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**SOCIO-ECONOMIC FACTORS AFFECTING FOOD SECURITY IN
HOUSEHOLDS OF ELDERLY PERSONS IN IMENTI CENTRAL SUB
COUNTY, MERU COUNTY, KENYA**

By

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Reg. No.: C50/75456/2009

**A Research Project Submitted in Partial Fulfillment of the Requirement
for the Award of the Degree of Master of Arts in Sociology (Rural
Sociology and Community Development)**

2014

DECLARATION

I hereby declare that this research project report is my original work and has not been presented for an award in any other university.

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This research project report has been submitted with my approval as the university's Supervisor.

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DEDICATION

This project is dedicated to very special people in my life;

My dear mum Sarah, with love I truly honour your effort in molding all of us and ensuring we achieved the best levels of education. For a sense of justice and your passion for education I dedicate all my efforts of this project to you. Your struggle to outlive the illness gave me this topic for the study, God bless you at old age mum.

Post-houmously to my dear brother Japhet, for your mentorship and loving support you dedicated towards my education. I miss your presence in this achievement of my second degree. May God rest your soul in eternal peace.

To Nick, my loving son, it is only through education that you can dine with kings. My prayer for you is that may God's blessings, protection and guidance never part from your ways.

Mike; for the love and friendship we shared, your thoughtful and complex deeds in my life and in particular for this achievement will stay within me always and I cannot just take it for granted. Thank you very much and God Bless you.

ACKNOWLEDGEMENTS

The completion of this project paper has left me indebted to many parties and well-wishers.

I sincerely thank God for his abundance grace and provision that sufficiently followed me all through my course work and in completion of this project.

My sincere appreciation goes to my university supervisor Professor Edward Mburugu, for his patience, encouragement, intellectual and professional guidance. Amidst your other academic tasks, you sacrificed your time to read and correct my drafts and the final project report. I say thank you very much to Dr. Robinson Ocharo for his positive criticism and input of very valuable tools in measuring household levels of food security during my research study.

To my loving son Nick, thank you for being patient with my absence when you needed my assistance most and may God bless you mightily. To my dear brothers and sisters, thank you all for your immeasurable moral support, may God always bide us with love and peace we have always enjoyed. Special thanks to you sister Kagu for typing and printing this document to the last bit. To my brother Nathan, I am grateful for availing your time for my consultations during this period of study.

To my employer, I am thankful for allowing me adjustable schedules from my very demanding work and to my colleagues for your continued support and encouragement.

Finally to Mary Ng'ang'a for your hand in data analysis and my research assistants team led by Simon Mwiti. To all the respondents and in particular the elderly and key informants thank you for willingly providing me with the necessary information towards this study. May you enjoy the golden days of your life.

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LIST OF ABBREVIATIONS AND ACRONYMS

AGRA	Alliance for Green Revolution in Africa
ASALs	Arid and Semi-Arid Lands
ASO	African Society of Orthopedics
CAADP	Comprehensive Africa Agriculture Development Programme
FAO	Food and Agricultural Organization
FDG	Focus Group Discussion
FEWS/NET	Famine Early Warning Systems Network
GoK	Government of Kenya
HFIAS	Household Food Insecurity Access Scale
HFSS	Household Food Security Scale
IFPRI	International Food Policy Research Institute
KARI	Kenya Agricultural Research Institute
MDGs	Millennium Development Goals
NDOC	National Disaster Operation Centre
NEPAD	New Partnership for African Development
OAU	Organization of Africa Unity
OECD	Organization of Economic Co-operation and Development
OPCT	Older Persons Cash Transfer
PACD	Plan of Action to Combat Desertification
PCEA	Presbyterian Church of East Africa
RRI	Rapid Response Initiative
SSA	Sub-Sahara Africa

UNEP United Nations Environmental Program

WFP World Food Program

WFS World Food Summit

ABSTRACT

The purpose of the study was to investigate the socio-economic factors affecting food security in households of elderly persons in Imenti Central Sub County, Kenya. The objectives were to assess demographic characteristics of households with elderly persons, health status of elderly persons, influence of aging and farming practices of elderly persons in relation to households' food security. The study was based on the disengagement theory of aging, the activity theory of aging and the theory of food economy and entitlements. The study adopted a descriptive survey design. The target population of the study comprised of 80 households in each of the four divisions within Imenti Central Sub County. The sample size comprised of 320 households with elderly persons purposively sampled, key informants to address matters facing the aged and Focus Group Discussion (FGDs) with groups of elderly persons. Questionnaire tools were used to collect the data from elderly persons, while interview guides collected data from key informants and the FGDs. A total of 304 elderly persons' questionnaires were returned and a questionnaire return rate of 95% was achieved. The major findings of the study revealed that majority of the elderly persons were living in pathetic conditions since they have been left alone in shanty structures in the rural as their children have moved to the urban in search of employment. Their health status contributes to low food security due to the fact that they either have health conditions that hinder them from eating the available food for instance when on diet or they do not like eating the kind of food that is available in the households. Aging interfere more with sustaining the level of food security in households with elderly persons because as age crops in they get less active and they cultivate only small portions of their land either leaving the rest uncultivated or leasing it out. Elderly persons maintain traditional farming practices and fail to embrace the evolving agricultural technology, thus their lands gets less productive causing food insecurity. Moreover, the study revealed that most households with elderly persons were faced by food insecurity with severe hunger as only 19.4 percent of the households were food secure. In the light of the research findings, the researcher recommended that; although social norms and traditional mind-sets are difficult to change over short time, the collaboration efforts involving the government, the community and the families should be encouraged on care-giving in regard to the challenges that come with aging. Thus the researcher suggested for further research on the impact of Cash Transfer Programme for elderly persons on the levels of food security in their households.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Globally, approximately 800 million people live in conditions of food and educational deprivations. Food production comprises such factors as land use and tenure, soil management, crop breeding and selection, crop management and harvesting (Sen, 1999). Food distribution involves a series of post-harvest activities including the transportation, storage, marketing of food as well as activities related to household purchasing power, traditions of food use including feeding practices, food exchanges and public food distribution. Activities related to food utilization and consumption include those involved in the preparation, processing and cooking of food at both the home and community levels, as well as household decision-making regarding food, household food distribution practices, cultural and individual food choices and access to health care, sanitation and knowledge (Ayalew, 2006).

Food and Agriculture Organization (FAO) of the United Nations (2002), estimates that global food production needs to increase by 60% by 2050. Improving productivity and intensifying crop production among small-household farmers could be key to global food security and ending hunger. According to Coates, et al (2007), food security and insecurity are terms used to describe whether people have access to sufficient quality and quantity of food. The risk of food security situation has impacts on the population's access to food and water and overall levels of health and nutrition, particularly among vulnerable people in the society. Poverty, health, food production, political stability, infrastructure, access to markets and natural hazards are some of the determinants of food security.

In the developed countries, the primary causes of food insecurity are poverty, low levels of education, poor health status, and certain disabilities that increase the risk of food insecurity for individuals and households in the United States. 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 (FAO, 2002).

Globally, certain groups of people are more vulnerable to food insecurity than others. Vulnerability is the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability. Vulnerable groups include: victims of conflict (for instance refugees and internally displaced people); migrant workers; marginal populations (such as 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 (WHO, 2002). According to Maxwell and Smith (1992) older people are particularly sensitive to disruptions in food availability and access. They have been categorized as vulnerable persons, a consequence of food insecurity amongst the majority of them.

Eradication of extreme poverty and hunger is first among the eight Millennium Development Goals (MDGs) set by the United Nations member states and at least 23 international organizations for achievements by 2015. The Food and Agriculture Organization, categorizes

food as a basic human right (FAO, 1996). Food security means access to sufficient, safe and nutritious preferred food at all times to meet the requirements of an active and healthy life. This basic need remains unfulfilled in many countries especially in Asia and Sub-Saharan Africa (Food and Agriculture Organization, 2004).

For food security to exist at the national, regional, and local levels, food must be available, accessible, and properly utilized. Availability of food means that enough safe and nutritious food is either domestically produced or imported from the market. However, food availability 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. Food must be properly utilized which depends on proper food storage to guard against spoilage, appropriate handling to avoid disease transmission, and proper preparation to ensure nutritiously balanced meals (FAO, 2002).

The World Food Summit (WFS) 1996, defined food security as a situation when all people, at all times have physical, social and economic access to sufficient, safe food to meet their dietary needs and food preferences for an active and healthy life. The dimensions of food security include availability, access and utilization of food. Therefore households become food insecure when there is uncertainty about food availability and access; insufficiency in the amount and kind of food necessary for meeting their dietary requirements. Famine is the most extreme state of food insecurity. In its least serious degree, food insecurity indicates only the risk of hunger, not necessarily its presence. According to FAO (2003), food security exists when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Food insecurity has been described as “a condition in which people lack basic food intake to provide them with the energy and nutrients for fully productive lives” (Cox et al., 2001). A critical examination of these definitions, especially in the context of smallholder farming and the elderly, suggests that there are many factors embedded in what food security or insecurity entails. Most of the smallholding farms are characterized by low income generation, small size land utilization, lack of proper inputs and lack of resources, all of which limit productivity and further increased level of poverty. Low level of managerial and technical skills and inadequate training are identified as the major determinants of low level of productivity and household food insecurity. People living in poverty often cannot produce or buy enough food to satisfy their needs and so are more susceptible to diseases. Sick people are less able to work or produce food.

The United Nations (UN) Standing Committee on Nutrition concluded that, nutrition is an essential foundation for poverty alleviation and also for meeting Millennium Development Goals (MDGs) related to improved education, gender equality, child mortality, maternal health and diseases (POST, 2006). Food and Agriculture Organization (FAO) estimates indicates that the number of undernourished people increased from 848 million to 923 million from 2003/05 to 2007, largely owing to the food price crisis (FAO, 2008). To understand the magnitude of food insecurity, hunger, and malnutrition, one must consider both the continued rapid growth in world population and the number of individuals below the poverty line.

Food production in most African communities was much associated with the older people of the society. They owned the land, farm tools and also controlled the farming systems and determined what food would be produced in particular seasons. This ceases to be the case

when the main producers start growing old and the situation brings in in-adequate supply of food to their families. Good health is a pre-requisite for socio-economic development in a country. Poor health means withdrawal of people from productive activities thus rendering them dependent and becoming very vulnerable. The elderly have been categorized as vulnerable persons, a consequence of food insecurity amongst the majority of them. Traditional systems of care and support for the elderly people that depended upon the extended family system have broken down or if in existence can no longer cope or be sustained (FAO, 2008).

Consequently, food production, distribution, and consumption are perhaps the most important economic activities in Africa as elsewhere in the world. Food production is so important in Africa that nearly seventy percent of the population of most African countries are directly engaged in producing and distributing food (Exploring Africa, 2011). Regional strategies for example the Alliance for Green Revolution in Africa (A.G.R.A.) and the Comprehensive African Agricultural Development Program (C.A.A.D.P.) have also complemented efforts in ensuring that food security will be achieved by all communities by 2015. According to New Partnership for Africa's Development (NEPAD) (2003), CAADP aims to eliminate hunger and reduce poverty through agriculture by bringing together key players - at the continental, regional and national levels - to improve co-ordination, share knowledge, successes and failures, to encourage one another, and to promote joint and separate efforts.

NEPAD (2003) states that the CAADP has been prepared to promote interventions that best respond to the widely recognized crisis situation of African agriculture. It has been cast to deliberately focus on investment into the following three mutually reinforcing "pillars" that

can make the earliest difference to Africa's dire situation: extending the area under sustainable land management and reliable water control systems; improving rural infrastructure and trade-related capacities for improved market access; and increasing food supply and reducing hunger. The CAADP also pays attention to emergencies and disasters that require food and agricultural responses or safety nets; if ignored, the dislocation caused by these can undermine or reverse development achievements. In addition, it presents one long-term "pillar" on agricultural research, technological dissemination and adoption.

Kenya's Vision 2030 lays emphasis to food security through the Economic Pillar which strives to revamp the state of the Agricultural, Wholesale and Retail Trade sectors. The government of Kenya which is the key policy formulator has recognized the right to food in the context of national food security. This includes not only sufficient intake of calories, but also the right to nutritious diets that guarantee health, growth and development at all stages of life and for all citizens (GOK, 2010).

In particular the Kenyan government has been and is still the principal player in policy formulation of the older persons. It has envisaged that the state will continue to play such significant role and also provide resources for the effective management and implementation of quality services to the improved livelihood for the older persons (Olum, 2011). The constitution of Kenya (article, 57) (a) the state shall take measures to ensure the rights of the older persons to fully participate in the affairs of the society; (c) to receive reasonable care and assistance from their family and the state. The national policy for the elderly covers among other issues the laws and rights of older persons, poverty and sustainable development, health and active life, family culture, gender, food security and nutrition (GOK, 2010).

Older Persons Cash Transfer (OPCT) Programme Payment System, is set to benefit 105,000 elderly persons through a bi-monthly cash pay for basic upkeep. The programme first began in 2007 under the Rapid Response Initiative (RRI) as a programme funded by the Government of Kenya to provide a bi-monthly stipend to elderly, disabled as well as orphaned persons to cater for Kenya's most poor and vulnerable communities which Postal Corporation of Kenya is the designated payment agent (Mutegi, 2014).

According to statistics from the Republic of Kenya (2011), only about a third of the Kenyan population can be said to be chronically food insecure. About 3.8 Million Kenyans require assistance to meet basic food requirement. Over the last 3 decades, per capita food availability has declined by more than 10%. The International Food Policy Research Institute (I.F.P.R.I) classified the status of hunger in Kenya as "alarming". It was indicated that negligible progress was made between 1990 and 2009 in terms of the global hunger index.

According to Futures Bulletin (2013), Meru is subdivided into nine sub counties with Imenti Central being one of them. Imenti Central Sub County is climatically divided into two regions with the lower parts of the Sub County being less productive and less developed as compared to the upper region. However, in terms of land ownership the people from the upper region have smaller pieces of land due to extensive land fragmentation though more productive as compared to the lower parts where farmers own bigger chunks of land but less productive. The disparity has been brought about by the fact that the rainfall is very good for food production in the upper part and low in the lower parts that are a bit dry. People of the lower region also lack proper inputs and resources all of which limit food productivity hence leading to household food insecurity. The small portions of land in the upper region are used for small scale farming that poses the households into food insecurity. The above scenario

makes the situation worse for the elderly who lack the energy and resources to continue with food production.

1.2 Statement of the problem

Millions of people worldwide suffer from hunger and under-nutrition, a major factor contributing to food insecurity which is an international problem. 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. For food security to exist at the national, regional, and local levels, food must be available, accessible, and properly utilized. Food insecurity may be chronic, seasonal, or temporary, and it may occur at the household, regional, or national level (FAO, 2008).

According to the Household Food Insecurity Access Scale (HFIAS) report (2007), food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Household Food Security Scale (HFSS) (2011) supports differentiation of four categories of food security: food secure, food insecure without hunger, food insecure with moderate hunger and food insecure with severe hunger. This scale includes items about food conditions understanding and addressing household food insecurity issues related to vulnerable people. Improving households' food security is an effective way to bring together communities to address food systems issues embedded in food production, processing, and distribution; food access and utilization by individuals, communities and populations; and food recycling, composting and disposal.

Traditional systems of care and support for the elderly people that depended upon the extended family system have broken down or if in existence can no longer cope or be

sustained. Majority of the Youth and middle aged persons have left for job search in towns and the elderly persons have been left in the rural areas to shoulder most of the responsibilities. This situation has consequently reduced economic activities; particularly those farm related tasks that are geared towards food production. They have also not been able to access the available food from the market due to reduced levels of income. The above dimensions reveal inequalities in food patterns in rural households which drive this study to investigate what causes food insecurity among the aged in Imenti central. Although an overwhelming amount of research has addressed food security issues, much attention has been paid to evaluation of food security interventions and their nutritional benefits along with factors influencing their sustainability. Most of the researches done on projects implementation have focused on general organizational factors that influence their implementation. The researcher of this study therefore focused on the socio-economic factors that influence food security for the aged, an issue which has not been adequately addressed previously.

1.3 Research questions

- i. What is the influence of the demographic characteristics of households with elderly persons on the level of food security in Imenti Central Sub County?
- ii. To what extent does health status in households with elderly persons affect the level of food security in Imenti Central Sub County?
- iii. How does aging of elderly persons influence households' level of food security in Imenti Central Sub County?
- iv. To what extent does farming practices in households with elderly persons contribute to the level of food security in Imenti Central Sub County?

- v. What is the level of food security in households with elderly persons in Imenti Central Sub County?

1.4 Overall Objective

The overall objective of this study was to understand how socio-economic factors affect levels of food security amongst households with elderly persons in Imenti Central Sub County.

1.4.1 Specific Objectives of the study

The specific objectives of the study are:

- i. To examine the extent to which demographic characteristics of households with the elderly persons influence the level of food security in Imenti Central Sub County.
- ii. To investigate how health status of the elderly persons affect the households' level of food security in Imenti Central Sub County.
- iii. To determine the influence of aging of elderly persons on the households' level of food security in Imenti central Sub County.
- iv. To investigate how farming practices affects the level of food security in households with elderly persons in Imenti Central Sub County.
- v. To investigate the level of food security in households with elderly persons in Imenti Central Sub County.

1.5 Significance of the Study

Despite the efforts put by the government to ensure well-being of the older persons, it is still found that this population stratum is neglected and continues to be given low priorities in receiving economic, social assistance and to some extent cultural respect from the society.

The findings and recommendations of this study would therefore help the government to formulate and implement policies that can revitalize community-based projects and private sectors participation towards the welfare of the older persons in regard to food security initiatives. The study endeavors to provide empirical findings of the elderly and their status of food security and give recommendations in the subject area. The research study was also hoped to provide a base for further research aimed at documenting socio-economic factors that influence food security in the larger part of the Meru County and the country at large.

1.6 Justification of the study

There are many categories of people who suffer food insecurity in Kenya today and various governments, NGOs, Corporations and Communities themselves have intervened to save the situations. A number of studies have been carried out on food security and insecurity status of some of these categories. However, more and sufficient information on the elderly persons in relation to their food security status is required.

This Study therefore focused on “Socio-economic factors that affect food security for the aged” The study investigated the situation on the ground and provided information on the status of food security among the households with the elderly persons in the Sub County.

1.7 Scope and limitation of the study

The study was limited to households with the elderly persons of both gender (males and Females) of ages beyond 65 years. In this case, the study concentrated on the socio-economic

factors that affect food security among households with elderly persons within the Sub County. Therefore, the findings of this study shall be generalized to all households with elderly persons of the Imenti Central sub-County in Meru County with necessary interventions to counter the food insecurity situation.

1.8 Definitions of significant terms

Ageing This is the process of growing old, which begins at conception until death

Elderly Persons of 65 years and above

Famine This is a situation in which large numbers of people have little or no food and many of them die.

Food insecurity has been described as “a condition in which people lack basic food intake to provide them with the energy and nutrients for fully productive lives” (Cox et al., 2001)

Food security Food security is defined as “access by all people at all times to enough food for an active healthy life” (Ellis, 1992). The World Food Summit in 1996 re-affirmed that food security can only exist when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Geriatrics This is the part of gerontology or a branch of medicine concerned with the health and care of old people.

Gerontology This is the scientific study of ageing and the problems associated with it. It takes in a very wide field by looking at the social, environmental, economic, physiological and psychological aspect of ageing and their effects on the aged.

Household: The people who sleep under the same roof and take meals together at least four days in a week. All the people in a family or group who live together in a house, a home and everything that is connected with looking after it.

Hunger The feeling of weakness or discomfort that you get when you need something to eat or it can be defined as a severe lack of food which causes suffering or death.

Nutrition: According to the oxford dictionary, nutrition is the process of ingesting and assimilating food nutrients in the human body. It goes further to define nutrients as substances that provides nourishment essential for the maintenance of life and growth.

Osteoporosis This is a medical condition in which the bones become brittle and fragile from loss of tissue, typically as a result of hormonal changes, or deficiency of calcium or vitamin D.

Population Ageing An increase in the elderly people's share of the total population

Under- nourished In the context of `world food summit (1996), it refers to a person whose food consumption level is inadequate in terms of calories consumed relative to the requirement on a continuing basis.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The review is focused on factors that influence food security among households with elderly persons. It was presented under the concept of food security, characteristics of households with elderly persons, health status, influence of aging, farming practices, literacy, levels of food security in households, theoretical framework and conceptual Framework

2.2 Concept of food security

Food security has been a global concern since the 1974 World Food Conference, held at a time when world food supplies were tight and large-scale food shortages and starvation appeared imminent (WFA, 1996). The concept of adequate food is an important part of the current definition of household food security. Clearly, what is adequate for one member is not adequate for another. A person's requirements for different nutrients depend on many factors including age, sex, level of activity and physiological status. However, adequacy of diets should not be considered only in quantitative terms (i.e. nutritional caloric sufficiency), but also in qualitative terms (i.e. variety, safety and cultural acceptability). Several major conditions define an adequate diet, necessary for an individual to stay active and healthy; adequate energy and protein, provide micronutrients (vitamins and minerals) in sufficient quantities to maintain good health, be safe and free from contaminants, parasites and toxins which may be injurious to health and it should be culturally acceptable and, in addition, should satisfy the palate and be capable of providing pleasure to the consumer (Wond & Macaulay, 2010).

Food security is defined as “access by all people at all times to enough food for an active healthy life” (Ellis, 1992). The World Food Summit in 1996 re-affirmed that food security

can only exist when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. At both macro and micro levels, it implies that adequate supplies of food are available through domestic production or through imports to meet the consumption needs of all people in the country.

The Sphere Handbook (2011), says that food security exists “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. This definition involves three elements that are of particular relevance to older people: availability, access and utilization.

Food availability is the quantity, quality and seasonality of the food supply in the affected area. Availability includes production of food (fisheries, agriculture, livestock, and wild fruit), food imported into the disaster area by traders, and food brought into the disaster area by government and aid agencies. Local markets deliver food to the people (Coates, et al, 2007). A disaster adversely affects the availability of food by disrupting production, trade and local markets. For older people and other vulnerable groups, the availability of food depends on; the availability of food products that suit their nutritional needs and eating habits. Some older people may have difficulties in eating hard foods and may require a different food type that is not available at the market or at food distributing centres. A disrupted local (village) market, that is, a market to which traders no longer bring food and goods from larger markets, may adversely affect the availability of food to older people and other vulnerable groups. The disaster may affect the production or processing of certain key food products that are particular to the dietary needs of older people (Becquey, 2010).

According to HFIAS guide (2007), food access is the capacity of an individual or household to safely procure sufficient food to satisfy the nutritional needs of all its members. For older people and other vulnerable groups, access to food depends on the distance to their nearest market. Older people often tend to use local markets rather than travel to towns. Their ability to get to market to buy food and transport it home may be affected by reduced mobility, even if they have money to buy food. Food distribution points run by the state or humanitarian agencies may be too far away or too difficult for older people and other vulnerable groups to reach. Older people may not be able to access any existing safety net or social protection programmes. Cultural norms within the household dictate who has priority access to food. Older people may be the last to receive food (or they may be the first). Older people may choose to forgo food so that younger members of the family can eat. Families may or may not prioritize older family members' needs in decisions about family spending. Older people may or may not participate in family decision-making (Kithu, 2012).

Food utilization is the household's ability to use the food it is able to access, including storage, processing, preparation and distribution within the household. It also includes the ability of the individual to absorb and metabolize nutrients, which can be affected by chronic disease or malnutrition (Help Age International's Health and Nutrition Guidelines, 2012). Older people, particularly those with limited mobility, vision and hearing, may require a care-giver or support with food preparation, collection of such essentials as water and fuel, and the storage of food commodities. Older people may have specific nutritional requirements because of chronic diseases or malnutrition. Older people may be unable to utilize the kinds of food provided in food distributions. For example, those who have lost teeth may find it difficult to chew hard foods, or they may find some foods difficult to digest.

Access to fuel and cooking utensils may be essential to make food edible for older people (Ageing in Africa, 2000).

2.3 Characteristics of households with elderly persons and food security

In the case of Africa, the world's largest continent, with a land area of nearly 30 million KM², with a wealth of natural resources – (minerals, Forests, wildlife and diverse biological diversity) a majority of the inhabitants of the continent wallow in poverty accompanied by skewed income patterns despite these enormous resources (Sand Brook, 1982). These characteristics are very synonymous with its past history of colonization and subsequent partition by the various European powers (Editors of life, et al, 1961) even after obtaining independence, a majority of African governments inherited and continued to maintain centralized economic and sectoral institutions together with irrelevant development policies through making sub-Saharan Africa one of the poorest regions of the world. As a result, food crisis is ever prevalent in this continent and may continue to be so until a radical surgery is carried out on the existing development policies.

The African food crisis is long term in nature and has been building up for several decades and while food production has declined, population has been increasing, leading to increases in poverty with minimal resources being made available for food production. Yet, the funds ear-marked for the poor never reach them, and seldom efforts are made to link further funding to the achievement made by those involved with the results not to mention regular cost-benefit analysis aid allocation (Hancock,1989).

Food insecurity in Kenya has been classified as either chronic or transitory. Chronic food insecurity results from a continuous inadequate access to food and is caused by chronic inability of household to either produce or purchase sufficient food, whereas transitory food

insecurity is the inadequate access to food due to instability in food production and food supplies. Food problem in Kenya is mainly transitory in nature. This has been exemplified by: - periodic droughts over the years, institutional failure and poor policies which cause food crop and livestock production to decline forcing the country to import substantial food stuffs. While food crisis in the Arid and Semi-Arid Lands (ASALs) has always been attributed to climatic and environmental condition, other equally important factors have been documented. These include limited alternative sources of income, exploitative cereal marketing channels, unavailability of drought and disease resistant crop varieties, low limited crop diversification, poor storage methods, lack of credit services, inaccessibility to agricultural services, illiteracy and poverty (Mayanga et al, 2003).

The transitory food insecurity households are those that, under normal circumstances are able to produce enough stock, but are vulnerable to supply problems, when external shocks affects their food production systems or distribution chains for a limited period of time. The constitution of Kenya, 2010 (article 61-1) recognizes that all land in Kenya belongs to the people of Kenya collectively as a nation, communities and as individuals. However, a large percentage of Kenyan population is still faced with landlessness, while large chunks of idle land owned by the state or individuals, including non-citizens still exist. Land tenure systems and land distribution has been so inconsistency and discriminative to an extent that food production has highly been affected.

2.4 Health status of elderly persons and food production

Older people can be particularly adversely affected by health complications. Risk factors that reduce older people's access to food include isolation (living alone or having a reduced role in family decision making), chronic diseases or pain, communicable diseases, disability,

poverty, cold and psychological stress. Older people must be able to access food sources easily (including food or cash distributions in an emergency). Food provided to older people should be easy to prepare and eat and should meet their protein and micronutrient requirements (The Sphere Handbook, 2011).

According to Copper (2008) individuals need adequate amounts of a variety of quality, safe foods to be healthy and well-nourished. Under-nutrition results from an insufficient intake or an improper balance of protein, energy, and micronutrients. Nutritional consequences of insufficient food or under-nutrition include protein energy malnutrition, anaemia, vitamin A deficiency, iodine deficiency, and iron deficiency. Food insecurity and malnutrition result in catastrophic amounts of human suffering. In developing countries, persistent malnutrition leaves people weak, vulnerable, and less able to fight common ailments. According to Kithu (2012), malnourished affected persons suffer from poorer health status, compromised immune systems, and higher rates of illnesses and fatigue. Malnutrition can lead to decreased energy levels, delayed maturation, growth failure, impaired cognitive ability, diminished capacity to learn, decreased ability to resist infections and illnesses, shortened life expectancy, increased maternal mortality, and low weight

According to the World Health Organization (WHO) report 1999, health is vital to maintain the well-being and quality of life in old age and that health is essential if older people are to continue making active contribution to the society. Although a majority of older people enjoy sound health, lead very active and fulfilling lives, quite a proportion enter old age in a state of ill health. As people reach old age, they enter a period in their lives when they are at a high risk of developing chronic diseases which in turn may result to disability. The report concludes by painting a gloomy scenario by saying that, chronic diseases, including cardiac

vascular diseases, diabetes, cancer, high blood pressure and depression are predicted to be the main contribution to the burden of disease in the developing countries by year 2020. These diseases are very prevalent in old age and are mostly a consequence of poor feeding habits that result out of food insecurity within their households.

According to a study done by Dr. James Kigera of the PCEA Kikuyu hospital, in presenting his research findings to a conference held in Nairobi by the African Society of Orthopedics (A.S.O), he indicated that a third of Kenyans aged 50 years and above may be suffering from a disease of bones; known as osteoporosis or porous bones. In his findings he indicated that previously it was a low priority disease but now medical doctors say it is becoming a major health concern which eventually leads to disability in older persons, limiting their capacity to be economically productive. Dr. Kigera said that from his findings it is possible that 33% of Kenyans suffer from the complication (The Standard; July 8, 2013).

According to Latham (1991), traditional diets of most African people are good. They usually only need minor changes to allow them to satisfy the nutrients requirements of all member of the family. The problem is not what foods are eaten but rather how each food is eaten and how this is distributed within the family. He argues that the habit of eating certain protein rich foods such as insect, snakes, baboons, mongooses, dogs, cats, unusual sea foods and snails is definitely beneficial. Another habit that is good nutritionally is consumption of animal blood. Some tribes puncture the vein of a cow and draw off a calabash of blood, arrest the bleeding, and consume the blood usually after mixing it with milk. Blood is a rich food and mixed with milk is highly nutritious.

The traditional use of certain dark green leaves among rural people is another beneficial practice and should be encouraged. Such dark green leaves are rich in sources of carotene,

ascorbic Acid, iron and calcium; they also contain useful quantities of protein and vitamins. Expatriate Horticultural farmers in Africa have tried to get villagers to cultivate lettuce, cabbage, etc rather than their traditional vegetables. Many wild fruits are also rich in vitamin C (Latham, 1991). However, all the mentioned practices of growing and making use of the traditional foods have been overtaken by the western practices, for example maize, cassava and potatoes, now grown in large amounts in Africa originated outside the continent. Latham further argues that many changes in food habits that have been introduced or encouraged in Africa by so called civilization have been harmful. For example, the change from lightly milled to highly milled cereals is becoming a serious problem in Africa. The poor, the hungry and the malnourished are unable to live a normal life, they are less likely to fulfill their potential as human beings and they cannot contribute fully to the development of their own countries.

Food insecurity may also result in severe social, psychological, and behavioral consequences. Food-insecure individuals may manifest feelings of alienation, powerlessness, stress, and anxiety, and they may experience reduced productivity, reduced work, and reduced income earnings. Household dynamics may become disrupted because of a preoccupation with obtaining food, which may lead to anger, pessimism, and irritability. Under-nutrition is caused by an array of interrelated factors including household food insecurity, poor household care of elderly persons and poor access to health and sanitation services. A household is considered food insecure when, due to lack of money, it faces problems such as limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. Thus, the concept of household food insecurity includes not only under-nutrition and hunger but also

householders' perceptions of problems with the quantity and quality of food available, uncertainty of food supply and experiences of going hungry (Black et al., 2008).

2.5 Influence of aging and food security

The elderly persons are defined as persons aged 65 years and above. The terms elderly people, older people and the aged will be used interchangeably, but the terms mean one and the same thing. To arrive at this definition two indicators of age have been considered. These are chronological age and the functional or social age.

Chronological age – number of years as per birth registration. Most of the elderly people may not know their age and so associated it to certain events for instance disasters, calamities and national events. Functional or social age – this attributes to the physical appearance like the grey hair, stooped posture and failing eyesight. The use of functional age is popular in rural areas where chronological age is unknown and the elderly are therefore identified by their functional attributes. The problem with functional age is that not every person displays these attributes. Age 65 years was first used in Germany in 1873 to define the age at which a person qualified for public social security. Most other countries followed Germany in using age 65 in retirement regulations (Kamwengo 2001)

Grey hair and wrinkles perhaps are the most visible signs of aging and the chronological age of 65- the most often used criterion of assessing old age but may have no effects on physical functioning or cognitive capability. The social factors such as population pressure, traditional farming systems and practices, and economic limitations like poor infrastructural services, shortage of farm land and other productive assets, are also factors responsible for households' food insecurity. It is not because age 65 or grey hair that the elderly persons are symptomatic of competence or incompetence or a boring or dazzling personality, attractive

or unattractive. We simply make these assessments because we live in a society that constructed the meaning of aging in a particular (primarily negative) way. However, old age and aging process are of course a biological reality which has its own dynamics, largely beyond our control (Edwards, 2010).

Aging is not a distasteful experience and one can disagree with the lay belief that aging is a negative process because it leads to old age and its consequent physical, mental, social and economic deterioration. It is a stage of life where one needs to get hold of new skills to learn certain things, mind sets and socialization norms. Old age has some delights, which though different are not less than the ecstasies of youth. Unfortunately old age is connected with multiple sicknesses and general inability (American Public Health Association, 2006). All people have their likes and dislikes, and their beliefs about food, yet most are conservative in their food habits. They tend to like what their mothers cooked for them when they were young, and what was served to them at school. The foods that people ate without a second thought in childhood are seldom disagreeable to them later in life (Latham, 1991).

Help Age International (2012), a leading global organization working for and with the disadvantaged older people worldwide, says that “despite these UN statistical of older people, issues relating to them have not attracted much attention by policy makers, professionals in various fields. There is very little knowledge about ageing issues, needs and problems the elderly face. Information about ageing and the issue of the elderly remain quite sparse. Policy makers also lack the necessary information about issues affecting the older people resulting in their inability to formulate policies that address the specific needs of this vulnerable group. (Ageing in Africa, 2000).

According to the UN Population Division “population ageing” is defined as an increase in the elderly share of the total population, and that a population described as “an aged population” when the percentage of older people (aged 65 years and above) exceeds 7 percent. Kenya’s percentage of older people is estimated at 10 percent (Ageing in Africa, 2000). Hence Kenya has an ageing population.

In the developing world elderly persons unlike older Americans (especially those over the age of 62) they do not have access to an age-specific social safety net. While many older people are not able to work and are, therefore, considered for unconditional cash or food support, there are many others who are capable and willing to work but are not considered as potential beneficiaries of livelihoods support due to their age. Food insecurity has been associated with a wide array of negative health outcomes both among the young and old. The prevalence of food insecurity is higher among elderly persons living in a household with a grandchild present (Help Age International, 2012).

2.6 Farming practices of elderly persons’ households and food security

When old age crops in, the older people who have been known to own most of the food producing farms and farm tools eventually get labeled poor. They are living in poverty because they often can no longer produce or buy enough food to satisfy their needs and therefore end up being susceptible to diseases. This puts them in such a precarious situation of malnourishment and many other illnesses that makes them less able to work in their farms and therefore less able to produce food. Households become food insecure when there is uncertainty about food availability and access, insufficiency in the amount and kind of food necessary for meeting their dietary requirements.

According to Omosa (1998), tracing Kenya's food policy from 1963 to date nevertheless shows that the ideology underlying the country's search for adequate food has continued to center on improving the supply of basic foodstuffs mainly grain crops. Sessional paper No.4 of 1981 on National Food Policy, was the first official attempt to directly address Kenya's food security. It argues that, intensified production is necessary so as to enable the country maintain a position of broad self-sufficiency in the main food stuffs without using scarce foreign exchange of food imports. It aimed at achieving a calculated degree of security of food supply for each area of the country, and ensure that every member of the population has a nutritionally adequate diet (Kenya SP No.4,1981, p-2,SP No.2, 1994,p4).

Food security has been Kenya's priority among others. This has been reflected in the current 2013/2014 budget where food security has received the highest allocation in the next five years. According to the daily Nation (June 15, 2013), the financial budget highlights, irrigation and other food security enhancing programmes was allocated Kshs. 245 billion. It also highlights the low productivity of agriculture which is caused by use of inappropriate technology, in accessible farm inputs, weak extension support services and over reliance on rain fed agriculture.

According to Gitu (2006), Kenya for a long period pursued the goal of attaining food sufficiency in key food commodities that included maize, wheat, rice milk and meat. Self-sufficiency in maize was achieved in very few years during the 1970s when production was high to the extent that some was exported. Unfortunately, attainment of self- sufficiency did not imply that household food security was achieved. Evidence shows that solving the food security issues from the production (supply side) point of view, which overlooks the demand

side, does not solve food security problem particularly the access of vulnerable groups to enough food.

Food insecurity has also been viewed as a question of entitlements where not all can have a fair share of food available or produced. Sen (1981), argues that some people are deprived of food due to a breakdown in the “means” of accessing food. As evident in Kenya, food insecurity has occurred without any decline in the general supply of food. In other words, food production per person can increase and yet more people still go hungry. This is basically due to the other intervening variables like food distribution patterns as well as national policies and subsidies. Furthermore, food shortages are not experienced uniformly even in the same food deficit zone.

Recurrent food shortages especially before grain marketing was liberalized in Kenya, have been blamed on the abandonment of indigenous drought resistant crops and soil conservation methods. However, initiatives being made to assist rural communities to revert to these practical are beset with obvious inherent contradictions. Apart from changes in feeding habits and tastes over time, the market has not been overly receptive to these changes particularly with regard to indigenous crop varieties like millet, cassava, sorghum and cowpeas. It has also become increasingly difficult to convince consumers that their traditional crops and vegetables are not only well suited to the local climate conditions but they are also nutritious.

According to Delgado (2000), the world is undergoing profound technological changes that came in with increased technological innovations requiring higher levels of formal education and highly specialized skills. This in particular has profoundly hit the agriculture sector where majority of the small skill farmers are still analogue in their farming methods.

Majority of them especially in the rural areas are illiterates' and do not have any formal education to adapt to the technological changes. Consequently, Lack of modern farm tools and poor methods of farming due to poverty and low education levels has also impeded agricultural development in food production. Therefore, there is dire need for a concerted and a participatory effort aimed at sustainable co-existence between 'New' technologies in Agriculture and traditional farming practices.

Food insecurity has also been caused by land fragmentation as most of the large-scale farms have been subdivided beyond economically sustainable production capacity. As a result of the fragmentations, some 89% of households in Kenya are living in less than 3 ha while more striking is that 47 percent live on farms of less than 0.6 ha (1.5 acres) therefore the country is predominantly made of small farms: 10% of the holdings of 575,000 households are above 3 ha (7.5 acres). One third of these are in the large farm areas in the Rift Valley Province and another one third in the marginal areas of lower Eastern Province (Kitui and Machakos counties) and some parts of upper eastern province (Meru county). Mayanga (Ibid) defined transitory food insecurity as a temporary decline in household's access to sufficient food supplies.

In the world there are approximately 800 million people who live in condition of food and educational deprivations. Worldwide, the average age of farmers is about 60 years, including the developing countries, and many amongst them are women and poorly educated. Older farmers are less likely to introduce new, transformative production techniques. The 2005 State of Food Insecurity Report (FAO, 2006) gave a relevant contribution to highlight the strong relationship between food insecurity on one hand and illiteracy and lack of education

on the other. Unfortunately there is a lack of data concerning education for elderly in rural areas of developing countries. Because of such data scarcity, education in this research was measured by school attendance and not by school completion, nutrition awareness and ability to embrace upcoming technology in food production and storage. School attendance of people in different age-groups can be reasonably considered as a good proxy for educational achievement in a country, but it does not encompass all the relevant information.

Therefore, the problem of food insecurity especially among the elderly can as well be linked to poverty, illiteracy, lack of labor in their farms, climatic changes and low levels of skilled agricultural practices, negligence of the traditional practices and mushrooming urbanization that has caused the rural- urban migration. In the past people in the rural areas had the responsibility of feeding people in urban areas through food crop farming. But agriculture in the rural areas is under pressure to an extent that is not in the position to even feed the rural folk (salih, 1994). Food insecurity include farmers' inability to access food crop research findings, de-motivated extension workers or lack of them in some areas, tribal clashes and displacement, illiteracy and rudimentary farming methods. In addition there has been reduced supply of labor to farms due to unemployment in the rural areas that has led to majority of the youth and middle aged persons to leave for job search in towns. Consequently, the elderly persons have been left in the rural areas to shoulder most of the responsibilities. This situation has reduced economic activities in the community due to the fact that the elderly are not strong enough to undertake most of farm related tasks. They have also not been able to access the available food much of which is sold to earn cash income.

2.8 Household Food insecurity Access Scale model

The Household Food Insecurity (Access) Scale (or HFIAS) is a brief survey instrument developed by Food and Nutrition Technical Assistance (FANTA) to assess whether households have experienced problems with food access (Coates et al. 2007). Food security exists at different levels of organization (such as national, or community food security) and is measured differently for each level. The HFIAS was designed to measure household food insecurity (not individual) and is specifically designed to measure access to food.

According to Deitchler et al (2010), there are three generally agreed upon domains of food security: availability, access, and utilization. Availability means that sufficient quantities of food are available on a consistent basis. Without availability, there cannot be access to food. Access means having the sufficient resources to obtain appropriate foods for a nutritious diet. However, having access to food does not guarantee utilization. Utilization means the proper biological use of food and can be affected by health status/illness management, food preparation, food safety, and sanitation. In terms of all aspects of food security, stability over time has important implications for physical and psychological well-being.

According to HFIAS guide (2007) the Household Food Insecurity Access Scale (HFIAS) provides a simple and user-friendly approach for measuring the impacts of development food aid programs on the access component of household food insecurity. The guide includes a standardized questionnaire and data collection and analysis instructions. The HFIAS is composed of a set of nine questions that have been used in several countries and appear to distinguish food insecure from food secure households across different cultural contexts. The information generated by the HFIAS can be used to assess the prevalence of household food

insecurity (access component) and to detect changes in the food insecurity situation of a population over time.

According to Coates et al. (2007), the HFIAS poses questions of increasing severity on food security domains, such as anxiety over food, insufficient dietary quality, and the quantity of food. It was developed on the premise that households across different cultural or social contexts respond to food insecurity in universal ways.

2.9 Summary of literature review

Lack of knowledge about the ageing process has left majority of the elderly people to live under such precarious and deplorable situations. This scenario would not be there if proper policies are formulated and implemented towards mitigating this state of the elderly people. In addition, if more studies are done on the same, then this would be a lifeline for the welfare and increased participation of the elderly in the societal activities. Babbie (1995) says, “We can’t solve our social problems until we understand how they come about and persist. Social science research offers a way of examining and understanding the operations of human social affairs. It provides points of view and technical procedures that uncover things that would otherwise escape our awareness”. Help Age International (2002) persuasively argued that, although ageing has been recognized as a growing socio-economic phenomenon, lack of data and information on the many issues of older persons remained a problem. It was noted that social gerontology (a study of socio-psychological and socio-economic aspect of ageing) is a field that has not aroused a lot of interest in developing countries. The consequence of this is that it has hampered the provision of services to the older people. Ageing does not necessarily imply ill health. Access to decent living conditions and proper health care throughout a person’s life can prevent or delay the onset of undesirable health conditions

associated with ageing. If older people maintain good health, they will require less caring by the family members and be able to continue with various activities as they age (prochum, 1998).

Past studies have been carried out on the effect of aging on many aspects in life; Kithinji (1992), in a study of old age in Meru Provides an anthropological view in the process of ageing among the Meru, notes that the kinship-based support networks that provided care and support for the rural elderly have weakened and are crumbling down. He says that the migration of young adults out of the rural areas and the entry of women into the labor force have separated potential primary care givers from their elderly parents. This, in turn, has rendered the elderly persons very vulnerable. However, this study does not expound on the challenges that the elderly get exposed to. This study therefore intends to add more information particularly on elderly in terms of their status of food security.

Khasian (1987), in a study of the economic well-being of the older persons in Nairobi, Kakamega and Machakos concluded that the extended family and the systems of mutual obligations towards the older persons are disintegrating and families no longer meet the needs of the older persons adequately. Khasian like Kithinji, does not exhaustively address the challenges the older people face after family support and care is eroded, especially in accessing food. This study therefore, aims at identifying the social economic factors and challenges affecting food security among the elderly persons.

Abilla (1980) says, although health facilities have increased rapidly since independence there is differential distribution of facilities between urban and rural areas. Most African states are faced with inadequate facilities to provide basic health services for their dispersed rural population. Then amidst these rising economic constraints and rising levels of poverty, the

elderly persons find themselves faced by more challenges in their attempt to access the inadequate health facilities. Abilla however does not exhaustively analyze these challenges faced by elderly but instead rotates her study only on the accessibility of health centers and failed to go further into studying the causes and how they could impact on food security. This study therefore tried to discover and understand the challenges facing the elderly in their attempt to access sustainable food supply in their households.

Cattel (1994), has carried out a wide range of studies on ageing among the communities of Western Kenya. Cattel talks, about the difficult situations facing the elderly people as a result of social changes and modernization. She notes that today the issue of family support for older persons is coming more and more in the forefront particularly as African extended families are becoming stressed by geographical separation, economic pressures, western influence, and socio-economic changes in the 20th century. While Cattel admits that the elderly in Samia are faced by many challenges, these challenges are however not singled out.

Koinange (1996), notes that we need to appreciate the health needs of older people. Although ageing is a natural process which we must all expect and prepare ourselves for, complaints and illnesses are common in old age. These complaints, such as poor vision, poor hearing, joint pains, and so on limits the ability of the older people to live independently. Koinange says that while health objectives for older people should not only be to increase the longevity of life, but also to make life more fulfilling, rewarding and not complicated by too many health problems. Good health is of vital importance to older people, not only because it improves their quality of life but also because it enables older people to continue participating towards the social- economic activities of their communities (Footsteps, 1999).

Saturnina (2005), in her study on the experiences of the elderly in accessing Health Care services in Meru South Sub County of Eastern Province, found out that lack of adequate income and other resources meant that the elderly people rarely had the means with which to manage their health. She further notes that the majority of the elderly people reported an increasing breakdown of family and social structures that cared and support them, thus leaving many of them isolated, lonely and marginalized within their own communities. Saturnina further emphasizes that the impact of HIV/AIDS in particular on the role of the elderly people as care givers of orphans of the pandemic and other sick relatives, emerged as a major factor that adversely affected the health of the elderly people. With the death of their adult sons and daughters, older people are left as the sole caretakers of their orphaned children in terms of food provision, clothing and shelter. Saturnina concludes that it is only a perception that elderly people are cared for and supported by their family members and relatives but this was something that no longer exists.

However, with the numerous problems elderly people face, it's important to note that the elderly people in Kenya have unique problems. They experience a sense of isolation, poverty, rejection, loneliness, destitution and dependency. These problems then compound together to make the elderly persons feel left out and live under very precarious and deplorable situations and particularly in terms of their daily provision of basic needs. This study intended to understand these socio-economic challenges faced by older persons with a view to suggesting possible measures/interventions that could promote active and healthy ageing process. That notwithstanding, the study also ensured the elderly persons reasonably participate towards community development and reasonable food security measures are put in place in every household with an aging person.

2.10 Theoretical framework

Theories are an abstraction of reality. According to Francis Abrams, he defines a theory as a contemptuous skill that explains the observed irregularities or reality between two or more variables. According to the oxford dictionary, a theory is a formal set of ideas that is intended to explain why something happens or exists or are principles on which particular subject is based.

In their attempt to understand and explain the ageing process, various social scientists have borrowed from various theoretical frameworks that have been put forward to explain the phenomena. This implies that there is no single theory that can conclusively and comprehensively explain ageing. The study therefore borrowed from various theoretical frameworks that have been used earlier by various scientists to understand and explain the process of ageing and its many implications. The theories listed below were therefore be used as points of reference in the study.

- i. The disengagement theory of ageing
- ii. The activity theory of ageing
- iii. The theory of food economy and entitlement

2.10.1 Disengagement theory

This was originally developed by Cumming and Henry (1961), two scientists interested in studying aging and the way interactions with other people change as people grow older. According to their theory, as people age, they tend to withdraw from society and this can be mutual, with society being less likely to engage with and include older people. They argued that this was a consequence of people learning their limitations with age and making way for new generation of people to fill their roles. Under this theory, as people age they tend to

grow more fragile and their circles shrink as they start to pull away and be less actively involved. Critics point out that often this disengagement is forced rather than voluntary; someone who needs to move to a nursing home for example, experiences a curtailment of her social circle as her friends may not be able to visit, and may start to die, leaving her with fewer connections.

The theory argues that certain processes of ageing are universal, inevitable and developmental. The theory postulated that as people grow older there is mutual withdrawal between the social context and the ageing person, seen in the decreased interaction or activity outside the primary family group (Marshall 1986). In their book "Growing Old," Cumming and Henry suggested that some older adults purposely withdraw from society in preparation of death. Disengagement occurs as older adults retire from work and decrease their social participation. Society fosters this disengagement by providing fewer opportunities for older adults to participate in the workforce and in social situations. Cumming and Henry suggested that this mutual disengagement of the individual from society and society from the individual is the optimal form of aging.

Cumming and Henry outlined nine postulates of Disengagement theory. The first postulate states that "although individuals differ, the expectation of death is universal and decrement of ability is probable. Therefore a mutual severing of ties will take place between a person and others in his society." A second postulate is that the disengagement process reduces the number of normative expectations placed on older adults and essentially frees them from social responsibilities. Disengagement is a universal event, experienced across gender and cultures. Cumming and Henry argued that their theory adequately explained why older adults demonstrated a reduction in work, a decrease in social interactions, a lack of interest in new

activities, and an increased amount of introspection. This theory was grounded in the University of Chicago's Kansas City Study of Adult Life and conclusions were drawn from observations of older adults' social participation, ego energy, and self-awareness.

This theory was deemed applicable to this study due to the disengagement of the elderly persons from the societal activities and also reduced individual work, the elderly withdraws from most productive economic activities. Indeed some of them retire from the workplace because they sense their mortality and do not wish to spend their last days in work. On the other hand getting relieved from the societal roles make them eventually suffer loneliness because it reduces their social interactions, and their desire is to disengage and prepare for death.

2.10.2 Activity theory

This theory is supported mainly by those who disagree with the disengagement. It was developed by Havighurst and Maddox (1963). The theory postulates that successful ageing is highly dependent on maintaining a high level of activity (Lipman and Smith 1968). Therefore the more the activity the aged are engaged in, the more satisfied they are likely to be in life. But when those desiring to remain active incur loss of activity, they tend to become lonely and experience feelings of isolation. Maddox says that successful ageing depends on the contribution the elderly people continue to make in both their social and economic realms. The theory suggests that the greater the loss of activity the slower the life satisfaction.

In addition, other social psychologists who disagree with the disengagement theory support that healthy aging corresponds with continued psychological engagement and social participation throughout older age. Older adults should actively compensate for the age related changes in their biological, psychological, and social experiences, and individuals

must continue to engage in and modify the activities that they pursued in their middle age. These gerontologists thus conclude that disengagement is not compatible with optimal aging.

In old age, Erikson argued that individuals must pass through a stage which is characterized by a psychological conflict between ego integrity and despair. In this stage, older adults reflect upon their life and then assess their self-worth. A positive appraisal of their life course experience results in ego integrity while a negative self-appraisal results in despair. Older individuals with ego integrity go on to acquire wisdom, acknowledge the universal conditions of humanity, and accept their mortality. Those who fall into despair suffer with what Kierkegaard referred to as the sickness unto death. Despairing individuals may become withdrawn and ambivalent or hostile and destructive in their old age. Activity theory explains why some older adults remain employed and actively participate in work and social events and also provides insight into why some other older adults may appear to be at peace with growing old while others appear fearful.

To support the activity theory, both Parker (1982) and Busee (1969) believe that various activities that the elderly people engage can revitalize them and maintain their socio-economic well-being. These economic activities may increase the levels of ego integrity for the elderly, consequently enabling them to engage and participate in the communal activities thus rendering them to be more active than living lonely and idle. In ascertaining the practicability of either of the above theories, this study therefore was able to give some empirical evidence of the reality amongst the elderly in terms of food security situations in their lifeline.

2.10.3 Theory of food economy and entitlement

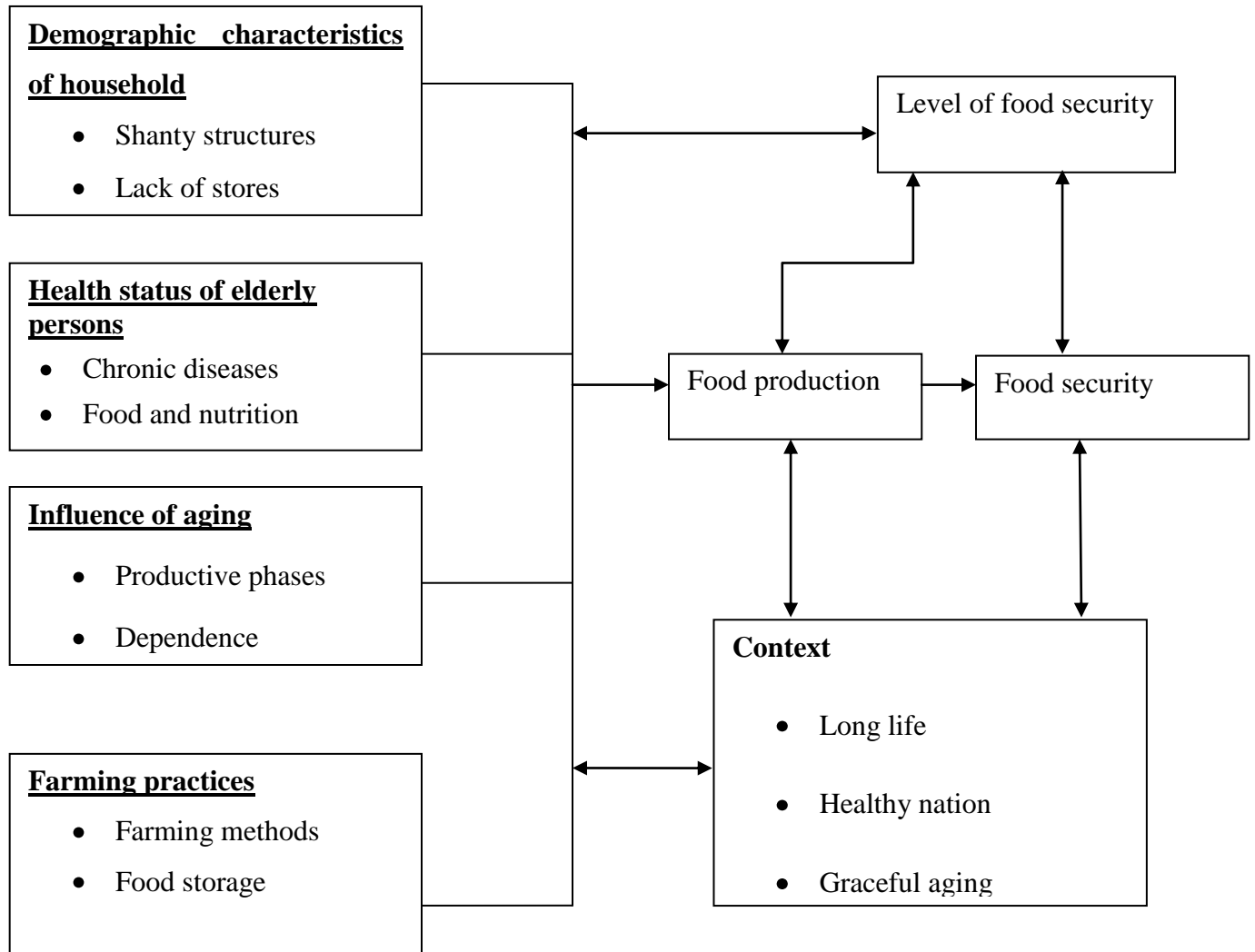
This theory was postulated by Nobel laureate Amartya Sen (1980). The problem of establishing command of food, or the problem of acquiring food in itself, is central to the question of hunger. Therefore people establish command over food in two broad ways; direct ownership of food via production and conversion of wages into food. Sen observed that famine is clearly class-dependent. Only people on the lowest level of the economic ladder, such as landless rural labourers, are prone to hunger. Sen (1980) argues that the problem of food security is not about the food supply failure. However, the problem of food security and famine is more about food access rather than food supply.

Food security has changed from the food supply issue to the accessibility of food or entitlement argued by Amartya Sen (1980). He further argues that the issues of food security also has changed from the idea of entitlement that only focus in economics perspective and individual as a unit of analyses to more complex issue including political regime, natural disaster, civil war, governance and global governance and also climate change and environmental issues. The shift of paradigm in looking into the hunger, famine and food security cannot be separated from the limitation of entitlement idea.

According to Sen (1999) even when there is a decline in food availability, serious study is required to look at the behavior of the determinants of food acquisition in different sectors of society like the elderly. In this perspective, famine is seen through the lens of loss of endowment (land loss, loss of labor power) or loss of exchange entitlement (falls in wages, rise in food prices). Therefore it is important to look at food security of households with elderly persons by contrasting endowment with their exchange entitlement.

2.11 Conceptual Framework

Figure 2.1: Interrelationship of independent and dependent variables



The conceptual framework illustrates socio-economic factors influencing food production in Imenti Central Sub County which include; demographic characteristics of households, health status, Influence of aging and farming practices of elderly persons. The moderating variables, according to Kothari (2004) are independent variables that are not related to the purpose of the study but can have an effect on the dependent variable. In this study therefore, level of food security and the level of food production are the moderating variables.

CHAPTER THREE: METHODOLOGY OF STUDY

3.1 Introduction

This chapter describes the research site in terms of geographical location, topography, land use and climatical conditions. The chapter also highlights the process of selecting the sample size, the sampling procedure, methods of data collection, research instruments and data analysis. A combination of both primary and secondary data was used in order to give a general overview of the food security situation among households with elderly persons within the area of study.

3.2 Site selection

Imenti Central Sub County

Imenti Central Sub County is located in the Eastern Province, Meru County. The Sub county covers an area of 2,982 (square kilometers) and is highly populated with a total population of 141,768 with a population density of 179 people per square kilometer. The area has a total of 37,209 households. (Kenya Bureau of Statistics Population Census 2009). Administratively, the Sub County is comprised of four divisions namely: Kiagu, Abothuguchi East, Abothuguchi Central and Abothuguchi West.

This site was purposively selected due to a number of reasons: no study had been done before in the area regarding the elderly, the researcher had a clear geographical understanding of the Sub County and its socio-economic activities, knowledge on culture and the local language was an added advantage. The main food crops grown in the area include maize, beans, peas, millet and sorghum. These are mainly grown for subsistence while those grown as cash crops are tobacco, cotton in the lower part of the Sub County while tea and coffee are mainly

grown in the upper part of the Sub County. Imenti central is also well endowed with fruits such as mangoes, oranges, passion fruits, papaws, bananas and avocados.

However, climatic conditions in the upper part of Imenti central are more favourable than the lower section of the Sub County. The Households in the Sub County get their income from the mentioned cash crops, though cotton has currently deteriorated in market value, its production has been lowered. Tobacco on the other hand has been a preserve of the old men and is getting phased out from the farms due to the expenses and labor required which cannot be met by the elderly, while the younger generation is not keen on taking from them. Tea production is only found in a very minute portion of the upper part of the Sub County, while the elderly persons cannot cope with its required labour and inputs. Some parts of the Sub County plant coffee, which has been their main cash crop although for the last two decades, international export prices of coffee have been fluctuating putting households' food security in the Sub County at risk.

3.3 Research Design

This study employed descriptive research design which is commonly used in the social sciences. This was particularly so because the information was obtained through responses from a sample of individuals who gave answers to questions indicated in the instruments. Descriptive research design is a process of collecting data in order to answer questions regarding the current status of the subjects in the study. According to Kothari (2004), the main purpose of the descriptive study is formulating a problem for more precise investigation. Thus descriptive study has its primary objective in the development of insights into the problem. The research methods used elicit both qualitative and quantitative data which after analysis was generalized to the entire population of households with elderly

persons in Imenti Central Sub County. This could further be generalized to households with elderly persons of the entire country.

3.3.1 Unit of analysis

The unit of analysis denotes the phenomenon being investigated. This study sought to investigate how socio-economic factors affect food security amongst elderly persons in Imenti Central Sub County, Meru County. Socio-economic factors affecting food security amongst the elderly in Imenti Central therefore form the unit of analysis.

3.3.2 Unit of observation

Unit of observation refers to the entity or subject from which we obtain data required in the research study. They are the sources of primary data about the issue under investigation. It refers to the study respondents. The unit of observation for this study is the elderly persons' households. This is because the group understands the phenomenon of food security since most socio- economic factors affect their food production. The elderly have not moved to urban areas, and besides, their advanced age affects their ability to produce their own food. The Sub County agricultural officers, medical doctor, public health officer, teachers and local administrators (chiefs and Members of County Assembly - MCAs) also formed the unit of observation because they gave insights on how the elderly people live and the challenges they face in accessing and producing food.

3.4 Target population

The target population constituted of elderly persons' households in Imenti Central Sub County – that is rural families in both the lower and upper part of the sub County, targeting both males and females of ages above 65.

3.5 Sampling procedure

The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample was selected (Cooper & Schindler, 2003). A sample size is a subset of the population to which the researcher intends to generalize the results. Any statements made about the sample should also be true of the population (Orodho, 2002). The non-probability sampling (Biased sampling) design was applied because purposeful and snow balling techniques of sample size were applied in obtaining a representative sample.

Purposeful sampling technique

This sampling technique allows a researcher to use cases that have the required information with respect to objectives of the study. Cases of subject are picked because they possess the required information. Since there is no ready records of households with the elderly persons and due to time factor, the researcher after purposively choosing this particular Sub County, used snow ball sampling technique to identify homes with the elderly persons.

The snowballing sampling

In snowballing method, the initial subjects in this case the elderly persons were identified. The few identified respondents helped us by directing us to the next household with elderly persons for interviewing. This was done until the researcher achieved the number of respondents required in each division in the Sub County. The identification of the key informants was done in the same procedure in order to identify respondents who gave the researcher a clear picture of food security situation among the elderly persons and their challenges within the Sub County.

3.5.1 Sample size

Imenti Central Sub County is subdivided into four divisions that differ in terms of ecological and economic characteristics. The four divisions therefore became the primary sampling units from which the households were selected and eighty (80) households from each division were picked for data collection. The total households were therefore 320 with 320 respondents both males and females.

Table 3.1 Sample frame

Divisions	Sampled households	Focus Groups	Size of FGD	Key informants
Kiagu	80	-	8-10	4
Abothuguchi East	80	1		4
Abothuguchi West	80	-	8-10	4
Abothuguchi Central	80	1		4
Total sample Respondents	320	2	16 - 20	16

From the above table, a total of 338 respondents were to respond to the questionnaires and interview schedules.

3.6 Sources of Data

The study utilized both primary and secondary data. Primary data involves collecting data from actual field research. In this study raw data was collected from the elderly persons, and from other key informants e.g. health workers, local administrators (ward representative and

chiefs), agricultural officers, teachers and community workers. Firsthand information that the proposed study sought to obtain from the respondent was therefore availed by the mentioned people. Secondary data was used to reinforce the information collected from the sampled respondents.

3.6.1 Data collection procedure

The research team comprised of the researcher and two research assistants. The research assistance participated in data collection. Both primary and secondary data were used. Primary data was collected through actual household survey. Respondents' household characteristics data includes age, gender, employment, and education level of head of household, household size and nutritional knowledge. Household age structure was also captured in order to establish dependency ratio. The total arable land owned by each household in acres and the effective area allocated to produce crops and their respective yields in Kilograms and tones was assessed. Data on other off farm and on farm income generating activities was also collected from the households. Further, the research got information on the household food security strategies employed to secure food in the Sub County. The aim here is to understand how households work towards meeting their food needs, who engages in what strategy and how they arrived at these choices.

Key informants were selected and interviewed to give a “snapshot” on food security based on their experience with the target population. Interview schedules and questionnaires were used as instruments for data collection. Data was obtained from the respondents through face to face interview in which the researcher asked questions and recorded the answers promptly. The justification of this method is that, it has the advantage of ensuring a high response rate and permits observation that has interest. This method also

allowed the researcher to clarify questions for better understanding by respondents and the method facilitate probing for clarity of answers from the respondents.

Two Focus Group Discussions (FGDs) were held in the whole Sub County to get an in depth of the status regarding food security in the Sub County.

3.7 Data Collection Instruments

In order to enrich the research process, the study categorized potential respondents into two major categories; the elderly aged over 65 years, (Family members/caretakers of the illiterate elderly persons assisted the elderly in responding to the questionnaires) and Key Informants (health workers, teachers, administrators, agricultural officers and social workers)

The most commonly used research instruments in social sciences study in data collection are: questionnaires, interview schedules, observational forms and standardized tests. In this study, the researcher basically used Questionnaires and interview schedules to collect information.

3.7.1 Questionnaires

Questionnaires were administered to the elderly persons who were assisted by at least a family member or caregivers. Each item in the questionnaire addressed a specific objective. The questionnaires had been carefully formulated to avoid confusing the respondents. The structured (close-ended) and unstructured (open ended) questions were used.

N/B: The elderly who were not educated were assisted by the people living with them. In cases where they lived alone, then the researcher or the assistance guided and interpreted the questionnaires to them.

3.7.2 Interview schedule

This is a set of questions that the interviewer uses when interviewing the respondents. An interview schedule makes it possible to obtain data required to meet the specific objectives of

the study. It also standardizes the interview situations so that interviewers can ask the same questions in the same manner (Mugenda and Mugenda, 2003). The use of this instrument is to get data from key informants that helped in carrying out in-depth interviews on the key information relating to experiences with food security and the elderly. The Sub County agricultural officers, teachers, nurses, public health officer and local administrators were identified for this purpose. Interview schedules were the major method of data collection. The information collected from the key informants was used to strengthen information collected from the respondents. The fact that the key informants interact frequently with the elderly, they are more conversant and knowledgeable on issues affecting them regarding food security.

3.7.3 Focus Group Discussions (FGDs)

The researcher identified key participants to be involved in the discussions and ensured appointments were made on time; participants were informed what the discussions focused on. Selected participants who were typical residents of the area of study and had interacted with the intended population (elderly) were informed that the whole exercise was for the purpose of understanding the phenomenon. The research team i.e. Researcher and research assistants arrived early enough at the venue and ensured that the meeting place was arranged, reviewed the guide and welcomed participants as they arrived.

At the start of the discussion, individual introduction for both the participants and the research team were done in a participatory manner to ensure the informants felt part and parcel of the whole process. Data on food security status were obtained from the discussions.

3.7.4 Published/Unpublished Materials:

This was used to help in the collection of qualitative information that could be used to validate data collected from other desk review of legal instruments methods. Such information was used to get an insight into views and opinions about food security. The materials helped in drawing appropriate conclusions about the collected information from the respondents.

3.8 Problems/challenges encountered during the data collection exercise

Language barrier – The researcher and her research assistants found it difficult interpreting some English words into vernacular and had to seek for assistance on the process. This was experienced especially when interviewing the illiterate respondents.

Poor infrastructure – Imenti Central Sub County has no single tarmacked road therefore it was difficult to access households particularly those that were located in the lower parts of the sub County. The researcher had to trek a long distance from one homestead to another which was quite tedious.

Harsh weather – having carried out the research during the dry and dusty spell of the season, the researcher suffered a lot of sun burns and intense sweating during the traversing of the Sub County.

Monetary mind-set by respondents – the greatest challenge was to convince respondents that the research was for the purpose of completing a study and was a requirement by the university. Majority of them felt that they needed to be paid some money for responding to questions.

3.9 Data analysis

Qualitative and quantitative analysis methods were integrated and applied in this study. Qualitative comprises of respondents views, opinions, attitudes perceptions and other responses to the interview schedule and questionnaires. It does not contain any empirical analysis. The researcher obtains detailed information about the phenomenon being studied and then establishes the patterns, trends and relationships from the information gathered. Quantitative analysis is where the information being analyzed is comprised of numerical value.

The data collected from Focus Group Discussions, questionnaires and key informants are raw data. The researcher's task was therefore to prepare a statement regarding the collected data. The first step was to collate all questionnaires, FGDs and Key Informants' notes. This provides a complete record of the discussions and facilitated the analysis of the data. The aim of this analysis is to look for trends and patterns that emerge within either a single focus group or among various focus groups.

Data from the field was also edited to ascertain that all entries have been properly done. The quantitative data was coded and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics like the mean, mode and median, frequency tables and percentages were used to summarize the data.

The qualitative content of data was summarized to identify emerging themes. Major statements were made to present the outstanding themes. This was presented by charts, histograms and frequency polygons.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents and discusses the findings of the study. The study was to investigate socio-economic factors affecting food security in the households with elderly members in Imenti Central Sub-County, Meru County, Kenya. Data was collected using questionnaires for elderly persons that comprised of 320 sample population, two focus group discussions and interview schedules that involved sixteen key informants (Chiefs, county Assembly representative, medical doctor, teachers, water officer, public health officers and agricultural officers). Collected data was compiled into frequencies and percentages, and then presented in tables and pie charts. The data was then interpreted to answer the following research questions regarding the characteristics of households, health status, influence of aging, farming practices and literacy level to counter levels of food security in households with elderly persons in Imenti Central Sub-County.

4.2 Instrument return rate

The research sample targeted of 320 respondents thus 320 questionnaires were administered. 304 questionnaires were returned, representing 95% response rate. This response rate was considered satisfactory for the study. Data from the two focus group discussions and sixteen interview schedules were also gotten from the respondents.

4.3 Demographic information of the respondents

The personal information of the respondents was sought to give an insight on the respondents' characteristics, which included their gender, age, marital status, family type, family size, level of education and occupation. The researcher sought to find out the respondents age bracket and presented the findings in Table 4.1.

Table 4.1 Respondents' age bracket

Age bracket	Frequency	Percent
65 – 70	24	7.9
71 – 75	48	15.8
76 – 85	40	13.2
85 and above	192	63.1
Total	304	100.0

Table 4.1 shows that, majority of the respondents who participated in the study (63.1%) were over 85 years old and only 7.9 percent were between 65 to 70 years old. These findings reveal that elderly persons in the area were past the productive age thus they can be considered to be too old to actively be involved in food production. These findings were also apparent in the first FGD that comprised of local elderly persons of a local church group whereby majority of the respondents were over 80 years old. The second FGD comprised of a group formed by retirees, they were all between 65 and 75 years old.

The researcher sought to find out gender distribution among the respondents and requested them to indicate their gender. Their responses were tabulated in Table 4.2.

Table 4.2 Respondents' gender

Gender	Frequency	Percent
Male	108	35.5
Female	196	64.5
Total	304	100.0

The study findings show that the female population (64.5 %) was higher than that of males (35.5%) in the study area. The first FGD comprised of more female respondents than male respondents. These findings implied that women population was higher than that of men in the study area. Though, the second FGD that comprised of retirees had more males than females revealing gender disparity in the livelihoods of the residents of the study area. The researcher sought to find out the marital status of the respondents and presented the findings in Table 4.3.

Table 4.3 Respondents' marital status

Status	Frequency	Percent
Single	24	7.9
Married	120	39.5
Widowed	160	52.6
Total	304	100.0

Table 4.3 shows that majority of the respondents (52.6%) in Imenti Central Sub-County are widowed. These findings imply that as age advances, one spouse passes on thus, the reason of the high widowhood in the area. The percentage of widowed respondents (52.6%) adds

up to the percentage of single (7.9%) to form a larger group of lonely elderly persons (60.5%).

The researcher further sought to find out the family types of the respondents and presented the findings in Table 4.4.

Table 4.4 Respondents’ family type

Family type	Frequency	Percent
Widow headed	172	56.5
Widower headed	92	30.3
Both parent	40	13.2
Total	304	100.0

The study findings show that majority of the respondents’ families are widow headed (56.5%). These findings reveal that most of the widowed families are female headed implying that female spouses are left behind after the passing on of their male spouse. Thus the findings explain the reason as to why we have higher female population among the elderly persons in Imenti Central Sub County. The study finding from the medical doctor also reveals that, families where the elderly persons could no longer live on their own due to chronic diseases of old age like dementia and arthritis, they depended on their children, caretakers or grandchildren. The researcher sought to find out the respondents family size. Their responses were presented in Table 4.5.

Table 4.5 Respondents' family size

Family members	Frequency	Percent
Alone	23	7.6
1 – 3	157	51.6
4 – 5	120	39.5
6 and above	4	1.3
Total	304	100.0

The study findings revealed that majority of the elderly persons' families (51.6%) had less than three family members leaving in the homes with 7.6 percent elderly persons living alone. Information from the FGDs revealed that food production tend to be lowered by the lack of young and energetic persons who were said to have migrated to urban centres in search of jobs leaving elderly persons by themselves. However, information from the public health officer revealed that majority of the households of elderly persons had children who were not of productive ages. He stated that some of these children had been left behind by deceased children due to the rise of HIV and AIDS and by others who have left for towns in search of jobs thus, the elderly parents are left with the burden of bringing up these children. From the study there were families that the elderly persons had adopted children to live with after the maturation of their own children who had moved to venture into their own lives elsewhere.

The respondents' level of education was also sought and responses tabulated in Table 4.6.

Table 4.6 Respondents' level of education

Level of education	Frequency	Percent
Primary	12	3.9
Secondary	8	2.7
College	6	1.9
University	2	0.7
Never attended school	276	90.8
Total	304	100.0

Table 4.6 shows that majority of the respondents (90.8%) never attended school at any one time in their lives. The second FGD stated that there were a high number of residents in the study area who had not attained basic education. These findings were a clear revelation of the high existing levels of formal illiteracy in the area. The researcher sought to find out the occupation of the respondents and presented the findings in Table 4.7.

Table 4.7 Respondents' occupation

Occupation	Frequency	Percentage
Crop farming	148	48.7
Animal husbandry	92	30.3
Casual labour	22	7.2
Business	38	12.5
Skilled labour	4	1.3
Employment	0	0.0

N = 304

From the study findings, most of the respondents (48.7%) engage in crop farming, while 30.3 percent indicated that they rear animals, 7.2 percent were casual labourers, 12.5 percent do business and 1.3 percent engaged in skilled labour to earn a living. No respondent indicated that they were still employed. These findings were confirmed by the FGD where most of the participants engage in crop farming and animal husbandry after retirement to earn a living. These findings implied that majority of the households tabled their meals from farm produce.

4.4 Characteristics of households with elderly persons

For the study to identify with the respondents' household, the researcher sought to examine the demographic characteristics of the household with elderly persons. This information was to help the researcher answer research question one (I) of the study, by examining the influence of the characteristics of the households on the level of food security. Therefore, the researcher sought to find out the type of building materials used to build house structures in the homes and presented the findings in Table 4.8

Table 4.8 Types of building materials used for house walls

Building materials	Frequency	Percentage
Stone	4	1.3
Bricks	0	0.0
Timber	90	29.7
Iron sheet	8	2.6
Mud	202	66.4
Total	304	100.0

The study findings show that, majority of the respondents' house walls (66.4%) were constructed of mud. The area's County Assembly representative stated that majority of the houses were built of mud due to the poor infrastructure network especially in the lower part of the Sub County. These findings implied that residents were living in high level of poverty. Then the researcher sought to find out the type of roofing used for house structures in the households of elderly persons and presented the findings in Table 4.9

Table 4.9 Types of roofing materials for household structures

Occupation	Frequency	Percentage
Iron sheets	252	82.9
Grass thatched	52	17.1
Total	304	100.0

Table 4.9 shows that, majority of the house structures in the households (82.9%) are roofed with iron sheets. Information from FGDs stated that they prefer using iron sheet for roofing over thatching with grass because grass thatched roofs need regular replacement and the elderly persons were not in the capacity to do these regular routine, a condition that was observable by the researcher during the study. Further, the researcher sought to examine the sanitation facilities in the households to get an insight on the living conditions of the elderly persons. Table 4.10 presents the findings.

Table 4.10 Availability of sanitation facilities

Sanitary facility		frequency	Percentage
Toilet	Available	16	5.3
	Not available	288	54.3
Pit latrine	Available	301	99.0
	Not available	3	1.0

N = 304

From the study findings, a few of the households (5.3%) indicated that they had toilets inside their houses while almost all the households (99%) had a pit latrine. Information from the public health officers also revealed that most of the homes have a pit latrine available and the few that did not have were using neighbours latrines since theirs had been damaged and they were not able to repair them. He also stated that in some households toilets were provided for by the children whose aging parents had squatting problems due to arthritis. The sanitation aspect was realized not to pose a challenge to the health of the elderly since almost all homesteads had a sanitation facility available. Then the researcher sought to find out the sources of basic essentials used in the households of elderly persons and presented the findings in Table 4.11.

Table 4.11 Sources of basic essentials

Sanitary facility	frequency	Percentage
Drinking water -Borehole	5	1.6
Piped water	79	26.0
Rivers and streams	220	72.4
Cooking fuel Charcoal	2	0.7
Gas	6	2.0
Firewood	296	97.4
Paraffin	0	0.0
Electricity	0	0.0

From the study findings, majority of the households got their drinking water from streams or rivers, while they mainly use firewood as cooking fuel. These findings were confirmed by the first FGD of local elderly persons who stated that most of them lived alone and could not cook all the meals since they did not have the strength to fetch water and firewood on daily basis. These findings implied that some elderly persons would skip meals during the day. These findings were a clear indication that the situation elderly persons found themselves in made their living food insecure not because of lack of food but were not able to utilize it due to lack of cooking time, tiredness and loneliness.

The researcher sought to find out where the food eaten in the households was gotten from and presented the findings in table 4.12.

Table 4.12 Sources of food eaten in households

Source of food	Frequency	Percentage
Farm produce	261	85.9
Market	24	7.8
Relief food	0	0.0
Friends, relatives and neighbours	19	6.3
Total	304	100.0

Table 4.12 shows that, majority of the elderly persons' households (85.9%) depended on farm production to feed their families while 6.3 percent rely on food given to them from friends, relatives and neighbours. The FGDs stated that majority of the elderly persons in the study area produced food from their farm though not enough to sustain them between harvests. Hence, the dependence on donations from their children, relatives, friends and well wishers. These findings show uncertainty in accessing food to be used in the households. It implies that these households are at one point or the other worried whether the food they had would last them until they got more donations or whether what they had would be enough to feed everyone in the family. These findings reveal states of food insecurity in the households when the food is not available for the elderly persons.

Further the researcher sought to establish whether the food produced was enough for consumption and remained for future use, thus the presence of food storage facilities. The findings were presented in table 4.13.

Table 4.13 Presence of food storage facilities in households

Presence	Frequency	Percentage
Yes	86	28.4
No	218	71.6
Total	304	100.0

From the study findings majority of the households did not have food storage facilities like granaries and food stores. Thus these findings triggered the researcher to establish how surplus food was stored in the households. Table 4.14 presents the findings.

Table 4.14 Ways of storing surplus food produced in farms

Storage mode	Frequency	Percentage
No surplus food to store	148	48.7
Sells all surplus food	32	10.5
Store in the house	68	22.4
Stores	56	18.4
Total	304	100.0

From the study findings most of the respondents (48.7%) produce food for consumption and do not remain any food for future use. These findings concur with the agricultural officer's statement that most homes produce food that is consumed while green and nothing goes to stores as future security. She also stated that some of those who harvested their farm produce keep on selling in small portions to elevate their financial income leaving them at the throne of food insecurity.

4.5 Health status and food security

This section was to answer research question two (II) by investigating the influence of elderly persons' health status on the level of food security. To establish food security or insecurity in terms of food accessibility and utilization in households with elderly persons, the researcher provided the respondents with statements to describe the food they ate for the last six months. Table 4.15 presents the responses.

Table 4.15 Respondents perceptions on available food for the last six months

Perception	Frequency	Percentage
We always have enough kind of food we want to eat	4	1.3
We always have enough food but the kind we don't want to eat	147	48.3
Sometimes we do not have enough food to eat	116	38.1
Often we do not have enough food to eat	37	12.3
Total	304	100.0

From the study findings most of the respondents (48.3%) indicated that though food was available in their households it was of kinds they would not want to eat. Those who indicated that sometimes or often they do not have enough food to eat in the last six months showed that there were families that their food security status was uncertain. The respondents who indicated affirmative responses (sometimes and often) on the uncertainty of availability of food in their households depicted severe food insecurity in the households. Therefore, the researcher sought from the respondents the reasons as to why some would indicate sometimes or often did not have enough food and presented the findings in Table 4.16.

Table 4.16 Reasons for sometimes or often lack of enough food

Reasons	Frequency	Percentage
Do not have enough money to buy food	81	26.6
Reluctant to cook	78	25.7
Found it too difficult to get to the store	4	1.3
Not able to eat because of health problems	141	46.4
Total	304	100.0

Table 4.16 shows that, most of the respondents (46.4%) indicated that the most probable reason someone would sometimes or oftenly not have enough food to eat is when they have health problems. These findings implied that when elderly persons are on diet due to some ailments like diabetic or have other health problems associated with aging like being toothless or having toothache, they might not have enough to eat because maybe whatever they are required to eat is out of reach, reluctant to cook or not affordable, which consequently reduces food accessibility and utilization therefore, households are exposed to food insecurity.

The researcher then sought to find out the respondents' perceptions on cases when food is available but not the kind they want to eat and presented their responses on Table 4.17.

Table 4.17 Respondents’ perceptions when food is available but not the kind they want to eat

Perception	Frequency	Percentage
Reluctant to cook	78	25.7
Do not have enough money to buy food	81	26.6
Variety of food we want not available	112	36.8
On diet	33	10.9
Total	304	100.0

Most of the respondents (36.8%) indicated that they disliked the kind of food available and their preferences were inaccessible due to being on diet or very expensive for daily consumption, while others (25.7%) indicated that they were reluctant to cook foods they loved to eat due to the cooking method and procedures required to maintain their medical and nutritional requirements. These findings implied that at some instances elderly persons are faced by hunger not because they do not have food to eat but because of the ailments that crops in and loneliness they are left in as age advances. These findings were confirmed by the medical doctor’s interview who stated that majority of the elderly in the study area suffered an old age malnutrition disorder caused by lack of accessibility to the right food nutrients and utilization. Therefore the findings reveal that diseases hinder them from being active in food production, which is a clear indication of lack of food availability that leads to food insecurity.

The researcher sought to establish the effects of health conditions on food security. Table 4.18 presented respondents responses on health conditions that hindered their food security.

Table 4.18 Responses on health conditions that hinder food security

Responses	Frequency	Percent
Arthritis	92	30.3
Diabetes	51	16.8
Hypertension	46	15.1
Tooth ache/toothlessness	70	23.0
Dementia	6	2.0
Poor eye sight	8	2.6
Back ache	14	4.6
None	17	5.6
Total	304	100.0

Table 4.18 shows that most of the respondents (30.3%) were not able to work in their farms because of arthritis related ailments a condition that hindered their movement. Tooth aches, diabetes, and hypertension were also ailments that were reported to interfere with the elderly persons' participation in their farms, while toothlessness hinders them from eating available varieties of food, thus accessibility and utilization of food are interfered with threatening food security. FGDs also indicated that diseases that they faced as their ages advanced hindered their day to day activities in the farms. These findings implied that food insecurity among the elderly persons was contributed largely by their health conditions. Information from the agricultural officer stated that food production entailed active labour force and with the deteriorating health of elderly persons they are not able to cultivate their farms due to constant ailing. Therefore, much of their land was left uncultivated and food produced was

not enough to sustain the households. The medical doctor interviewed stated that chronic diseases like arthritis, Diabetes and hypertension reduces healthy aging. These findings concur with Dr. James Kigera of the PCEA Kikuyu hospital who indicated that a third of Kenyans aged 50 years and above may be suffering from a disease of bones; known as osteoporosis or porous bones. In his findings he indicated that previously it was a low priority disease but now medical doctors say it is becoming a major health concern which eventually leads to disability in older persons, limiting their capacity to be economically productive.

4.6 Influence of aging and food security

To answer objective three (III) of the study the researcher sought to establish on the influence of age related issues that contribute to the level of food security in their households. Thus the researcher sought to find out whether the elderly persons lived with other family members and if the food available was enough for all dependants. Therefore the researcher sought to find out the members in the households and presented the findings in Table 4.19.

Table 4.19 Respondent responses on family members in their households

Family members	Frequency	Percent
My children	38	12.5
My grandchildren	156	51.3
Adopted children	8	2.6
No dependants	102	33.6
Total	304	100.0

Table 4.19 shows that in majority of the elderly persons' households (51.3%) indicated that they lived with grandchildren, while 33.6 percent indicated that they lived alone, though 2.6 and 12.5 percent represented the few who lived with adopted children and their own children respectively. An interview with a group of teachers from the study area revealed that there were minor children living under the custody of elderly persons. These findings imply that a high population of the elderly persons were either living lonely by themselves or were giving care to minors not of productive age, a clear indication that the lonely elderly persons would not be able to partake all meals in a day by themselves or were strained by the responsibility of feeding young children in their households a condition that would show food insecurity due to lack of availability or utilization of food. These findings prompted the researcher to find out whether they personally took care of these children or they had care-givers to assist them raise these children. The findings were presented in Table 4.20

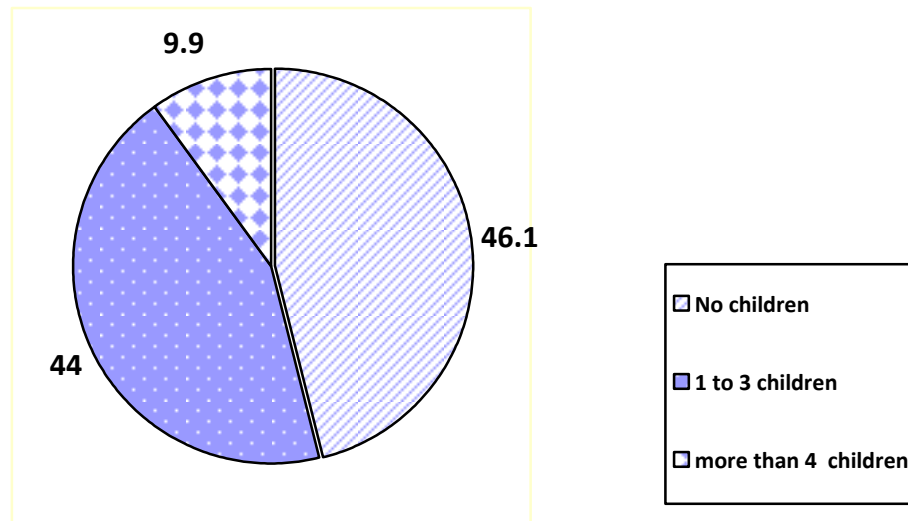
Table 4.20 Presence of care-givers in elderly households with children

Present	Frequency	Percent
Yes	20	6.6
No	144	47.4
Not applicable	140	46.1
Total	304	100.0

From the study findings, majority of the respondents who indicated they lived with young children in their households (53.9%) most of them (47.4%) had no care givers in their households to help them with the responsibilities of raising these children, while only 6.6 percent had care givers to assist take care of children in their households and 46.1 percent

either lived alone or lived with their own children who were of age to feed themselves. These findings were confirmed by the County Assembly Ward Representative who stated on the prevalence of high poverty levels in the households with elderly persons that lived with children who were either orphaned grandchildren or relatives' adopted children whose parents had died of HIV and AIDs or others left behind as their parents ventured for greener pasture into urban areas. These had left the elderly persons with the burden of raising these children despite their advancing ages. These findings revealed that these elderly persons were living in abject poverty that leads to food insecurity when they find themselves as providers. To investigate the burden on the elderly persons of care giving, the researcher sought to find out the numbers of children living in the households. The findings were presented in Figure 4.1.

Figure 4.1 Number of children living in households



From the figure 4.1, majority of the households (44%) with children, had one to three children who were below seventeen years old, with an alarming 9.9 percent indicating more

than four children. These findings imply that elderly persons were weighed down by the responsibilities of raising children in their latter stages of life. Therefore these findings revealed that the households were in the risk of facing basic essential shortcomings especially food, when the elderly persons could not afford to feed dependents.

To confirm these revelations the researcher provided the respondents with the Household Food Insecurity Access Scale (HFIAS) measurement tool to find out on the prevailing condition in the level of food security in the households with children. The findings were presented in Table 4.21.

Table 4.21 Household Food Insecurity Access Scale measurement tool on households with children

Question	Invalid cases		Rarely		Sometimes		Often		No		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
In the last 6 months, did you ever cut the size of any of the children's meals because there wasn't enough food?	140	46.1	93	30.6	47	15.5	8	2.6	16	5.2	304	100.0
In the last 6 months, did any of the children ever skip meals because there wasn't enough food?	140	46.1	110	36.2	70	23.0	32	10.5	10	3.3	304	100.0
In the last 6 months, were children ever hungry but you couldn't just afford food?	140	46.1	131	43.1	69	22.7	18	5.9	4	1.3	304	100.0
In the last 6 months, did any of the children ever go hungry for a whole day because there wasn't any food?	140	46.1	110	36.2	96	31.6	12	3.9	4	1.3	304	100.0

The study findings reveal that in households with children, 48.7 percent children cut meals because there wasn't enough food to eat, 69.7 percent indicated that they skipped the meals because there wasn't enough food, 71.7 percent went hungry the whole day because there wasn't any food. These findings implied that food in the households was insecure due to it being unavailable, inaccessibility and unutilized. Whenever households reported that, either; sometimes, rarely or often they did not have enough food at one point they were considered food insecure. Therefore from the HFIAS scale the levels of food security were 2.8 percent of the households with children were food secure, 36.5 percent were mildly food insecure, 23.2 percent were moderately food insecure while 5.7 percent were severely food insecure. Then the researcher used the Household Food Insecurity Access Scale to establish the level of food security of all households with elderly persons and presented the findings on Table 4.22.

Table 4.22 Household Food Insecurity Access Scale measurement tool on households

Question	No		Rarely		Sometimes		Often		TOTAL	
	F	%	F	%	F	%	F	%	F	%
In the past 6 months, did you worry that your household would not have enough food?	4	1.3	44	14.5	197	64.8	59	19.4	304	100.0
In the past 6 months, were you or any household member not able to eat the kinds of food you preferred to eat because of lack of resources?	5	1.6	61	20.1	110	36.2	128	42.1	304	100.0
In the past 6 months, did you or any household member have to eat a limited variety of foods due to lack of resources?	0	0.0	34	11.2	118	38.8	152	50.0	304	100.0
In the past 6 months, did you or any household member have to eat some foods that you really did not want because of lack of resources to obtain other types of foods?	0	0.0	18	5.9	56	18.4	230	75.6	304	100.0
In the past 6 months, did you or any household member have to eat a smaller amount of food than you felt you needed?	8	2.6	32	10.6	94	30.9	170	55.9	304	100.0
In the past 6 months, did you or any member of your household have to eat fewer meals in a day because there was not enough food?	9	3.0	53	17.4	127	41.8	115	37.8	304	100.0
In the past 6 months, was there ever no food to eat of any kind in your household because of lack of resources to get food?	29	9.5	220	72.4	40	13.2	15	4.9	304	100.0
In the past 6 months, did you or any household member go to sleep at night hungry because there was not enough or no food?	182	59.9	15	4.9	77	25.3	30	9.9	304	100.0
In the past 6 months, did you or any member of your household go a whole day and whole night without eating anything because there was not enough food?	293	96.4	7	2.3	4	1.3	0	0.0	304	100.0

To calculate the levels of food security from the measurement scale the following formula was used:

$$\frac{\text{Sum of HFIAS scores in the sample}}{\text{Number of households in the sample}} \times 100$$

The measure of food security using Household Food Insecurity Access Scale measurement tools were ranged using the three universal indicators that is mild, moderate and severe to depict food insecurity, where none of the three indicators reflects, the aspect of food security is achieved. Therefore, from the study findings an average 19.4 percent of households indicated that they were food secure at all times in the last six months since they differed to the statements that were to indicate food insecurity. The statements that depicted mild food insecurity (18.4 %) where by in the households they worried about not having enough food (32.9%), were unable to eat the food they preferred due to unavailability (32.8%), they were forced to eat foods that were not of their prevalence (33.3%) and ate a monotonous diet that was available (33.3%). Some (32.5%) ate monotonous diet or undesirable foods so as to ensure that they always had food and others (32.3%) had to start cutting back on the quantity of food to ensure that the foods were enough. This revealed that they (29.3%) were faced by moderate food insecurity. While those that depicted severe food insecurity (32.5%) oftenly skipped meals to cut the number of meals they ate or ran out of food, 13.4 percent went to bed hungry and 1.2 percent were hungry a whole day and night even as frequently as rarely. The findings from Table 4.21 and Table 4.22 reveals that the prevalence of food insecurity is higher among elderly persons living in a household with a child/children present.

4.7 Farm practices and levels of food security

To establish whether farming is an economic activity in households with elderly persons (Research question IV) the researcher sought to find out aspects that influence levels of food security based farm practices. This focused on land ownership, size, use, farm implements and farm production. The findings on Land ownership are presented in Table 4.23.

Table 4.23 Source of acquiring land in households with elderly persons

Source of land	Frequency	Percent
Inherited from family	212	69.7
Bought	36	11.8
Leased	28	9.2
Given temporary	4	1.3
Given permanently	24	7.9
Total	304	100.0

Table 4.23 shows that majority of the elderly persons' households (69.7%) acquired their land through family inheritance, only 11.8 percent indicated that they bought their land, 9.2 percent leased land to farm on while 1.3 percent and 7.9 percent indicated that they had been given their land temporary or permanently respectively. Information from the FGDs revealed that majority of the residents had acquired land from their forefathers and some of them were given land permanently during the post-colonial era. These findings were a clear indication that there existed residents who had moved in from upper regions of Sub County to settle in the study area while most of the area's residents are ancestral locals due to the fact that they acquired their land through inheritance.

Further the researcher sought to establish the average size of land owned by the households and presented the findings in table 4.24.

Table 4.24 Average land size owned per household

Land size in Acres	Frequency	Percent
1 – 2 Acres	180	59.2
3 – 10 Acres	120	39.5
Over 11 Acres	4	1.3
Total	304	100.0

The study findings show that majority of the households in Imenti central sub county owned land sizes of an average of 1 to 2 acres (59.2%). An interview with the local chiefs revealed that due to the climatic conditions of the study area majority of the households found on the lower dry region of the Sub County owned large chunks of land an area that geographically covered two thirds of the Sub County area. The upper wet region had high population due to land defragmentation of this climatically favourable region. These findings reveal that majority of the households practice small scale farming after defragmentation of lands that fell under favourable regions, implying that food production was not high due to the small farms available.

To ensure utilization of land, the researcher sought to find out whether the available land was subdivided among family members, leased out, left idle, or whether it was wholly utilized.

The findings were presented in table 4.25.

Table 4.25 Respondents responses on Land subdivision

Land subdivision	Frequency	Percent
Sub division to family members	186	61.2
Utilize wholly	30	9.9
Left idle	24	7.9
Leased out	64	21.1
Total	304	100.0

Table 4.25 shows that majority of the households(61.2%) indicated that they had sub divided their land to their children, while 21.1 percent leased out portions of their land, with only 7.9 percent and 9.9 percent left their land idle or used their land wholly respectively. Information from some of the respondents and FGDs revealed that elderly persons were not able to fully utilize their land therefore they either sub divided it among their children or leased out or left the land they could not manage idle. These findings implied that households could not produce enough food for consumption because land owned was not extensively utilized. These findings triggered the researcher to investigate the extent of land cultivated by households after the sub division of their land to the family members per year. The findings were presented in table 4.26.

Table 4.26 Average land size cultivated per year

Land size	Frequency	Percent
Half of the land	125	41.1
A quarter of the land	136	44.7
Idle land	13	4.3
The whole land	30	9.9
Total	304	100.0

The study findings show that most of the respondents indicated that they either cultivated quarter of their land 44.7 percent or a half of the land 41.1 percent, while 9.9 percent indicated that they cultivated their whole piece of land, with 4.3 percent leaving their pieces of land extensively idle. These findings implied that the pieces of land elderly persons were left with after sub dividing to their family members were not put into maximum use for food production. This poses a danger on the ability to produce enough food to run them throughout the year. To find out the source of labour within the households the researcher requested on whether they received any support in their farm activities. Table 4.27 presents the findings.

Table 4.27 Respondents' responses on whether they receive help in farm activities

	Frequency	Percent
Yes	32	10.5
No	272	89.5
Total	304	100.0

From the study findings majority of the elderly persons (89.5%) indicated that they personally cultivated their farm, while 10.5 percent agreed that they got help in their farm activities. These findings reveal that most of the elderly persons were left living alone in the rural areas due to the increased rural-urban migration by the younger generation and when their grown children start their independent living. Therefore they have no one to help them in the farm activities. According to the Area chief the elderly persons without relatives living near them suffer a great deal since they are not able to work in their farms due to their ailing health and deteriorating strength.

The researcher sought to find out from the minority who indicated that they got help in farm activities the mode of compensation for the work done. Their responses were presented in figure 4.2 below.

Figure 4.2 Responses on mode of compensation for labour in their farm

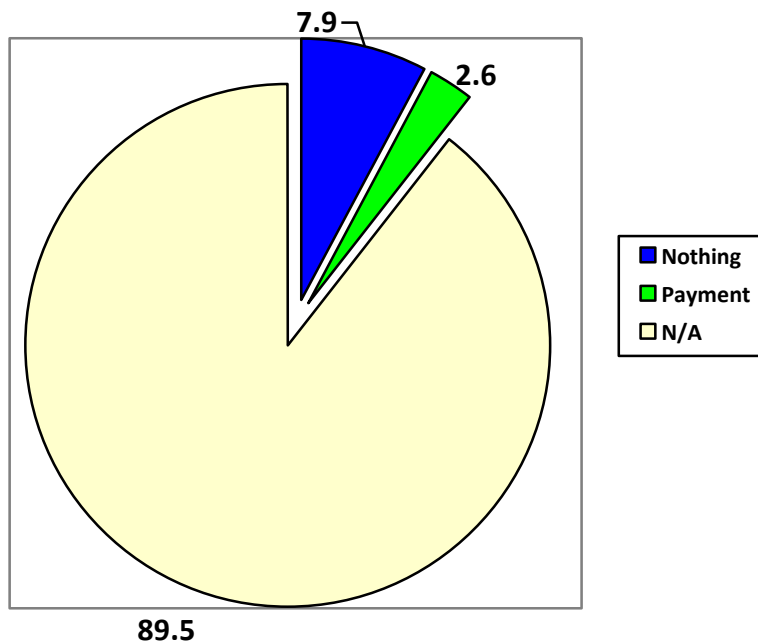


Figure 4.2 shows that out of the 10.5 percent of the respondents who indicated that they got help in their farm work, 7.9 percent indicated that they do not pay anything for the work done, while 2.6 percent indicated that they paid for hired labour in their farms either in cash or food stuffs. These findings imply that the percentage who indicated that they did not pay for labour in their farms were either being helped by well-wishers or they worked with grandchildren that they lived with. Only very few households were in the capacity of hiring labour for their farms, which indicated the high level of poverty aspects among the households. These findings were confirmed by the Area agricultural officer who stated that most elderly persons are left home after their children go to town to seek for jobs and also due to lack of money they are not able to hire labour in their farms, thus leaving sections of their farms uncultivated. She further stated “We encourage them to make kitchen gardens that are easier to manage rather than working in the larger portions of the farms.”

To investigate on the land utilization the researcher sought to establish what kinds of farming they engage in by sourcing to know the type of crops they planted. The findings were tabulated in table 4.28.

Table 4.28 Type of crops grown among households with elderly persons

Type of crop	N =291 Long rains (Mar to June)				N = 291 Short rains (Oct to Dec)			
	F	%	KG	MEAN kg	F	%	KG	MEAN kg
Food crop								
Beans	120	39.5	3124	10.3	175	57.6	5837	19.2
Maize	86	28.3	10620	34.9	262	85.9	98475	323.9
Potatoes	68	22.4	16280	53.6	47	15.4	5472	31.1
Sweet potatoes	76	25.0	432	1.4	76	25.0	9456	0.98
Arrowroots	12	39.5	96	0.3	15	4.9	297	0.4
Yams	35	11.5	75	0.2	38	12.5	136	0.7
Sorghum	91	29.9	9562	31.5	0	0.0	215	0
Cowpeas	86	28.3	6532	21.5	0	0.0	0	0
Black beans	87	28.6	1320	4.3	0	0.0	0	0
Cash crop								
Tea	18	5.9	498	1.6	18	5.9	364	1.2
Coffee	6	2.0	4158	13.7	6	2.0	0	0.0
Cotton	9	3.0	2025	6.7	0	0.0	0	0.0
Tobacco	0	0.0	0	0.0	5	1.6	825	2.7
Fruits								
Avocados	15	4.9	8455	27.8	0	0.0	0	0
Mangoes	163	53.6	46870	154.2	163	53.6	0	0
Oranges	4	1.3	260	0.9	4	1.3	72	0.2
Paw paw	37	12.2	189	0.6	37	12.2	15	0.05
Bananas	126	41.4	98653	324.5	126	41.4	54879	180.5
Vegetables								
Kales	69	22.7	7432	24.4	28	9.2	1245	4.1
Cabbages	10	0.3	25	0.08	19	6.3	32	0.1
Carrots	38	12.5	96	0.3	10	3.3	63	0.2
Indigenous	172	56.6	521	1.7	191	62.8	4563	15.0

Table 4.28 shows that majority of the households (87.5%) grow food crops on their farms while only 12.5 percent of the families grow cash crops on their farms. From these findings food crops grown vary from root crops, grains, fruits and vegetables. The root crops are not extensively grown due to their low production that is less than a kilogram available for all households on both seasons. Grains like cowpeas and sorghum take long to mature thus their

production is only once in a year and they are not extensively produced. Black beans are planted only in long rains because they require warm intervals of weather and due to their demand for labour and expensive care they are not common in households with elderly persons. However, beans are grown on both seasons, though their production is higher during the short rain season. The production of maize is lower in the first season (long rains) though a relatively high quantity is produced on the short rains. Cash crops are grown on the study area depending on the climatic conditions of the region with tea and coffee being grown on the upper region of the sub county and due to the land defragmentation only very small quantities are produced in the households with elderly persons. Cotton and tobacco do well in dry lands therefore they are grown on the lower regions of the sub county, but due to their required heavy labour they are produced in very small quantities.

The study findings reveal that since the study area is a banana and mango productive region at least there is a crop of either of the fruits in the households, though production of other fruits like oranges, paw paw and avocados are grown in smaller quantities.

Therefore the researcher sought to find out what other farm practices the residents engage in other than crop farming, their responses were tabulated in table 4.29.

Table 4.29 Other farming practices other than crop farming

Farming practices	Frequency	Percent
Animal husbandry	276	90.8
Bee keeping	28	9.2
Indigenous chicken keeping	261	85.9

N = 304

Other than farming the study findings reveal that majority of households of elderly persons (90.8%) in Imenti Central Sub County practice animal husbandry to earn a living, 9.2 percent of the respondents indicated that they practice bee keeping while 85.9 percent indicated that they reared indigenous chicken in small numbers. These findings were confirmed by a focus group discussion with some retirees who indicated that animal rearing like cattle, goats and sheep has become an easier way for them to earn a living.

The researcher sought to find out the availability of farm implements in households with elderly persons and tabulated the findings in Table 4.30.

Table 4.30 Farm implements in households with elderly persons

Implement	N =304			
	F	% Number of tools		MEAN %
Harvesting				
Harvester	10	3.3	0	0.0
Hands	304	100.0	100	100.0
Planting and tilling				
Jembes	94	30.9	158	1
Pangas	296	97.4	444	2
Ox ploughs	22	7.2	0	0
Tractors	5	1.6	0	0

From the study findings, majority of the households relied on manual labour to harvest their farm produce with only 3.3 percent of the households were able to afford hiring harvesters. These findings implied that due to the diminishing energy not much of food was planted

explaining the reason they were able to harvest with their hands. Information on other farm implements revealed that all households had at least a jembe and two pangas, while only 7.2 percent of the households hire ox ploughs to till in their farms and 1.6 percent hire tractors with the help of their able families. These findings implied that the farm implements for planting and tilling were not a challenge since the elderly persons only worked on small portions of their land and those with larger portions hired labour or implements.

The problem of food insecurity especially among the elderly can be linked to poverty, lack of labor in their farms, climatic changes and low levels of skilled agricultural practices. The elderly persons were enlightened on matters that would lead to high food production and food utilization like food preservation and storage, among others. Therefore the researcher sought to find out ways the elderly households improve their farms' produce. The findings were tabulated in table 4.31.

Table 4.31 Ways to improve farm produce

Methods	Frequency	Percent
Add manure	164	53.9
Build gabions	0	0.0
Terracing	10	3.3
Plant recommended trees /plants	47	15.5

N =304

From the study findings, majority of the respondents (53.9%) indicated that due to the extensive land use they add manure to their farms after planting to boost crop production, while 3.3 percent and 15.5 percent indicated that terracing and planting recommended trees or plants were among the measures they under take to improve land production and reduction of soil erosion. None indicated that they build gabions due to the labour required. The area agricultural officer stated that they advocate the importance of building gabions to the residents and also sensitize the community on environmental conservation of soil by planting nappier grass and other clippers like sweet potatoes on sloppy lands to reduce fertile soils from being eroded away. however, not many of the residents embrace the information and implement the same. This has therefore led to low food production in the households with elderly persons.

Regarding to food storage, the demographic characteristics of households with elderly persons revealed that majority of the households (71.6%) did not have storage facilities in their homes and stored their food within the houses they lived in. Therefore the researcher sought to find out how they preserved harvested food and presented the findings in table 4.32.

Table 4.32 Methods of food preservation

Storage facility	Frequency	Percent
Use of pesticides	117	38.4
Traditional methods	48	15.8
NA	139	45.7
Total	304	100.0

From the study findings, in most elderly households the food produced mainly grains from farms is preserved by use of pesticides (38.4%), while 15.8 percent still rely on the traditional methods of food preservation like adding ashes to the grains. Majority of the respondents (45.7%) indicated they did not harvest surplus food to be preserved for long. These findings implied that in majority of the households food was either eaten green, sold out after harvest as a source of income or production was not a lot to keep for long.

Further for the researcher to familiarize with the various aspects that hinder or promote food security in households with elderly persons she sought to find out from the respondents challenges they faced that lowered or hindered food production in their households. Their responses were tabulated in table 4.33.

Table 4.33 Challenges that hinder food production in households

Challenges	Agreement		Disagreement	
	F	%	F	%
Lack of finances to purchase food	272	89.5	32	10.5
Poor / insufficient rainfall patterns (Weather fluctuation)	290	95.4	14	4.6
The size of the land inadequate	30	9.9	274	90.1
Lack of labour (Domestic and in farms)	272	89.5	32	10.5
Cost of farm input very high to afford	301	99.0	2	1.0
Lack of water for irrigation	281	92.4	23	7.6
Pests and diseases attacking crops	283	93.1	21	6.9
Poor soils for crop production	248	81.6	56	18.4
Health related problems	287	94.4	17	5.6
Lack of agricultural extension services	176	57.9	128	42.1
Poor road networks	218	71.7	86	28.3
Poor markets for farm products	218	71.7	86	28.3
Lack of knowledge in foods and nutrition	261	85.9	43	14.1
Loneliness	23	7.6	281	92.4
Lack of farm implements	178	58.6	126	41.4
Total	3338	1098.2	1221	401.8
Average	222.5	73.2	81.4	26.8

From the study findings, majority of the respondents (73.2%) were in agreement with the statements provided by the researcher on various aspects that hinder food production. Two of the statements recorded high disagreement from the respondents (that loneliness 92.4 percent and size of land 90.1 percent). These findings reveal that lack of resources in the study area depicting poverty levels greatly hindered food production than climatic constraints they experienced.

The researcher finally sought to establish whether there are strategies put in place to cater for elderly persons' food security during hunger and presented the findings in Table 4.34

Table 4.34 Respondents strategies to address for food insecurity

Strategies	Frequency	Percent
Borrow food from friends, relatives and neighbours	36	11.8
Casual labour to get money to buy food	13	4.2
Relief food from donor agencies	0	0.0
Community based programs to feed elderly persons	0	0.0
Sale of livestock and poultry	2	0.7

N = 304

Majority of the elderly persons indicated that there were no organized community-based programmes/strategies to improve food production. 11.8 percent indicated that their family members and well-wishers gave them food when their stores ran out, but 4.2 percent indicated that they looked for casual labour to get money for buying food, while others (0.7%) sold their livestock and poultry like cows, goats and chicken for food. There were no community based programs in the study area to intervene on the elderly food levels status. Information from the FGD revealed that elderly persons were neglected since no measures had been put in place to cater for food supply especially during dry seasons. The County Representative stated that the government measures to elevate elderly persons' livelihood

throughout the country (Cash Transfer for the older persons) was yet to be implemented in the Sub County.

4.9 Relationship between respondents' age bracket and the levels of food security

The study hypothesized that there is a direct relationship between the independent variables and the dependent variables. The relationship was cross tabulated in Table 4.35.

Table 4.35 Cross tabulation of levels of food security * Respondents' age bracket

Count		Respondents' age bracket				Total	
		65 – 70 years	71 - 75 years	76 - 85 years	Over 85 years	F	%
		Levels of food security	Food security	3	8	6	42
	Food insecurity without hunger	11	13	9	23	56	18.4
	Food insecurity with moderate hunger	9	17	12	52	90	29.3
	Food insecurity with severe hunger	1	10	13	75	99	32.5
Total	Frequency	24	48	40	192	304	
	Percent	7.9	15.8	13.2	63.1	100.0	

Table 4.35 revealed that age is a determinant factor on food production. From the study findings only 19.4 percent of the households are food secure overall while 80.6 percent of the households are food insecure. Moreover the study area was revealed to be food insecure with severe hunger because most of the households (32.5 percent) were severely food insecure.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions and recommendations arrived at. It also gives suggestions for further studies.

5.2 Summary of the study

The purpose of the study was to investigate the socio-economic factors affecting food security in households of elderly persons in Imenti Central Sub County, Kenya. The objectives were to assess demographic characteristics of households with elderly persons, health status, aging status and farming practices in relation to food security in the Sub County. Levels of households' food security was also established. The study was based on the disengagement theory of aging, the activity theory of aging and the social capital theory all which attempts to explain relational, withdrawal, isolation and social ties in terms of perceptions to confront poverty and vulnerability within provision of basic needs. The study adopted a descriptive survey design. The target population of the study comprised of 80 households in each of the four divisions within Imenti Central Sub County. The sample size comprised of 320 households with elderly persons purposively sampled, key informants to address food security matters facing the aged and focus group discussion with groups of elderly persons. Questionnaire tools were adopted to collect the data from elderly persons, while interview guides collected data from key informants and the FGDs. Test- retest method was used to test the reliability of the tools. A total of 304 elderly persons' questionnaires were returned, a questionnaire return rate of 95% was achieved which was deemed very good for data analysis.

The data collected was analyzed both qualitatively and quantitatively.

5.3 Summary of the findings

From the study, the respondents demography gave an insight on the respondents' characteristics, thus most of the elderly persons who participated in the study (63.1%) were over 80 years old revealing that elderly persons in the area are past the productive age and they can be considered to be too old to actively be involved in food production. There are more female elderly persons (64.5%) than male elderly persons (35.5%), while majority of the elderly persons (52.6%) in Imenti Central Sub County are widowed. The study findings revealed that majority of the elderly persons' families 55.3 percent had less than five family members leaving in the homes with most elderly persons indicating that they live alone. These findings implies that food production tend to be lowered by the lack of young and energetic persons who migrate to urban centres in search of jobs leaving elderly persons alone in the rural Imenti Central Sub County.

On the demographic characteristics of households, majority of the elderly persons' house structures (66.4%) were built of mud. This was due to the poor infrastructure network especially in the lower part of the Sub County. These findings implied that residents were living in high level of poverty. House structures in the households (82.9%) are roofed with iron sheets and they prefer using iron sheet for roofing over thatching with grass because grass thatched roofs need regular replacement and the elderly persons were not in the capacity to do these regular routine, a condition that was observable by the researcher during the study. A few of the households (5.3%) indicated that they had toilets inside their houses while almost all the households (99%) had a pit latrine and the few that did not have were using neighbours latrines since theirs had been damaged and they were not able to repair them. Some households with toilets had been provided for by the children whose aging

parents had squatting problems due to arthritis. The sanitation aspect was realized not to pose a challenge to the health of the elderly since almost all homesteads had a sanitation facility available. Majority of the households got their drinking water from streams or rivers, while they mainly use firewood as cooking fuel and since most of them lived alone they could not cook all the meals for they did not have the strength to fetch water and firewood on daily basis. Thus, elderly persons found themselves living under food insecurity not because of lack of food but were not able to utilize food. Majority of the elderly persons' households (85.9%) depended on farm production to feed their families while 6.3 percent rely on food given to them from friends, relatives and neighbours. These findings show uncertainty in accessing food to be used in the households and imply that the households are at one point or the other worried whether the food they had would last them until they got more donations or whether what they had would be enough to feed everyone in the family.

On health status, most of the respondents (48.3%) indicated that though food was available in their households it was of kinds they would not want to eat. Those who indicated that sometimes or often they do not have enough food to eat in the last six months showed that there were families that their food security status was uncertain. The respondents who indicated affirmative responses (sometimes and often) on the uncertainty of availability of food in their households depicted severe food insecurity in the households. The most (46.4%) probable reason someone would sometimes or often not have enough food to eat is when they have health problems. Elderly persons are on diet due to some ailments like diabetes or have other health problems associated with aging like being toothless or having toothache, they might not have enough to eat because maybe whatever they are required to eat is out of reach, reluctant to cook or not affordable, which consequently reduces food accessibility and

utilization therefore, exposing households to food insecurity. Most of the respondents (36.8%) indicated that they disliked the kind of food available and their preferences were inaccessible due to being on diet or very expensive for daily consumption, while others (25.7%) indicated that they were reluctant to cook foods they loved to eat due to the cooking method and procedures required to maintain their medical and nutritional requirements. At some instances elderly persons are faced by hunger not because they do not have food to eat but because of the ailments that crops in and loneliness they are left in as age advances. Majority of the elderly in the study area suffered an old age malnutrition disorder caused by lack of accessibility to the right food nutrients and utilization, hindering them from being active in food production, which is a clear indication of lack of food availability that leads to food insecurity. Most of the respondents (30.3%) were not able to work in their farms because of arthritis related ailments a condition that hindered their movement. Tooth aches, diabetes, and hypertension were also ailments that were reported to interfere with the elderly persons' participation in their farms, while toothlessness hinders them from eating available varieties of food, thus accessibility and utilization of food are interfered with threatening food security.

Aging revealed that majority of the elderly persons' households (51.3%) indicated that they lived with grandchildren, while 33.6 percent indicated that they lived alone, though 2.6 and 12.5 percent represented the few who lived with adopted children and their own children respectively. The study further revealed that there were minor children living under the custody of elderly persons. Therefore a high population of the elderly persons were either lonely or were giving care to minors not of productive age, a clear indication that the lonely elderly persons would not be able to partake all meals in a day or were strained by the

responsibility of feeding young children in their households. This condition indicates food insecurity due to lack of availability and utilization of food. Majority of the respondents who indicated they lived with young children in their households (53.9%) most of them (47.4%) had no care givers to help them with the responsibilities of raising these children, while only 6.6 percent had care givers. There is higher prevalence of food insecurity in the households with elderly persons that lived with children who were either orphaned grandchildren or relatives' adopted children whose parents had died of HIV and AIDs or others left behind as their parents ventured for greener pastures into urban areas. This situation had left the elderly persons with the burden of raising these children despite their advancing ages posing them to abject poverty leading to food insecurity.

Households with children, 69.7 percent children skipped meals because there wasn't enough food to eat and they lacked enough money to buy food, 48.7 percent indicated that they cut the meal sizes of the food consumed by children, 71.7 percent skipped meals when there was no enough to eat while 71.7 percent went hungry the whole day because there wasn't any food. These findings implied that food in the households was insecure due to it being unavailable, inaccessible and unutilized. Whenever households reported that, either; sometimes, rarely or often they did not have enough food at one point they were considered food insecure. Therefore from the HFSA scale the levels of food security were 6.9 percent of the households were food secure, 39 percent were mildly food insecure, 24 percent were moderately food insecure, while six percent were severely food insecure.

The measure of food security using Household Food Insecurity Access Scale measurement tools were ranged using the three universal indicators that is mild, moderate and severe to depict food insecurity, where none of the three indicators reflects, the aspect of food security

is achieved. Therefore, the study findings generally revealed that an average of 19.4 percent of households indicated that they were food secure at all times in the last six months since they differed to the statements that were to indicate food insecurity. The statements that depicted mild food insecurity (18.4 %) where by, in the households they worried about not having enough food (32.9%), were unable to eat the food they preferred due to unavailability (32.8%), they were forced to eat foods that were not of their prevalence (33.3%) and ate a monotonous diet that was available (33.3%). Some (32.5%) ate monotonous diet or undesirable foods so as to ensure that they always had food and others (32.3%) had to start cutting back on the quantity of food to ensure that the food was enough. This revealed that they (29.3%) were faced by moderate food insecurity. While those that depicted severe food insecurity (32.5%) oftenly skipped meals to cut the number of meals they ate or ran out of food, 13.4 percent went to bed hungry and 1.2 percent were hungry a whole day and night even as frequently as rarely. Therefore, food insecurity is higher among elderly persons living in a household with a child/children present than those without.

On farm practices majority of the elderly persons' households (69.7%) acquired their land through family inheritance, only 11.8 percent indicated that they bought their land, 9.2 percent leased land to farm on while 1.3 percent and 7.9 percent indicated that they had been given their land temporary or permanently respectively. The study also revealed that majority of the residents had acquired land from their forefathers and some of them were given land permanently during the post-colonial era. These findings were a clear indication that there existed residents who had moved in from upper regions of the Sub county to settle in the study area while most of the area's residents are ancestral locals since they acquired their land through inheritance.

The study findings revealed that majority of the households in Imenti central sub county owned land sizes of an average of 1 to 2 acres (59.2%). The climatic conditions of the study area found on the lower dry region of the Sub County caused households to own large chunks of land, while the upper wet region had high population due to land defragmentation of this climatically favourable region for food production. These findings reveal that majority of the households practice small scale farming after defragmentation of lands that fell under favourable regions, implying that food production was not high due to the small farms owned. Majority of the households (61.2%) indicated that they had sub divided their land to their children, while 21.1 percent leased out portions of their land, with only 7.9 percent and 9.9 percent left their land idle or used their land wholly respectively. These findings implied that households could not produce enough food for consumption because land owned was not extensively utilized.

Most respondents cultivated quarter of their land 44.7 percent or a half of the land 41.1 percent, while 9.9 percent indicated that they cultivated their whole piece of land, with 4.3 percent leaving their pieces of land extensively idle. These findings implied that the pieces of land elderly persons were left with after sub dividing to their family members were not put into maximum use for food production. This poses a danger on the ability to produce enough food to run them throughout the year. The elderly persons (89.5%) indicated that they personally cultivated their farm, while 10.5 percent agreed that they got help in their farm activities. These findings reveal that most of the elderly persons were left living alone in the rural areas due to the increased rural-urban migration by the younger generation and when their grown children start their independent living. Therefore they have no one to help them

in the farm activities causing them suffer a great deal since they are not able to work in their farms due to their ailing health and deteriorating strength.

In the households (89.5%) grow food crops on their farms while 12.5 percent of the families have cash crops. From these findings food crops grown vary from root crops, grains, fruits and vegetables. The root crops are not extensively grown due to their low production that is less than a kilogram for all households in both seasons. Grains like cowpeas and sorghum take long to mature thus their production is only once in a year and they are not extensively produced. Black beans are planted only in long rains because they require warm intervals of weather and due to their demand for labour and expensive care they are not common in households with elderly persons. However, beans are grown on both seasons, though their production is higher during the short rain season. The production of maize is lower in the first season though a relatively high quantity is produced on the short rains. Cash crops are grown on the study area depending on the climatic conditions of the region with tea and coffee being grown on the upper region of the sub county and due to the land defragmentation only very small quantities are produced in the households with elderly persons. Cotton and tobacco do well in dry lands therefore they are grown on the lower regions of the sub county, but due to their required heavy labour they are produced in very small quantities.

Other than farming, majority of households of elderly persons (90.8%) practice animal husbandry to earn a living, 9.2 percent of the respondents indicated that they practice bee keeping while 85.9 percent indicated that they reared indigenous chicken in small numbers an easier way for them to earn a living.

Majority of the households relied on manual labour to harvest their farm produce with only 3.3 percent of the households able to afford hiring harvesters. This implied that due to the diminishing energy not much of food was planted explaining the reason they were able to harvest with their hands. Information on other farm implements revealed that all households had at least a jembe and two pangas, while only 7.2 percent of the households hire ox ploughs to till in their farms and 1.6 percent hire tractors with the help of their able families. These findings implied that the farm implements for planting and tilling were not a challenge since the elderly persons only worked on small portions of their land and those with larger portions hired labour or implements.

The study assessed their enlightenment on matters that would lead to high food production like food preservation and storage, among others. Majority of the respondents (53.9%) indicated that due to the extensive land use they add manure to their farms after planting to boost crop production, while 3.3 percent and 15.5 percent indicated that terracing and planting recommended trees or plants were among the measures they under take to improve land production and reduction of soil erosion. None indicated that they build gabions due to the labour required. Though sensitization of the community on environmental conservation of soil by planting nappier grass and other clippers, like sweet potatoes on sloppy lands to reduce fertile soils from being eroded away, not many of the residents embrace the information and implement the same. This has therefore led to low food production in the households with elderly persons. Most elderly households that mainly produced grains preserved by use of pesticides (38.4%), while 15.8 percent still rely on the traditional

methods of food preservation like adding ashes to the grains while majority of the respondents (45.7%) indicated they did not harvest surplus food to be preserved for long. These findings implied that in majority of the households food was either eaten green, sold out after harvest as a source of income or production was not a lot to keep for long.

5.4 Conclusions

Based on the study findings the study came up with the following conclusions:

The households of the elderly persons are faced with abject poverty due to the household structures they live in, which lack food storage facilities hindering food utilization. The elderly persons are faced with health challenges that hinder them from accessing adequate and appropriate foods. They also are not able to use the available types of food due to the ailments they suffer. Elderly persons are faced by various levels of food insecurity due to the deteriorating strength and vulnerability that comes handy with aging. Farming practices by elderly persons depict that they mainly use manual labour limiting their food production. The elderly persons food utilization that entails enlightenment on food production based on food storage, feeding habits and farming methods have lowered food production thus food insecurity.

The study findings also revealed that there were no measures to intervene on the gaps caused by food insecurity in households with elderly persons either community-based or by the government.

5.5 Recommendations

Based on the findings and conclusions of the study, the researcher made the following recommendations;

- The Ministry of Agriculture should sensitize farmers on the most appropriate farming methods in the area to ensure maximum food production. They should also be enlightened on the best practices of food preservation for future food storage. There should also be mechanisms to provide farm inputs to the farmers.
- There should be established programmes that provide homes for the aged to cater for the elderly persons who live alone, sickly and too aged to undertake their daily domestic duties. In addition feeding programmes in households with elderly persons should be formulated and implemented.
- Relatives should be encouraged to follow up on the well being of their aging parents and organize to employ care givers to keep up domestic duties that may be making it difficult for the elderly to access food.
- The ministry of special programmes should consider provision of relief food to households with the elderly persons who suffer severe food insecurity. They should also collaborate with the ministry of education in ensuring children who are under the care of aged people have a school feeding programme to provide at least a meal for them at school.
- The government of Kenya through the programme officers in charge of Cash Transfer Programme for the elderly should come up with sensitization projects for the elderly persons and the entire community to enlighten them on the logistics and operations on the distribution of the programme's funds. It should also allocate budgetary funds to help assist the elderly persons' medication throughout the country. This would cater for their deteriorating health as their age advances.

5.6 Suggestions for further research

The researcher suggests that;

- i. A study should be carried out to investigate the impact of Cash Transfer Programme for elderly persons on the levels of food security in their households.
- ii. A similar study should be replicated in an urban setup for comparative aspects.

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APPENDICES

APPENDIX I

LIST OF PHOTOS TAKEN DURING DATA COLLECTION



One of the widowed respondents, and her orphaned grandchildren. One of the children is physically and mentally challenged outside the only shelter in the household.



An elderly male respondent complains “I live in this deplorable condition alone with nobody to cook or at least fetch drinking water for me. My wife died, my children are married so I rely on well-wishers from the neighborhood for food.”



This respondent’s right foot is disfigured at the knee joint by effects of arthritis and osteoporosis common with many elderly persons in the study area.



The researcher with an elderly respondent together with her grandchildren showing her swollen foot. “Movement is such a problem” She remarks.



The researcher interviewing one of the elderly persons inside the respondent’s house.



A Focus Group Discussion (FGD) comprised of retirees who are in an organized welfare group explains to the researcher the challenges they face in accessing food.



The second FGD of elderly persons in a church.



An elderly female respondent sorting out cowpeas after harvesting.



A respondent's house with harvested food grains, water and firewood stored alongside the bed.



An elderly couple at their homestead.



A respondent showing her only tooth.



A respondent with a caregiver and her grandchildren outside her house.

APPENDIX II

LETTER OF TRANSIMITAL

Dear respondent,

My name is Naomi Karea a student in the University of Nairobi. I am required by the university to undertake a research study in partial fulfillment and completion of Master of Arts (MA) degree studies in Rural Sociology & Community Development.

This study is meant to increase the understanding of;

“Social - economic Factors affecting food security among the elderly persons in Imenti Central Sub County”

The Questionnaire seeks to gather information from the elderly individuals and some key informants in Imenti Central Sub County. It is sub-divided into sections each addressing each of the study objectives.

Therefore, I kindly request you to give your views and ideas regarding the status of food security among the elderly in the Sub County. Participation of the survey will be voluntary and all the information given will be used only for the research purpose and will be treated with confidentiality. In-case of any clarification or need for translation, please feel free to consult.

Thanks for your support

Yours Faithfully,

Naomi Karea Samwel

APPENDIX III

QUESTIONNAIRE FOR ELDERLY PERSONS/ HOUSEHOLD MEMBERS

To ensure confidentiality, do not write your name in this questionnaire. Kindly respond to each question by ticking (√) where appropriate or filling in the appropriate answer.

Section A : Demographic data of the respondents

Location _____

1. What is your gender?

(i) Male []

(ii) Female []

2. What is your age bracket?

i. 65-69 []

ii. 70-74 []

iii. 75-79 []

iv. 80-84 []

v. 85 and above []

3. Indicate your marital status.

i. Single []

ii. Married []

iii. Widowed []

4. Indicate the type of the family

i . Female headed []

ii . Male headed []

iii . Child-headed []

iv . Both parents []

5. Size of the family members

(i) 1 -5 []

(ii) 6 -10 []

iii) 11 and above []

6. What is your level of education?

(i) Primary level []

(ii) Secondary level []

(iii) College level []

(iv) University level []

(v) Never attended school []

7. What is your occupation? **(Please pick from any given:** Crop farming, animal husbandly, casual labourer, business person, employment, skilled occupation e.g. tailor, plumber).

.....

Section B: Demographic characteristics of households with elderly persons

Please tick appropriately

8. Type of house structures shelters of your household

a. Building materials?

Stones [], Bricks [], Timber [], Iron sheets [], Mud []

b. Roofing materials?

Iron sheets [], grass thatched [], any other specify

9. Toilet facility? Available []

Not available []

Pit latrine? Available []

Not available []

10. What is your source of drinking water?

a. Borehole / well []

b. River []

c. Piped water []

d. Stream []

11. Source of cooking fuel

a. Firewood []

b. charcoal []

c. Gas []

d. Paraffin []

e. Electricity []

12. What are the main sources of food eaten in your household?

i Own farm produce []

ii Bought from markets []

iii From friends, relatives and neighbor []

iv Relief food []

v Others (please specify)

13.a) Do you have a granary/ food store in your home? Yes []

No []

b) If no how do you store your surplus food from your farm?

i. Sell all surplus food in the market []

ii. Do not produce surplus food []

iii. Store surplus food in the house []

Section C: Health status and food security

Each of the following questions in this section is asked with a recall period of 6 months. The questions are meant to investigate the level of food in the households or whether the amount of food in the elderly households is sufficient.

14. a) Which of the statements below describes best the food eaten in your household for the last 6 months?

- i We always have enough of the kinds of food we want to eat []
- ii We have enough but not always the kinds of food we want []
- iii Sometimes we don't have food enough to eat []
- iv Often we don't have enough to eat []

b) If options (**sometimes or often not enough to eat**) above is selected, here are some reasons why people don't always have enough to eat. Please choose from the list below the reasons why you don't always have enough to eat. (Mark all that apply)

- i Not enough money to buy food []
- ii Not enough time for shopping or cooking []
- iii Too difficult to get to the store []
- iv Not able to eat because of health problems and on diet []

c). If option (**enough food but not the kind we want to eat**) here are some reasons why people don't always have the kind of food they want to eat is selected, please tick the reasons of not always having the kind of food that you want to eat (Mark all that apply)

- i Not enough time for cooking []
- ii Not enough money to buy food []
- iii Variety of foods we want not available []
- iv On diet []
- v Not enough food in the store []

15. Do you have any health condition that hinders you from working in your farm?

Yes [] No [] If yes which one _____

16. Do you have any health complications like being on diet that restrict you from eating some types of foods produced in your farm? Yes [] No [] If yes state them _____

Section D: Aging factors and food security in households with elderly persons

17. Whom do you live with in your home?

My children [] My grandchildren [] Adopted children [] Alone []

b) If you live with children at minor ages do you have any other person to assist you in care-giving of these children? Yes [] No []

c. If No how are you able to meet their daily needs? _____

18. The table below gives the Household Food Insecurity Access Scale (HFIAS) measurement tool. Please respond to the statement indicated by answering **YES or NO** and then ticking the options provided (**1, 2, 3 and 4**)

Use the key or code provided: **1=rarely (Once or twice in the past 6 months), 2=Sometimes (three to ten times in the past 6 months), 3=Often (more than ten times past 6 months),4= Never happened in the last 6 months**

No	Question	Yes/ No (If No skip to the next question)	1	2	3	4	Indicate the code that apply
1.	In the past 6 months, did you worry that your household would not have enough food?						
1.a	How often did this happen?						
2.	In the past 6 months, were you or any household member not able to eat the kinds of food you preferred to eat because of lack of resources?						
2.a	How often did this happen?						
3.	In the past 6 months, did you or any household member have to eat a limited variety of foods due to lack of resources?						
3.a	How often did this happen?						
4	In the past 6 months, did you or any household member have to eat some foods that you really did not want because of lack of resources to obtain other types of foods?						
4.a	How often did this happen?						
5.	In the past 6 months, did you or any household member have to eat a smaller amount of food than you felt you needed?						
5.a	How often did this happen?						
6.	In the past 6 months, did you or any member of your household have to eat fewer meals in a day because there was not enough food?						

6.a	How often did this happen?						
7.	In the past 6 months, was there ever no food to eat of any kind in your household because of lack of resources to get food?						
7.a	How often did this happen?						
8.	In the past 6 months, did you or any household member go to sleep at night hungry because there was not enough or no food?						
8.a	How often did this happen?						
9.	In the past 6 months, did you or any member of your household go a whole day and whole night without eating anything because there was not enough food?						
9.a	How often did this happen?						

19. These questions asked only in elderly households with children i.e. persons of 1-18years old

No.	Question	Yes/ No (If No skip to the next question)	1	2	3	4	Indicate the code that apply
1	In the last 6 months, did you ever cut the size of any of the children's meals because there wasn't enough food?						
1.b	How often did this happen?						
2.	In the last 6 months, did any of the children ever skip meals because there wasn't enough						

	food?						
2.a	How often did this happen?						
3	In the last 6 months, were children ever hungry but you couldn't just afford food?						
3.a	How often did this happen?						
4	In the last 6 months, did any of the children ever not for a whole day because there wasn't any food?						
4.b	How often did this happen?						

Section E: Farming practices that contribute to food production in the households for the elderly

This section is meant to establish the extent farming practices contribute to food security among the households with elderly persons.

20. How many acres of land do you have?

- a. 1-5 acres []
- b. 5-10 acres []
- c. 10-15 acres []
- d. 15-20 acres []
- e. 20 and above []

21. How did you acquire your farm?

- a) Inherited from family []
- b) Bought []
- c) Leased []
- d) Given by a relative – Temporary []
Permanent []
- e) Others (specify) _____

22. Have you subdivided your farm?.....

23. How much land do you cultivate in a year? _____

24. Any land leased out or in? _____

25. What reasons can you give for leasing out

- i Source of income for domestic use []
- ii Land too large for cultivation []
- iii Other specify _____

26. In the table below indicate other property you own apart from land.

Item	Specify type	Number
Farm implements / Tools		
a. Harvest tools		
b. Planting tools		
c. Weeding		
Animals		
Birds		

27. Indicate the type of fruits, vegetables, food crops and cash crops grown during the short and long rains which gives the two seasons in this area. How would you rate the productivity (put in kilograms)

Type of crop grown	Long rains -LR (March-June)	Short rains -SR (October-December)	Amount produced (Put in kilograms)
A. Fruits			
B. Vegetables			
C. Food crops			
D. Cash crops			

28. What other farm practices do you engage in apart from crop farming?

i.

ii.

iii.

29. What is your source of labour (Domestic and farm work)? Tick appropriately.

i Family members []

ii Hired labour (Permanent) []

iii Daily casuals (temporary) []

iv Others (specify) _____

30. Apart from farming, what is your other source of income?

i. _____

ii. _____

iii. _____

iv. _____

Section F: Factors affecting food production in the households for the elderly persons.

This section is meant to assess the challenges that affect food security amongst the elderly households.

31. The following statements describe the challenges faced by elderly persons in regard to their household food security status. Please circle the numbers you feel they best describe your situation. **1=strongly agree, 2= Disagree, 3=Agree, 4 strongly disagree.**

a.	Lack of finances to purchase food	1 2 3 4
b.	Poor / insufficient rainfall patterns (Weather fluctuation)	1 2 3 4
c.	The size of the land inadequate	1 2 3 4
d.	Lack of labour (Domestic and in farms)	1 2 3 4
e.	Cost of farm input very high to afford	1 2 3 4
f.	Lack of water for irrigation	1 2 3 4
g.	Pests and diseases attacking crops	1 2 3 4
h.	Poor soils for crop production	1 2 3 4
i.	Health related problems	1 2 3 4
j.	Lack of agricultural extension services	1 2 3 4

k.	Poor road networks	1 2 3 4
l.	Poor markets for farm products	1 2 3 4
m.	Lack of knowledge in foods and nutrition	1 2 3 4
n.	Loneliness	1 2 3 4
o.	Relief food from donor agencies	1 2 3 4
p.	Lack of farm implements	1 2 3 4

32. What measures or techniques do you apply in your farm to improve the farm produce?
33. What methods do you use to preserve harvested food for future use?
34. What measures/strategies have you put in place to alleviate any of the above challenges to improve food security in your household?
a)
b)
c)
35. Have you received any assistance inform of food supply/aid or farm input within your household? If yes, please indicate the source and type of supply.

Type of supply	Source
a. _____	_____
b. _____	_____
c. _____	_____

Thank you for your time in this exercise and your most honest responses.

APPENDIX IV

INTERVIEW GUIDE FOR KEY INFORMANTS

This section is meant to capture in-depth views or more information from of key people including: Health officer, Agricultural officer, teachers, chief, assistant chief and Ward representative.

1. How do elderly persons in Imenti Central make their livelihood?
 - i _____
 - ii _____
 - iii _____
 - iv _____

2. What is your opinion about the food situation for the elderly persons within the Sub County?
 - i _____
 - ii _____
 - iii _____
 - iv _____

3. What is the impact of socio-economic changes on food security towards the lives of the elderly within the Sub County?(consider these factors- education, unemployment, health, poverty,
 - i Education
 - ii Health
 - iii Unemployment
 - iv Poverty

4. Is there any relationship between elderly persons’ age and food security status? If yes, please explain.

5. Under your position, what action have you taken to promote food security within the households for the elderly persons?

6. Are there food safety measures set in place specifically to support the welfare of the elderly in the Sub County/ward particularly in terms of food security? If yes, please specify.

7. What recommendations would you give towards improving the welfare for the elderly persons within the area especially in improving their food security status?

APPENDIX V

FOCUS GROUP DISCUSSION (FGD) WITH RETIREES.

This guide will be for the retired persons who definitely fall in the category of old persons. They are knowledgeable about the food security situation in the area.

1. How would you explain the situation of elderly person's households in terms of food security?
2. What do you consider as the main challenges facing the elderly persons' households in regard to food security?
3. Do you think the elderly households' access adequate food supply?
4. As retired officers, do you get any assistance from the government or any donor agency?
5. Are there strategies put in place for food preservation among the households for the older persons?
6. Does the community engage the elderly in social activities and do you think it's important? Explain.
7. Can you describe the current situation of the elderly people's health, quality and quantity of food in their housing?
8. Is there any supply of farm inputs towards food production to the elderly and the community at large?
9. What recommendations would you give towards improvement and sustainability of the food security amongst the elderly?

Thank you for your participation.