	8.3
Food and material gain	2	2.1
To access extension services and trainings	1	1.0
Do not belong to groups	18	18.8
Total	96	100

The study revealed that majority of respondents is affiliated to groups and other social networks for various reasons. While 69.9% affiliate to groups for psycho-social support, 8.3% for monetary gain, 2.1 % for food and material gain and 1% to access extension services. Some 21 respondents, (21.9%) do not affiliate to groups. The reason why these women do not belong to groups were given as 33% of respondents having poor attitude; while 66% lack of information about their existence.

4.5.2 Quality of family and community support system

The quality of various support systems were rated as indicated in table 4.10 below

Table 4.10: Quality of support system for women with HIV/AIDS

Source of support	Quality of support system rating in percentage				Total
	Excellent	Good	Fair	poor	
Family support	6.3	22.9	40.	30.2	100
Community support	6.	39.6	27.1	27.1	100

Overall 6.3% respondents rated quality of family support as excellent, 22.9% good, 40.6% fair, and 30.2% poor. Hence 70.7% rated family support as fair and poor. On community support, 6.3% respondents rated the quality of community support as excellent, 39.6% good, 27.1% fair and 27.1% poor. Hence 54.2% rated community support as fair or poor.

A total of 39.6% respondents received good support from the community, compared to only 22.9% in case of family support. This means there is more stigma and discrimination within the family unit compared to the community cycle. This explains why 81.2% of respondents belong to psycho-social support groups.

4.6 Decision making on Access and control of family resources

The decisions are made at household levels as shown in table 4.11 below.

Table 4.11: Decision making at household level

Decision making on	Percentage of decision makers			
	Men	Women	Men and women	Total
Type of food crops to be grown in farm	31.3	43.8	22.9	100
Disposal of food crops	32.3	49	15.6	100
Food consumption in household	14.6	74	11.5	100

The study revealed that 43.8% of women compared to 31.3% of men made decision on type of crops to be planted on their farm. Also, 49% women compared to 32.3% men made decision on disposal of farm produce, while 74% women made decision on food to be consumed by their household compared to 14.6% in the case of men. This is true because only 27.1% of the respondents are married, 19.8% are divorced, 12.5% separated, 25% widowed and 15.6 % are unmarried as shown in the table 4.2.

4.6.1 Ownership and control of family resources

The ownership and control of resources is indicated in table 4.12 below.

Table 4.12: Ownership and control of resources

Resource	Owner and controller in percentage			
	Men	women	Both man and woman	Total
Land and plot title deed	86.5	13.5	0	100
Commercial crops (tea, coffee, macadamia)	65.6	31.3	3.1	100
Food crops (maize, beans, cassava, pumpkins)	11.5	86.5	2.1	100
Major livestock (cattle and shoats)	70.8	26.0	3.1	100
Minor livestock (local poultry, rabbits)	14.6	83.3	2.1	100

The study revealed that 86.5% men own land title deed compared to 13.5% women. 65.6% men own commercial crops compared to 31.3% women. 70.8% men own major livestock compared to 26% women. 11.5% men own food crops compared to 86% women, while 14.6% men own poultry and rabbit compared to 83.3% women. This implies that men own major capital assets and major enterprises, while women own only minor enterprises or assets like utensils.

4.7: Eating habits and nutritional knowledge

The vegetables consumed and grown is as given in table 4.13 below.

Table 4.13: Vegetables consumed and grown

Quality	Vegetables consumed		Vegetables grown	
	Frequency	Percentage	Frequency	Percentage
Types of vegetables				
Low in protein	36	37.5	34	34.5
Low in beta-carotene	19	19.8	3	3.1
Rich in protein, beta-carotene, vitamin C, zinc and iron	5	5.2	2	2.1
Low in beta-carotene, and protein	21	21.9	47	47.9
Low in vitamin C, zinc and iron	15	15.6	11	11.5
Total	96	100	96	100

The study revealed that only 5% of respondents consumed vegetables rich in proteins, vitamin C, beta-carotene, zinc and iron. 37.5% consumed vegetables of low protein contents. 20.8% consumed vegetables low in vitamins beta-carotene, and proteins, while 15% consumed vegetables low in vitamin C, iron and zinc. The study further revealed that 32.3% of the respondents grew vegetables of low protein contents, 11.5% grew vegetables with low vitamin C, zinc and iron while 15.5% grew vegetables low in beta-carotene and protein. The results indicate that women's nutritional requirements for immune system can not be met from the vegetables they are growing. Though 82.3% have kitchen gardens, majority of the respondents have wrong combinations or low diversity of crops. Kitchen gardening technology was limited to shamba type. (74%) compared to 4.2% and 2.1% with multi-storey and tumbukiza type of gardens.

58.3% of respondents had attained the secondary school level of education compared to 41.7% who have primary school education. Education level affects nutrition knowledge on the right food for PLWAS and general hygiene. People living with HIV/AIDS should eat foods that are 30% richer in energy than normal, rich in vitamins and minerals and enough proteins. However, only 21.9% had adequate knowledge on the food combinations recommended for PLWAS.

4.7.1 Nutritional value food crops grown

The nutritional of foods crops grown is given in table 4.14 below.

Table 4.14: Nutrition value of food grow

Nutritional value of foods	Frequency	Percentage
Rich in energy, proteins, minerals and vitamins	20	20.8
Low in energy , minerals and vitamins	31	31.3
Low in protein , minerals and vitamins	29	30.2
Do not grow food crops	4	4.2
Total	96	100

The study revealed that only 20.8% of respondents grow food crops rich in carbohydrate, protein, minerals and vitamins .31.3% grow food crops low in energy , minerals and vitamins, while 30% grow crops low in protein , minerals and vitamins. This means women have foods of low nutrition value to make balanced diet combinations. Observation made by researcher revealed that most households grew exotic starchy foods like maize and Irish potatoes. Few households grew indigenous starchy foods like sweet potatoes, yams and arrow roots which contain more energy than exotic staples. Exotic

legumes grown include beans and garden peas. French beans and snow peas are grown as cash crops but not as food crops. Fruits like passion, tree tomatoes, mangoes and avocados are seasonal. Macadamia nuts are grown for sale and not eaten by adults.

4.8 Health status of respondents

The morbidity of respondents is shown in table 4.15 and table 4.16 below.

Table 4.15: Number of out-patient cases

No of out-patient cases in	Frequency	Percentage
6 months		
None	71	74.0
1-3	18	18.8
3-5	6	6.3
More than 5	1	1.0
Total	96	100

Table 4.16: Number of In-patient cases

No of in-patient cases in 6 months	Frequency	Percentage
None	84	87.5
1-2	8	8.3
2-4	4	4.2
Total	96	100

The study revealed 74% of respondents did not fall sick within past 6 months, while 18.8% attended out-patient clinics 1 to 3 times, 6.3% 3 to 5 times, and only 1% more than five times. It also shown that 8.3% were admitted in the hospital 1 to 2 times and 4.2% admitted 2 to 4 times in the last 6 months period. This means that the few respondents fell sick or were in good physical health. This is true because 95.5% of respondents are on Anti-Retroviral Therapy (ART) meaning their viral load and opportunistic diseases are under control.

4.8.1 Mortality

Mortality of PLWAS is as indicated in table 4.17 below.

Table 4.17: Number of HIV/AIDS related deaths

No of deaths	Frequency	Percentage
None	70	72.9
1-3	21	21.9
3-5	3	3.1
5-7	2	2.1
Total	96	100

The results indicate that 72.9% of the respondents did not lose their spouses, child or member of support group within 2 years period. 21.9% lost 1 to 3 loved ones, 3.1% lost 3 to 5 persons, and 2.1% lost 5 to 7 persons within 2 years period. Mortality of persons living with HIV/AIDS is also controlled through Anti-Retroviral Therapy and social support networks and cooperation from the community.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the findings; conclusions reached and then give the recommendations as per the responses from the target group. This is in relation to HIV positive women's socio-economy, culture and health status. The chapter also looks at the conclusions and recommendations as deduced from the study findings. Finally the chapter points out the areas the researcher thought would require further research in related fields.

5.2 Summary of research findings

The findings of research are tabulated and discussed below.

Table 5.1: Summary of research findings

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Objective	Data collection method	Data analysis	Major findings
1) To establish how socio-economic factors affect food security of women with HIV/AIDS in Tetu district.	Questionnaire Observations Focused group discussions	Descriptive	<ul style="list-style-type: none">• land parcels in Tetu district are small below 1 acre• 62.6% have 0.25 to 1.0 acres of land
<ul style="list-style-type: none">• How does land tenure, size and management affect food security of HIV positive women in Tetu district	Questionnaire Observation	Descriptive	<ul style="list-style-type: none">• Land is owned by the household head• Diminishing land size lowers food productivity• Land under cash crop is better managed than land under food crops
<ul style="list-style-type: none">• To establish how level of family income affect food security	Questionnaire Focused group discussions	Descriptive Quantitative	<ul style="list-style-type: none">• Women with HIV/AIDS have limited sources of income. 43.8% earn from sale of farm produce while 42.7% are

	Interviews		<p>casual labourers</p> <ul style="list-style-type: none"> • Community prefer male casual labourer to female Female casual labourers per day earn Kshs.150/= while male labourer is earn Kshs.270/= • 64.6% of households make monthly savings of less than Kshs.1000/=
<ul style="list-style-type: none"> • To establish how social support system affect food security of women 	Questionnaire		<ul style="list-style-type: none"> • 81.2% of respondents are affiliated to social support networks • Women affiliate to networks for psycho-social support (69.9%) • Most respondents receive better support from community than in their family .39.9% receive good support from community while 29.2% receive good support from family unit.
2) To examine the influence of gender and eating habits on food security of HIV positive women in Tetu district	Questionnaire	Descriptive	<ul style="list-style-type: none"> • HIV/AIDS burden rest on women who play triple roles of productive, reproductive and community • Women are more vulnerable to socio-economic impacts of HIV/AIDS • Tetu community is patriarchal • Traditional crops like deep green leafy vegetable are not grown in kitchen gardens
<ul style="list-style-type: none"> • To examine the influence of gender roles and gender power relationship on food security 	Questionnaire		<ul style="list-style-type: none"> • Men own and control land ,commercial crops and major livestock • Women own and control food crops and local poultry • It is the role of women to feed the family • Women make decision on type of food to be consumed in the households • Widows are denied right to

			inherit deceased husband land and property
<ul style="list-style-type: none"> To examine influence of eating habit on HIV positive women 	Questionnaire	Descriptive	<ul style="list-style-type: none"> Traditional food crops like cassava, yams and pumpkins are less popular than exotic types like potatoes, maize and beans French beans are planted for cash but not as food.
3) To determine how health status of HIV positive women in Tetu district affect their food security.	Focused group discussion Questionnaire	Descriptive	<ul style="list-style-type: none"> Poor health lowers women overall productivity Family resource are diverted to cater for medical expenses Poor health lowers labour output of women
To determine how level of morbidity affect food security	Questionnaire	Descriptive	<ul style="list-style-type: none"> 95.4% of respondent are on Anti-Retroviral Therapy Women on ART have less morbidity and mortality Lack on knowledge on nutritional intervention of HIV/AIDS

5.3 Discussion of the findings

This section discusses the research findings, and is presented according to the research variables.

5.3.1 Socio-economic factors

Household socio-economic status has been viewed as a very important variable that determines attainment of its food security. Food production requires availability of land, labour, and capital. The study set out to look for land tenure system for individual households, land size and enterprise mix to determine its productive potential and its ability to feed it. According to Ministry of Agriculture 2009 annual report for Tetu district, on average every household has a family size of 5 to 6 persons and farm size of

0.9 acres. Small land parcel and poor management cause food insecurity. The ministry of Agricultural officers had opinion that land under food crops is not well managed as the area under cash crops. Family labour and inputs is preferentially allocated to cash crops. The study revealed that 65.6% men own and control cash crops while 86.5% women owned food crop. This means that women make decision to feed family using food crops they produce, but food purchase is determined by men who control funds from commercial crops. This concurs with study by Bettmann & Corbis et al 1999, who indicated that food accessibility is dependent of family affordability of food prices on the market. According to USAID, 1999, HIV/AIDS deplete human, financial and physical capital hence increasing societal vulnerability to shocks like poverty, food insecurity and conflicts. This is also true for women with HIV/AIDS in Tetu who have limited livelihood strategies. All of 43.7% of respondents depended on sale of farm produce, while 42.7% were casual laborers. While 64.6% made per capital monthly savings of less than Kshs.1000/=. According to Devautifun (1999), feeding oppress women because it involves subservience to men and to a social and economic systems that are disempowering female and poor people. In the effort to provide nourishing and grafting meals, women fail to live up to vague standards

81.2% of women with HIV/AIDS in Tetu affiliated to psycho-social support groupings to help surmount stigma and discrimination. This concurs to Taylor, 2000, study which found out that women under stress nurture themselves and form alliances with others. Most PLWAS networks acts as lobby movements which advocate for their human rights.

5.3.2 Socio-cultural factors

Socio-economic factors are a key variable in attainment of household food security. Unequal power relationship between men and women denied women ability to control and make vital decision on use of family resources like land, major livestock. Although women play key role in farming and tending livestock, men entirely rip benefit from their labour. This concur with KNASP,2010-20013 which state that Kenya remains deeply unequal nation in terms of income and gender norms, roles and reactions.

Women's triple roles of productive, reproductive and community roles overburden them and drain them of their energy and good health making them vulnerable to impacts of HIV/AIDS. Gender roles of men and women in a Tetu oppress women especially those with HIV/AIDS who do casual labour (42.7%) to put food on the table for their family.

Gender violence was reported during focused group discussion as an impediment to women's wellbeing and productivity. Cases of livestock theft by persons related to these women were reported. Some women were also disinherited their deceased husband land and property by their in-laws. This compares to UNDP Africa Renewal, 2005 which state that in many parts of Africa, there are no effective legal provision for women to inherit land and assets from the deceased husbands, leaving widows destitute. Legal reforms backed by implementation mechanism would go a long way toward preventing the downward spiral into poverty that makes women and children even more vulnerable to infection. The community preferred male casual labourers to females yet females are more than men. Women earn kshs.150/= per day compared to 270/= for men.

The socially acceptable foods are generally made from exotic staples like maize and potatoes, exotic legumes like beans and peas, and brassicas for vegetables. Most families

feed on maize and beans with cabbages or kales as vegetables. Yams, cassavas, sweet potatoes and arrowroots are less common. Cowpeas and pigeon peas are not at all grow in Tetu district. This concurs with Maundu, 1999, that the tradition crop from which food was made has suffered genetic erosion and lack of knowledge to utilize them.

5.3.3 Health status of women

According to Williamson, 1998, the impact of HIV/AIDS on food security is severe for female-headed households due to increased morbidity and mortality. Topouzis, 1996, also found out that for PLWAS, there is usually an increase in household expenditure for medical treatment, transportation and other care related activities. This concurs with the study which revealed that 64.6% of respondents made a monthly savings of less than Kshs.1000/= and had limited livelihood strategies. 42.7% were casual labourers, while 43.7% depended on sale of food crops. Hence HIV/AIDS lowers household productivity and its food security.

The study findings also revealed that 95.5% of respondents are on Anti-Retroviral Therapy meaning that their viral load and opportunistic diseases are under control. Hence their morbidity and mortality is lowered. 74% of respondent had not been treated in out-patient clinic and 87.5% had not been hospitalized in the 6 months period. 72.9% had not lost close relative through HIV/AIDS related sickness in the last 2 years period. Thompson 2010 stated that successful ART is associated with dramatic decreases in AIDS-defining conditions and their associated mortality. Expansion of treatment options and evolving knowledge require revision of guidelines for the initiation and long-term management of ART in adults with HIV infection.

5.4 Conclusions

Based on the above findings, it can be concluded that socio-economic and socio-culture factors as well as health status of HIV positive women in Tetu affect their food security as indicated below.

5.4.1 Effects of socio-economic factors on food security

HIV positive women are food insecure due to low farm productivity and lack of opportunity to make major decisions appertaining to land use and labour as a factor of production. Small land sizes, land tenure systems, poor land management and enterprise mix negatively affect food security of the women. There are several service providers to PLWAS in Tetu district from both private and public sectors who allege to address socio-economic impact of HIV/AIDS. These players are not responsive to the needs of women living with HIV/AIDS because of their generalist and quantitative approaches where the area covered or the number of persons reached matters most. Lack of stakeholder analysis and deliberate targeting of PLWAS in public sectors is noticeable. Affiliation to groups makes women access to ARVs, psycho-social, food, clothing and financial supports from organizations make women to cope with the HIV/AIDS burden which is engendered.

5.4.2 Effects of socio-cultural factors on food security

Women are the 'doers' of agriculture yet men rips the benefits. Lack of control of family capital assets like land and capital due to existing gender disparity makes women not able to access credit from the micro-financier institutions who ask for tangible collaterals. This translates to low investment into food security strategies like food production and gender friendly income generating activities.

The private sector (NGO) is addressing practical gender needs of women with HIV/AIDS like food, clothing, and funds which are not sustainable. This creates dependency syndrome to the NGO, hence increasing their vulnerability to social shocks.

Intensified efforts are needed to challenge the gender stereotypes and attitudes, and gender inequalities in relation to HIV/AIDS, encouraging the active involvement of men and boys. Empowerment of women is fundamental for reducing their vulnerability to infections. Elimination of all forms of discrimination, as well as all forms of violence against women and girls, including the harmful traditions and customary practices, abuse, battering, rape and other forms of sexual violence, battering and trafficking in women and girls. There is need for these players to address strategic needs of these women through training and giving means to generate their own income.

Though Tetu is in agriculturally high potential area, the community lacks adequate nutritional knowledge to select the desirable food varieties to meet their nutrients requirement. Poor eating habits and poor preparation methods makes women with HIV/AIDS food insecure due to low intake of immunity boosters in the diet. Decline in consumption of low vitamin A & C, and iron and traditional staple was notable in the study. Traditional crops like deep green leafy vegetables are not grown in the kitchen gardens. Most households preferred maize, potatoes and beans to yams, arrowroots, cassava and pumpkins. And French bean and snow peas are not locally consumed.

5.4.3 Effects of individual's health status on food security

Poor health lowers women overall productivity. Family resources are diverted to cater for medical expenses lowering food purchasing power of a household. Poor health also lowers women's labour output making them less able to cultivate and engage in casual

work. Poor health and stigma pre-occupies the mind of sick women making them less able to make a rational judgments and enterprise management.

The Anti-Retroviral therapy has greatly managed health of women with HIV/AIDS.

Hence women living with HIV and AIDS are able to lead less dependent lives through acceptable and good behaviors, right nutrition and medication.

5.5 Recommendations

The following recommendations were made from the study.

- 1). There is need to challenge the status quo of gender disparity due to unequal power relationship between men and women. Involvement of both men and women in resource distribution and decision making will lead to equitable distribution of financial resources to meet households' basic needs like access to food. The role of feeding the family should also be shared among men and women.
- 2). Organizations and institutions which support PLWAS should focus more on strategic gender needs like changing legislations and regulatory framework to protect the rights of women to inherit land and property in order to conquer gender disparity.
- 3). There is also need to sensitize all leaders and entire community in all forums on gender issues in development and in attainment of food security.
- 4). There is need to promote low labour intensive income generating activities to women with HIV/AIDS in order to diversify their livelihood strategies and to address overdependence casual labour, sale of farm produce as source of livelihood.
- 5). There is need to capacity build the community on nutritional intervention of HIV/AIDS. Nutrition education is notably lacking among majority of respondents though they had basic education of secondary school level.

6). There is need to integrate traditional food stuffs in their diets for examples pumpkins to mitigate Zinc and beta-carotene deficiency among PLWAS. Traditional vegetables like grain amaranths, spider plant, togotia, muhika and stinging nettle are known to have higher levels of vitamin C and B complex, iron and Magnesium compared to brassicas (Maundu, 1998).

7). HIV and AIDS stigma should be fought at family level since 70.6% of respondents rated quality of family support as fair and poor.

5.6 Area of further research

The following are suggested areas of further research.

- i) Public sector and private sector responsiveness to HIV/AIDS: Both public and private extension and service providers are not custom focused. The public sector implementing top-bottom focused projects where the client is not involved during project initiation. The private sector has donor focused projects and programmes for women living with HIV/AIDS. There is need to involve clients during initiation of projects in order to meet clients' expectations.
- ii) Public –private partnership in fight of HIV/AIDS: Most players in mitigation of impacts of HIV and AIDS scourge are working independently and competing to one another .There is need to partner or collaborate to avoid duplication of intervention and to build synergy.
- iii) Effects of Social science research on HIV/AIDS: So much social research has been done on HIV/AIDS, yet their findings are not well disseminated to all players. There is need to research on effects of social science on HIV/AIDS.

REFERENCES

- Abdale F and Kraak V (1995):** *Community-based nutrition support for people living with HIV and AIDS: A technical assistance Manual*. New York: God's love we deliver, Inc.
- Awour LL, Achilili F O and Amolo D B (1998):** *Nutrition for people living with HIV/AIDS as a health guard*
- Ayee, J. (2000):** *Paper on democracy, Poverty and Social exclusion: Is democracy the missing link?* Presented to DPMF, and international IDEA, Addis Ababa, Ethiopia.
- Borg, R. W. (1996):** *Educational Research: An introduction*, 6th Edition, New York, Longman
- Castebon k, Kadio a, Bondurand a et al, (1997):** *Nutrition status and dietary intakes in human immunodeficiency Virus (HIV) infected outpatients in Abidjan, Cote D' Ivoireii 1995*
- Cimoch P, (1997):** *Nutrition, Prevention and treatment of HIV of HIV-associated malnutrition: a case manager's guide*
- Chambers R. (1997):** *Whose reality counts: putting the first last*. London: Rugby intermediate technology publications.
- Cheluget B, (2006)** *Evidence for decline in adult prevalence in Kenya*
- Cochran, W.G, (1977):** *Sampling Techniques, 3rd Edition*: John Wiley& sons, Inc: New York
- FAO, (1988):** *Traditional Food Plants*. Rome Italy

- FAO, (1988):** *Food and Nutrition Paper*. Rome Italy
- Friis H and Michaelsen KF, (1998):** *Micronutrients and HIV infection*
- Fufures Group, (1999):** *The impact of AIDS on various sectors* Paper presented at USAID's consultative meeting on AIDS as a development crisis: Rethinking strategies and results. Washington DC
- Jill Davies and Barbara Hammond, (1992):** *Cooking explained third edition*.
- Kathuri, J K and Pal, A.D, (1993):** *Introduction to education Research*. Njoro: Education material centre, Egerton University
- Kenya Gazette, Legal Notice No.170 (1999):** *Government of Kenya declares AIDS a National disaster and NACC established*
- Kothari, C.R. (2008):** *Research methodology: Methods and techniques*, New Delhi: New Age International (P) Ltd Publishers.
- Lucey, T. (1996):** *Quantitative Techniques*. New York: Ashford Colour press
- Maundu P.M. and Ngugi, G.W. (1999):***Traditional food plants of Kenya*, National Museums of Kenya.
- Ministry of Agriculture:** *Annual reports (2006, 2007 & 2008) for Central Province, Kenya*
- Ministry of Health, (2007):** *Kenya National Guidelines on Nutrition and HIV/AIDS*
- Ministry of Health, Kenya, (2008):** *Preliminary report, National AIDS and STI Control Programme*
- Ministry of Health, (2007):** *Kenya AIDS indicator Survey (KAIS)*
- Ministry of Medical Services, (2008):** *Health System Facts and Figures*

- Ministry of Planning and National Development, (1998):** *Poverty in Kenya Volume 2: Poverty and Social indicator*
- Ministry of Planning and National Development, (2008):** *Vision 2030: A summary of Key Investment Opportunities in Kenya*
- NACC (2008):** *Kenya National AIDS Strategic plan 2009/10-2012/13*
- NACC (2009):** *Coordination Framework and Institutional Assessment*
- NEMA, (2008):** *State of environment report Kenya, 2006/7: Effects of Climate Change and Coping mechanisms in Kenya*
- Nyakundi P, (2005):** *Rural Kenya's peasantry and the poverty reduction strategy paper (PRSP) some implications*, Uppsala: Swedish University of Agriculture Sciences, Thesis no. 29- ISSN1403-779.
- Sorensen, A. (1990):** *Women's organizations and changing gender relations among Kipsigis, Nairobi, Kenya*
- World Bank report, (2006):** *Monitoring Success in Gender Equality, Labour market in middle income countries*
- World Bank Report (2007):** *Millennium Development Goals*

APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

University of Nairobi

School of Continuing and Distance Education.

The Chairperson / Secretary

.....

Support group

P o. Box.....

Tetu District.

Dear Sir/Madam,

RE: ACADEMIC RESEARCH

I am a student of University of Nairobi pursuing a Masters Degree in Project Planning and Management. I am conducting an academic research, on the factors that affect food security among women who are HIV positive in Tetu district.

Your support group has been chosen to provide information relating to issues of women and households' food security. I hereby request you to kindly fill the enclosed questionnaire as accurately as possible. The questionnaire has four sections which will focus on food security, socio-economic issues, cultural issues, and health related issues and suggested ways of improvement.

The information which you will give is confidential and will be used only for the purpose of academic research. Thank you in advance

Yours faithfully,

Lucy Mwendwa M'ikiara

APPENDIX 2: QUESTIONNAIRE FOR WOMEN GROUP LEADERS AND MEMBERS

Instructions

The purpose for this study is to investigate the factors affecting food security of women living with HIV/AIDS in Tetu district. Please answer the questions to the best of your knowledge. Write your responses in the spaces provided and put a tick [] where appropriate. Date.../.../2010

Section A: background information

1. Gender [] Male [] Female

2. Please indicate your marital status

[] Married [] Divorced [] Separated [] Widowed [] Unmarried

3. How long have been in this group?

i Less than one year []

ii 1 to 3 years []

iii 3 to 5 years []

iv 5 to 10 years []

v Over 10 years []

4. Please indicate your age bracket

i under 20 year []

ii 20 – 30 years []

iii 30 - 40 year []

iv 40 – 45 years []

v Over 45 years []

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5. List down the types of vegetables that you often consume

i

ii.....

iii.....

6. List the types of vegetables that you grow.....

i.....

ii.....

iii.....

iv.....

7). In your own opinion, what are the types of foods should people living with HIV/AIDS eat?

.....
.....

8). Do you have a Kitchen garden? [] Yes [] No

If Yes what type/s of kitchen garden?

i Multistorey []

ii Shamba type []

iii Tumbukiza garden []

iv Hanging garden []

v Others (Please specify).....

Section B: Socio-economic aspects

9). Please specify your household's land tenure system

Owned by self Owned by Head of Household Leased Communal

Donated by well wisher

10). What size is your household land in acres.....

11). a) What size of land in acres is under Cash crops like coffee, tea, flowers.....

b) What size of land in acres is under Food crops like maize, bean, vegetables, arrowroots, potatoes.....

12). Give food crops you grow in your farm

i.....

ii.....

iii.....

13). What is the source of family income?

i Sale of farm produce []

ii Formal employment []

iii From well wisher []

iv Family business []

v Casual labour []

vi Others (please specify) []

14). Give your average income from the farm in one month Kshs.....

Section C: Gender

15). Who makes decisions on the following activities at household level?

a) What types of crops to plant in the farm.....

b) When to sell farm produce.....

c) The type of food to be eaten

16). Who owns and controls following property in the household?

Property	Owner	Who controls
Land title deed		
Family income		
Cattle		
Sheep & goats		
Poultry		
Commercial plot		
Coffee		
Tea		
Macadamia nuts		
Avocadoes		
Maize and beans		
Horticultural crops		
Kitchen garden		

Section D: Social support systems

17). Please list down the institutions or organizations which support people living with HIV/AIDS in Tetu district

Institution/organization	Type of support
i.....
ii.....
iii.....

18). Are you a member of any other group or groups? [] Yes [] No

i) If Yes, give reasons for belonging to a group or groups:

.....
.....

ii) If the answer is no give reasons:

.....
.....
.....

19). In your own opinion, indicate the type of support women with HIV/AIDS receive from their families and relatives

Excellent []

Good []

Fair []

Poor []

20). Indicate the type of support from the community or church or mosque.

Excellent []

Good []

Fair []

Poor []

Section E : Health issues

21). Have you been tested for HIV/AIDS? []Yes []No

22). How long have you known your status?

Less than one year []

1 to 3 years []

3 to 5 years []

5 to 10 years []

Over 10 years []

22). Are you on Anti Retroviral Therapy (ART)? [] Yes [] No

23). How many times have you gone to the hospital or admitted in the last few months

a) Out-patient

Past period in months	No of times
In the last 1 month	
In the last 2 months	
In the last 3 months	
In 4 to 6 months	

b) In - patient

Past period in months	No of times
In the last 1 month	
In the last 2 months	
In the last 3 months	
In 4 to 6 months	

24). Have you lost a group member, spouse or children in the recent past? [] Yes [] No

If yes, fill in the information in the table below.

Past period in months	No of loved ones (please specify)
In the last 3 month	
In the last 6 months	
In the last 9 months	
In 1 to 2 years	

Thank You.

APPENDIX 3: QUESTIONNAIRE FOR DIVISIONAL HEALTH AND AGRICULTURAL OFFICERS

Instructions

The purpose for this study is to investigate the factors affecting food security of women living with HIV/AIDS in Tetu district. Please answer the questions to the best of your knowledge. Write your responses in the spaces provided and please put a tick [] where appropriate. Use the space provided to fill in your answers.

Section A: Background information

1). Indicate your gender

[] Male [] Female

2). Please name the ministry you're working with.

Ministry of Agriculture [] Ministry of Health []

3). How long have been in your present position

Less than one year []

1 to 3 years []

3 to 5 years []

5 to 10 years []

4). Indicate your age bracket

Under 25 yrs []

25- 30 yrs []

30 – 35 yrs []

Over 35 years []

5). Generally in your opinion, describe the food situation of households in the division

Adequately fed []

Under fed []

Get food supply from within the division []

Get food from outside the division []

6). What is the prevalent rate of HIV/AIDS in the area?

7). Which gender group is more vulnerable to HIV/AIDS?

Men [] Women [] Young Men [] Young Women []

Section B: Food security (availability, accessibility, and utilization)

8) Which HIV/AIDS positive gender group is more vulnerable to food insecurity?

Men [] Women [] Young Men [] Young Women []

9) Which factors makes HIV positive women vulnerable to Food Insecurity?

.....
.....
.....

10). Which food crops are commonly grown in this division?

.....
.....
.....

11). Are all households food secure? Yes [] No []

12). Which foodstuffs are commonly consumed in the households in the division?

.....

.....

.....

13). Which is the commonest source of animal protein consumed by women with HIV/AIDS?

Fish []

Poultry meat and eggs []

Milk []

Termites []

Others (please specify) []

.....

14). Which foodstuffs are available in the area but are not locally consumed?

.....

.....

15) In your own opinion, which foodstuffs do you recommend to the households?

.....

.....

16) To what extent do you agree with this statement? Women living with HIV/AIDS in this division have adequate knowledge on foods and nutrition.

Totally agree []

Agree []

Do not know []

Disagree []

Totally disagree []

Section B: Health issues

17). Women of age 18 to 45 have adequate knowledge of their health status.

Totally agree []

Agree []

Do not know []

Disagree []

Totally disagree []

18 What kind of support do groups women living with HIV/AIDS receive from your organization?.....
.....

Section C: Socio-cultural issues

19). All married women have the right to inherit their deceased husband's land and property.

Agree []

Totally agree []

Do not know []

Disagree []

Totally disagree []

20). Why are some foodstuffs found within this division not consumed?

.....

.....

.....

21). Who plays the role of feeding a household? Women [] Men []

22). Who controls the family income or financial resources? Women [] Men []

23). Who makes decision on area of land to be planted food or cash crops?

Women [] Men []

Thank You.

APPENDIX 4: QUESTIONNAIRE FOR CHIEFS

Instructions

The purpose for this study is to investigate the factors affecting food security of women living with HIV/AIDS in Tetu district. Please answer these questions to the best of your knowledge. Write your responses in the spaces provided and put a tick [] where appropriate.

Section A: Background information

1. What is your gender? Male [] Female []

2. How long have you been in your present position?

Less than one year []

1 to 5 years []

6 to 10 years []

Over 10 years []

3. Please indicate your age

Under 25 years []

25 to 30 years []

30 to 35 years []

Over 35 years []

Section B: Food situation

4. What are the most common sources of food for households in your location?

.....
.....

5. Are all households well fed or food secure? [] Yes [] No

6. In your own opinion which factors affect food security among women living with HIV/AIDS in your area?

.....
.....
.....
.....

Section C: Social support system

7. Which organizations or institutions give support to groups or people living with HIV/AIDS?

.....
.....

8. What type of support do these institutions or organizations give?

.....
.....
.....

Section D: Health status

Instructions: To what extent do you agree with the statements in no.9, 10 and 11?

9. There is strong social stigma associated with HIV/AIDS.

Totally agree []

Agree []

Do not know []

Disagree []

Totally disagree []

10. There are so many women of age 18 to 45 who do not know the health status

Totally agree []

Agree []

Do not know []

Disagree []

Totally disagree []

11. Women living with HIV/AIDS get strong support from family, relatives and community.

Totally agree []

Agree []

Do not know []

Disagree []

Section E: Social cultural issues

12. Which are the most common sources of family income in your area?

.....

.....

.....

.....

13. Who controls the family financial resources?

Men [] Women []

Section F: Socio-economic issues

1. How has HIV/AIDS pandemic affected households' food security?

.....

.....

.....

.....

.....

.....

.....

15. The following are some of the factors affecting food security of women living with HIV/AIDS in Tetu district. Please indicate the extent to which they affect food security.

1. To great extent

2. To some extent

3. Moderately

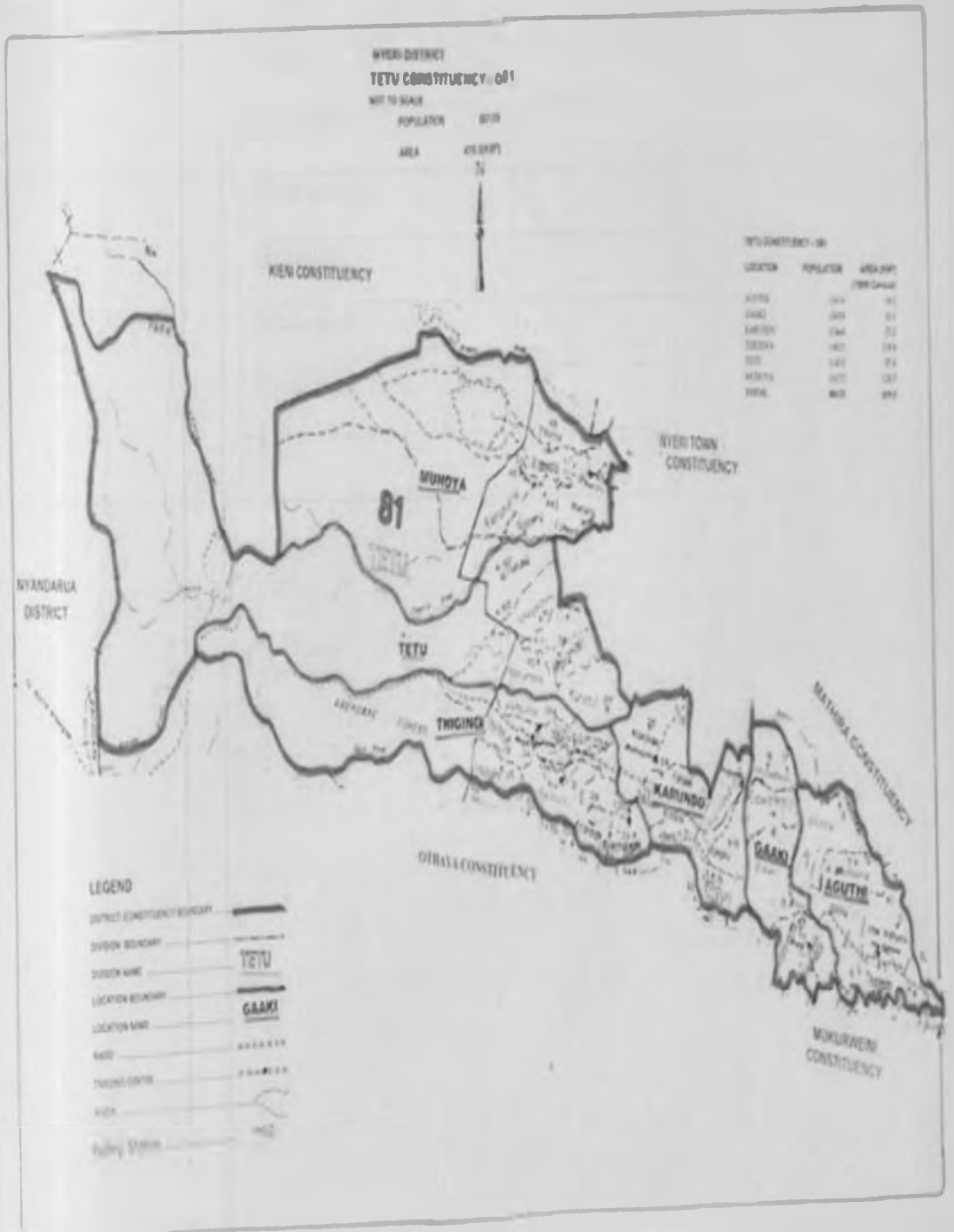
4. Not at all

5. Do not know

	1	2	3	4	5
Land fertility, size and management ;and tenure					
Family income levels					
Social support systems (belonging to groups and networks)					
Health status(level of wellbeing or sickness in the family)					
Eating habits (acceptance or rejection of some foods)					
Gender (being male of female)					

Thank you.

APENDIX 5: MAP OF TETU DISTRICT



APPENDIX 6: ADMINISTRATIVE UNITS OF TETU DISTRICT

Division	Locations
Tetu East	Aguthii
	Gaaki
	Karundu
Tetu West	Thengenge
	Huhuini
	Muhoyas
	Kimathi
	Tetu

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