SOCIO-ECONOMIC FACTORS INFLUENCING IMPLEMENTATION OF NJAA MARUFUKU KENYA PROGRAMME FOR SUSTAINABLE FOOD SECURITY IN MAKUYU DIVISION, MURANG'A COUNTY.

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NJ6ROGE NAOMI NDUTA

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF ART DEGREE IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI

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DECLARATION

This Research Project Report is my very original work and has not been submitted to any other university for the award of a degree.

Signature..... Date...7! W l n -

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This Research Project Report has been submitted for examination with my approval as the university supervisor.

Signature.  Dat J t & f a

Dr Raphael Ondeko Nyonje

Senior Lecturer,

Department of Extra Mural Studies

University of Nairobi

DEDICATION

This Research Project Report is dedicated to my husband Ben, our beloved daughters Cynthia and Esther for their invaluable love and great desire to see me excel in higher academic heights. Further dedication goes to my dear mum Wairimu for her prayers, support and encouragement.

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

FAO -	Food and Agriculture Organization
MDG -	Millennium Development Goals
NMK -	Njaa Marufuku Kenya
MOA -	Ministry of Agriculture
NGO -	Non-Governmental Organizations
U.N -	United Nations
IFAD -	International Fund for Agriculture Development
WFP -	World Food Organization
EDF -	European Development Funds
IFP -	Irrigated Food Production
OCP -	Orphaned Crop Programme
ENSO -	El-Nino Southern Oscillation
WVK -	World Vision Kenya
TAU-	Technical Assistant unit
NAAIAP -	National Accelerated Agriculture Input Access Programme
ASIP -	Agricultural Sector Investment Programme
UNDP -	United Nation Development Programme
CBS -	Central Bureau of Statistics
SSA -	Sub-Saharan Africa
MSCBP-	Multi-Sector Capacity Building Programme
IP -	Implementation Plan
ECPAFS -	European Commission Policies and Actions for Food Security
BNCP -	Botswana National Productivity Centre
SRA -	Strategy for revitalization of Agriculture
PRSP	Poverty Reduction Strategy Paper
ERS -	Economic Recovery Strategy
HCD -	Human Capital Development
ANPPCAN	African Network for the Prevention and Protection against Child Abuse and Neglect

ABSTRACT

Food security has remained a major challenge for the governments around the world. Kenya in particular has suffered for long over food insecurity both in urban and rural areas. Studies have discovered that, despite the much effort by the government and donor agencies in funding food-based programs, implementation of the same has remained an issue. Makuyu division in particular has been under several famine interventions like World Food Programme, World Vision Kenya, and Njaa Marufuku Kenya among others. Despite the much effort of the said agencies, the area has remained vulnerable to hunger and poverty. In line with this, the study sought to investigate socio-economic factors influencing implementation of food-based programmers in the area of study. The study focused on the demographic characteristics, land accessibility, capacity building and income level of the program implementers. Descriptive survey was used to gather information from the programme implementers from a target population of the 180 members of the groups undertaking the project activities and four NMK government officers. A sample of 123 members selected from the eight NMK funded groups through stratified proportional simple random offered required information by responding to the provided questionnaires. The study instruments were validated prior to actual data collection by close consultation with research experts and peer students. A self help group different from the study population was used for pilot testing. The scores obtained from the pilot objects were correlated to determine the instruments reliability. Obtained raw data were systematically organized, coded, analyzed through descriptive statistics with aid of a computer Software Statistic Package for Social Scientists and finally presented using percentage, frequency distribution and cross tabulation tables. The research findings showed that demographic characteristics; gender, age, marital status and family size had great influence on implementation of NMK food-based programmes. Land accessibility; availability, size and ownership greatly influenced implementation of the NMK programme. The study also found that capacity building and the level of implementers' income were great influences of programme implementation. The study recommends for gender balance in funding and capacity development towards implementation of food-based programmes. The government should also check on the issue of land which the study found a barrier to the implementation of agricultural projects.

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CHAPTER ONE

INTRODUCTION

j#l Background to the Study

Healthy, well nourished people are essential for national development. 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).

Given the projected increase in world population and pressure on natural resources, the problems of hunger and food insecurity have global dimensions and are likely to persist and even increase dramatically in some regions unless concerted action is taken. In the year 2000, nations in the United Nations (UN) developed an ambition to address the challenges resulting to advancing globalization which indeed resulted to formulation of Millennium Development Goals (MDGs). In the formation of the MDGs, attention has been paid to hunger and poverty as stated in MDG number -1; *eradicate extreme poverty and hunger* (UN, 2003). In order to meet the challenges of food insecurity, new and more global partnerships are needed between donors, international institutions, the governments, civil societies and private sectors, which should be trickled down to the marginalized communities through involving community in the implementation of food security interventions.

In Central Europe, food and nutrition, insecurity and poverty which are very wide spread are hampering the regions development process (FAO, 2005). The European Commission Policies and Actions for Food Security (ECPAFS), over the years has been a prominent international actor in terms of food security. The main objective of the commission is to achieve the MDG, in particular the first of those, namely- eradication of hunger and extreme poverty around the world. Through the European commission, the European Development Fund (E.D.F.) as the main financial instrument has been funding many community projects for sustainable food security and also supporting local production through the provision of inputs like seeds, fertilizers, rural and agricultural development, consolidating of production capacities, infrastructures, micro-credit, occupational training for capacity building which together have contributed to successful implementation of the programmes for food security in the community and also in household levels.

Report by Alexander Dawner (1998) indicates that the Australian Government in May 2003 contributed 1 Billion pounds for programmes and initiatives to enhance food security of people in the developing world. This was done through support for agricultural programmes and research as well as training of the programme implementers. In Australia, gender considerations are incorporated into the delivery of the food security programmes by enhancing women's access to credit, resources, technology and information, integrating women farmers and the smallest holders into commercialization schemes, as well as attending to land tenure issues. This in general has led to successful implementation of food related programs and thus sustainable food security.

Brazil is one of the countries on track to achieve many of the UN MDGs particularly in reducing extreme poverty and malnutrition. Much of its achievement is credited to bold and innovative government policies and community aided programmes. "Zero hunger" is a national government strategy to reduce hunger and malnutrition (http://www.fomezero.gov.bvlj). Some of the programmes and initiatives have been credited with reducing the incidences of hunger but some have not been successful. An earlier evaluation of this programme questioned its capacity to support the poorest farmers or to promote rural development. Part of its inadequacy in achieving its objectives as per the evaluation is lack of information, knowledge and skills among small-scale farmers which has prevented them from taking full advantage of the government's agricultural programmes (Borros & Adami, 2006).

In Asia, food availability increased with the Green Revolution, but despite this food security, some parts of the region remain fragile, significantly affected by economic and climatic fluctuation. Implementation of the food programme funded by the local government has been threatened by cash income and land degradation caused by increasing population and climatic variation (Babu, 2010). An evaluation of International Fund for Agricultural Development (IFAD) projects on food security by TANGO International specifically in India and Bangladesh concluded that, in order to achieve projects' objectives, it is essential that projects retain the ability to adapt to changes in the programming context. Overly rigid Programme structures leave too little room for community input; flexibility is therefore particularly important to projects based on household food security.

Establishing and building of the capacity of community based institutions has proved an effective method of enhancing livelihood security through support of community infrastructure or community empowerment projects (Tango International, 2007). The organizations involved

with the projects must provide focused capacity and confidence building measures that empower vulnerable individual and groups and encourage more active participations in planning and decision making process by the traditional unheard (IFAD, 2007). Several countries in the Sub-Saharan Africa continue to experience food insecurity both in community and in household levels. Food security remains a development problem even in regions and among specific groups of households that have shown considerable progress in combating poverty. A number of programmes and policies that are designed to improve food security have been implemented in these countries (Meyer, 1999).

From the studies done, most countries in Sub-Saharan Africa face major challenges in making needed instrument for improving food security, which could be due to inadequate advocacy from the hungry vulnerable communities. The community on the ground is not well placed in decision making ministries such as planning and financing. There is also inadequate capacity in the government or the donor to design appropriate food security programmes and policies to demonstrate the benefits of the interventions.

Most of these projects in developing countries have not been successful in targeting the most vulnerable and therefore have shown little impact on improving the food security status of the beneficiaries. Although few studies have evaluated food interventions for food security and nutritional benefits, a large gap remains in understanding the role of such programmes in sustainable food security in Sub-Saharan Africa that has remained vulnerable over the years (Maxwell, 1998).

In South Africa, capital intensive projects, initiated to increase food production and provide employment in the rural environment were the main stay of agricultural development until the 1990s (Clay, 1999). A case study on one of the agricultural project 'Sheila project' in the N.W. Province of S.A clearly indicates that although the project resulted in immediate high agricultural yields, they were generally not sustained. From the research done by Van Rooyen (2002), top-down planning and inadequate farmer participation resulted in a lack of real farmer ownership and commitment. To an extent, poor performance was the result of weak implementation and the management of the project cycle. Failure by initiators to adapt to the social environment and introduction of participative development strategies furthermore resulted to farmers not being actively involved in their own development. A recent review of [sa]fety net programmes in Malawi, Mozambique and South Africa indicated that there exists a

large gap in our knowledge about the design and implementation of safety net programmes along with a high level demand for short-run solutions (Haddad & Zeller, 2009).

A research done in Accra, Ghana showed that technical education was the most consistent constraint in providing skills and capacity which is a major determinant of food security through agricultural programmes (Armar-Klemesu, 2000). Other influencing factors as noted in the same report include, unreliable rainfall, fragmented land holdings, dominance of subsistence production units, low adoption of improved production inputs and techniques, and lack of capacity to manage activities within the projects.

Kenya like any other developing countries is faced with hunger and poverty and these problems are getting worse by the day. A study done by Kang'ethe (2004) shows that, more than 14.5 or 52.3% of the population of Kenya are hungry and malnourished. The Kenyan government is a signatory to the Millennium Declaration made at the UN Millennium Summit in 2000, where leaders placed development at the heart of the global agenda by adopting the MDGs as pillars for sustainable development.

The Kenyan government together with donors and NGOs have put in place initiatives and implementations mechanism to mitigate current food situation broadly described as programmes and policies that respond to immediate needs of the poor and food insecure (FAO, 2008). Some of the long term interventions include targeted food security programmes such as National Accelerated Agriculture Input Access Programme (N.A.A.I.A.P.); whose objective is to improve access and affordability of key inputs to small holder farmers, Orphaned Crop Programme (OCP) with an aim of diversifying sources of food through promotion of indigenous crops that are drought tolerance, Revitalization of Agriculture Infrastructure Mechanization Services with an objective of improving agricultural infrastructure and land development to Kenyan farmers, Irrigated Food Production (IFP), Njaa Marufuku Kenya (NMK), among others.

Njaa Marufuku Kenya was developed for implementing and fulfilling MDG-1 whose target is to halve the number of poor and hungry by the year 2015. The NMK goal is to contribute to reduction of poverty, hunger and food insecurity among poor communities in Kenya. It targets the extremely poor and vulnerable community members by empowering them through capacity building and provision of sustainable resource support to enable them Participate fully in economic activities. Makuyu division of Murang'a County is one of the areas were selected to benefit from this programme once it is successfully implemented by the targeted community. Makuyu division is an area that is characterized by high absolute levels

of poverty being a semi arid area. Landlessness is prevalent and the squatter problem is an issue further contributing to the poverty situation and food insecurity. The area largely depends on agriculture which is predominantly rain-fed and output is therefore influenced by the amount, distribution and variability of rainfall, which causes considerable risks and uncertainty in production. Recurrent drought has been associated with significant declines in production and consequent food shortages. The area under study was selected for the NMK programme owing to its vulnerability and delicate situation.

The NMK programme aims at reversing the area's food insecurity situation to sustainable food security upon its successful implementation. The success of any programme is dependent on the way it is designed and implemented, which in turn is tied to various influencing factors. Most of the research literature reviewed on the implementation of programmes, have identified common factors influencing implementation of projects. Among the factors featured are gender inequality, lack of knowledge and skills, lack of capital and resource inputs, among others. NMK programme targets extremely poor and vulnerable community members, women, youth, orphans and child-headed families through provision of grants and empowering then through capacity building. The researcher would wish to investigate the extent to which socio-economic factors influence implementation of NMK programme food security in Makuyu division.

1.2 Problem Statement

Food security remains an elusive goal in many parts of the world despite the concerted efforts of governments, non-governmental and international agencies over the past years. An estimated 925 million people around the world were undernourished in the year 2010 (FAO, 2011). All nations signatory to the Millennium Declaration of the year 2000, have a goal of reducing hunger and extreme poverty by halve by the year 2015 in fulfillment of the MDG goal number one. Over the years, several interventions for reducing poverty and enhancing food security have been designed and initiated in Kenya being a signatory to the Declaration. Some of the strategies the government has put in place include: Poverty Reduction Strategy Paper (PRSP), Strategy for Revitalization of Agriculture (SRA), Economic Recovery Strategy for Wealth and employment creation (ERS), National Accelerated Agricultural Input Access Programme (NAAIAP) among others.

Makuyu division has been under famine intervention measures by the government and donor agencies, among them the World Food Programme (WFP), World Vision- Kenya, and the African Network for the Prevention and Protection against Child Abuse and Neglect (ANPPCAN). The area has remained vulnerable to hunger and poverty since most of the said agencies have been supplying food stuffs and other basic need requirements without community consultations and thus no sustainable food security. The presence of NMK food interventions in Makuyu division unlike the said agencies is to provide an opportunity for fighting food insecurity among individuals and households for sustainable food security towards fulfillment of the MDG goals and thus realization of the Vision 2030-the country's new long-term development blue print. This would be realized from effective implementation of the programme through full engagement of the community.

Although an overwhelming amount of research has been given to food security issues, much attention has been paid to evaluation of food security interventions and their nutritional benefits and also to the 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 would therefore focus on the socio-economic factors and their influence on the implementation of community-based projects for sustainable food security, which has not been adequately addressed by other scholars.

1.3 Purpose of the study

The purpose of this study was to examine the socio-economic factors influencing implementation of NMK programme for sustainable food security in Makuyu Division, Murang'a County.

1.4 Research Objectives

The study was guided by the following objectives:-

1. To examine the extent to which demographic characteristics of the programme beneficiaries influenced implementation of the NMK programme in Makuyu Division.
2- To investigate the level at which access to land by the beneficiaries influenced implementation of the NMK programme in Makuyu Division.

   To determine the extent to which capacity building of the programme beneficiaries influenced implementation of the NMK programme in Makuyu Division.

4. To establish the extent to which income level of the programme beneficiaries influenced implementation of the NMK programme in Makuyu Division.

1.5 Research Questions

The study intends to answer the following questions:-

1. To what extent did demographic characteristics of the programme beneficiaries influence implementation of the NMK programme in Makuyu Division?
2. To what level did access to land by the beneficiaries influence implementation of the NMK programme in Makuyu Division?
3. To what extent did capacity building of the programme beneficiaries influence implementation of the NMK programme in Makuyu Division?
4. To what extent did income level of the programme beneficiaries influence implementation of the NMK programme in Makuyu Division?

1.6 Significance of the Study

The study findings and recommendations were hoped to help the government to implement policies that can revitalize community-based projects and private sector participations on food security initiatives. The study was endeavored to provide information to the NMK personnel at its different levels to identify the strengths and weaknesses on the programme implementation and hence corrective measures where need be. Empirical findings and recommendations in the subject are hoped to offer practical importance for the stakeholders of the programme. Related programmes within the country and even beyond may also make use of the same.

The research is also hoped to provide important lessons from the ground, to replicate or enable development practitioners to pay attentions while designing and implementing of both development and food security programmes. The research study is also hoped to provide a base for further research on the projects' encompassing implementation issues. The research is aimed [at] documenting social and economic factors that influence project implementation for planners ^d implementers so that key assumptions of the food-based projects can be redefined to ensure

achievement of food security country wide. The achievement of the NMK programme objectives will consequently hasten the realization of the MDGs and hence the vision 2030.

Delimitations of the study

Makuyu division is situated in the South East of Murang'a County, Central Kenya. It covers an area of 195 km with a population density of 229 persons per km (National Census report, Murang'a South, 2009). The area was way back in 1997 gazzetted as a hardship area owing to its semi arid conditions (Kenya National Official Record (Hansard) 14th Oct 2004).The research study was carried out in Makuyu division of Murang'a County. The area was selected because of its extreme climatic condition and the fact that there had been other agencies for food interventions, yet food insecurity has remained elusive in the area. This therefore attracted the government's interventions for food security through the Njaa Marufuku Kenya programme. The area of study has remained food insecure despite the past efforts of both government and donor agencies. Implementation of food-based projects calls for full involvement of community members and therefore, the study was confined to the influence of social-economic factors which had not been adequately addressed by most scholars. The study specifically focused on collecting data on the socio-economic indicators that would directly or indirectly influence implementation of the Njaa Marufuku food interventions in Makuyu division of Murang'a County. Research data was collected from the participants of the NMK funded groups since they were the people on the ground and had key information on the factors influencing program implementation. Open and closed ended questionnaire were used in data collection since it would allow respondents respond using their own words and also have adequate time to give well thought out answers.

1-8 Limitations of the study

One of the limiting factors of the study was on the language barrier where respondents to written questionnaire faced handicaps due to high illiteracy levels in the area. From the National Economic Survey (2010), 60% of the adult population in the area of study is illiterate. Use of a trained research assistant, conversant in the language of their best understanding helped in mitigating such challenges.

Uncooperative informants were likely to be encountered due to suspicion on the real motives of the researcher. The level of literacy and understanding as to the purpose of the study would vary from one respondent to the other thus different levels of suspicion. Working closely with the community group facilitators, community leaders and the community volunteers helped explain the sole academic purpose of the study to the informants who appeared suspicious of the real motive of the research study. Different NMK-funded groups are widely spread within the division and therefore reaching individual study objects was a challenge. The group facilitator were however able to organize for the group meetings, which enabled easy access to the population sample representatives.

1.9 Basic Assumptions of the Study

1. The study assumed that NMK programme was being implemented in the area of study.
2. It was a basic assumption that respondents would be available and that they would teco-operative and willing to give correct and truthful information.
3. It was also assumed that the study would be completed within the scheduled time w t b t major external influences.
4. It was also an assumption that the NMK implementers were conversant in Kikuyu and Kamba dialects.

1.10 Definition of Significant Terms

Njaa Marufuku Kenya (NMK) - This is Kiswahili for 'Eradication of Hunger' in Kenya

Socio-economic factors: The study looked at the factors that constitute the community's lifestyle; what they are, how they live and how they earn their living.

Capacity Building of the program beneficiaries: In this study, this concept was taken as a **social** factor that is aimed at strengthening the skills, competencies and ability of the people so **that they** can be actively involved in the activities of food security projects.

Demographic characteristic of the program beneficiaries: Demographic characteristics **looked into in** this study were gender, age, education qualification and family size of the **beneficiaries** of the programme.

Project implementation: This involved carrying out of the actual activities within the project **towards** realizing the project objectives of improving food security status within the d i m

Community food security: This had been taken to mean that the community would be able to

have food, could afford to buy food and could access it throughout without any unbearable seasons once the NMK program was successfully implemented

Community perception: This referred to the community's view of the NMK programme and its impact on their well being.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter attempts to review what past researchers have contributed that is relevant to the current study with a focus on implementation of projects for sustainable food security. This will enable the study to develop new knowledge from the gaps identified in the literature reviewed which if bridged would contribute in successful project implementation. The independent variables of the study will be focused on and their contribution to implementation of projects for sustainable food security which is the study's dependent variable. A conceptual framework will be used to demonstrate the relationship between variables. An operationalization table will be included in this chapter as a description of the variables, their measures and indicators.

2.2 Overview of NMK Programme

Njaa Marufuku Kenya Programme is a multi-sectoral programme under the auspices of the Ministries of Agriculture, Education, Public Health, Livestock Development and social services. It was developed for implementing and fulfilling the MDG-1 whose target is to half the number of poor and hungry people in Kenya by the year 2015.The goal of the programme is to contribute to the reduction of poverty, hunger and food insecurity among poor and vulnerable communities in Kenya. NMK supports community-driven agricultural development initiatives that increase productivity, enhance the generation of rural incomes and address health and nutritional improvement. The NMK programme was started in Kenya in the year 2005 in three pilot districts; Murang'a, Butere-Mumias and Narok to be later rolled out to other districts upon its success. It is a program of its own kind where the government gives poor families grants to boost their efforts towards attaining food security and reducing acute hunger and poverty. It was implemented by the government as a bold ambitious 10-year implementation plan (I.P) for hunger and poverty reduction over the period 2005-2015. Its objectives are anchored on fulfillment of 4 components:-

Component 1- Support to Community-Driven food security improvement initiatives.

Component 2- Support to community nutrition and community based school-meals Programmes.

Component 3- Support to private sector on food security innovations towards hunger and poverty reduction

Component 4- Support to the programme management and coordination.

In Murang'a County, Maragwa and Makuyu divisions were selected for the programme implementation largely due to their poverty levels as a result of unfavorable climatic conditions. The NMK programme aimed at increasing food security averting this situation through support to resource poor communities, support health and nutrition interventions that target the poor and vulnerable, and strengthen and support private sector participation in food security initiatives. Documented records from NMK desk at the local district headquarters- Kenol; indicate that the government through the Ministry of Agriculture disbursed a total of kshs 7,808,750.00 to support the community initiatives for sustainable food security. An amount of kshs 1,320,000.00 was released to support community group projects, kshs 495,750.00 for community nutrition and school meals programme, kshs 510,000 to school meals sustainability agricultural projects and kshs 1,621,000.00 to support private sector participation in food security initiatives. The government through the Ministry of Agriculture aimed to achieve a sustainable food security within the division which would be subject to proper management and implementation mechanisms of the program by the community involved.

2.3 Influence of Demographic Characteristics of the Beneficiaries on Implementation of NMK Programme

Food insecurity in a household may be caused by a combination of factors amongst which gender issues may play a larger role. The Ministry of Agriculture (M.O.A.) strategic plan 2000-2009, recognizes the fact that women play a key role in implementation of agriculture about 70% of agricultural related activities are carried out by women. A study carried out for Agricultural Sectors Investment Programme (ASIP) 2004 established that women were the core of the small hold agricultural in Kenya. They manage at least two fifth of the small holding and produce about 75% of the labour used in the small holding. They are largely responsible for attaining food security at the household level as they are responsible for a large part of cultivation as well as for marketing (World Bank, 2005).

A study done by Blackden (2006) indicates that food security comprises of a vital aspect °f human welfare in a society, particularly for women in Africa. Implementation of food-based agricultural projects has been seen as a women fundamental responsibility if not an obligation to

human society, and indeed households. Traditionally, African women have spent their entire life time ensuring that their families are fed. According to FAO (2008), food security is when all the people have access to safe and nutritious food at all times. This definition explains why there has been considerable attention paid to the linkage between the state of women, their food production and food security.

In general, most studies that have looked at food-based projects have focused on women and the gendered nature of work. In Australia, Kuntala (2004) argued that involvement of women, youth and minority members of the society in development and food-based projects was very low, and thus persistence of food insecurity in marginalized communities. The researcher intends to investigate whether involving women in the implementation of NMK program would help improve on food security as noted by Ponttier (1998) that it is essential for women and youth to be involved in projects which profoundly affect their lives.

A questionnaire survey on all ongoing IFAD-supported projects in Eastern and Southern Africa covering 29 projects in 13 countries recognized a need to address gender issue at all stages in the project cycle because of its great implication for effective project implementation. The study noted that beneficiary participation varies considerably throughout the life of a project. Although all the projects claim that the participation of women is important for the success of the project, the degree to which they contribute varies considerably between different stages in the projects cycle, indeed it is only at the implementation stage that women get slightly involved. Typically, men dominate decision-making, particularly at the identification and evaluation stages (Confidential Report No. 1090, 2000).

To address gender issues in projects implementation the report advocates for women's capacity building, provision of credit, technology development among others. The questionnaire surveys confirm the relevance of IFAD's Gender-strengthening Programs for its ongoing projects in Southern and Eastern Africa. Through gender strengthening, opportunities exist to ^prove the effective of projects design and implementation. The main focus of NMK program is on the vulnerable community members among them women, youth, orphans and child-headed families who are empowered through capacity building and provision of grants. It aims at integrating gender of across age in the implementation of food-based projects. The researcher w°uld wish to investigate the extent to which empowering both gender across age would ^fluence implementation of the NMK projects.

A research study conducted by Amin (2005) found out that in Uganda Luingwi location, men were involved in fish farming projects more than women whereas the farming programs required more women and youth participation. Not only are women noted to be the major providers of the agricultural labor in most of the rural Africa, but they are also seen to play crucial roles in the processing and distribution of food (Sicoli, 1998). Female gender is recognized to be the caregiver, responsible for the nutrition of the entire household relative to male gender, they are noted to spend a greater proportion of their income for household food consumption (Guyer 1980).

A study on Philippines Integrated Rural developments (IRD) projects identified some imperfections like low participation of women and poorer households in the implementation of the projects (Ahmad, Tabassum and Gil, 2003). The study concluded that low performance of women and poorer households was tied to the type of project activities, since a different project on poultry and sewing registered high women participation. Food-based projects involve mult-activities, like in the case of NMK Program in Makuyu division. The researcher of this study stems a need to develop knowledge on gender involvement in programs which are open to various projects activities.

Family size and age distribution influence projects implementation. Jimmiel (2005) found that in Zimbabwe, age distribution had a key role in determining labour distribution and those households with more members adopted fish farming projects introduced by the government as a means of improving food security within the community. From the same report, it was established that education had a role to play in encouraging innovation, optimism and tolerance in food-related projects. Mwanyumba (2010) in his research conducted in Taita district, Wundanyi location found that most of the farm workers were women aged between 35 and 60 years, closely followed by women of advanced age group. Some old men over 60 years also assisted in the farming equally.

In the past, involvement of women in implementation of community development and food security project has been the focus of intensive debates by most international forums like the 1995 Forward Looking Strategies for the advancement of women held in Kenya, the 1995 Beijing Declaration and the United Nation Development Fund for women 2000.Dispite all these awareness and understanding of gender imbalance in development programs, there still exist a Bap as yet not much has resulted in significant priorities for majority of women. Involvement of women in project implementation is still faced by various disabilities.

Women make a major contribution to economic production of their communities. Their active support is crucial to the utilization of development objectives and therefore as stated by Montein (2004), there can be no societal transformation without their involvement, support and leadership in development process. Although there have been accepted evidences on the contribution of women in food production, there are a lot of problems encountered by great majority of rural women who wish to fully get involved and contribute more in the implementation of agriculture projects (FAO, 1994). The Kenyan government through the NMK program provides grants to boost the efforts of the poor especially youth and women towards attaining food security. Most if the studies reviewed have discovered the importance of integrating women in development processes to avoid human waste. The same studies have discovered that women performance despite them being empowered is still low specifically in small and micro-scale industries. The researcher would therefore wish to uncover other possible gap problems on gender and projects implementation and also determine the extent to which these gaps have affected achievement of projects objectives.

Education is the most important means to the development of human resources, appropriate skills, knowledge and attitudes. It forms the basis for developing innovation science and technology which are useful in implementing both development and food security programs. Lack of education and low levels of literacy make access to information difficult and commonly undermine the confidence and skills needed to enter public life whether at village, community, local or national level. As regard to education of women involvement in project implementation, studies have shown that there is a strong association between education, economic development and food security and nutrition (Barret, 1998). Provision of adequate education levels will enhance capacity to service actively in community projects. This is because lack of education deprives one out of productivity levels in the rural areas since one will remain ignorant of ways and means of producing more on the farm.

Education qualification as brought to the light by Saara (2005) is key to project implementations. She argues that giving education to young mothers in United Kingdom had resulted in their participation in community projects resulting to self confidence and self esteem. Reuben (2005) as well thought that education levels of households in Niger Delta in Nigeria were quite low, especially among the youth and women who were engaged in agricultural farming. In his time of study in the Niger area, only two projects offered educational services. He recommends raise of levels of education of both gender and across age in order to achieve

projects objectives since illiteracy is a factor that hinders development as concluded by many researchers.

A study carried out in Senegal by Michelle (2006) reported that non-formal education had a key role in promoting community participation in implementation of community projects, although the utilization of non-formal education had been largely neglected. The same study found that those with non-formal education were more likely to than those without education at all to belong to community organization, hold leadership position with the local institution, attend local organizational meetings at least occasionally, speak out in meetings and get together with others to raise an issue.

Macharia et al (2007),in his study conducted in Kiambu, Kirinyaga and Maragwa districts established that the education level of households heads was an important factor influencing what development projects people would initiated collectively, which new farming technologies would be adopted and what farming enterprises to undertake. Education has a tremendous influence on the food security status. Implementation of food security projects is associated with the level of education of the project beneficiaries. Illiteracy level in the rural area of Vihiga district leads to poor implementation of the agricultural programmes by the donors and also by the government (Mwaura Eliud, 2009).

Kidane (2006) indicates that educational attainment by the household heads could lead to awareness of the possible advantages of modernizing agriculture by means of technological input, read and understand documentation, read instructions on the fertilizer packs, and diversification of household income which in turn would enhance household food supply. Njoki Ndegwa in her research project (2009) notes that implementation of community based projects for food security has been entirely culturally assigned to women as an informal contribution which in most cases goes unaccounted for. Women have been neglected in policies, programmes and services that are designed to improve food security (Lado, 1992). Studies also reveal that women have less access to resources such as land, extension services and credit that would facilitate their productivity towards sustainable food security.

NMK in Makuyu division targets the most vulnerable groups, majority of which are academically disadvantaged. The researcher intends to find out whether empowering academically disadvantaged communities through capacity development and provision of grants would contribute to successful implementation of projects.

2.4 Influence of Land Size of the Beneficiaries on Implementation of the NMK Programme

Land is the main asset in agricultural production and if well utilized it can provide food security and job opportunity in many parts of Africa, Kenya included. Kenya has an area of about 587, 00 sq kms of which 11000 and 576 sq kms are water and land mass respectively (National census report, 2010).Only about 16% of the later is of high and medium agricultural potential largely because it receives adequate and reliable rainfall while the rest fall under Arid and Semi-Arid Lands. The main feature of Kenya's agriculture's is domination of small scale farmers who account for 75% of total agricultural production. According to IFAD strategic framework 2007-2010, land issues are of particular concern for the implementation of its interventions and especially a time like now when population growth, high food prices, impact of climate change, trade regime and others are causing fierce competition for land and very high pressures on tenure systems.

Access to productive land is critical to the millions of poor people living in rural areas and depending on agriculture and livestock for their livelihood, because it reduces their vulnerability to food and poverty. A 2005 World Bank analysis of implementation of agricultural projects in 73 countries between 1960 and 2000, shows that countries with more equitable initial land distribution were food secure compared to those where land distribution was less equitable. In rural societies, the landless or near landless and those with insecure tenure rights, constitutes of the most food insecure and most marginalized and vulnerable groups.

Land access and tenure security influences decision on the nature of agriculture projects to be implemented whether for subsistence or commercial purposes. Lei (2003) in his writing states that, success of future endeavors to promote new agricultural technologies for sustainable food security will be predicted by farm and wet land availability which also acts as collateral and thereby influences people's access to financial services. The effect of land fragmentation on agricultural production has been discussed by a number of studies. Land is a constant and non-renewable resource all over the world. With the increase of world population, pressure on land has had great effect on agricultural production and thus hunger and food insecurity.

The challenge facing agricultural-based projects worldwide is to reverse this decline in agricultural production at a time when crop land is shrinking due to land fragmentation. It is [Ur]ged that, since mid 21[s] century, agricultural areas that served as crop proxy for crop land in general has increased by 19% from the 1950s (Lane, 1998; Mwangi, 2005). The United Nations

report observes that, between 1950s and 1984, agricultural production, grain in particular, exceeded population growth. Since then, growth in the agricultural production has fallen behind the population and per capital output has dropped by 7%. (United Nations, Department of Agriculture 2005).

Sub-division of land primarily affects the implementation of agriculture policies and programmes. Most farmers are restricted to subsistence agriculture and cannot participate in sustaining food security since they produce what is enough to eat there and then. Worse off are the high potential areas where scramble for land has led to fragmentation beyond economic size. Literature on land size and implementation of agricultural projects at the global level is quite enormous. Caryle, (2000) has focused on the effects of land size and land fragmentation on agricultural yields and productivity and strongly correlates the two. A study done in Bangladesh focusing on land fragmentation and ownership of resources with reference to productivity and technical efficiency in rice production reveals that, land fragmentation has a significant detrimental effect on productivity and efficiency (Sanders, 1994). Such fragmentation can be seen to have negative benefits to farmers, households, community in general. Comparative statistics and analysis of survey data have led to the conclusion that small-sized farms are likely to be more fragmented and that fragmentation had a negative impact on crop productivity and increased family labour use and other monetary expenses (Pham Van, 2007).

Land issues, ownership, fragmentation and land tenure are major obstacles to achieving food security says Thompson (1996). Thompson analyzed causal of land subdivisions as land distribution schemes, inheritance, dowry/customs, land purchase and sale, population density and excessive investment emphasis on land. In Punjab India, Chandra (2001) in his PhD dissertation, reports that most of the agricultural projects by marginal and smallholders are not financially viable i.e. are not able to earn enough income to meet their objectives towards household food security. The factors behind this are quoted as farm size and quality, education level of the targeted people, family size and fixed investments. Due to the fragmented land, even if the farmers cultivate the best possible crops, the returns remain meagra. Small farms per se are not viable unless they are supported with some supplementary income.

In Kartana India, food insecurity has been prevalent. Gadgil (1999) reports that 87% of fte farming families own farms of less than 4 hectares, accounting for more than 50% of the total cultivated area. Families with very small farms (less than 1 ha) constitutes of 39% of the

total land. Pham Van (2007) argued that accessibility of land in Nigeria, Niger Delta affected the participation level and hence implementation of self-help groups.

In April 1995, Jimmiel found out that in Zimbabwe the gender of the household held an important implication in relation to access to land and other production resources. Their women could not claim inheritance to land which gave them limited access to land and therefore only very few female were involved in agriculture projects. Most of the NMK Projects activities are not land consuming, for example poultry and rabbit rearing, milk goats farming. The researcher would want to investigate the extent to which land variable would influence implementation of such programs.

A research study done in Vihiga district, Kenya by Mwaura (2009), indicates that agricultural productivity has been largely affected by scarcity of productive land. Much of the available land has been fragmented into small segments which can only support horticultural crops to serve the season. High population growth according to the study report, contributes to land sub-division for selling and buying. Due to lack of land accessibility for the implementation of agricultural programmes by the community, the district remains vulnerable to both hunger and poverty. The researcher finds a need to conduct a study on the implementation of NMK programme to ascertain other researchers' findings and come up with new knowledge on how to cope with land scarcity for sustainable food security.

2.5 Influence of Capacity Building of the beneficiaries on implementation of the N.M.K programmes

The achievement of M.D.G and other international and national development targets in developing countries hinges in capacities of individuals, organizations and societies to transform in order to reach their designed objectives. United Nation Development Programme (UNDP) defines capacity building as the ability to perform functions effectively, efficiently and sustainably. Capacity building is regarded as the enhancement of the competency of individuals and local communities to engage in activities in a sustainable manner for positive development, poverty reduction and also meeting the MDGs, (Hope, 2009). Capacity building involves strengthening performance capabilities by empowering those who are most marginalized by providing equal chances for community to access resources.

In the implementation of projects for food security, the beneficiaries need the ability to perform many functions to ensure food is available and accessible to all. A study conducted by Webbs Rogers (2003), shows that in order to produce more and more nutritious food the beneficiaries have to use agricultural knowledge and farming skills which are technical assets. Capacity building is not only a stand-alone training interventions but rather a strategically co-rdinated set of activities aimed at improving the abilities of skills of individuals for a better performance. According to Kistern (1998), capacity development and skills training are determinants of successful agricultural developments. For a project to realize its objectives, the guidelines of the project cycle must be vigorously implemented. The cycle should however further incorporate participative process, social integration, capacity development and economic diversity. Kistern insists that human capacity development and skills training are important determinants of successful agriculture development. Economic transformation therefore focuses on Human Capital Development (HCD), broadly defined as expanding choices and the ability to react to changes.

Neglect to human development would often feature to failures, and various studies illustrate the value of human capacity development in enabling efficient resource use and productive farming (Mac Calla, 1999). Low farm production could be explained to a significant extent as resulting from low investment in human capital development. From this observation, it is concluded that organization of project stakeholders and participants and facilitation of interaction and networking are very crucial to the successful implementation and sustainability of any development projects. During this process, skill limitations can be addressed through focused training programs which would capacitate project participants to make informed decisions.

Personnel issues, including recruitment, selection of training is among the common critical success factors in effective project implementation, Jeffrey and Denis, (1997). In many situations, personnel for the project team are chosen with less than full regard for the skills necessary to actively contribute to a successful project implementation. Hammord (1979), in his book has developed a contingency model of the project implementation process which includes People as a situational variable whose knowledge, skills and abilities must be considered for P[r]oject success. It is also important for the project to be implemented by people with technical skills and with adequate technology to perform their tasks.

Steven (1979) in his report on implementation risk analysis identifies two of the eight risk factors as been caused by technical incapability i.e. the user's unfamiliarity with the programme system. A study by Shalmali (2006) on the programme's implementation reveals that lack of knowledge and skills have prevented people from taking full advantage of recent government agricultural programmes. Policies to support small-scale farmers have the same double objectives of providing short-term support inconjuction with long-term structural changes. These however cannot be realized without further resources geared to farmer's capacity building in gathering information, market functioning and general education.

Building functional capacities at the community level remains important in global approaches to participatory development. In Cambodia (Asia), local capacity remains particularly important. An assessment by the World Bank (2006) shows that, in the attempt to provide a sustainable flat form for Cambodia's future growth, development agencies have adopted an interlinked approach that provides a critical role for local level capacity building. This emphasis reflects the importance of supporting community level growth, bottom-up development initiatives in a predominantly rural society that remains largely organized around the village and where rural- urban linkages remain weak. Studies on implementation of health programs by the community health workers show that in India such community health workers receive training for about three months, while in other countries such as Brazil they receive training for about six to eight months at the beginning of their career (Campos, 2004).

In Rwanda as noted by Malinga, (2008, pp.185) the government by 2005 had realized that capacity entailed more than training and to be comprehensively addressed using a multi-sector and multi-dimensional approach. The same study reports that one fundamental developmental change agenda that the Rwandan government under took was the establishment of a Multi-Sector Capacity Building Programme (MSCBP). This programme was designed to guide capacity initiatives in the public, private and other organizations in order to make them more effective, efficient and transparent in the implementation of their development projects as indicated by Malinga.

In Botswana, the Botswana National Productivity Center (BNPC) represents a good example of an institution being used for facilitating the country's capacity development and on-going productivity enhancement (Hope, 2009). Likewise, the Technical Assistant Unit (TAU) in S. Africa was established to undertake capacity development skills. It is demand-driven and Reuses on developing indigenous capacity using international technical expertise and support

for the success of the community-based projects. In Kenya, a study conducted by Koech (2008) in El-Da Marvine on Kenya Green Growers Projects, indicate that only projects' leaders and facilitators were given formal education, the rest of the community project implementers were taken through demonstrations due to their low levels of education.

Most of the studies done are based on implementation of organizational and institutional programs in which the implementers are literates thus a positive correlation between capacity building and program implementation. A study by Ropp (1999) in Malaysia concluded that for teachers to implement the usage of computers, they should be computer literate and thus be given appropriate training in computer usage. It is therefore necessary for more studies to be conducted on the implementation of rural community agriculture projects where people are marginalized on high poverty and illiteracy levels. Rogers (2003) analyzes a rural development project in the uplands of Vietnam and traces some of shortcomings in project implementation as failure to start small and grow slowly, need to introduce limited technologies and of helping farmers to adapt the technologies. Our country Kenya is in the era of new technology and for this reason the researcher finds a need to search for more knowledge on the take up of the new technologies through capacity building for projects implementation.

2.6 Influence of Income of the Beneficiaries on Implementation of NMK Programme

Adoption and ownership of funded community projects is dependent to the income level of the beneficiaries from other sources external to the program or the financial benefits expected from the project being implemented. A study by Gan (2001) on antipoverty program found out that citizens were well involved in the program due to material gains accruing from the projects for example paid labour. Community participation in the implementation of the program was tied to age rates and frequency. As reported by the same study, it is only in the implementation stage of many projects where the communities are paid for labour they provide thus enhancing their effective implementation

Lack of finances contributes to people's powerlessness. Frances (2009) argues that the Poor and marginalized feels stigmatized and rarely join with others in community projects. Lack capital has been identified in many studies as a major constraint in expansion of projects. In Central Kenya, Macharia (2010) found out that lack of affordable credit was a major

mpediment to intensified use of modern farming methods and technology. Reduced opportunity osts of the program attract project implementers and mostly in agricultural projects.

In Uganda, Rutaisire et al (2010) found that lack of capital was one of the major factors lindering project implementers from achieving their intended objectives. Most of the active >articipants of community projects were community members of stable incomes and were able o generate incomes for expansion of the projects. Occupation of different members of the :ommunity will affect their income and the availability of labour for agricultural activities. The ype of occupation will also determine available savings that can be invested in agriculture ictivities. However, this will depend on the farmer's priorities as some farmers may prefer to nvest their money in non-agricultural activities. Rutaisire concluded that daily income of the immunity members significantly associated with implementation of projects hence their ;ustainability.

Ismail Hassan (2010) in his research study on improving project implementation in igriculture sector in South Africa delimited his variables to resistance to change, financial ;ources, capacity development and competition from other off-farm activities. There have not >een adequate studies on implementation of projects for sustainable food security in Makuyu livision and therefore a knowledge gap on the extent to which such factors would influence >roject implementation exists, thus the need for the study.

JNDP (2003) indicates that implementation of projects on agriculture are also influenced by)hysical access to land, insecure land ownership, limited use of fertilizers and weak support services of research extension and finance.

l.l Theoretical framework

This section looked into the underlying theories supporting community involvement in he implementation of community-based programmes funded by the government or by other lonor agencies. Implementation of such projects can be based on theories such as citizen Participation theory, theory of decentralization, interactive planning process model, community ievelopment model, incorporation of public input model, system theory and others.

Citizen participation is a process which provides individuals with an opportunity to influence public decision and has long been a component of the democratic decision-making process. The roots of public participation can be traced in Ancient Greece and Colonial New England. Before the 1960s, government processes and procedures were designed to facilitate

'external' participation. Citizen participation was institutionalized in the mid 1960s with the president Lyndon Johnson's Great Society Programs (Corgan & Sharpe, 1986).

Citizen participation theory states that participation is a desired and necessary part of all community development activities. According to Spiegel (1968), citizen participation is the process that can meaningfully tie programmes to people by enhancing ownership. Citizen participation in programmes implementation was earlier practiced in Platos Republic. Plato's concept of freedom of speech, assembly, voting and equal representation have evolved through the years to form basic pillars upon which the United States was established. Citizen participation is the essence of democracy. The town assembly in America was unique because all of the citizens in the community got together to decide on issues. The growth of States both numerically and economically later made it increasingly difficult for every citizen to actively participate in all community decisions and programmes. This led into use of representatives either directly or in form of community groups (Christen & Robinson, 1980).

In spite of the fact that direct citizen participation has declined, ample opportunities exist in most communities for citizens to get involved in their community's destiny. Volunteer groups function as links between individuals and larger societal structures. Involvement of the community in programs implementation helps promote dignity and self-sufficiency within the individual which helps to tap the energies and resources of individual citizen within the community and also provides a source of special insight, information, knowledge and experience which contribute to soundness of community solutions. Community involvement helps legitimate its programmes, plans, actions and leadership. It also helps reduce the cost for personnel needed to carry out many of the duties associated with the community actions without which, scores of worthwhile projects would never be achieved in many communities. The study will be anchored on this theory for its strengths in projects implementations.

According to this theory, majority of the community members are reluctant to participate in implementation of programmes when they don't have enough information to act responsibly. They will only act in community activities if they understand the issue and the tied benefits (Wright $Hyman, 1966). The high value placed on education in any society sometimes eause people with low education achievement to feel inferior and shy off from participating in anY community activity. Citizen participation in community betterment organizations and Projects does not usually occur by chance alone but it is bound by participants' acceptable

principles such as visible positive benefits, better knowledge, and knowhow, group comforts and the like.

Much from this theory has been borrowed by the Kenyan government with an aim of eradicating hunger and poverty through involving community in projects implementation processes. This would depend on the participatory approach adopted as opposed to before 1980s when the government was the only benevolent in taking development to the people, referred to as a 'domesticating' approach as opposed to 'liberating' approach where people should be empowered to participate in their own development (Paulo Freire, 1973). Through NMK programme, the government aims to improve development and food status of Makuyu community by actively involving the community in the implementation of food security projects thus enhancing community ownership of the programme for sustainable food security.

2.8 Conceptual Framework

A conceptual framework is a hypothesized model identifying the concepts under study and their relationships (Mugenda & Mugenda 2003).It presents in a diagrammatic form the way the researcher has conceptualized the relationship between the independent and the dependent and also the confounding variables.

This section provides a structural description of the relationship between the variables forming the concepts of the study on the implementation of food security programmes.

The framework below is an illustration of possible underlying social and economic factors influencing implementation of projects for sustainable food security. The independent variables are grouped together on the left side but not in any order of importance. The dependent variable is placed on the right hand connected with an arrow as a sigh of direct relationship.

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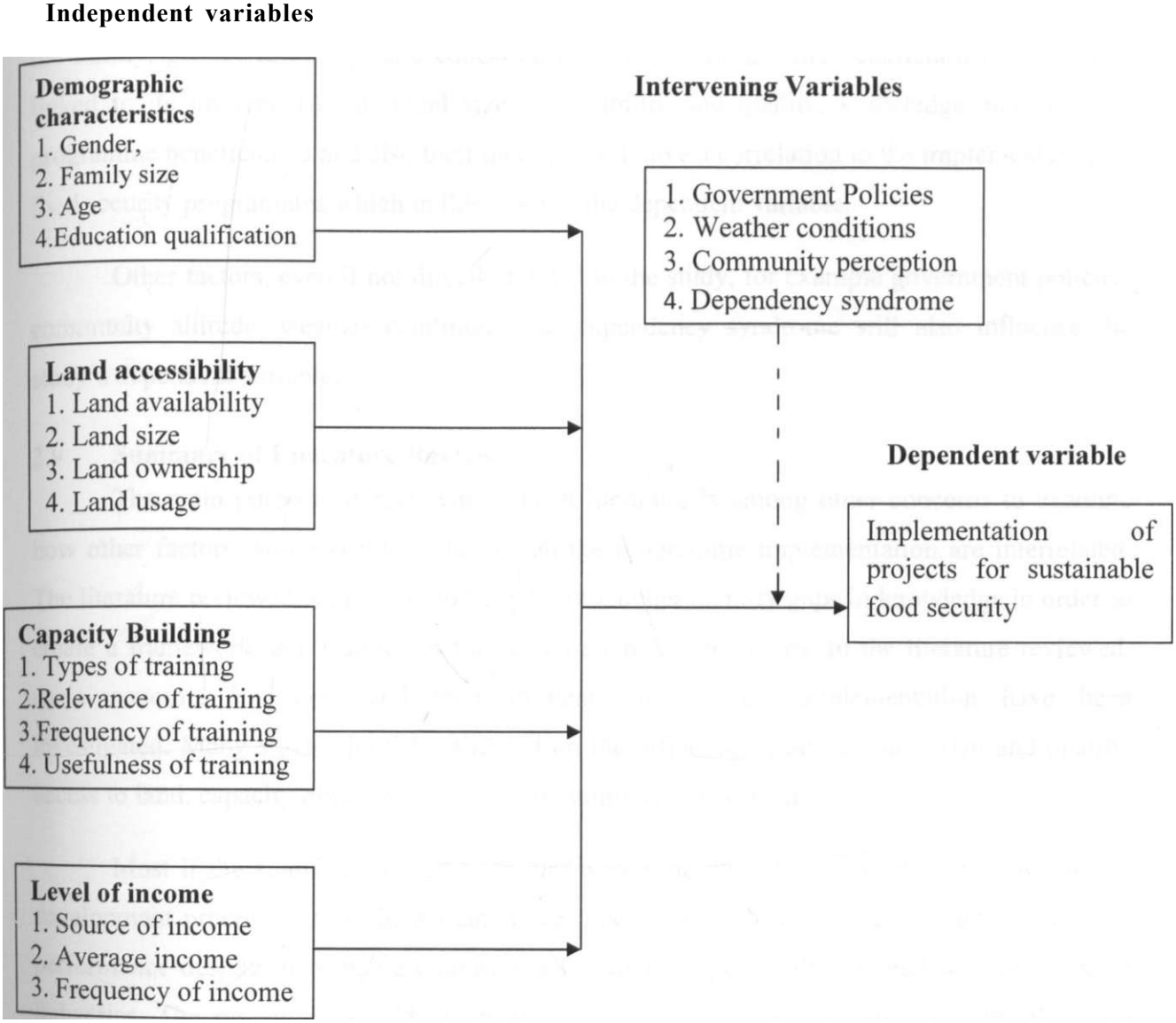

Figure 1: Conceptual Framework

Food-based programmes are mainly meant to ensure food security in the intended community. In the NMK food-security programme in Makuyu division, there are 8 community Projects funded by the government through the Ministry of Agriculture to be implemented by tlle community.

Unsuccessful implementation of similar programmes has been linked to the influence of various factors as indicated in the conceptual framework above. Programme implementation depends mainly on the demographic characteristics of the community of concern. The size of the family, gender roles, age and education level of the progamme beneficiaries are directly linked to its implementation. Land size, accessibility and quality, knowledge and skills of programme beneficiaries and also their income level have a correlation to the implementation of food security programmes which in this study is the dependent variable.

Other factors, even if not directly related to the study, for example government policies, community altitude, weather conditions and dependency syndrome will also influence the study's dependent variable.

2.9 Summary of Literature Review

The main purpose of reviewing related literature is among other concerns to examine how other factors with possible influence on the programme implementation are interrelated. The literature reviewed is intended to help the researcher identify gaps in knowledge in order to create a framework and a direction for other new research studies. In the literature reviewed, socio-economic indicators and their influence to projects implementation have been investigated. Many studies have highlighted on the influence of gender, land size and quality, access to land, capacity development and community empowerment.

Most if the studies reviewed have discovered the importance of integrating women in development processes to avoid human waste. The same studies have discovered that women performance despite them being empowered is still low specifically in small and micro-scale industries. The researcher would therefore wish to uncover other possible gap problems on gender and projects implementation and also determine the extent to which these gaps have affected achievement of projects objectives. Specific studies on Philippine^ integrated rural development projects, concluded that low performance of women in project implementation [w]as tied to the type of project activities undertaken. The researcher wishes to establish the [e]*tent to which gender influences implementation of projects based on food security.

Education level of the project beneficiaries has been cited in the reviewed studies as an [ln]dicator of project implementation. Educated beneficiaries are able to comprehend the [ltT1]Portance of owning community projects by being actively involved. Other studies have

concluded that capacity building of the community equally contributes to people's reception to community projects irrespective of their education level. Most studies reviewed have established the need for capacity building in all phases of project cycle and most of the projects studied have encompassed the same. The researcher would want to find out the relevance of training offered to the implementation of the projects undertaken.

Implementation of agricultural-based projects has been hampered by land scarcity as concluded by most studies conducted on implementation of food security projects. NMK programme is involved with agricultural projects that require reasonable amount of land, and therefore the researcher intends to conduct a study on the implementation of the NMK programme to ascertain other researchers' findings and help generate knowledge on how to cope with land issues to ensure sustainable food security.

Most of the literatures reviewed indicate that there are still other indicators of poor implementation of food-based programmes, and therefore studies should be conducted to help unearth most of these factors lest they remain a barrier to the achievement of the MDGs number-1 by the year 2015 which is just a mile away.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview of the research methodology employed by the study. It gives a description of the research design used, the target population studied, the sample size and sampling procedure applied, data collection methods and instruments used. Validity and reliability of the instruments used are also featured in this chapter together with data analysis and presentation procedures.

3.2 Research Design

The research study employed a descriptive survey design which is under quantitative approach. According to Best (2004), a survey is a means of gathering information about the characteristics, actions or opinions of a group of people, referred to as population. It assisted in describing data and characteristics about population and phenomenon that was being studied.

The descriptive survey design helps answer the questions like who, what, where and how on describing the phenomenon on study. This design was appropriate for the study because it enabled data collection from the sample on the factors influencing implementation of the NMK programme.

3.3 Target Population

Target population is that population that the researcher wants to generalize the results of the study. Mugenda and Mugenda (2003) define target population as the entire group a researcher is interested in or the group about which the researcher wishes to draw conclusion.

The target population of the study was all the 180 members of the eight NMK funded community groups who were the direct beneficiaries of the NMK food security programme as indicated in the general overview of NMK Program, Murang'a county report of March 2012, (Table 3.1). Three community group facilitators and the NMK desk officer were also targeted giving a total population of 184 elements. The target population provided information on the socio-economic factors and challenges influencing implementation of the said programme.

Table 3.1: NMK Funded Community Groups up to March 2012

	Name of the group	No. of members	Activity/project funded
1	Muhohoyo Mwihoko Self-Help Group	23	Dairy goats keeping and horticulture farming
2	Four Rivers Horticultural S.H.G	20	Horticultural crops farming
3	Sabasaba Growers S.H.G	30	Multipurpose Tree Nursery
4	Kimorori Adult Education S.H.G	24	Dairy Goats Farming
5	Ithanji mango farmers S.H.P	18	Banana production
6	Makuyu Dairy Goat Self Help Group	16	Dairy Goat Project
7	Thangira Community Health Farmers	11	Potatoes seed bulking
8	Royal Life transformation initiatives	38	Bee keeping & Horticulture farming
	TOTAL	**210**	

Source; General overview of NMK programme Murang'a County Report (March 2012)

3.4 Sample size and sampling procedure

This section presents the method used to determine the study sample size from which data was collected. It also describes the sampling techniques used in selecting elements to be included as the subjects of the study sample.

3.4.1 Sample size

A sample size is a sub-set of the total population that is used to give the general views of the target population (Kothari 2004).The sample size must be a representative of the population on which the researcher would wish to generalize the research findings. According to the Krejcie and Morgan sample size table (1970), the sample size of this study was 123 members based on the target population of 180 elements, (Appendix 5). The 3 community group facilitators and the NMK desk officer were also included in the study sample. Krejcie and Morgan sample size table is a table that is universally accredited and provides a reasonable sample size depending on the size of the population on the study.

3.4.2 Sampling Technique

This is the act of selecting a suitable sample or a representative part of a population for the purpose of determining characteristic of the whole population (Frankel &Wallen, 2008). The study applied probabilistic techniques to obtain the study sample from the study population. Probability technique is a sampling process in which each element of the population has an equal chance of inclusion in the sample (Ogula, 1998).

A sample of 123 respondents as per Krejcie and Morgan Sample Size Table was selected from the 180 target population through stratified proportional random sampling in order to ensure that they were evenly spread within the eight community funded groups (Table 3.2). The three community group facilitators and the NMK desk officer were selected to be included in the study sample.

Table 3.2: Sample size distribution table

S.N	Name of the group	No. of group members	Sample per group
1	Mohohoyo Mwihoko S.H.G	23	20/180*123= 16
2	Four River Horticulture S.H.G	20	20/180*123= 14
3	Sabasaba Growers S.H.G	30	30/180*123= 21
4	Kimorori Adult Education S.H.G	24	24/180*123= 16
5	Ithanji Mango Farmers S.H.G	18	18/180*123= 12
6	Makuyu Dairy Goat S.H.G	16	16/180*123= 11
7	Thangira Community Healthy Farmers	11	11/180*123= 7
8	Royal Life Transition Initiatives	38	38/180*123= 26
	T OTALS	**180**	**123**

3.5 Research Instruments

Creswell (2003) indicates that research instruments are the tools used in the collection of data on the phenomenon of the study. This study used two different types of questionnaire to gather information from the study respondents. A questionnaire according to Mugenda and Mugenda (2003) is a list of standard questions prepared to fit a certain inquiry. Closed-ended questions were used where the respondents were restricted to direct answers without further explanations. To obtain data from the group members, the researcher distributed questionnaire to different groups at different times and collected them after they were responded to. The questionnaire consisted of four sections each addressing the four study variables.

A different questionnaire was used to obtain information from the four NMK government officers. The questionnaires used contained open and closed- ended questions which allowed the respondents to freely give their opinions.

3.5.1 Pilot Testing

Orodho (2004) describes pilot testing as a smaller version of a larger study that is conducted to prepare for the study or to field test the survey to provide a rationale for the design. It involves pre-testing of the instruments to determine their validity and reliability. The researcher pilot-tested the instruments by using a different but a similar group from a different division and then made necessary adjustments.

The researcher used a self-help group undertaking similar activities but from the neighboring Maragwa division. Kaharo Active Assembly Women Group consists of 35 members who are the direct beneficiaries of the project activities. Using simple random sampling, the researcher selected a sample of 12 subjects equivalent to 10% of the study sample size of 123 subjects. According to Mugenda and Mugenda (2003), a sample equivalent to 10% of the study sample is enough for piloting the study Instruments. After responding to the instruments, the subjects were encouraged to make necessary corrections and adjustments of the instruments to increase their validity.

3.5.2 Validity of Research Instruments

Validity is defined as the appropriateness, correctness, and meaningfulness of the specific inferences which are selected on research results (Frankel &Wallen, 2008). It is the degree to which results obtained from the data analysis actually represent the phenomenon

under study. This research study concerned itself with content validity. Content validity according to Kothari (2004) is the extent to which a measuring instrument provides adequate coverage of the topic under study. Content validity ensures that the instruments will cover the subject matter of the study as intended by the researcher.

To ensure content validity of the instruments, the researcher closely consulted research experts and also the peer members undertaking the same program. The research experts assisted in assessing the variables to be measured by the instruments, while the peer members helped in determining whether the set of items were accurately representing the variables under study. Results of the pilot testing obtained from Kaharo Active women group was used to validate the instruments especially in the adjustment of language and modification of the questions.

3.5.3 Reliability of the Research Instrument

Reliability is the consistency with which the measuring instrument performs, such that apart from delivering accurate results, the measuring instrument must deliver similar results consistently after repeated trials (Leedy, 2000).

The reliability of the instruments was estimated through a repeated measurement which involved the split half method. The questionnaire items responded by the respondents of the pilot testing group were assigned arbitrary scores. The scores obtained were keyed into the SPSS soft ware and through Spearman-Brown prophecy formula, a correlation coefficient of 0.711 was obtained indicating that the instrument had an internal consistency. According to Mbwesa (2006), if the correlation coefficient of the instruments falls above +0.6, the instrument is taken reliable and therefore suitable for data collection.

3.6 Data Collection Procedure

In the data collection procedure, the researcher prepared a research project proposal with constant consultation with the supervisor. The research project proposal was then presented to a panel appointed by the University of Nairobi for approval and permission to collect data on the Phenomenon of the study.

Research permits from the Ministry of Higher Education through the National Council for Science and Technology and also from the NMK office, Murang'a South were obtained. The researcher together with a trained research assistant accompanied by a community group

facilitator visited the NMK-funded groups for data collection. Questionnaire was administered to the sample group and after responding to the items therein, the questionnaires were collected and handed over to the researcher. A different type of questionnaire was also responded to by the NMK officers but on a different day. Ethical principles were observed throughout the excise in line with the constitutional right of every person.

Obtained data from the field was summarized and analyzed after which a report on the same was prepared subject to supervisor's corrections ready for the final defense.

3.7 Data Analysis Technique

The raw data obtained from the study was systematically organized and converted to numerical codes representing measurements of variables. The organized and well coded data was then analyzed through descriptive statistics which according to Frankel and Wallen (2008) is a technique that enables researchers to meaningfully describe data with numerical indices or in graphical form. Computer software Statistical Package for Social Scientist (SPSS, Version 11.5) aided in data analysis which were then presented using percentages and frequency distribution tables.

3.8 Ethical Consideration

The researcher exercised utmost caution while administering the data collection instruments to the respondents to ensure their rights and privacy were respected. Before the actual administration of the instruments, an explanation on the aim and the purpose of the study was explained to the respondents in the language they understood better.

The study also sought the consent of the respondents before they were provided with all the requirements of the study. To ensure confidentiality, the questionnaires were given numerical codes instead of names and no respondents were forced into the excise. The study findings were presented without any manipulation of data in favour of the researcher's [ex]Pectations.

Table 3.3: Operational Definition of Variables

Objectives	Variables	Indicators	Measuring levels	Tools of data collections	Tools of analysis
f^examine the extent at which demographic characteristics influence of implementation of NMK Program in Makuyu division, Murang'a county	Demographic characteristics	Gender of project beneficiaries	Nominal	Questionnaire	Percentage and Frequencies
		Age group of the program beneficiaries	Ordinal	Questionnaire	Percentage and Frequencies •Mode
		Family size of the program beneficiaries	Ordinal	Questionnaire	Percentages and Frequencies
		Marital status	Nominal	Questionnaire	Percentages and Frequencies
		Education level	Ordinal	Questionnaire	Percentages, mode Frequencies
To investigate the extent to which capacity building of program beneficiaries influence the implementation of the NMK program in Makuyu division, Murang'a county	Capacity building	Number of beneficiaries trained on the project activities	Ratio	Questionnaire	Percentages and Frequencies
		Number of times trained	Ratio	Questionnaire	Percentages and Frequencies
		Frequency of training	Nominal	Questionnaire	Percentages and Frequencies
		Relevance of training to the program	Ordinal	Questionnaire	Percentages and Frequencies
		Usefulness of training	Nominal	Questionnaire	Percentages and Frequencies
To investigate the level at which access to land by the beneficiaries influence lmplementation of the NMK program in Makuyu division, |H[an^a_county	Access to land	Land availability	Nominal	Questionnaire	Percentages and Frequencies
		Land size	Ratio	Questionnaire	Percentages and Frequencies
		Land ownership	Nominal	Questionnaire	Percentage and Frequencies
		Land usage	Nominal	Questionnaire	Percentages and Frequencies
To establish the e*tentto which kneficiaries income level influence the ^mentation of L<J!iPi^grams	Level of income of the program beneficiaries	Source of income	Nominal	Questionnaire	Percentages and Frequencies
		Rate of income	Ordinal	Questionnaire	Percentages and Frequencies
		Frequency of the income	Ordinal	Questionnaire	Percentages and Frequencies

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS, INTERPRETATIONS AND DISCUSSIONS

^ \ Introduction

This chapter provides an analysis, presentation, interpretation and discussion of the data $_{c0}$llected from the study respondents on the NMK program implementation. The information $_{0}$btained was on the demographic characteristics of the program beneficiaries that covered gender, age, marital status and education qualification of the project implementers; access to land, capacity building and income level of the program beneficiaries and the influence they had $_{0}$n the implementation of the NMK programme.

4.2 Questionnaire Return Rate

The study sample was 127 subjects, 123 from the NMK funded groups and 4 NMK government officers. In order to answer the research questions, the study administered 117 questionnaires to the direct implementers of the NMK program and a different questionnaire to the **4** NMK officers. The study sample size of 123 respondents was not realized. The response rate was therefore 95.12 % which was considered adequate for analysis and conclusion. According to Frankel and Wallen (2004), a response rate of above 95% of the respondent can adequately represent the study sample and offer adequate information for the study analysis and thus conclusion and recommendations. Different NMK funded groups were met through prior arrangements which enabled the researcher to effectively collect data from the sampled respondents.

4.3 Demographic Characteristics of Respondents

One of the study objectives was to examine influence of demographic characteristics of the beneficiaries on the implementation of the NMK program for food security. In order to establish influence of respondents' demographic characteristics, the study obtained the respondents responses on gender, age, marital status, family size and education qualification. The study further analyzed the results obtained by cross tabulating them with respondents' response on the extent of their involvement in the implementation of the NMK programme.

Gender responses and implementation of NMK Program

One of the demographic characteristic that the study investigated on was gender ^stribution among the NMK program implementers in order to establish influence gender has

on implementing of community programs. To fulfill this, the researcher asked the respondents to indicate their gender and the results were presented in Table 4.1.

Table 4.1: Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	39	33.3
Female	78	66.7
TOTAL	**117**	**100.0**

Table 4.1 shows that 78 (66.7%) of the 117 respondents were women while only 39 (33.3%) were men. This shows that a large number of study respondents who had taken up programme activities were female gender. Further analysis of the extent of respondents' involvement in program implementation by gender was undertaken and the findings were as indicated in Table 4.2.

Table 4.2: Involvement in Program Implementation by Gender

		Gender		Total
Extent of involvement		**Male**	**Female**	
Largely involved	Count	12	21	33
	% of Total	10.3%	17.9%	28.2%
Moderately involved	Count	26	55	81
	% of Total	22.2%	47.0%	69.2%
Not largely involved	Count	1	2	3
	% of Total	.9%	1.7%	2.6%
Total	**Count**	**39**	**78**	**117**
	% of Total	33.3%	**66.7%**	**100.0%**

Table 4.2 shows that 55(47%) of female gender and 26(22.2%) of male gender were involved in NMK activities to a moderate extent, while 21(17.9%) female gender and 12(10.3%) male gender were largely involved in the programme implementation. Only 1.7% female and 0.9% male gender were lowly involved in the programme activities.

From the results analysis, it is an indication that female gender is more receptive to the implementation of community food-based programmes compared to male gender. Majority of the respondents largely involved in programme implementation were female, confirming that gender had influence on NMK programme implementation.

In response to gender issue, the study established that majority of the programme implementers (66.7%) were female which correlates with the findings by the Ministry of Agriculture (2009) which noted that 70% of the agricultural related activities are carried out by women who provide about 75% of the labour used in the small holdings.

The study finding also confirms observation made by the World Bank (2007) which stated that, in Kenya men were the key decision makers in farming, yet women provide the greatest labour. The study results also concede with research findings by Mwanyumba (2010) conducted in Taita district, Wundanyi location. It was found that most of the farm workers (66%) were women aged between 35 and 60 years, closely followed by women of advanced age group. Some old men over 60 years also assisted in the farming equally. Gender distribution has been found to have great influence on implementation of development and food based projects.

4.3.2 Age of Respondent and Program Implementation

Age is a demographic characteristic that is bound to influence implementation of projects. In order to determine the influence age has on implementation of NMK programme, the study respondents were asked to indicate their age bracket for the study analysis. The findings obtained are presented in Table 4.3.

Table 4.3: Age Distribution of the Respondents

Age Distribution	Frequency	Percent
15-25	6	5.1
26-45	23	19.7
46 years and above	88	75.2
TOTAL	**117**	**100.0**

According to the study findings, 88 (75.2%) respondents were community members of ^ years and above, 23 (19.5%) were in the age group of 26-45 years and only 6 (5.1%) of the

respondents were in the youthful stage of below 25 years. Most of the community members aged below 25 years were not involved in the NMK agriculture-based projects despite the fact they are the most populated and vibrant age group within the society. The study clearly indicates that majority of the programme implementers were above 45 years most likely those who had retired from their formal occupations or had not been very successful in life. Further investigation was carried out on the extent of respondents' involvement in the programme implementation in relation to the age of the respondents and the results were presented in Table 4.4.

Table 4.4: Involvement in Program Implementation by Age

Extent of involvement		15-25years	26-45 years	46 years and above	Total
largely involved	Count	3	6	24	33
	% of Total	2.6%	5.1%	20.5%	28.2%
moderately involved	Count	3	16	62	81
	% of Total	2.6%	13.7%	53.0%	69.2%
not involved	Count	0	1	2	3
	% of Total	0.0%	0.9%	1.7%	2.6%
TOTAL	**Count**	**6**	**23**	**88**	**117**
	% of Total	**5.1%**	**19.7%**	**75.2%**	**100.0%**

As stated in Table 4.4, out of the 28.2% of the respondents who were largely involved in the programme implementation, 20.5% were above 46 years, 5.1% were in the age group of 26-45 years while only 2.6% were in their youthful age of below 25 years. This indicates that a large number of NMK programme implementers are concentrated in the age above 46years. Age distribution was therefore found to have influence on the implementation of food-based Programmes, since most of the community members in their productive age are not involved in the programme implementation process.

This study finding correlates with the findings by Jimmiel (2005) who found that in Zimbabwe, age distribution had a key role in determining labour distribution and those households headed by members of above 45 years of age adopted fish farming projects

introduced by the government as a means of improving food security within the community. The study also noted that, different types of project activities attract different age groups of the respondents.

The study results agree with Kipserem (2011) who found out that in Keiyo district, the average age of farmers in the study area was above 45 years and concluded that youth tend to shun projects that are agriculture-related and those of low monetary profits.

The study findings were also found to concur with the conclusion made by Kabue (2011) that young people may be receptive to new ideas and innovations in agriculture but may not perceive farming as an important occupation and hence lack of participation.

4.3.3 Marital Status of the Respondent

Marital status is a demographic characteristic that is likely to have influence on community participation in community projects. It was therefore important for the study to investigate whether marital status had any influence in the implementation of NMK programme for food security. In order to establish its influence on the programme implementation, the study respondents were asked to state the marital status they belonged to and the findings were analyzed and presented in Table 4.5.

Table 4.5: Distribution of Respondents Marital Status

Marital status	Frequency	Percentage
Single	13	11.1
Married	79	67.5
Widowed	25	21.4
TOTAL	**117**	**100.0**

From the above analysis, 79 (67.5%) of the respondents were married, 25 (21.4%) were widowed while 13 (11%) were single. The findings showed that a large number of the NMK Program implementers were married, followed by the widowed and finally by singles families.

The study found it important to examine the extent to which respondents in each marital status were involved in the implementation of the programme in order to ascertain the influence [n] had in implementing the NMK programme. The results arrived at are shown in Table 4.6.

Table 4.6: Involvement in Programme Implementation by Marital Status

Extent of involvement		Marital status			Total
		Single	Married	Widowed	
Largely involved	Count	2	26	5	33
	% of Total	1.7%	22.2%	4.3%	28.2%
Moderately involved	Count	11	50	20	81
	% of Total	9.4%	42.7%	17.1%	69.2%
Not largely involved	Count	0	3	0	3
	% of Total	0.0%	2.6%	0.0%	2.6%
TOTAL	**Count**	**13**	**79**	**25**	**117**
	% of Total	**11.1%**	**67.5%**	**21.4%**	**100.0%**

The findings indicate that among the respondents who were married, 42.7% of them were moderately involved in the program activities, 22.2% were largely involved while only 2.6% were not largely involved. From the widowed families, 17.1% were moderately involved, but only 4.3% were involved to a larger extent. Very few single families were in the project implementation with 9.4% moderately involved and 1.7% involved to a greater extent.

Extent of involvement in programme implementation with respect to marital status of the respondents confirmed that, community members in stable and complete families are more involved in implementing community food-based projects compared to single and widowed families. Married families are prominent in the society and with many members to provide for and therefore the need to embrace programme activities for food security within the households. Most of the programme activities e.g. dairy goats farming are extended to households and the benefits are leapt by the implementers who are the project's direct beneficiaries.

4.3.4 Family size of the Programme Implementers

The size of the families of the respondents is within demographic characteristics and is bound to influence implementation of programmes and especially related to food security. The study question on the influence of respondents' demographic characteristics on program [lm]Plementation was responded to by identifying the extent of involvement of respondents of

different family sizes in implementing the program. Their responses were analyzed and presented in Table 4.7.

Table 4.7: Involvement in Programme Implementation by Family Size

Extent of involvement			Family size 1-5	6-10	11 and above	Total
	Largely involved	Count	16	15	2	33
		% of Total	13.7%	12.8%	1.7%	28.2%
	Moderately involved	Count	31	50	0	81
		% of Total	26.5%	42.7%	.0%	69.2%
	Not involved	Count	2	1	0	3
		% of Total	1.7.%	.9%	.0%	2.6%
TOTAL		**Count**	**49**	**66**	**2**	**117**
		% of Total	**41.9 %**	**56.4 %**	**1.7%**	**100.0%**

The Table 4.7 indicates that majority of the respondents 66 (56.4%) who were implementing the NMK program had families of less than 10 members but more than 6 family members. Among those respondents, 50(42.5%) were moderately involved in program implementation, 15(12.8%) were largely involved and only 0.9% were involved to a small extent. There were only 2(1.7%) respondents with more than 11 family members and all were largely involved in implementing the NMK programme.

Most of the families in the society are of the size of between 6-10 members which may be a challenge to meet their food demands; hence the need to embrace NMK funded activities to supplement their other food sources.

4.3.5 Family Status of the Respondents

The study also investigated the family status of the programme implementers in attempt to answer the study question on whether demographic characteristics of program implementers' mfluence program implementation. The study respondents were asked to state the status of their families and the results of their responses were as shown in Table 4.8.

Table 4.8: Family Status of the Respondents

Extent of involvement			Family status			
			Male-headed	Female - headed	Child-headed	Total
	largely involved	Count	25	7	1	33
		% of Total	21.4%	6.0%	.9%	28.2%
	moderately involved	Count	53	24	4	81
		% of Total	35.3%	30.5%	3.4%	69.2%
	not involved	Count	3	0	0	3
		% of Total	2.6%	.0%	.0%	2.6%
TOTAL		**Count**	**61**	**51**	**5**	**117**
		% of Total	**59.2%**	**36.5%**	**4.3%**	**100.0%**

From the study findings, majority of the programme beneficiaries 61(59.2%) were from male-headed families 51(36.5%) were from male-headed families while 5(4.3%) were from child-headed families. The study indicated that a large number of the programme implementers were from male-headed families closely followed by female-headed families. Most of the family assets like land, income are controlled by men and this may influence individual's involvement in programme implementation.

Studies done by Degafa, (2000), Ramarkrisha (2002), and Kidane (2005) as quoted in Murei (2011), independently conducted in different parts of rural Ethiopia, came out with common conclusions that livelihood of female-headed households were disadvantaged when compared with their male counterparts. This is due to the fact that researches justify female households have limited access to livelihood assets like land, education, laborforce and credit services which can be extended in implementing community projects.

4.3.6 Respondents Education Qualifications and Programme Implementation

The level of education of the project implementers was looked at as a demographic ^dicator that would influence implementation of food-based projects. In order to answer the study question on influence of respondents' demographic characteristics on programme [lrn]plementation, the study respondents were asked to indicate their education levels which were

further cross-tabulated with their extent of involvement in programme implementation. Table 4.9 shows respondents' responses.

Table 4.9: Education Qualification of the Respondents

Education Level	Frequency	Percentage
Primary level	63	53.8
Secondary level	28	23.9
College level	11	9.4
University level	3	2.6
Never attended any school	12	10.3
TOTAL	**117**	**100.0**

According to the study findings, 63 (53.8%) respondents indicated primary education as their highest education level, 28 (23.9%) had secondary education, 11(9.4%) had attended different colleges, 3(2.6 %) of the respondents had university education while 12(10.3%) had not attended any form of school. For further analysis, extent of respondents' involvement in programme implementation with respect to their education qualification was cross tabulated and results were presented in Table 4.10.

Table 4.10: Involvement in Programme Implementation by Level of Education

Education qualification		Extent of Involvement			Total
		Largely involved	Moderately involved	Not largely involved	
primary level	Count	18	45	0	63
	% of Total	15.4%	38.5%	.0%	53.8%
college level	Count	2	8	1	11
	% of Total	1.7%	6.8%	0.9%	9.4%
secondary level	Count	12	15	1	28
	% of Total	10.3%	12.8%	0.9%	23.9%
university level	Count	1	2	0	3
	% of Total	.9%	1.7%	.0%	2.6%
No sch. attended	Count	0	11	1	12
	% of Total	.0%	9.4%	0.9%	10.3%
TOTAL	**Count**	**33**	81	**3**	**117**
	% of Total	**28.2%**	**69.2%**	2. 6%	100.0%

The analysis on the extent of involvement of the respondents in implementation of the program activities with respect to their education qualification indicated that, majority of the respondents 63(53.8%) had primary education among them 45(38.5%) were moderately involved in the program activities, 18(15.4%) were largely involved and none was lowly involved in the program implementation.

Out of the 28(23.9%) respondents with secondary education qualification, 15(12.8%) were moderately involved, 12(10.3%) were largely involved while only 1(0.9%) was noted not involved to a greater extent. With the only 3 respondents with university qualification, 2(22.7%) were moderately involved while 1(0.9%) was largely involved in the program implementation. The few respondents without any formal education were noted to be involved in program implementation. 11 (9.4%) of the 12 respondents who had not attended any form of school confessed of being moderately involved in the implementation of the program activities.

From the study findings, it can be interpreted that education is essential to the implementation of the programme though the level of education qualification of the programme implementers does not directly influence implementation of food-based projects. Reuben (2005) noted that education levels of households in Niger Delta in Nigeria were quite low, especially among the youth and women who were engaged in agricultural farming but with constant field demonstration, the government supported food interventions were successfully implemented.

The study findings are supported by study finding by Kidane (2006), which indicated that attainment of basic educational skills by the household heads could lead to awareness of the possible advantages of modernizing agriculture by means of technological input, read and understand documentation, read instructions on the fertilizer packs, and diversification of household income which in turn would enhance household food supply.

Macharia (2007) studied educational characteristics of dairy farmers in Central and the Rift Valley provinces and concluded that those mostly involved in dairy farming were lowly educated (69.9%). Mubichi (2009) while studying factors influencing sustainability of foreign aid projects in Imenti North found out that, where community members had primary education, the donor funded projects were about 58 times more likely to succeed compared to where the community had no education and therefore the study findings agree with most of the findings of the past researchers of implementation of food based projects.

4.4 Land Accessibility and Program Implementation

Land accessibility is the second variable the study wished to examine in attempt to answer the study question on the influence of land on implementation of NMK program for food security. Most of the activities for food production are agriculture based and therefore, land accessibility is likely to influence implementation of programs based on food production. In attempt to establish its influence on NMK program implementation, the study investigated on land available to the implementers, the size of the available land and the ownership of the land °n program activities. The results were later cross-tabulated to assess the extent of respondents' •nvolvement in program implementation with respect to land.

4.4.1 Land Ownership and Implementation of NMK Program

Most of the projects for sustainable food security are based on agriculture^ which on the other hand is dependent on the availability of productive land. In relation to thfcis variable, the study investigated the ownership of land by the program implementers letting the respondents state the ownership of land they live in and for program implementa-rtion. The study findings resulted at were analyzed and presented in Table 4.11.

Table 4.11: Land Ownership of the Respondents

Land Ownership	Frequency	Perce x*itage
Self owned	61	52. .1
Rented	5	4_ 3
Others	51	43 .6
TOTAL	**117**	I00.C:

Land is an essential resource in the implementation of food-based projects. The study findings indicated that at least all project implementers had access to land, eitk-ier self owned, rented or from other sources like inheritance, land care-taking, or given by donc^rs. Most of the program implementers represented by 61(52.1%) had their land self-owned, S 1(43.6%) from other sources like inheritance, donated, while only 5(4.3%) lived on rented land.

The relationship of land ownership and the extent of respondents' involvement in the program implementation was established and presented in Table 4.12.

Table 4.12: Involvement in Program Implementation in relation to Land Ownership

Extent of involvement		Land ownership			Total
		Self owned	Rented	Others	
Largely involved	Count	16	1	16	33
	% of total	13.7%	.9%	13.7%	28.2%
Moderately involved	Count	44	4	33	81
	% of total	37.6%	3.4%	28.2%	69.2%
Not largely involved	Count	1	0	2	3
	% of Total	0.9%	0.0%	1.7%	2.6%
TOTAL	**Count**	**61**	**5**	**51**	**117**
	% of Total	**52.1%**	**4.3%**	**43.6%**	**100.0%**

Table 4.12 shows that majority 81(69.2%) respondents were moderately involved in program implementation, 44(37.6%) on self owned land, 33(28.2%) on land given, donated or inherited and 4(3.4%) on rented land. The study findings indicated that the community members living on their own land are in a better position to execute program activities. Land ownership from the study analysis is seen as a factor with influence on the implementation of food related projects.

In a study done in Bangladesh by Sanders (1994) focusing on land fragmentation and ownership of resources with reference to productivity and technical efficiency in rice production, it was revealed that land ownership has a significant detrimental effect on productivity and efficiency in implementation of agricultural projects.

^•4.2 Land Size of the Respondents

The size of the land available to the programme implementers determines the level of the programme's implementation depending on the type of activities carried out. The study in [a]ttempt to answer the study question on the influence of land availability on NMK programme

implementation enquired the size of land occupied by the respondents and on which programme activities were being executed. The respondents' responses were analyzed and presented in Table 4.13.

Table 4.13: Land size and Programme Implementation

	Frequency	Percentage
1 Acre and below	70	59.8
1-2 Acres	40	34.2
Above 2 Acres	7	6.0
TOTAL	**117**	**100.0**

From the study finding, 70 (59.8%) of the respondents occupied a land of less than one (1) acre, 40 (34.2%) occupied a land of less than 2 acres while only 7 (6%) had a land of above two acres. A large number of respondents occupied a small land of less than 2 acres which may have a big influence on project implementation.

The obtained findings were cross tabulated with the respondents' extent of involvement in program implementation and the findings were as in Table 4.14. It was established that despite the fact that majority occupied less than one acre land, only 12.8% were involved in the program implementation to a larger extent. Majority of the respondents 53(45.3%) were moderately involved but with a land of less than 1 acre. Only 7 (6.0%) respondents had a land of above 2 acres and the study noted that they were involved in the programme implementation to a greater extent. Most of the projects for food security are based on agriculture activities which require reasonable size of land to realize their objectives.

Table 4.14: Extent of Involvement in Programme Implementation in Relation to Land Size

Extent of involvement			Size of the Land			
			1 acre and below	1-2 acres	Above 2 acres	Total
	Largely involved	Count	15	16	2	33
		% of Total	12.8%	13.7%	1.7%	28.2%
	Moderately involved	Count	53	24	4	81
		% of Total	45.3%	20.5%	3.4%	69.2%
	Not largely involved	Count	2	0	1	3
		% of Total	1.7%	.0%	.9%	2.6%
Total		**Count**	**70**	**40**	**7**	**117**
		% of Total	**59.8%**	**34.2%**	**6.0%**	**100.0%**

Further investigation indicated that 94 (80.3%) of the respondents confirmed that the land they occupied was not very adequate for the implementation of the NMK project activities (Table 4.15). Among the 117 respondents interviewed, 23(19.7%) revealed that the land size they occupied was adequate just for the NMK agricultural activities they were undertaking like dairy goats faming. The responses of the respondents on land adequacy were analyzed in Table **4**.15.

Table 4.15: Adequacy of Land Accessible of the Respondents

	Frequency	Percentage
Just Adequate	23	19.7%
Not Adequate	94	80.3%
fOTXL	**117**	**100.0**

The study results agree with the study findings by Thompson (1996) which indicated [l]hat land issues, fragmentation and land tenure are major obstacles to achieving the MDG goal °-1 of eradicating hunger and poverty.

The findings of the study correlates with the findings of the study by Mwaura (2009) in Vihiga district-Kenya, which indicated that agricultural productivity had been affected by scarcity of productive land since much of the available land had been fragmented into small segments which could only support horticultural crops to serve the season.

The study's research finding also agrees with Lei (2003) whose findings concluded that success of agricultural technologies for sustainable food security depends on availability of farm and wet land which also acts as collateral and thereby influences people's access to financial services.

4.4.3 NMK Funded Activities Undertaken by the Respondents

The type of agriculture activities executed determines the success of program implementation and therefore the study sought to examine the extent of involvement of respondents in different farm activities. The respondents were requested to indicate the activities they were involved in and their responses were presented in Table 4.16.

Table 4.16: Farm Activities within the NMK Programme

NMK funded Activities	Frequency	Percent
Horticulture crop farming	21	17.9
Banana production	16	13.7
potatoes seed bulking	5	4.3
cassava and sweet potatoes production	15	12.8
bee keeping	18	15.4
dairy goats farming	42	35.9
TOTAL	**117**	**100.0**

According to the study findings, different agricultural activities were being carried out by the program beneficiaries although majority of the respondents 42 (35.9%), were engaged in ^tfy goats farming activities. The study found that 21(17.9%) of the respondents undertook Viticulture farming, 18(15.4%) were in bee-keeping, 15(12.8%) in cassava and potatoes

production, 16(13.7%) in banana production and only 5(4.3%) in potatoes seed bulking. As established from the study, a large number of the respondents were in dairy goats farming. Dairy goats farming was favourable and practical even to the respondents on small self owned rented or donated pieces of land.

For more information on implementation of the NMK program, the researcher sought to establish the extent of the respondents' involvement in the specific program activities they were executing and the findings were analyzed and presented in Table 4.17.

Table 4.17: Involvement of Respondents in the NMK Programme Activities

	Frequency	Percentage
Largely involved	33	28.2
Moderately involved	81	69.2
Not largely involved	3	2.6
TOTAL	**117**	**100.0**

The study findings indicated that, 28.2% of the respondents interviewed were largely involved in the activities they were undertaking, 69.2% were involved but not to their full capacity, while 2.6% were also involved but to a lower extent. Lack of maximum involvement of the respondents in the implementation of the program suggests that majority of them had challenges of which the study sought to establish.

The study also sought to investigate the level of production of the activities undertaken by the groups under the NMK program in order to assess the level of their achievement towards sustainable food security. Different group members as the study sample were asked to state the production level of their projects. Table 4.18 presents the results of the respondents' responses.

Table 4.18: Level of Production of NMK Activities

Land Size	Frequency	Percentage
Highly productive	32	27.4
Moderately Productive	80	68.4
Less productive	5	4.2
TOTAL	**117**	**100.0**

Table 4.18 indicates that 80(68%) of the respondents had their projects productive to a moderate extent, 32 (27.4%) had their project activities productive to a higher extent and only 5 (4.2%) had their projects less productive. It can be interpreted that, most of the NMK program activities were being rolled on regardless of challenges as established by the study.

4.5 Capacity Building on NMK Program Implementation

Among the variables investigated in this study is the capacity building of the programme beneficiaries. This is because achievement of programmes and food interventions is tied on the capacity of the direct program implementers. In order to answer the study question on influence of capacity building on program implementation, the researcher sought for information on the training offered to the respondents, frequency of training, relevance and usefulness of training to the programme implementation.

4.5.1 Training of the Program Beneficiaries

Capacity building involves training for technical skills for practical application. Implementation of the NMK programme for food security involved execution of agricultural activities and therefore the study sought to establish influence of training in the its •mplementation. The respondents were asked to indicate whether they were trained or not prior to program implementation process. The findings were analyzed and presented in Table 4.19.

Table 4.19: Capacity Building of the Respondents

Training	Frequency	Percentage
Yes	112	95.7
No	5	4.3
TOTAL	**117**	**100.0**

The study undertaken showed that 112 (95.7%) of the program implementers had their capacities developed prior to the implementation of the NMK program. 5 (4.3%) of the program beneficiaries had not been trained due to late entry and absenteeism during training sessions as established during the study. The study findings indicated that a larger number of respondents underwent through training for skills to be applied in conducting the program activities.

The study further investigated on the relationship of training and extent of involvement of the respondents in the program implementation by cross tabulating two sub variables. The results obtained were analyzed and presented in Table 4.20.

Table 4.20: Involvement in Program Implementation in Relation to Training

		Extent of involvement			Total
11 anting		**Largely involved**	**Moderately involved**	**Not largely involved**	
Yes	Count	32	77	3	112
	% of Total	27.4%	65.8%	2.6%	95.7%
No	Count	**0**	4	1	5
	% of Total	**.0%**	3.4%	.9%	4.3%
TOTAL	**Count**	**32**	**81**	**4**	**117**
	% of Total	**28.2%**	**69.2%**	**2.6%**	**100.0%**

Table 4.20 shows that majority of the respondents 112 (95.7%) were trained for Programme implementation and among them, 65.8% were moderately involved in the ^plementation activities, 27.4% were largely involved and only 2.6% were involved but not to

a large extent. 4.3% of the respondents did not go through training and were noted not to be involved in program implementation to a large extent. From the study findings, it can be interpreted that training is a prerequisite for execution of projects activities since it enhances capabilities, efficiency and effectiveness of the implementers.

4.5.2 Training Frequency and Programme Implementation

The number of training sessions that the program implementers are exposed to determines the magnitude of skills and knowledge imparted which in turn would influence program implementation. In attempt to answer the study question, the study respondents were asked to state the number of times they had been trained and the results obtained were as in Table 4.21.

Table 4.21: Training Attendance by respondents

Training frequency	Frequency	Percent
1-5 times	53	45.3
6-10 times	47	40.2
10 and above times	12	10.3
None	5	4.3
TOTAL	**117**	**100.0**

Table 4.20 shows that 53(45.3%) of the respondents had been trained for at least 5 time, while 47(40.2%) had been trained for at most 10 times. The study findings therefore indicate that a large number of the respondents had attended training for at least 5 to 10 times. 12(10.3%) of the respondents had been trained for more than 10 times and only 4.3% had not been at all trained.

A large number of the program implementers had gone through training prior to the onset of the program implementation. It can be interpreted that training for skills is vital for Program implementation and therefore it should be frequent and ongoing for upgrading [ln]iplementers' skills to handle new challenges as they emerge in the program implementation Process.

4.5.3 Relevance of Training on Program Implementation

Capacity building involves strengthening of performance and capabilities of the programme implementers through skills training for specific project activities. To answer the research question, the respondents were asked to indicate whether training offered to them was of any relevance to the programme implementation. The responses were analyzed and presented in Table 4.22.

Table 4.22: Relevance of Training on Program implementation

Training relevance	Frequency	Percentage
Yes	109	93.2
No	8	2.6
TOTAL	**117**	**100.0**

Table 4.21 indicates that 109(93.2%) of the respondents confirmed relevance of capacity building offered to them for the implementation of the program. A small number represented by 8 (2.6%) of the program beneficiaries, among them those who never underwent any capacity building indicated that training offered was not relevant to the activities they were undertaking.

Skills and technology attained through training will have relevance if directly applied in the actual implementation activities and therefore, untrained respondents may not realize its relevance in the programme implementation until they are trained and apply the same in the implementation activities.

Capacity building of community members implementing the NMK programme has been found of profound benefits for effective implementation. The study respondents confirmed that the type of technical skills, knowledge and technology offered to them through training contributed to a great extent towards achieving objectives of the projects undertaken.

The study findings ascertain the findings of a study conducted by Njuguna (2011) on [lm]plementation of fish projects in Embakasi constituency. The study had established that [re]gardless of low education qualification of the program implementers, the skills and knowledge gained during technical training enabled implementers to have more exposure and ^s get actively involved in implementation of community projects. Majority of the NMK

program implementers were of basic primary education level which to some extent contribute to the uptake skills and knowhow from the training offered.

Similar study done in Accra-Ghana resulted to related findings in that technical education was the most consistent fountain in providing skills and capacity which is a major determinant of food security through agricultural programmes (Armar-Klemesu 2004). Development of peoples' capacity is therefore important in enhancing their effectiveness, efficiency and transparency in the implementation of community projects.

A study by Shalmali (2006) on the programme's implementation reveals that lack of knowledge and skills have prevented people from taking full advantage of recent government agricultural programmes which was also reflected from the study's findings. The NMK programme implementers had been sufficiently trained and thus the large extent involvements in the NMK programme implementation.

4.6 Influence of Income Level of the Program Beneficiaries on Implementation of the NMK Program

The study sought to investigate the extent to which income of the program implementers external to the NMK benefits influenced program implementation. In order to establish the influence of beneficiaries' level of income on program implementation, the study investigated on the respondents' source of income, average income per month and also the frequency of their income.

4.6.1 Respondents Source of Income

The level of income of the project implementers is a factor bound to influence implementation of community projects. In order to answer the research questions of this study, the study, respondents were told to specify on the sources of their incomes, either from external sources or if they were wholly dependent on products of the NMK activities. Table 4.23 presents the analysis of the study findings on the beneficiaries' source of income.

Table 4.23: Source of Income of the Respondents

Source of Income	Frequency	Percentage
From NMK activities	19	16.2
From other sources	98	83.8
TOTAL	**117**	**100.0**

According to the study findings, 98 (83.8%) of the 117 respondents had alternative external sources of income while only 19 (16.2%) relied wholly on the benefits accrued from NMK funded activities.

From the study analysis, it can be interpreted that extra income external of project activities is a pre requisite of food based program implementation since it helps maintain project activities in and off seasons to ensure sustainability of the community program.

4.6.2 Average Monthly Income of the Respondents

The size of the implementer's income dictates the amount extended towards implementing the program. The researcher of this study therefore sought to investigate on the average monthly income of the study respondents in order to assess its influence on the program implementation. The respondents were asked to indicate approximates of their monthly incomes. The results obtained are in Table 4.24.

Table 4.24: Average Monthly Income of the Respondents from External Sources

	Frequency	Percentage
Below 1000/= per month	16	13.7
1001-5000/= per month	76	65.0
5001-10000/= per month	5	4.3
Above 10000/= per month	1	.9
No external income	19	16.2
TOTAL	**117**	**100.0**

From the same findings, it was found that even if most of the programme implementers tad external sources of income, majority of the respondents had an income of less than 5000/=

per month which may not be adequate to meet households' basic needs and also help sustain project activities.

For further analysis the study cross tabulated the respondents' responses on their monthly income with extent of their involvement in the implementation of the NMK programme. The obtained results are as in Table 4.25.

Table 4.25: Involvement in Program Implementation by Respondents' Average Income

Benefits from other external sources		Extent of involvement			
		Largely involved	Moderately involved	Not involved	Total
below lOOOsh	Count	6	9	1	16
	% of Total	5.1%	7.72%	.9%	13.7%
1001-5000sh	Count	22	54	0	76
	% of Total	18.8%	46.2%	.90	65.0%
5001-lOOOOsh	Count	2	2	1	5
	% of Total	1.7%	1.7%	.9%	4.3%
above 10001	Count	0	1	0	1
	% of Total	.0%	.9%	.0%	.9%
No external income	Count	3	15	1	19
	% of Total	2.6%	12.8%	.9%	16.2%
TOTAL	**Count**	**33**	**81**	**3**	**117**
	% of Total	**28.2%**	**69.2%**	**2.6%**	**100.0%**

Table 4.25 shows that 76 (65%) of the respondents had a monthly income of 1001-5000 and among them, 54(46.2%) were involved in the program implementation to a moderate extent, 22 (18.8%) to a larger extent only 1(0.9%) was not largely involved. From the study findings, 16 (13.7%) of the respondents had a monthly income of below 1000/= and only 6(5.1%) were involved in the program implementation to a larger extent. Only 1(0.9%) respondent had an income of above 10,000/= and was moderately involved in the program ^plementation.

It can be interpreted that most of the community members of low or no stable sources of income are more likely not to be involved in implementation of community projects due to lack of extra savings to help maintain project activities in and off seasons. On the other hand, community members with extra large reliable salaries may not be directly involved in community food-based projects since they can assess and afford food without being directly involved in the implementation process.

4.6.3 Sustainability of the NMK Programme Activities

One of the NMK program objectives was to ensure sustainable food security in the area of study and therefore the study sought to establish whether the activities undertaken by the respondents were sustainable. The researcher asked the study respondents to give their views on the program sustainability. Their responses were analyzed and indicated in Table 4.26.

Table 4.26: Sustainability of the Production of NMK Activities

Production sustainability	Frequency	Percentage
Sustainable	105	89.7
Not sustainable	12	10.3
TOTAL	**117**	**100.0**

The study findings indicated that most of the activities within the programme were sustainable as stated by 105 (89.7%) of the study respondents. Only 12(10.3%) of the respondents confessed that the NMK funded activities under their care had not been sustained, most likely due to challenges identified in the conducted study like gender parity, age distribution, education levels, type and frequency of training, income from external sources and others. It can therefore be interpreted that success of food program implementation can be facilitated by developing capacities of the implementers and also availing productive land to the programme beneficiaries.

4.6.4 Benefits from NMK Activities

One of the NMK programme objectives was to ensure food security to the programme unplementers and later to the entire community. The study therefore sought to assess any

quantifiable benefits in monetary terms from the NMK funded activities in order to establish if the carried out activities were able to meet households' food requirements and extend extra to the wider community as a gesture of sustainable food security. The results obtained were as indicated in Table 4.27.

Table 4.27: Benefits from NMK Activities

NMK benefits	Frequency	Percentage
below-1000/= per month	100	85.5
1001-5000/= per month	17	14.5
TOTAL	**117**	**100.0**

According to the findings, 100 (85.5%) of the respondents were able to extend products from NMK activities to the wider community though for only less than 1000/= per month. This is an indication that NMK activities as per the time of study were beneficial but only to the implementers who were the direct beneficiaries of the program. The study findings shows that 17 (14.5%) of the beneficiaries were able to get reasonable returns though of less than 5000/= per month from the sales of products from NMK activities.

Influence of level of beneficiaries' income on projects implementation was investigated and the study established that majority of the study respondents had other income sources external to the NMK activities. It was also confirmed that much of this income was used towards maintenance of the projects activities, although most of the respondents noted that it was not adequate to expand their projects to their desire but however little it was, it assisted a lot in the project implementation. This is an indication that lack of capital limits community participation in implementation of community-based projects and more so non- profit food based projects.

Frances (2009) noted that people of low income and those marginalized on poverty and education feel stigmatized and rarely join with others in community projects. Results of most studies previously done on income variable on project implementation have their findings concur with the findings of this study. In Uganda, Rutaisire (2010) established that lack of reliable capital was among major factors hindering program implementers from achieving their

intended objectives. In Central Kenya, Macharia (2010) found out that lack of affordable credit was a major impediment to intensified use of modern farming methods and technology.

Income level of the individuals has generally been noted to have a bearing on the maintenance of the projects. The low income of this study's respondents is expected to slow the implementation process of the NMK programme intended to address food insecurity in the area of study thus missing to hit its objectives within the time bound. The general findings of the study indicated that there were relationships between implementation of NMK program and the identified independent variables; demographic characteristic of the beneficiaries, accessibility of land, capacity building and income level of the beneficiaries which should be taken as a concern by the government and any donor agencies who are out to help in eradication of hunger and poverty within vulnerable community members.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5. Introduction

This section presents the study's summary of findings, conclusion and recommendations in line with the research questions. The summary of the analysis of each research indicator is featured and from this study analysis, associated recommendations for improvement of programme implementation and suggestions for further research were made.

5.2 Summary of the Findings

The study sought to investigate factors influencing implementation of NMK programmes so as to recommend alternative strategies for successful implementation of projects especially projects based on agriculture for sustainable food security. The study engaged both male and female genders who were directly engaged in NMK program activities. As far as demographic characteristics are concerned, the study investigated gender concern and established that 78 (66.7%) of the program implementers were female against 39(33.3%) male gender. 17.9% out of the 28.2% respondents who were largely involved in program implementation were female against 10.3% male gender, a clear indication that women are more receptive to implementation of community projects and more so based on food production.

As concerns age of the respondents, the study established that only 5.1% of youth below 25 years were involved in the food program activities. Majority of the program implementers represented by 75.2% were above 51 years, among them so elderly and vulnerable to effectively carry out the program activities.

Study respondents were from different family status, 67.5% married, 21.4% widowed while 11.1% were from single families. A large number of the respondents who were largely involved in program implementation were from married families. Most of the program beneficiaries substituted by 63.2% had primary education as their highest level, 25.6% had obtained secondary education while at most 10% of the respondents had attained higher education. It was also noted that 10.3% of program implementers interviewed had not attended any school for formal education. Majority of the respondents who were involved in program implementation to a large extent had primary education as their highest level of education.

Concerning the land variable, the study established that land accessibility, ownership, size and usage were of great influence to the implementation of projects, more specifically food-based projects. It was found that out of the 117 study respondents, 52.1% occupied self-owned land, and 4.3% lived on rented land while 34.6% occupied either inherited land, land given by donors or as land care-takers. From the same study, 80.3% of the respondents confirmed that the land they occupied was not adequate for effective implementation of the NMK activities. Majority of the respondents were found to occupy a land of 1 acre and below.

In order to answer the study questions, the study investigated the variable of capacity building of the program beneficiaries prior to the onset of the program implementation. It was established that almost all the program implementers represented by 95.7% had been trained on skills and technology necessary for the program activities. Further to this, 93.2% of the respondents confirmed that the type of training offered to them was of great relevance and useful to the program implementation.

As far as income level of the program beneficiaries is concerned, the study revealed that majority of the respondents represented by 83.3% were engaged in other activities and occupations from which they earned some extra income external to the NMK projects benefits. In spite of the little income earned, the study respondents confirmed that part of it was used in the implementation of the NMK program to ensure their sustainability and especially dairy goats farming which was found a major activity undertaken by most of the group members.

The study also established that the productivity of the NMK program activities was not high enough to cater for the food needs of other community members. Only 14.5% of the respondents confirmed that they had quantifiable NMK projects benefits of between lOOOsh and 5000sh obtained from sales of products from the NMK projects activities. Among the program implementers, 98.7% confessed that they had hopes of sustaining their projects activities amidst many challenges in the implementation process.

5.3 Conclusion of the Study

The study focused on the NMK programme for sustainable food security in Makuyu division of Murang'a County. From the study findings, demographic characteristics of the programme beneficiaries including gender, age distribution, marital status and education qualification of the programme implementers have a role to play in the implementation of community projects, both for development and for food security. Most of the community members marginalized on gender, age and education still suffer inequalities in the development ladder. Gender inequality is still in existence and plays a major role of placing women in informal sectors, in limited wage employment activities and in responsibility for child-bearing and domestic maintenance.

The study therefore concludes that demographic characteristics and especially gender imbalance is an outstanding factor that plays a large role in food insecurity in household levels and to the society at large. Traditionally, women were expected to provide food for the family and also take care of the family members, and up to the current study findings show that female gender has remained the mainstay of food production especially in developing countries.

Labour division by gender results to gender imbalances in the implementation of community-projects which has contributed a lot to the persistence of food insecurity and especially in marginalized areas. Despite the many strategies put forth by the government and private organizations on the awareness and understanding of gender imbalances in both development and food-based programmes, the study shows that there are still existing gaps since majority of women and of low education qualification remain entirely engaged in the informal sectors and in the implementation of non-profit projects.

One of the objectives of the NMK program was to boost community's efforts towards achieving sustainable food security. It targets extremely poor and vulnerable community members both gender and across all ages through provision of grants and empowering them through capacity building. The government's effort to involve youth in community projects as confirmed from the study is still at stake. Majority of the community members in their youthful stage are still lost in other activities not directly involved in food production.

Majority of the NMK programme implementers were above 51 years which is above the Productive age. The theory of citizen participation in which the study is anchored on advocates

for active participation of all community members across all age and gender for a successful implementation of community projects.

The study findings on the education qualification of the NMK programme implementers confirmed that basic education is a prerequisite to implementation of any programme since it enhances uptake of new skills and technology necessary for programme implementation. Never the less, education qualification is not directly related to implementation of food-based programmes.

In most cases, majority of the rural occupants with low levels of education are left to shoulder the burden of food provision since most of the high educated society members migrate to the urban areas in search of white color jobs. For effective implementation of food-based programs, the research findings reflect a need for at least basic education to enhance access of information and also skills necessary in projects implementation processes.

It can therefore be concluded that any community member of any education level as long as their capacity performance is enhanced through training can effectively and efficiently contribute in project implementation. However, education should be availed to all citizens since it creates self confidence and self esteem in individuals. From the past researchers, education has a key role of promoting community participation; it increases levels of literacy and thus access to information, skills and technology required for project implementation.

Scarcity of accessible land by the program beneficiaries was found a major hindrance to effective project implementation. Most of the activities adopted for the NMK program e.g. dairy goats farming, bee-keeping, horticulture and others were limited by land accessible by the program implementers as confirmed by the study findings. Availability and accessibility of land of reasonable size would enhance successful implementation of food programmes and thus timely achievement of its objectives.

In attempt to answer the study question on influence of land accessibility by programme miplementers on implementation of the NMK programme, it was established that land is a necessary resource for implementation of food based programmes. Majority of the NMK Programme implementers' occupied land that was self owned but of less than one acre. The

study findings concluded that, the size of land occupied was not adequate for the NMK project implementation to feed the whole community as per the programme's objectives.

Scarcity of land in the area of study, may have largely contributed to low food production that was only enough to feed the households and not the wider community as revealed by the study conducted. Most of the reviewed literature on implementation of projects indicated that agricultural projects have been hampered by land scarcity.

Despite the low education qualifications of the programme implementers, the study observed that the type of training offered to the programme implementers, had a positive influence to the implementation of NMK programme. It is therefore concluded that capacity building is key to implementation of programmes as long as the appropriate training is duly offered and with consistent back up. As per the study findings, much of the program success emanated from the kind of training implementers undertook and also subsequent field demonstrations.

Most of the study respondents had other sources of incomes regardless of their size. From the study findings, the study respondents revealed that the income they got from off-project benefits was not adequate but as little as it was, it played a great role in sustaining the projects activities. Level of income of program beneficiaries was therefore concluded as a factor influencing implementation of programmes. The Sources of income external to the programme being implemented act as a supplementary factor towards sustainability of the programme and especially before the peak up of the program activities.

The study findings stress the fact that achievements of community projects are tied on community participation which calls for active involvement of all community members in influencing the direction and execution of projects, rather than merely receiving a share of project benefits from a distance. Working as a team assists in tapping the energies and resources of individual citizen within the community for the benefits of the entire community as emphasized in citizen participation theory of which this study is grounded on.

Recommendations of the Study

Implementation of community food projects requires full involvement of the beneficiaries for ownership and sustainability. In order to ensure sustainable food security, the study recommends that;

1. For any sustainable community-based food projects to be realized, project initiators must strive to strike gender parity or at least bring more males into tow to support inception, implementation and management of community food projects. The researcher therefore recommends for rigorous mobilization and sensitization of the community on need for active involvement in execution of community projects especially for food security.

2. Project initiators should seek to involve more men and youth in community food production projects. This is because youth is a more receptive group to change and hence more likely to embrace modern technology for effective food production. Men as heads of households should be encouraged to engage in food production and desist from viewing it as a feminine role. The government and donors should offer grants to men groups towards implementing food-based.

3. The researcher recommends that where groups are the focus of community food production, it should be emphasized that post primary education be a pre requisite. This requirement will facilitate impartation of skills and dissemination of information and transfer of technology to the community and hence project sustainability.

4. To overcome the challenge of land fragmentation the researcher recommends that where practically possible, community food production should be carried out on communal land. However, members should be allowed to retain their individual small holdings for subsistence farming.

5. Donors and financing agencies should build on existing capacity to enhance ownership of food production activities by the community. Community should also be assisted to identify long term projects with a short payback period.

6. Where land has been alienated for commercial cash crop farming, the Ministry of Agriculture and the Ministry of Lands should team up to ensure that enough land is available for food production.

7. The government should use the study's findings to improve its policies towards revitalizing community food-based programs across the country.

5.5 Suggestions for Further Study

The focus of this study was to investigate on the social-economic factors influencing implementation of the NMK program for sustainable food security. The study would therefore suggest that a study on influence of social-cultural characteristics of project beneficiaries on implementation of food-based programs be undertaken.

It would also be of great importance for further research on the effects of NMK activities on sustainable food security in any of its targeted divisions and also investigate on those factors that would influence sustainability of such interventions.

Future studies should apply different research instruments like focus group discussions to involve respondents in discussions in order to generate detailed information which would help improve program implementation process.

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APPENDICES

Appendix I: LETTER OF TRANSMITTAL

NJOROGE NAOMI NDUTA,
P.O. BOX 2586-01000,
THIKA.

Dear Sir/Madam,

Re: Social- Economic Factors Influencing Implementation of Njaa Marufuku Programme for Sustainable Food Security in Makuyu Division, Murang'a County.

I am a Master of Arts student at the University of Nairobi-Thika Extra-Mural Centre (Reg No L50/65659/2010). I am undertaking a study that seeks to examine socio-economic factors influencing implementation of NMK programme for food security in Makuyu division as a partial fulfillment for the requirement for an award of a Masters in Arts degree in Project Planning and Management.

You have been randomly selected to provide information on implementation of the NMK programme through the issued questionnaire. This is a request for your participation in responding to the attached questionnaire. Your truthful response will help facilitate this study.

Please be assured that any personal information given will be treated with utmost confidentiality and will be purposely used for this study.

Thank you for your participation.

Yours Faithfully,

Njoroge Naomi N.

Appendix II: QUESTIONNAIRE FOR GROUP MEMBERS UNDERTAKING NMK PROJECTS ACTIVITIES

The Questionnaire seeks to gather information from the NMK project beneficiaries who are the implementers of the program. It is sub- divided into four sections each addressing each of the study variables. The identity of all the respondents will be held in strict confidence. Do not include your name in the questionnaire. Participation of the survey will be voluntary and all the information given will be used only for the research purpose. Kindly spare your time to provide answers based on your experience in the implementation of NMK program. In case of any clarification or need for translation, please feel free to ask

SECTION (A) DEMOGRAPHIC DATA

Please put a tick where appropriate.

1. Gender (i) Male [ ]

   (ii) Female [ ]

2. Age bracket in years (i) 20 years and below [(ii) 21 -30 [ ]

   (iii) 31 -40 [ ] (iv) 41 and above [ ]

3. Marital Status: (i) Single [ ] (ii) Married [ ]

   (iii) Widowered [ ]

4 Type of the family (i) Female headed [ ] (ii) Male headed [

   (iii) Child-headed [ ]

5. Size of the family members (i) 1-5 [ ] (ii) 6-10 [ ]

   iii) 11 and above [ ]

6. What is the level of your education?

   (i) Primary level [ ] (ii) College level [ ]

   (iii) Secondary level [ ] (iv) University level [ ]

   (v) Have never attended any school [ ]

7. Are you involved in the NMK project activities?

   (i) Yes [ ] (ii) No [ ]

8. Which of the following NMK funded activities are you involved in and to what extent? (Tick where appropriate).

Project Activities	Extent of involvement		
	Largely involved	Moderately involved	Not involved
Horticulture crops farming			
Banana production			
Potatoes seed bulking			
Cassava and sweet potatoes production			
Bee keeping			
Dairy goats farming			
Multi-purpose Tree Nursery			

SECTION (B) ACCESS TO LAND BY THE PROGRAMME BENEFICIARIES

9. What is the ownership of the land you live in? (i) Self owned [ ]

(ii) Rented [ ]

(iii) Others (specify [ ]

10. Indicate the size of land you live on in terms of acreage.

Land ownership	Size in Acreage		
	1 Acreage and below	1-2 Acres	Above two Acres
Self-owned			
Rented			
Others			

11. Is the land accessible adequate for the NMK agricultural activities?

(i) Adequate (ii) Not Adequate

12. What is the level of production of the land under NMK project activities?

(i) Highly productive [ ]

(ii) Moderately productive [ ]

(iii) Low production [ ]

13. What is the frequency of land production?

(i) Seasonal [ ]

(ii) Throughout the year [ ]

SECTION (C). CAPACITY BUILDING OF THE PROJECT BENEFICIARIES

14. Have you ever been trained on implementation of the NMK programme activities you are undertaking? (i) Yes [ ] (ii) No [ ]

15. If yes, how many times have you been trained? (i) 1-5 [ ]

(ii) 6-10 [ ]

(iii) 10 and above [ ]

16. In your own opinion, do you think the training offered is of relevance towards implementation of NMK programme?

(i) Yes [ ] (ii) No [ ]

17. To what extent has the training been useful to the implementation of the NMK progamme?

(i) Very useful [ ] (ii) moderately useful [ ]

(iii) Not at all useful [ ]

SECTION (D) INCOME LEVEL OF THE PROJECT BENEFICIARIES

18. What is the main source of your income?

(i) Benefits from NMK projects activities [ ]

(ii) Others. (Specify) [ ]

19. What is the frequency of your income? (i) Daily [ ] (ii) Weekly [ ]

(iii) Monthly [ ] (iv) Erratic [ ]

20. Estimate your income per month from NMK project activities in shillings.

(i) Below 1000 [ ] (ii) 1001-5000 [ ]

(iii) 5001-10000 [ ] (iv) 10001 and above [ ]

21. Estimate your income per month from other external sources other than from NMK project activities. (i) Below 1000 [ ] (ii) 1001-5000 [ ]

(iii) 5001- 10000 [ ] (iv) Above 10001 [ ]

22. To what extent do you think other external sources of income have helped in the implementation of NMK programme?

(i) Great extent (ii) Low extent (iii) No extent

23. What is your opinion on the sustainability of the productivity of the undertaken activities?
(i) Sustainable [ ] (ii) Not sustainable [ ]

24. In your own opinion, do you think the level of income of the projects beneficiaries has influenced NMK projects implementation?

(i) Yes [ ] (ii) No [ ]

Appendix III: QUESTIONNAIRE FOR THE NMK COMMUNITY GROUP FACILITATORS

Kindly spare your time to answer the following questions based on your experience in the implementation of NMK Program. All information will be confidential and for research purpose only.

1. To what extent have the projects being implemented by the community groups in Makuyu division successful?

(i) Very successful [ ] (ii) successful [ ] (iii) Not successful [ ]

2. If not successful, what do you think would have contributed to their failure?

3. In your own opinion do you think access to land by beneficiaries influences?

implementation of NMK projects? (i) Yes [ ] (ii) No [ ]

4. If yes, how do you think land issue can be addressed in order to ensure sustainable food security

5. How often are the program implementers trained on the project activities?

(i) Weekly [ ] (ii) monthly [ ] (iii) annually [ ] (iv) none of the above [

6. What is the turn-up rate of the program implementers during the training sessions and for field demonstrations? (i) High turn-up [ ] (ii) moderate turn-up [ ]
(iii) low turn-up [ ]

7. Do you think training of the project beneficiaries is of any relevance towards implementation of the MNK program? (i) Yes [ ] (ii) No [ ]

8. Do you think the training offered to the programme implementers is useful to the implementation of the NMK programme?
(i) Yes [ ] (ii) No [ ]

9. To what extent is the training useful to the implementation of NMK programme?

(i) Very successful [ ] (ii) Successful [ ] (iii) Not very successful [ ]

10. From your own assessment, do you think income level of the beneficiaries influence implementation of the NMK program?

Yes [ ] No [ ]

11. Kindly explain your assessment

IV: Krejcie and Morgan Sample Size Table

S	N	S	N	S
10	220	140	1200	291
14	230	144	1300	297
19	240	148	1400	302
24	250	152	1500	306
28	260	155	1600	310
32	270	159	1700	313
36	280	162	1800	317
40	290	165	1900	320
44	300	169	2000	322
48	320	175	2200	327
52	340	181	2400	331
59	380	191	2800	338
70	440	205	4000	351
73	460	210	4500	354
76	480	214	5000	357
80	500	217	6000	361
86	550	226	7000	364
92	600	234	8000	367
97	650	242	9000	368
103	700	248	10000	370
108	750	254	15000	375
113	800	260	20000	377
118	850	265	30000	379
123	900	269	40000	380
127	950	274	50000	381
132	1000	278	75000	382
136	1100	285	1000000	384

Appendix V: NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY AUTHORIZATION PERMIT LETTER

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349
254-020-310571, 2213123, 2219420
Fax: 254-020-318245, 318249
When replying please quote
secretary@nest.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/14/012/584**

Date: **24th May, 2012**

Naomi Nduta Njoroge
University of Nairobi
P.O BOX 40197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to cany out research on ***"Socio-economic Juc/ors influencing implementation of Njan Marufuku Kenya programme for sustainable food security in Makuyu Division,Murang'a County***" I am pleased to inform you that you have been authorized to undertake researeh in **Central Province** for a period ending ***30'" June , 2012.***

You are advised to report to **the District Commissioner, the District Education officer, Murang'a District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy** of the research report/thesis to our office.

DR.M.K.RUGUTT, PhD, HSC
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner
The District Education Officer
Murang'a District

"The National Council for Science and Techncioqy is Committed to thr Promotion of Science G'd Technology for National Oervefofirtent. '

Appendix VI: RESEARCH PERMIT

PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Naomi Nduta Njoroge
of (Address) University of Nairobi
P.O Box 30197-00100, Nairobi
has been permitted to conduct research in

Murang'a — Location
Central — District
Province

on the topic: Socio economic factors influencing implementation of njaa Marufuku Kenya Programme for sustainable Food security in Makuyu Division, Murang'a County.

for a period ending: 30th June, 2012.

Applicant's Signature

PAGE 3

Research Permit No. NCST/RCD/14/012/504
Date of Issue 24th May, 2012
Fee received KSH. 1,000

Secretary
National Council for Science & Technolog