

**INFLUENCE OF COMMUNITY PARTICIPATION ON
SUSTAINABILITY OF DONOR FUNDED FOOD SECURITY
PROJECTS: A CASE OF WORLD VISION MARIGAT
AREA DEVELOPMENT PROGRAMME IN
BARINGO SOUTH SUB-COUNTY**

BY

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DECLARATION

This research project is my original work and has not been presented for the award of any degree in any other University.

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This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I dedicate this work to my beloved wife Dorothy Jepkemoi Johana, my sons Patrice Kiptoon Cherutich, Brian Kipyegon Cherutich, Karlmax Kipkoech Cherutich and Lincoln Laanoi Cherutich who supported me to make this research project to a success.

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ACROYNMS AND ABBREVIATIONS

ADP:	Area Development Programme
AIS :	Artificial Insemination Services
ANOVA:	Analysis of Variance
ASAL:	Arid and Semi-Arid Land
CBO:	Community Based Organization
DECSI:	Dedebit Credit and Saving Institution
EA:	Entitlement Approach
FADA:	Food Availability Decline Approach
FFW:	Food-For-Work program
FSP :	Food Security Package program
HEA:	Household Economy Approach
LDCs:	Least Developed Countries
MDGs:	Millenium Development Goals
NGO:	Non Governmental Education
NO:	National Office
SCF:	Save the Children Fund
SD:	Sustainable Development
SPSS:	Statistical Package for Social Sciences
UNEP:	United Nations Environmental Programme
USAID:	United States Agency for International Development
WVK:	World Vision Kenya
WWF:	World Wide Fund

ABSTRACT

Food security is recognised as one of the growing existential environmental challenges for the sustainable development of humanity and planet Earth especially in the developing countries like Kenya. Consequently, some donor funded NGOs have been carrying out food security programs although in most cases the food security projects collapse after the withdrawal of NGOs, hence, become unsustainable. Therefore, the purpose of this study was to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County as a case. Specifically, it sought to determine the influence of community contribution, the relationship between adoption of new technologies, the influence of community involvement in decision making and the extent to which community involvement in monitoring and evaluation of projects influences sustainability of World Vision funded food security projects in Kenya. The study was guided by the Food Availability Decline Approach (FADA) and the Entitlement Approach (EA). Descriptive survey research design was used targeting the management and staff and farmers who are beneficiaries of World Vision Kenya food security projects in Marigat ADP in Baringo County. Both purposive and systematic random sampling were used to obtain a sample size of 164 respondents. Researcher-administered questionnaire was used as data collecting instruments. The data was analysed using both descriptive and inferential statistical methods with the aid of Statistical Package for Social Sciences (SPSS) version 21 computer software. The findings revealed that that all the independent variables combined could influence upto 59% change in the sustainability model of the food security projects in the area. Community contribution ($\beta = 0.286$) was significant to the sustainability of the projects while adoption of new technology ($\beta = 0.631$) was the most significant variable of the study. Community involvement in decision making ($\beta = - 0.273$) and in monitoring and evaluation ($\beta = - 0.093$) negatively affected the sustainability of the food security projects owing to the way they were carried out. All the variables were, however, significant to the study and it is recommended that; the communities in the vulnerable areas and particularly at the family levels be encouraged through their leadership in all sectors to avail their land and also provide all necessary support for the food security projects. The government should consider subsidizing the costs of farm inputs earmarked for the food insecure areas. There is need to involve most of the farmers at all stages of the planning and implementation of the projects. Finally, it is salutary to train the farmers on monitoring and evaluation techniques so as to enable them to keep the progress of the projects in a tractable state even long after the withdrawal of the donors. The study also recommends that further research should be carried out on; the challenges of implementing food policies in Baringo County and also the factors affecting the internal food markets in Baringo County.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Food security is recognised as one of the growing existential environmental challenges for the sustainable development of humanity and planet Earth (Bouma and McBratney, 2013). Providing sufficient quantity, quality and safe food to meet the rising demand of a global population, which has grown from 5.8 billion in 1997 to 7 billion in 2012 and predicted to rise to over 9 billion in 2050, is an enormous challenge (Godfray et al., 2010). In addition, of the world's 1.4 billion poor, 75 percent live in rural areas and are dependent on agriculture and related activities (FAO, 2010). Currently, Millennium Development Goal (MDG) number 1 is to reduce global poverty and hunger, illustrating the prominence of the issue and the necessity of a structured response. Although enough food is produced on a global scale to adequately meet the dietary requirements of current population, thanks to major technological advances in agricultural science and postharvest technology, nearly 1 billion still do not have enough to eat and frequently go to bed hungry (FAO,2010).

Food security in Western countries like the United States and continental Europe has been largely addressed through technology and policies (Wiggins, 2009). In Asia and the far east the adoption of technologies and new farming methods have been instrumental in improving food production and this coupled with policies on food trade has succeeded in regulating food access to their populations (IFAD, 2009; Lin & Yang,2000). In Africa food production has been largely supported by government efforts and their development partners, however, this has not been without its failures as indicated by Aidoo *et al.*, (2013) in a study done in Ghana. Weiser *et al.*, (2007) in their study of food insufficiency in Botswana and Swaziland also noted the food inadequacy problem and linked it with poor policy framework at the local level and lack of improved production methods in the rural areas of this countries. The search for a sustainable food production and access solutions still remain elusive in developing countries like Kenya where communities living in arid and semi-arid lands face annual cycles of extreme hunger.

Notwithstanding the enormous contribution of agriculture to the country, there are problems of food insecurity especially among producers. Food security issues in the country are also

affected by both local and international issues. Some local challenges are linked to policies and their implementation, and exclusion of the poor and those affected in decision making. International constraints like policies of donors, trade arrangements, liberalization of the economy, and activities of the extractive industries affect the sector (Aidoo, Mensah & Taffour, 2013). This situation poses certain questions to the stakeholders: is it possible to have a food-secure world that produces sufficient food for everyone and at the same time assures access to food for all? How do people view food security in different socio-economic settings such as industrialised and non-industrialised economies, between urban and rural agricultural societies, across growing seasons, etc.? Policy decisions regarding global hunger have oscillated between state-centric models and humanitarian-centered approaches (The Hunger Project, 2011). Development experts have long argued that addressing poverty and hunger requires developing sustainable solutions and markets for local production. Simply providing long-term food aid does little to alleviate pain and suffering long term. Humanitarian responses, however, assist in the development of local mechanisms to systematically reduce malnutrition (Warote, 2009).

These projects tend to focus on developing sustainable agricultural systems, strengthening local markets and building capacity. Although projects focused on development and humanitarianism receive greater praise, they often require funding from donor agencies which come with limitations. Over the years, perspectives on food security have changed in response to improved understanding of the factors that contribute to it and the wide range of coping mechanisms. For instance, better understanding of the geospatial and temporal dimensions of food security have uncovered the need to consider food security in terms of the level of human organisation – from the individual to household, community, country and global. The present study will mainly focus on community involvement in food security practices. There is sufficient evidence showing that global food security will remain a worldwide concern for the next half century and beyond, especially in developing countries (Rosegrant and Cline, 2003). Therefore, understanding the evolving dimensions and perspectives on food security especially with the communities concerned and their development partners is important in developing appropriate suite of policies and interventions to address the problem.

Programming decisions by international NGOs such as World Vision operating in the area of development are a function of both humanitarian and pragmatic concerns. Helping

communities establish sustainable agricultural cooperatives to address problems of undernutrition, for example, motivates programs implemented by NGOs in the food security sector (Hailey, 2006). But NGOs are strategic actors and must also be attentive to organizational imperatives in regard to funding. These concerns relate to donor preferences and the reality that aid projects must demonstrate tangible results (Kraner and Kinsela, 2012).

In most sectors, including those pertinent to food security, resources are scarce. Resource allocation decisions are rarely driven by objective assessments of need alone, but are also greatly influenced by proximity to the problem as well as ideological and political concerns (Jordan, 2000). State interests and government donors are likely to set the agenda, while international and local NGOs implement programs that are closest to the communities they serve (Jiang, 2008). Because power asymmetries exist within the NGO community, and these are reflected in their relationships with donors and other NGOs, examination of their interactions will shed light on the structure of the food security network.

In 2004, the FAO estimated that about one third of Kenya's population is experiencing chronic food insecurity. The north-eastern regions of the country (Wajir, Garissa and Tana River counties) were mostly affected (FAO, 2005). As the annually published report of the FAO "The State of Food Insecurity in the World" 2011 shows, this situation did not improve until 2008: 12.4 million people or 33% of the total population were undernourished in the period from 2006-2008. For the achievement of the MDG to halve, between 1990 and 2015 the proportion of people who suffer from hunger, this means, that if this trend continues, no progress or even deterioration of the situation of the hungry people in Kenya will be the output (FAO, 2011). Although Kenya's agricultural sector only accounts for 22% of the GDP, around 75% of the workforce is engaged in agriculture (U.S. Department of State 2012). According to the Kenyan Ministry of Agriculture around 70% of the rural households are self-sufficient, thus depend on farming to secure their food (MoA Kenya 2009). In the high-potential areas, Kenya's agriculture is dominated by small-scale farmers. The small-scale production accounts for about 75% of the total agricultural output and for 70% of marketed agricultural products. However, the adoption of improved inputs like hybrid seeds, fertilizer, safe use of pesticides and machinery by small-scale farmers is low. Productivity could be enormously increased if farmers adopted modern farming practices. Medium-scale and large-scale farms are less common than small-scale farms but compared to small-scale farms they

have much higher productivity per land unit. This is due the application of a high diversity of modern agricultural inputs and technologies (GoK 2010).

Kenyan farmers grow a huge diversity of food crops including cereals (maize, wheat, sorghum, rice and millet), pulses (beans, pigeon peas, cowpeas, chickpeas and green grams) and roots and tubers (sweet potatoes, Irish potatoes, cassava, arrow root and yam). Among these the main food crops are maize, rice, wheat, sorghum, potatoes, cassava and beans (GoK 2010). Despite this huge diversity of food crops, Kenyan food production is mainly characterised by white maize production which by volume counterweights all other food crops by far. This is because maize is the main staple food for almost all ethnic groups in the country and to most Kenyans, food security is synonym to having Ugali, made of white maize flour, on their table (Gitu, 2004). Also the government and the private sector have this attitude; when they talk about food insecurity they mean unavailability or unaffordability of maize. The production of maize in Kenya is largely rain-fed and therefore vulnerable to drought, at least in the non-high potential areas where rainfall is scarce and variable (Höffler and Booker, 2009). Nevertheless, many households in the marginal agricultural areas heavily rely on maize production rather than more suitable crops. This high dependency on maize as the major food crop has been identified as a long-standing problem with very negative effects on the food security of many Kenyan households (Höffler and Booker, 2009).

Unless farmers use suitable and improved seeds of drought tolerant crops crop production in marginal agriculture areas will not meet their food demands (UNOCHA, 2011). Among others, cow peas, pigeon peas, green grams, cassava, sweet potatoes, millets, sorghums, and beans are considered as drought-tolerant crops. These crops can do well across a wide range of agroclimatic zones including the arid and semi-arid parts of the country, hence can improve food security in these regions (MoA Kenya, 2009). Most of them are traditional food crops and still play an important role for poorer small-scale farmers and female-headed household with limited land resource. In most cases they are produced for subsistence and surplus marketing. Traditional food crops rarely receive a targeted promotion and thus suffer from low productivity. There is also little applied research going on for traditional food crops (as compared to maize and cereal production) and where it is done, there is only little transmission of research results into the extension system that would reach female smallscale producers of traditional crops (Höffler and Booker, 2009).

In 2010, the Kenya Red Cross Society (KRCS) came up with the Tana River Drought Recovery Project in response to the 2007-09 drought in Tana River. The project's main objective was to assist recovery from the drought and promote livelihood options that could help targeted communities adapt to future droughts through the provision of agricultural inputs such as irrigation equipment, seeds, fertilizer and pesticides, livestock, modern beehives, conducting restocking and installation of water and sanitation facilities. Most importantly the project was set to train the targeted beneficiaries on agricultural best practices, operation and maintenance of the how to use the water and irrigation equipment provided and on hygiene promotion, thereby building capacity of not only the beneficiaries but the surrounding community as well. The support has led to the transformation of pastoralists to farming and most importantly Madogo is now an area that is not targeted for Relief food. The interventions set in the project have assisted the targeted beneficiaries to cope with future changes and has resulted to: an Increased food production and income levels at the household level. A total of 33 farmer groups consisting of 1,750 farmers (10,500 beneficiaries) were supported through seed provision, land preparation, farming inputs and irrigation pumps. There was an increased percentage of those practising crop farming from 7.1% to 39%.

Similarly, in 2010, three pilot Disaster Risk Reduction (DRR) food security programs were strategised and designed to increase community resilience to future droughts through the strengthening, diversification and protection of livelihoods and assets. The interventions took an integrated approach through programming for improved livelihoods with a holistic view of access to water, irrigation, and agriculture extension health. The projects executed anticipated assurance of food security for at least 7,000 households; 2,400 in East Pokot, 2,100 in Walda (Moyale) and 2,500 in Turkana North. The mid to long term interventions of the integrated approach included: Food Security & Livelihood, Improved Health & Nutrition and Water/Sanitation Infrastructure & Sanitation services. In Turkana County, the project production capacity is over 1500 MT per year which is sufficient for domestic consumption and sale for the target community and its neighbors. At the moment the farms are supporting over 170 households. In the Walda, since the commissioning of the project, the project has been able to provide adequate food for over 350 households and have surplus for sale. The project was also able change the traditional pastoralist mindset to embrace agriculture. The community trained on farming, water systems and financial management amongst other capacity building activities

1.2 Statement of the problem

Food security is a difficult concept to define and complex challenge that has continued to haunt humanity despite remarkable progress in increasing global food production during the last century. As pointed out by Demi and Kuwornu (2013), “This challenge is necessitated due to the over growing population of the world, coupled with worsening climatic conditions as well as the high poverty rate among people.” Understanding the evolving dimensions and orientations of food security is important in developing integrated and sustainable measures to reduce it, including the role of nutrition-sensitive and postharvest technologies in reducing wastage (Aidoo *et al.*, 2013). In developing countries like Kenya the successive governments unsuccessful attempts to create a food secure nation by increasing agricultural production and improving access to food to all its citizens through policy interventions and the regulation of food markets have resulted in certain regions in the country experiencing frequent food shortages that often culminate into famine situations whenever there is drought. Most of the worst hit areas by the food shocks in the country lie within the Arid and Semi-Arid Lands (ASAL). This situation is often characterized by loss of livestock and consequently household income, increased levels of malnutrition and in extreme cases loss of human life (Warrote, 2009). As such it has attracted the interventions of a host of donor funded NGOs which seek to channel food stuffs to the most affected populations. Other NGOs such as World Vision focus on agricultural development as a way of providing lasting interventions to food insecurity in the areas most affected. However, despite the inarguable relevance of this kind of intervention, in most cases the food security projects collapse after the withdrawal of NGOs hence they lose sustainability especially after handing over the projects to the grantees (World Vision Kenya, 2013). This is especially so in Baringo County where the greater part of is categorized as ASAL. This situation has attracted the interest of the current study which sought to investigate the role of the beneficiary community in influencing the sustainability of donor funded food projects.

1.3 Purpose of the study

The purpose of this study was to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo South Sub County as a case.

1.4 Objectives of the study

The study was guided by the following objectives;

1. To determine the influence of community contribution on sustainability of donor funded food security projects in Baringo South Sub County .
2. To examine the relationship between adoption of new technologies and sustainability of donor funded food security projects in Baringo South Sub County .
3. To assess the influence of community participation in decision making on sustainability of donor funded food security projects in Baringo South Sub County .
4. To analyse the extent to which community involvement in monitoring and evaluation of projects influences sustainability of donor funded food security projects in Baringo South Sub County .

1.5 Research questions

The study was anchored on the following research questions;

1. How does community contribution influence sustainability of donor funded food security projects in Baringo South Sub County ?
2. What is the influence of adoption of new technologies on sustainability of donor funded food security projects in Baringo South Sub County ?
3. How does community participation in decision making influence sustainability of donor funded food security projects in Baringo South Sub County ?
4. What is the influence of community involvement in monitoring and evaluation of projects on sustainability of donor funded food security projects in Baringo South Sub County ?

1.6 Significance of the study

In spite of a number of national and international NGOs interventions, food insecurity remains among the major concerns of Baringo County. The outcome of the study, therefore, is intended to address sustainable food production and access in the area as a primary concern. Other stakeholders on food security may also draw important lessons and conclusions from the study. This may lead to the development of better strategies to increase food production and access to all in line with the Millenium Development Goal 1.

Government involvement in food security is at the macro level. While food policies and other relevant structures exist, the dynamics of the food situation often result in unequal access to food in the challenged areas. Therefore, the outcome of this study is also meant to address this

concern by identifying last mile solutions to food sustainability. There are ample literature on food security concepts, definitions and measurements. Empirical studies are also available in the role of NGOs in the development process as one of the development actors. Nonetheless, there are limited literatures on NGOs approaches and contribution towards sustainable food security at specific community levels. This research aims at providing important lessons in food sustainability from the ground, to replicate or enable development practitioners to pay attention while designing and implementing development projects/programmes. The research can also be basis for further research on the project's all encompassing impacts.

1.7 Limitations of the Study

The main limitation of the study was its scope. While the study area is information rich, it does not necessarily characterize the food sustainability problem in the entire region as every area has its own challenges unique to itself. As such, the findings may not be necessarily generalized to other areas as a whole. However, care was taken to make the sampling and instrumentation to be more reflective of the situation. Challenges of cooperation were also expected from the respondents, however, this were overcome by ensuring that the respondents understand the importance of the study to their situation. The language barrier was also expected to pose a significant challenge during data collection. However, this was overcome by recruiting research assistants who are familiar with the languages spoken in the study area.

1.8 Delimitation of the study

The scope of this study was confined to influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County as a case. The study focused mainly on the role of the community and their development partners in this case the NGOs in the sustainability of food production. There could be other factors influencing sustainability but the study only restricted itself to the influence of community participation. The study area was marigat ADP in Baringo County, other world vision ADP areas were not covered by the study.

1.9 Definitions of significant terms as used in the study

The following are definitions of terms as used in the study;

Community contribution this refers to the items deemed necessary for the project which the community are encouraged to willingly part with for the success of the project.

Community participation this means to be involving the local community in the projects at some level or entirely in the project

Food security means the ability of the community to achieve year round supply of food at reasonable prices, quantity and with the right nutritious value.

Monitoring and evaluation this refers to the procedures instituted by the project stakeholders to carry out periodic appraisals of the projects to determine whether they are on course as per their original objectives.

Sustainability this is the capability of the projects to continue and even be replicated successfully in the area and beyond after donor withdrawal.

1.10 Organization of the study

This project is organized into three chapters. Chapter one which forms the introduction gives the background of the study, statement of the problem, the purpose of the study, research objectives and questions. It outlines the significance, basic assumptions, limitations and delimitation of the study. At the end of the chapter, definitions of significant terms used in the study are given. Chapter two briefly reviews the theories and brings all basic concepts which are used as a basis for discussions in following chapters. It also contains an empirical review of the study and the conceptual framework to show the relationship between the dependent and the independent variables of the study. This is followed by the research gaps and summary. This research project has five chapters and an appendices section. Chapter three gives the methodology to be used in the study. It discusses the research design for this study and why it was chosen; the location of the study; the target population; sample size and sampling procedure; research instruments and their pilot testing; the reliability and validity of the research instruments; data collection procedure; data analysis techniques and ethical considerations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a discussion on the food security situation in Africa. It then focuses on the challenges of food production and access especially among marginalized communities.

It also looks at the how farmers in semi-arid areas have tried to address food insecurity and the constraints faced by farmers in improving the food situation in communal areas. The role of donor intervention in mitigating the problem is also discussed in the light of community involvement and participation in the food security projects. Theories pertaining to food production, access and sustainability are also reviewed.

2.2 The concept of sustainability of donor funded food security projects

Food security emerged as a global challenge facing many nations in the 20th century. Despite the advances in food production through technology and policy leading to the improvement in the food production and food storage, this has not translated to ensuring food security to all people. Currently, about 1.2 billion people worldwide still face chronic food shortages (FAO, 2009). Majority of these are in the developing countries and especially Africa. Food security has therefore been defined by various organizations and researchers, however, notable among the definitions is the one provided by World Bank 1986 which defined food security as “access by all people at all times to enough food for an active and healthy life” (World Bank, 1986). This definition was subsequently augmented by FAO to include the nutritional value and food preferences. Thus, FAO (1996) defined food security as a situation when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for a healthy and active life.

According to Bokeloh *et al.*, (2009), food insecurity is the absence of food security and applies to a wide range of phenomena ranging from famine to periodic hunger to uncertain food supply. It also refers to the inability of a household or individuals to meet the required consumption levels in the face of fluctuating production, price and income (Moharjan and Chhetri, 2006). The effects of food insecurity on individuals and a nation cannot be over emphasized since no country can develop with food insecure citizenry. There is enough documented scientific evidences linking food insecurity to the deterioration in human, social, cultural and political wellbeing. For example, food insecurity is linked with wide range of

poor health and nutritional outcomes in adolescents, adults, and Children (Campbell, 1991; Pinstруп-Andersen, 2009; Belachew et al., 2011). Food insecurity also affects both psychosocial and physical health outcomes (Hadley and Patil, 2006; Hadley et al.,(2008) and leads to overall poorer health among members of food-insecure households (Hadley et al., 2008; Chilton et al., 2009), poor pregnancy outcomes, including low birth weight and gestational diabetes (Laraia et al., 2010), increase maternal depression and anxiety (Whitaker et al., 2006; Casey, 2004), as well as reduced self-esteem (Laraia et al., 2006). Weiser et al., (2007) revealed that food insecurity was linked to high-risk sexual behavior among women in Botswana and Swaziland. According to Victora et al., (2008) inadequate nutrition before the age of two years could result in permanent effects on an individual's physical, mental development as well as future potential.

According to United Nation Report on Millennium Development Goals (2010), though various interventions have been put in place to improve the lots of the people, improvements in the lives of the poor have been unacceptably slow, and some hard-won gains are being eroded by the climate, food and economic crises. According to Rosen et al., (2012), the number of food-insecure people in 76 lower income countries will increase by 37 million (4.6%) for the next decade (2012 -2022). Sub-Sahara Africa is projected to have the highest increase (15.1%) in number of food insecure people, though the share of the population that is food insecure is projected to fall from 42 percent in 2012 to 38 percent in 2022 (Rosen et al., 2012). Domestic food performance is expected to play the most critical role in the food security of these countries which depend mainly on local grain supplies. While the governments in the developing countries in collaboration with their development partners have been focusing on ways of reducing the levels of poverty, and they patially successful, this has not necessarily translated to improved food security as food and other commodity prices have been on the increase.

Compounding to this situation is the climate change phenomenon characterized by increasingly unpredicable weather patterns such as erratic rains. Recently, drought incidences have been occurring within short intervals of time and are becoming common in many localities especially the drylands. In Kenya, the factors that have contributed to such deteriorating situation may vary from region to region or from one locality to another. Lack of rainfall, fragmented landholdings, dominance of subsistence production units, low adoption of

improved production inputs and techniques, incidence of pests and diseases, dependence on rainfall (low irrigation development) and inappropriate policies are among the major threats of the country's agricultural development and food security both at national and local levels (Adnew 2003, Webb & Von Braun 1994)

A development program is sustainable when it is able to deliver an appropriate level of benefits for an extended period of time after major financial, managerial and technical assistance from an external donor is terminated (US Agency for International Development, 1988). Sustainability refers to handover. At its simplest level, handover often means simply the transfer of responsibilities of running a project from one organization to another. Sustainability cannot be developed and imposed on a community by someone outside that community. It needs to be developed and implemented by the community itself or it will not work. The present study recognizes that fact that sustainability as practiced by various organizations involves the transfer of full responsibility by a more sophisticated organization, that is, the more equipped non beneficiary donor agencies to a less complex organizations, in this case, the communities which are usually less empowered with adequate resources. Bossert (1990) states that although the problem is in its phase out stage, there has been no adoption of any follow up strategy for sustaining the projects. These projects function well as long as they are provided with incentives. Projects are intended to produce benefits which continue at some specified level over time. Post-project assessments of sustainability take place after the project is completed to allow the local institutions time to become self-reliant. Assessments should be carried out several years after the end of the project construction period to allow a valid judgment as to the direction of the benefit stream and an assessment of sustainability. For donor-assisted projects the cessation of direct donor assistance will usually coincide with completion of construction or shortly thereafter. The critical event for evaluating sustainability is the removal of donors from operational and management support roles (Jonathan, 1994). However, the present researcher also observes that most donor assisted food sustainability projects in Kenya have a high level of dependability on the donors such that donor withdrawal affects them considerably to the extent of collapse.

For example, the World Vision implemented an Area Development Program (ADP) in the Makuyu and Kakuzi Divisions of Thika District, in Kenya's Central Province – an area known for its harsh climatic and topographic conditions. Rainfall patterns in this area are

erratic and together with intermittent flooding leads to soil degradation (World Bank, 2008). The poor soil quality, coupled with a history of unsustainable farming practices, had adverse effects on the range and quality of farm produce. The local communities tended to cultivate low-yielding maize and bean crops. Livestock production is also low. Moreover, as farmers did not have direct access to metropolitan markets, they are forced to sell their produce to exploitative middlemen. In this way, Makuyu ADP residents survived on an average monthly income of 3,000 Kenyan Shillings – the equivalent of US\$35, which was barely enough to cover their subsistence needs. In addition, many families had only one meal a day and as a result, malnutrition was chronic and was a key factor in rising mortality and morbidity rates of pre-school children. School attendance rates were also low and adults generally had low work performance due to hunger (World Vision Kenya, 2013).

The Makuyu Food Security Project has produced some positive outcomes in terms of agriculture and wellbeing. Crop farming and livestock husbandry practices have improved leading to increased food production. Some 58 percent of the project beneficiaries now enjoy three meals a day. As described in one community: “We now produce more food, have many offsprings from dairy goats and sell the surplus. We can now afford school fees and medical bills, and have hope for the future.” The project is also an excellent example of NGO intervention contributing to capacity building both at the community and local government level. Prior to the intervention, government extension workers lacked the motivation to fulfil their train-the-trainer duties (Tsafack and Gopalakrishnan, 2010). Through the project they received training allowances as well as transportation and organisational support. Little incentives such as lunch, snacks or even a cup of tea made a difference to both government extension agents and the members of the community participating in the training.

As one extension agent put it: “Extension agents have been very reluctant to train community groups and community members themselves show low enthusiasm in participating because they have to provide their own transport and lunches or snacks. But for a World Vision event, they are all enthusiastic and event attendance is always 100 percent.” (World Vision Kenya, 2013). A limitation of the project was that this enthusiasm and enhanced knowledge and skills have not been enough to help the community develop a food stock beyond five to six months – two months short of the project’s original goal. Moreover, while the farmers have adopted several new practices, they did not discard other unsustainable ones (World Bank,

2008). The reluctance of many farmers to fully embrace approaches could have been the result of either the farmers' perception of possible disadvantages, or the failure on the part of the project to effectively mobilise and engage the community.

2.3 Community contribution in donor funded food security projects

Food insecurity is a major obstacle to effective community development and previous studies have shown that food security is particularly difficult to achieve in some African contexts. For some communities food security, or the lack of it, reflects complex interconnections between ecology, sustainable agricultural practice and economic and social wellbeing (Warotte, 2009). The term community organization was coined by social workers in this era to address the problem of coordinating charity-based services, thus reflecting the structural perspective of community. However, the next phase in the evolution of community organization stressed cooperative planning among privately run community-service agencies (Riddell, 2008). Efforts were geared toward specialization of services and centralization of decisions regarding these services. By the late 1940s, community organization became professionalized in the field of social work.

Community organization theory stressed organizing as a process where a professional organizer worked with communities to help develop leadership within a community (Jowell, 2009). During the 1980s and 1990s, community organizations expanded to the point of being referred to as a movement, and the process of community organizing expanded into many community organizations. One struggle that emerged in this period was the awareness of power shifting from local communities to regions, nations, and international corporations. The process of globalization has raised new questions about the efficacy of local organizations in addressing problems caused by large-scale economic forces (Speer and Perkins, 2002). Many governmental and non-governmental agencies are recognizing the growing influence of community-based approach in addressing developmental agenda. In essence, involving the community as a whole in development increases the stakeholder base and the level of commitment to the agenda. Community involvement has also been found to not only downgrade the political perceptions of projects but also ensure their sustainability (Riddell, 2008).

An examination of the rate by which food prices increase daily in Ghana, migration of people from rural to urban areas, and the state of the economy in terms of food supplies and

consumption, has put a lot of burden on people living in poverty, especially, those in extreme poverty majority of which are farming households (Wiggins, 2009 and Nagayets, 2005). Although poverty and low income are associated with food insecurity (Oni et al., 2011), adequate household income only is not sufficient to ensure food security (Ivers and Cullen, 2011). This suggests that Economic growth and improvements in the distribution of income or consumption reduce the depth of poverty and ensure food security.

In Ethiopia, in addition to programs oriented to agricultural production, two intervention programs, i.e., the integrated household level extension program known as the food security package (FSP) program and the food-for-work (FFW) program, were implemented to fight food insecurity at the household level. The FSP was launched in 2002 with the overall aim of generating and diversifying rural employment and income that can reduce risks for food insecure households. This was informed by the fact that the household played a very important part in influencing community decisions since they were the basic unit of the community (Warotte, 2009). At the household level, the FSP program intended to secure food by diversifying the income base of the poor through provision of credit for a range of activities in a package. A household can be financed for a range of activities (package) and loans are disbursed on an individual basis. Although the components of the package for which loans are granted differ from area to area to suit agroecological and other needs, the basic components include livestock, i.e., oxen and cows, small animals, i.e., sheep and goats, poultry, beehives, seed, and fertilizer. In 2003, the number of households chronically affected by food insecurity and covered by the food security package program was 49,427 rural households (6.7%), and the number of beneficiaries increased to 629,328 rural households (86%) in 2008. The FFW program on the other hand, served as a safety net for poor communities in food insecure areas (Tsafack and Gopalakrishnan, 2010).

The FFW programs are mainly meant to provide employment and generate public goods such as physical and social infrastructures. It is a way of utilizing the food aid to development ends, while at the same time transferring food to the poor, i.e., a transition between emergency relief and the achievement of long-term development objectives. Ehui and Pender (2005) found that food-for-work and cash-for-work projects are main sources of nonfarm income in Tigray.

2.4 Adoption of new technologies in donor funded food security projects

Agricultural growth can come from expansion of cultivated land, increased productivity, diversification into higher value-added products or a combination of all three (Kidane et al., 2006). It can also come from reduction of wastage and post-harvest losses. Expansion of cultivated land in many sub-Saharan African countries has been constrained by physical access, insecure land ownership, limited access to animal and mechanical power and reduced availability of labour because of migration, competition from off-farm activities and communicable diseases such as HIV/AIDS. Productivity has remained low because of underutilization of water resources, limited fertilizer use, limited use of improved soil-fertility management practices and weak support services (research, extension and finance). Recurrent droughts, plagues and related increased risks have discouraged the investment that is indispensable for raising productivity. Malfunctioning and inefficient markets (largely due to a frail private sector in most countries), insufficient investment in infrastructure, high transportation costs, weak information systems and a poor regulatory framework have hampered proper remuneration of producers and deterred – indeed, incapacitated – them from investing and specializing in new and high value products. Prices remain low and are highly volatile - and there are no mechanisms that can help minimize or share the risk borne by producers.

Technological change is often a trigger for development, provided markets are responsive and absorb additional production. This generally requires the establishment of market information systems and the promotion of agro-processing industries, but in all cases the existence of public infrastructure is essential, be it production (e.g. irrigation facilities) or transportation. It also demands the creation of, and support for, smallholder farmer organizations and professional organizations of other private-sector operators, as well as mechanisms to consult them before taking important decisions, so as to ensure the establishment of the trust and mobilization indispensable for investment.

A major challenge facing the government is to enable communal farmers to increase their production so that they can be food secure and also increase their participation in the market to generate incomes. Thus, over the years researchers have worked hard to answer changing questions about agricultural technology adoption in achieving food security (Sen, 1998). Initially, policy makers and researchers in Africa have sought simple descriptive statistics

about the diffusion of new seed varieties and associate technologies such as fertilizer and irrigation (Sijm, 1997). Concerns arose later about the impact of technology adoption (irrigation, hybrid seeds, fertilizer and machinery) on commodity production, poverty and malnutrition, farm size and input use in agriculture, genetic diversity and a variety of social issues (IFPRI, 2001). Numerous researchers have developed innovative methodologies for addressing such concerns, carried out surveys and collected enormous amounts of data to describe and document the adoption of new agricultural technologies but little has been done on adoption of these by communal farmers (Sah, 2002). This is probably due to the cost implications and the vagaries in the agricultural inputs supply chain like that experienced in Kenya during the planting seasons.

In Zimbabwe, smallholder irrigation was introduced in the early 1930s by Emery Alvord (missionary) in the low altitude and low rainfall areas as a necessity to achieve food security (Rukuni and Eicher, 1994, citing Roder, 1965). Thus, the Government of Zimbabwe (GOZ) also committed itself to a program of poverty alleviation through “growth and equity” which was aimed at attaining self-sufficiency in food production (Von Braun, 1992). However, from the evaluations which have been made by some researchers like Jayne et al (1990), the result has been a food insecurity paradox. At the national level Zimbabwe has been food self-sufficient in years with average or above average rainfall, but food insecure at household level. This underscores the limitations of technology in providing food sustainability and, hence, needs to be supported by other components for food access such as policy and community involvement and empowerment.

In the Tigray region of Ethiopia, different interventions were carried out to raise agricultural production by giving utmost attention to agricultural extension services. One of the major components of the extension package is the use of fertilizers and improved seeds. As indicated, the most plausible way to eradicate poverty is to increase food supply in the region and create the opportunity for people to attain food security (Adnew, 2004). One of the means that has been followed to expedite the availability of enough food, which has been the obsession of the regional government, has been the increased use of fertilizers by smallholding farmers. Furthermore, several arrangements have also been developed to facilitate farmers’ access to rural credit to enable them to purchase fertilizer and other agricultural inputs (Belachew, Ebinger and Cote, 2011). The regional government, Dedebit

Credit and Saving Institution (DECSI), and regional cooperative associations have made efforts to provide credit for such purposes.

The extension services also focused on introducing better and improved agricultural practices. These practices were accompanied by the development of infrastructures that enable farmers to sell their products and buy farm inputs more easily (Adnew, 2004). Development agents were assigned in each tabia (lowest administrative level) to train farmers by demonstrating the benefits of the program. Furthermore, the government has introduced a variety of water harvesting schemes, which is considered as the single most important means to increase agricultural productivity and address the problems of water shortage (Haile, Alema and Kudhlande, 2005). Accordingly, extensive pond construction and digging of water wells, traditional river diversion schemes, and construction of small-scale irrigation schemes have been undertaken in different parts of the region since 2002. A total of 101,537 pond schemes were constructed during the period 2002-2005, of which 75.74% are functional. Traditional river diversion schemes and small-scale irrigation schemes were constructed in different parts of the region. Consequently, the amount of land under irrigation has increased from 4773 hectares in 2000 to 29,734.6 hectares in 2008.

About one third of the land mass in Kenya is considered arable, the rest is ASAL. Most of the urban populations live in the arable lands and have better access to food. The communities living in the ASAL regions are mostly pastoralists and have poorer access to food. The regions which they inhabit are also prone to climatic shocks and the attendant drought cycles that at times culminate into famines (IFAD, 2009). Government funded irrigations schemes in these areas have stagnated and underperformed for decades since their inception due to mismanagement. Donor intervention on food security in these areas have not focused much on irrigation probably due to the water scarcity in the areas and the legal implications of abstracting water for irrigation. However, there have been donor funded irrigation in Kainuk area in Turkana South District, Wajir and Mandera districts. In these areas food security has improved for many although food insecurity still exists for the poorer members of the communities. A study done in Ethiopia by Warotte (2009) found that food production projects through irrigation were successful in improving the household food security but their levels of sustainability was still rudimentary requiring more interventions.

2.5 Community participation in decision making in donor funded food security projects

Decision making can be regarded as the cognitive process resulting in the selection of a course of action among several alternative scenarios. Every decision making process produces a final choice (Reason, 1990). The output can be an action or an opinion of choice. Human performance in decision terms has been the subject of active research from several perspectives; from a psychological perspective, it is necessary to examine individual decisions in the context of a set of needs, preferences an individual has and values they seek; from a cognitive perspective, the decision making process must be regarded as a continuous process integrated in the interaction with the environment; from a normative perspective, the analysis of individual decisions is concerned with the logic of decision making and rationality and the invariant choice it leads to (Kahneman and Tversky, 2000). Yet, at another level, it might be regarded as a problem solving activity which is terminated when a satisfactory solution is reached. Therefore, decision making is a reasoning or emotional process which can be rational or irrational , can be based on explicit assumptions or tacit assumptions. Decisions are likely to be involuntary and following the decision, considerable time is spent analyzing the cost and benefits of that decision(Kenji and Shadlen, 2012). This is known as "Rational Choice Theory," which encompasses the notion that maximizes benefits and minimizes the costs (Ambalika and Shee, 2007).

Logical decision making is an important part of all science-based professions, where specialists apply their knowledge in a given area to make informed decisions. For example, medical decision making often involves making a diagnosis and selecting an appropriate treatment. Some research, for example, Perneger and Agoritsas (2011) using naturalistic methods shows, however, that in situations with higher time pressure, higher stakes, or increased ambiguities, experts use intuitive decision making rather than structured approaches, following a recognition primed decision approach to fit a set of indicators into the expert's experience and immediately arrive at a satisfactory course of action without weighing alternatives (Monahan, 2000). Recent robust decision efforts have formally integrated uncertainty into the decision making process. However, decision analysis, recognized and included uncertainties with a structured and rationally justifiable method of decision making since its conception in 1964.

The influence of Non-governmental organizations in augmenting the work done by government and international agencies is gaining recognition by the day. In Kenya their roles

are more prominent in the traditionally marginalized areas like the Arid and Semi-Arid Lands (ASALs) where basic government services are not readily accessible (Poverty Eradication Network, 2002). Essentially, their mission is to provide interventions to local communities through carefully designed projects meant to empower them so as to ensure sustainability of the initiatives. This obviously entails a lot of decision making at different levels so as to ensure that the available resources are meted out in such a way as to ensure maximum efficacy. However, in most cases strategic decisions in the NGOs are made by the sponsors based on baseline survey reports some of which are subject to change as a result of intervening factors (Riddell, 2008). Failure to recognize these changes and report them early enough might lead to failure of the interventions to achieve the desirable goals and consequently lead to wastage of resources (IFAD, 2009). On the other hand the managements might find themselves inundated with a lot of factual information leading to information overload and in turn result in analysis paralysis which is the state of over-analyzing- or over-thinking- a situation, or citing sources, so that a decision or action is never taken, in effect paralyzing the outcome.

Households adopt several strategies in an event of severe food shortage to manage the impact of food insecurity stemming from mild strategy such as eating less preferred food to severe strategies such as skipping meal for a day which sometimes are detrimental to their wellbeing. A review of literature revealed the following: withdrawal of children from school, a decrease in the intake of certain foods, the sale of assets to purchase food, theft, or exchange of sex for food or money (Kendall et al., 1996; Kyaw, 2009; Salaam-Blyther and Hanrahan, 2010; Weiser et al., 2007; Quaye; 2008; Holmes et al., 2009). Women tend to resort to risky coping strategies, especially when they have low education and economic opportunities (Ivers and Cullen, 2011). To alleviate the negative effects of food insecurity requires the concerted efforts of world leaders to work towards reducing poverty and improving food security situation in the world especially at the household's level. This requires perfect understanding of the world food situation which will then inform policy.

For instance, the World Vision sponsored Makuyu Food Security Project grew out of a series of community-level consultations. Basically, and ironically, the participation of local people in development activities was limited because they were hungry. Community members came forward with proposals for fruit tree planting and the construction of small-scale dams. World

Vision Kenya linked these communities to relevant government bodies to ensure their proposals were supported. In this way, the project evolved an integrated and participatory approach to addressing food insecurity and malnutrition, encompassing three main components (Tsafack and Gopalakrishnan, 2010). These were: Community-based sustainable agriculture and child nutrition practices, such as promoting a return to organic farming; the construction of microdams; production of drought resistant food and cash crops; improving livestock production; and agro-forestry; Capacity building initiatives to increase the community's ability to adapt and change, including a community-based training of trainers program and agricultural demonstrations; and Facilitating linkages between community and national institutions such as the Kenya Institute of Organic Farming, Kenyan Organic Farming Association, the Ministry of Agriculture and the African Beekeepers.

These distinct yet inter-related components were implemented in partnership with new and existing community-based organisations (CBOs) (World Bank, 2008). The idea was for the CBOs to function as a link between the project staff and the direct beneficiaries. Each year, planning sessions were held and community members could contact these CBOs with ideas for the project. The CBO chairpersons would report these to "cluster committees" who would liaise directly with the project coordinator. In this way, World Vision hoped to initiate and influence a broad-based movement in favour of sustainable agricultural practice. It was thought that this would ultimately result in improved food security.

2.6 Community involvement in M & E of donor funded food security projects

Third world countries in Africa and elsewhere give priority to rural development. The countries main problem is to identify and implement ways that can speed up its rural development since resources are always limited. Further while the few available resources are invested in development programme, local people often do not appreciate these programmes and are not involved in their implementation as expected by development agencies hence lack of sustainability (Stella, 2008). According to Bossert (1990), the common response to this problem of sustainability is to ensure that handover and transfer of responsibilities is built into the project from the start and continually monitored.

Donor agencies like World Vision supports many initiatives which are largely donor driven in Kenya. After the period of donor support, many of these initiatives have had challenges in survival. The agencies main role is to facilitate the process of community betterment but opportunity has to be afforded the community to better it members living condition (Soerderbaum, 2008). The ultimate goal is to help the community to a point where it has developed to shoulder its own development initiatives and this is done through capacity building during implementation. At this point change agents withdraw or minimize their assistance to the community. There has been difficulty in achieving sustainability and replicability of projects which is the ability of a given project to remain viable after external support is terminated (Ruffing, 2007). Several factors put NGOs in jeopardy and some NGOs seem to be getting tired of the effort and continual monitoring involved in maintaining the community involvement which is a pre-requisite of a sustainable project (Soerderbaum, 2008). Donors are discouraged by the number of failed projects, abandoned projects, bad governance, accountability and the number of new groups who make no attempt to break their dependency on NGOs but simply solicit for funds year after year. This does not auger well with their continuity and sustainability.

Mulwa (2007) stated clearly that, any judgment that emanates from evaluation would largely depend on the value system from which evaluating party originates. Conventionally, evaluating party is usually part of evaluation missions contracted and dispatched from the donor world. In the case of World vision funded food security projects the organization identifies projects, implement, then monitors and evaluates, or call technical person at its own peril. This can be a weakness that needs to be addressed. Odhiambo and Taifa (2009) while referring to Feverstein, (1986) explained that locally managed and controlled funds have great potential to bring about positive development outcome at the local level especially if community participation is sufficiently enhanced and political interference reduced.

The findings from an end-of-project evaluation of the World Vision Kenya Makuyu project indicate that despite best intentions to deliver an integrated and participatory intervention, ultimately the success of the project was compromised by an over-dependence on existing CBOs. For example, in one community, the farmers were frustrated over the lack of artificial insemination services (AIS) and many blamed the CBOs for monopolising project inputs. The local CBOs had recommended that farmers use the services of two privately owned veterinary clinics. These clinics were too costly for most of the farmers and so they continued employing

traditional methods, which the project was trying to discourage. One AI S provider put it this way: “Before the project started, there was a lack of AIS training and a lack of inseminators. The project has enhanced AIS services. However, the majority of the people are not enlightened on what or when to present their animals for insemination. The AIS is so much commercialised that when used by private practitioners, the ordinary farmer cannot make it. The project should have first involved all parties: farmer, inseminators, and start training at grass root level within the community itself.” In effect, the project-CBO linkage did not succeed in mobilising the main participants. A few lessons on well-intentioned yet inappropriate practice, stood out in the evaluation: The project did not set out clear criteria for identifying and selecting participants. The CBOs and cluster committees that were the interface between the project and the community had their own membership rules and criteria. Households that were not fee-paying members of the CBOs were not allowed to access project inputs. In most cases these were the poorest households and so the most deserving. There was not enough monitoring of patterns of usage. CBOs and CBO leaders were accustomed to working through kinship and social networks. Hence, the underlying logic of promoting a broad-based movement for social change was lost. Some CBO leaders tended to channel project inputs to relatives and friends. Finally, the project monitoring and design process did not pick up on these trends until late into implementation. The project had neither a policy on CBOs nor one on roles governing the partnership. The CBOs and community coordinators applied their own rules as well as inclusion and exclusion criteria that were unknown to project staff.

The Makuyu experience demonstrates that although working with existing CBO structures has proved to be very successful in many community interventions, it is not a panacea for sustainable development (World Bank, 2008). CBOs are not necessarily the best interface between project staff and local communities. Sound knowledge of local dynamics is essential to project design. The parameters for NGO -CBO partnerships need to be developed carefully. In some situations, the funders should operate at the CBO and community level. World Vision Australia is currently working with World Vision Burundi on the design of another community development initiative to address food security (Tsafack and Gopalakrishnan, 2010). All the lessons learnt from the Makuyu experience are being used in the design of this new project. In particular, the design process is assessing the traditional role and scope of existing CBOs and their relevance in the context of sustainable food security interventions.

2.7 Theoretical framework

The study will be premised on two theories the Food Availability Decline Approach (FADA) and the Entitlement Approach (EA). The first is an old theory developed centuries ago and modified to illustrate how food security is tackled at the local level, that is governmental level and this usually involves food production. The second is concerned with the mechanisms to improve access to food both at the community and macro levels.

2.7.1 Food Availability Decline Approach

Food Availability Decline Approach (FADA) which was an accepted theory before the influential work of Sen (1981). The first devisers of FADA were Adam Smith and Malthus who argued that famines are primarily caused by a sudden decline in food availability. This approach emphasized food availability at local levels in contrast to Entitlement Approach (EA) which examines food availability at aggregate or macro levels. The approach further argued that the crop failures due to natural calamities often result in high food prices, increased demand to deal with uncertainty and sales of possessions to obtain food. The decline in purchasing power impacts the poor and those who are negatively affected by bad weather to become famine victims (Lin and Yang, 2000). For the proponents of FADA, the best way to understand famine is to look at what happens to food availability.

In the present study, the FADA theory will be useful in examining the food production mechanisms at both individual and community levels in marginal areas in Kenya where natural shocks have strong repressive effects, physical endowments are much degraded and many local communities are excluded from various social services and infrastructures. In these areas government capacity is much limited and misuse of scarce resources/ corruption and policy constraints are rampant. In the research area, that is, Baringo County domestic food production is the most important dimension of livelihood of the community. Failure of food production might trigger people to suffer from famine.

2.7.2 Entitlement Approach

The Entitlement Approach (EA) was first launched by Sen (1981) who argued against failure in food supply as the only factor causing hunger/starvation or malnutrition. He argued that famines can happen in places where there is food available at national or local levels. He brought empirical evidences from Wollo, north Ethiopia, when there were famines perishing thousands of people while food was traded out from that specific province. He then brought

the concept of the lack of entitlements or access to food as a main cause for starvation. EA concentrates on the ability of people to command food through the legal means available in the society. The means could be production possibilities, trade opportunities, entitlement vis-a-vis state and other methods of acquiring food.

This approach focuses on the alternative bundles of commodities a person can command using his/her endowments such as land, animals, labour power, and knowledge where as failure to these entitlements cause starvation. Sen identifies endowment of a person and the exchange entitlement mapping as two essential factors on which his/her entitlements depend. Exchange entitlement mapping also depends on legal, political, economic and social characteristics of the society in question and a person's position in it. Some examples worth to mention is legal rights, social conventions and social security. Complementing EA, Haile et al. (2005) argued that though food security as a problem at a national level was felt in Ethiopia in the 1960s, it only started influencing policy in the 1980s. The 1983/84 drought and famine had posed pressure on government so that the government placed food self sufficiency among the major objectives of the Ten-Year Perspective Plan. The government has exerted tremendous effort to ensure adequate food supplies at national level, but this was not guarantee to ensure food availability at house hold and individual levels. EA argues against FADA for its inability to explain satisfactorily why certain group of people suffer from hunger while others are not affected.

The entitlement approach allows disaggregating food availability and access to the level of specific groups of people, defined geographically, demographically or occupationally. By analysing the sources of entitlement to food of various groups of people, it is possible to develop a vulnerability profile for different livelihood systems and to predict the potential consequences of a famine and the impact of livelihood shocks. It may also be possible to prevent a famine or a livelihood shock for a certain group of people because the vulnerable spot in their livelihood system has been identified and people can be assisted if there is a risk that their vulnerability is increased. Even during national food insecurity the entitlement approach emphasizes that each subgroup of a population faces different food security risks or no food security risk at all. Whether and how these people make their causal pathways to famine are very distinct (Devereux 2001). An example to identify the vulnerability of different households is the Household Economy Approach (HEA) which was developed by

Save the Children Fund (SCF). It describes how different households live, what risks they are vulnerable to and how they cope when a shock occurs. It describes the assets and resources accessible for different types of households, and how these resources are exploited in the daily, seasonal and long-term process to meet the households needs (SCF, 2005).

The conventional response to famine is to move food aid to the affected areas and to distribute free rations of food. This intervention logically follows the Malthusian assumption 'too many people, too little food'. But, if the diagnosis for the food insecurity situation is an exchange entitlement decline or a market failure, more appropriate and sustainable interventions might involve restoring entitlements in other ways. For example, with cash- or food-for-work programmes or by improving infrastructure that will improve transport, communications and marketing systems (Devereux, 2001).

However, EA has been mainly critiqued over its under estimation of the importance of supply factors. Academicians have criticized Sen's EA by reviewing and refuting some of his studies. Accordingly, they were convinced that famines have proceeded by a failure of food availability, supply factors such as poor infrastructure, poorly integrated food markets and high transport and other transaction costs have constrained to trade or deliver food in famine prone zones. Moreover, they criticized it from the angle of policy implication that the distorted diagnosis may lead to fallacious conclusion and thereby distorted remedies (Sijm, 1997). In spite of contradicting on some aspects of the causes of famine and food shortage both approaches are closely linked. They do not have fundamental difference apart from prioritizing one over the other. It is important to note that rigorous empirical examination is quite essential to recognise the usefulness of each approach. Both approaches are complimentary to each other in the current study and will aim at underpinning the food sustainability problem evident in many donor funded food security projects in the country and in particular the research area.

2.8 Conceptual framework

The conceptual framework in Figure 1 show the expected relationships between the independent variables and dependent variables.

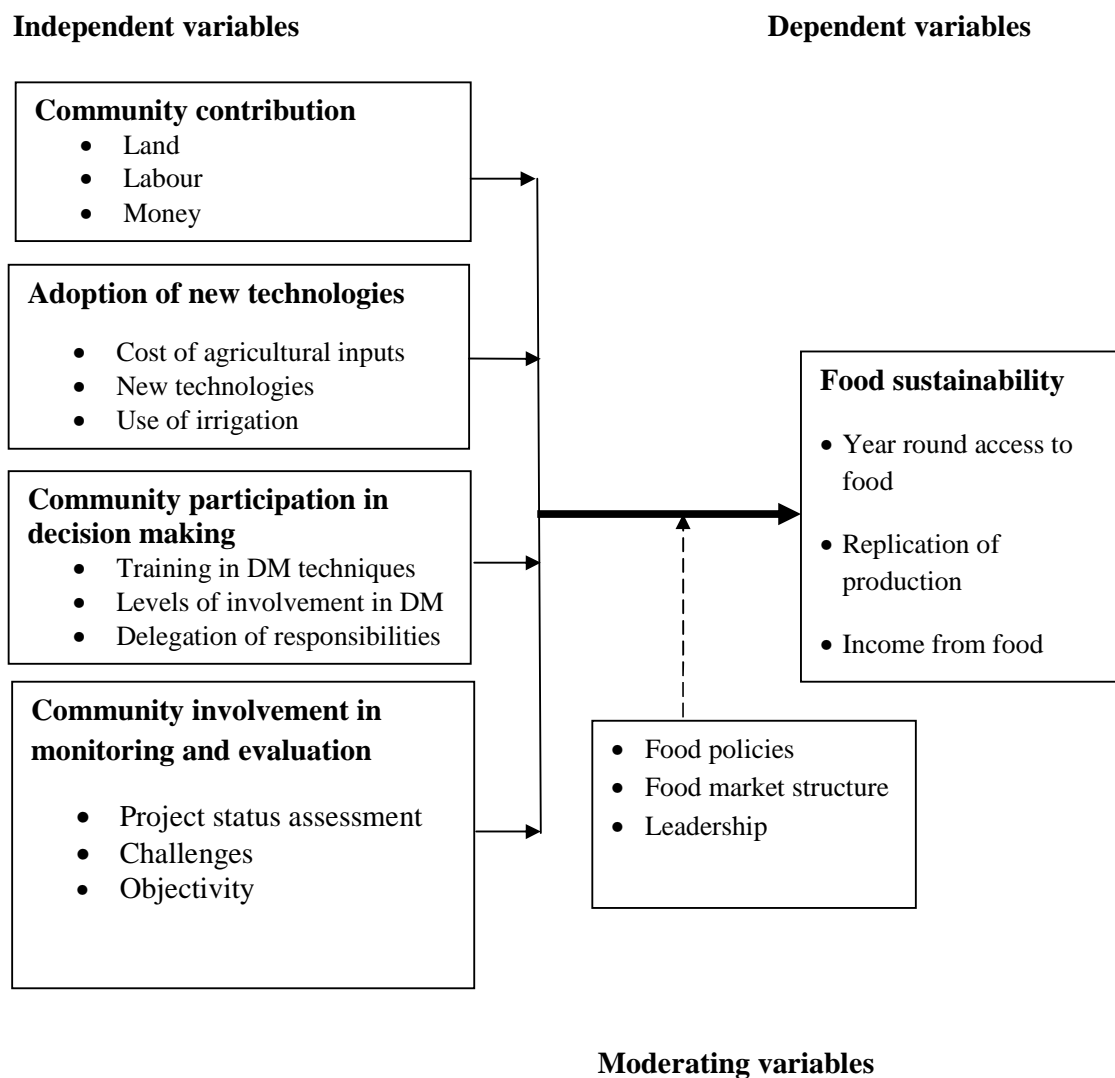


Figure 1: Conceptual Framework

Source: Author (2014)

In the conceptual framework in Figure 1, community contribution is expected to influence food sustainability as it increases the level of ownership of the food security projects by the community. Adoption of agricultural production technologies such as new seed varieties, fertilizers, new farming methods and mechanization may also influence food sustainability. It is also expected that decision making capabilities of the communities acquired through

training and delegation of responsibilities may have a significant impact on the future of the projects. Community involvement in project monitoring and evaluation may also determine the future sustainability of the food security projects.

2.9 Gaps in literature review

Food security still presents a challenge in modern times despite the advances in production technology and growing global advocacy for increased access to food for hunger threatened communities. Non-governmental organizations have taken a leading role in providing food interventions for these communities, however, most are limited by funding and the donor objectives. Some NGOs have also taken the food sustainability approach which seeks to empower the communities in terms of food security. However, despite their efforts, the future of their projects remains uncertain. Most literature have not focused in depth on community involvement and contributions in the food security projects where they are the main beneficiaries and also the handover dynamics when the ownership of projects are transferred to the communities to be fully under their management. The present study seeks to investigate these dynamics.

Table 2.1: Research gaps

Author	Area of Study	Gap
Ridell (2008)	Sustainability and self reliance	Voluntary community contribution
Warrote (2009)	Sustainable food security approaches	Community adoption of appropriate technologies
Quaye (2008) & Holmes et al., (2009)	Decision making at the household level on food security	Approaches to and community involvement in decision making
Ruffing (2007) & Soederbaum (2008)	Sustainability economics	Need for community involvement in monitoring and evaluation of projects

Source: Researcher (2014)

2.10 Summary of literature reviewed

Though various interventions have been put in place to improve food security improvements in the lives of the poor have been unacceptably slow, and some hard-won gains are being eroded by the climate, food and economic crises. Consequently, the number of food-insecure

people in 76 lower income countries is projected to increase in the next decade (2012 -2022). This calls for more food sustainability solutions. The critical event for evaluating sustainability is the removal of donors from operational and management support roles. However, the present researcher also observes that most donor assisted food sustainability projects in Kenya have a high level of dependability on the donors such that donor withdrawal affects them considerably to the extent of collapse. Government funded irrigations schemes in ASAL areas have stagnated and underperformed for decades since their inception due to mismanagement. Donor intervention on food security in these areas have not focused much on irrigation probably due to the water scarcity in the areas and the legal implications of abstracting water for irrigation. This underscores the limitations of technology in providing food sustainability and, hence, needs to be supported by other components for food access such as policy and community involvement and empowerment. The mission of the NGOs is to provide interventions to local communities through carefully designed projects meant to empower them so as to ensure sustainability of the initiatives. This entails alot of decision making at different levels so as to ensure that the available resources are meted out in such a way as to ensure maximum efficacy.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes specific procedures for the purposed research framework including research design, population, sampling procedures and sample size, instrumentation, reliability and validity of instrument, data collection procedures and data analysis techniques. It has been organized systematically to reveal these procedures and their appropriateness for the study.

3.2 Research Design

This study used the descriptive survey research design which is a method of sociological investigation that uses question based or statistical surveys to collect information about how people think and act. A survey may focus on opinions or factual information depending on its purpose, but all surveys involve administering questions to individuals (Kombo and Tromp, 2006). When the questions are administered by a researcher, the survey is called an interview or a researcher administered survey. When the questions are administered by the respondent, the survey is referred to as a questionnaire or a self-administered survey. Survey research design is an efficient method for systematically collecting data from a broad spectrum of individuals and educational settings.

Therefore, survey research design was relevant to this study because the study sought to obtain from farmers in the area and the project managers their opinions on the future performance of the food security projects they are involved in. Salant and Dillman (1994) noted that the researcher must ensure that the number of survey instruments distributed is sufficient to allow for no response and for unusable, illegible, and incomplete responses.

3.3 Target Population

The target populations are members of a real or hypothetical people to whom a researcher wishes to generalize the results of the study (Gall, Borg and Gall, 2003). According to Creswell (1994), population is defined as any group of individuals who have one or more characteristics in common that are of interest to a researcher. Mugenda and Mugenda (2003) define population as the entire group of individuals, events or objects having a common observable characteristic. Furthermore, Creswell (1994) defines the target population as a small portion of the population selected for observation and analysis. The target population

for this study was the management and staff at WVK in charge of Marigat ADP, this comprised of 10 members of the transformational development department who are tasked with the implementation of the projects, 8 from the nutrition department, 25 from the food relief department and 300 farmers who are beneficiaries of World Vision Kenya food security projects in Marigat ADP in Baringo County (World Vision Kenya Report, 2013).

3.4 Sample size and sample selection

Sampling may be defined as the selection or some part of an aggregate or totality on the basis of which a judgment or inference about aggregate or totality is made. In other words, it is the process of obtaining information about an entire population by examining only a part of it (Kothari, 2004). Frankel and Wallen (2000) defined sampling as a procedure of selecting members of a research sample from the accessible population which ensures that conclusions from the study can be generalized to the study population. A sample is a smaller group obtained from the accessible population and each member has equal chance of being selected to be a sample. It is also a finite part of a statistical population about the whole (Mugenda and Mugenda, 2003).

Purposive sampling was used to sample the management and staff working at the transformation development and nutrition departments of WVK Marigat ADP who are considered the key informants of the study while systematic random sampling will be used to obtain the required sample size of the farmers. Purposive sampling is ideal for the present study because specific persons were involved in the planning, executions and management of the projects from the donor side. These are key informants and can give more accurate and reliable information on the status and performance of the projects. On the other hand, systematic random sampling has the characteristic of providing each member of the target population an equal chance of being included in the study while at the same time keeping the size manageable. The main factor that was considered in determining sample size was the need to keep it manageable while being representative enough of the entire population under study. The use of the two sampling methods as opposed to other sampling designs was been informed by the need for respondent specificity and also the need for introducing randomness. Purposive sampling can be used with both qualitative and quantitative studies and can be carried out in addition to probability sampling. Systematic random sampling has more even spread over the entire population it is easier, inexpensive and is convenient to use over large populations (Kothari, 2004).

3.4.1 Sample Size

The current population of farmers who benefit from WVK food security projects in the area are 300 (World Vision Kenya Report, 2013). Since this population is less than 10,000, Fisher et al. (1983) recommends the following formula (Mugenda and Mugenda, 1999):

$$nf = n/(1+n/N)$$

Where nf = desired sample size (when population is less than 10,000)

n = desired sample size (when population is more than 10,000) at 95% confidence level

N = the estimate of the population size

The total number of prospective respondents (farmers) is 300, therefore n = 300

$$nf = 384 / (1 + 384 / 300)$$

$$= 384 / 2.28$$

$$= \underline{\underline{168}}$$

The sample size therefore comprised of 168 farmers and 18 staff and management of WVK Marigat ADP which brings the total number of respondents to 186. This sample size is larger than 30 and hence amenable to statistical analysis.

3.4.2 Sample Selection

The derived sample size was then be distributed in a sampling frame as shown in Table 3.1.

Table 3.1: Spreading the sample across the study area

Respondent type	Population	Sample size
Transformational development staff	10	10
Nutrition staff	8	8
Farmers	300	168
Total	318	186

Source: Author, (2014)

3.5 Methods of data collection

The study used both primary and secondary data. Primary data was collected directly from the respondents using the research instruments while secondary data was collected in form of

records from the donor agency. Permission to conduct this research was sought from World Vision Kenya in advance.

The study used researcher-administered questionnaires (see Appendix II and III) as data collecting instruments. Both closed and open ended items will be used in the questionnaire. The selection of these tools has been guided by the nature of data to be collected, time available and the objectives of the study. It has quite a number of advantages which include: confidentiality; time saving; and reduced interviewer bias. Questionnaires also have the advantages of low cost, easy access, physical touch to widely dispersed samples (Fowler, 1993) and also the fact that the results are quantifiable. However, the use of questionnaires requires careful preparation as it could easily confuse the respondents, or discourage them, or simply fail to capture important information needed in the study (Mugenda and Mugenda, 2003). This enabled the researcher to reduce both researcher and respondent biases.

3.5.1 Instrument Pretesting

This study used questionnaires after pilot testing them for correctness and accuracy on 20 non-participatory respondent sample. Piloting was done in Solai division of Nakuru county because similar gaps have been noted as found in the capacity assessment and sustainability report conducted by WVK.

3.5.2 Instrument Validity

Validity is defined as the extent to which the instrument measures what it purports to measure. It is that quality of a data-gathering tool/instrument that enables it to measure what it is designed for. Content validity pertains to the degree to which the instrument fully assesses or measures the construct of interest. The development of a content valid instrument is typically achieved by a rational analysis of the instrument by raters (ideally 3 to 5) familiar with the construct of interest (Fowler, 1993). Specifically, raters reviewed all of the items for readability, clarity and comprehensiveness and come to some level of agreement as to which items should be included in the final instrument. Face validity is a component of content validity and is established when an individual reviewing the instrument concludes that it measures the characteristic or trait of interest (Mugenda and Mugenda, 2003). Criterion-related validity is assessed when one is interested in determining the relationship of scores on a test to a specific criterion. Construct validity is the degree to which an instrument measures the trait or theoretical construct that it is intended to measure.

The study adopted content validity which was used to show whether the test items represented the content that the test was designed to measure (Mugenda & Mugenda, 1999). In order to ensure that all the items used in the questionnaires are consistent and valid, the instruments were subjected to scrutiny and review by experts in Nairobi University. The items were rephrased and modified to avoid ambiguity before being used for data collection.

3.5.3 Instrument Reliability

Reliability is the measure of the consistency of the results from the tests of the instruments. Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. There are three aspects of reliability, namely: stability. It refers to the stability, equivalence, and internal consistency (homogeneity) of the measurement (Fowler, 1993). Equivalence refers to the amount of agreement between two or more instruments that are administered at nearly the same point in time. Stability is assessed through a test-retest procedure that involves administering the same measurement instrument to the same individuals under the same conditions after some period of time. It is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. It is influenced by random error. Test-retest reliability is estimated with correlations between the scores at Time 1 and those at Time 2 (Mugenda and Mugenda, 2003). Internal consistency concerns the extent to which items on the test or instrument are measuring the same thing.

The researcher used the internal consistency to check the reliability of the research instruments (Cronbach & Azuma 1962). Reliability of the research instrument was calculated using Cronbach's coefficient alpha for either even or uneven items based on the order of number arrangement of the questionnaire items. According to Fraenkel & Wallen (2000), as a rule of thumb, a proposed psychometric instrument should only be used if an α value of 0.70 or higher is obtained on a substantial sample. The following is the Cronbach's coefficient alpha formula which was used:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Here N is equal to the number of items, c-bar is the average inter-item covariance among the items and v-bar equals the average variance.

The study obtained a Cronbach Alpha value of 0.7981 from the pre-test prior to administration of the questionnaires which was above the recommended value of 0.70 implying that the accuracy level of the questionnaires was up to 80%, thus, the instrument was deemed reliable for the study. After ascertaining that the instrument was giving consistent results, it was adopted as the main tool used for data collection.

3.6 Procedure of Data collection

Both for legal and ethical considerations, the researcher obtained a permit before embarking on the study. Care was taken to ensure that the data is scored correctly, and systematic observations made. Primary data was collected mainly utilizing quantitative and qualitative methods to obtain in depth information of the study variables. Every respondent was approached through the management separately, interviewed and appropriate responses filled in the questionnaire by the researcher and his assistants. The use of closed and open ended questions and also focus group discussions generated both quantitative and qualitative data respectively. This improved the quality of responses to be contained in the interview schedule. The interview schedule was pilot tested to identify weaknesses, ambiguities and omissions so as to improve the quality of the questionnaire.

3.7 Methods of data analysis

Data obtained from the questionnaires were first cleaned and edited before being coded and subjected to further analysis. The Likert scales in closed ended questions in the questionnaires were converted to numerical codes and be scored on 1-5 point scale in order of magnitude of the construct being measured, then be entered into the Statistical Package for Social Sciences (SPSS) version 21.0 computer program . On the other hand, open ended responses in the questionnaires were assigned into emerging categories and the numbers representing various categories entered into the computer application.

Descriptive statistical analysis was done using, frequencies and percentages to describe the basic characteristics of the data. Inferential data analysis was done using the Pearson's Product-Moment Correlation Coefficient and multiple linear regression. In addition, the open ended items were qualitatively analyzed and be used where necessary. The results were then be presented in APA tables.

Regression model was used to make predictions or inferences about the population from observations and analyses of a sample. The importance of this is that the results of the analysis using the sample can be generalized to the larger population. More specifically, the researcher used multiple regression model to establish if the relationship between the independent variables and the dependent variables were statistically significant. The model is shown below:

$$y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e$$

y= Sustainability of food security projects

x₁= Community contributions toward the projects (CC)

x₂= Adoption of new technologies (AT)

x₃= Community participation in decision making (DM)

x₄= Community involvement in monitoring and evaluation (M&E)

e =error term.

Hence, the final model obtained was;

$$Y = 11.737 + 0.286 CC + 0.631 AT - 0.273 DM - 0.093 M\&E$$

The term “independent” variables and “dependent” variables are derived from the mathematical expression, when X_i (i=1, 4) are generally independent variables and the dependent variable, y is said to be the function of X_i (i=1, 2.....4) i.e. y=f (X_i). This means that the variation of y depends on X_i.

The regression coefficient ‘a’ is the Y intercept: while b₁, b₂, b₃, and b₄ are the net change in y for each change of x₁, x₂, x₃ and x₄. The error term is a random variable with a mean of zero, which captures those variables that cannot be quantified. The data was presented, analysed and interpreted using tables.

3.8 Ethical Considerations

For both legal and ethical considerations permits to carry out the study were obtained from relevant authorities like the University of Nairobi, National Research Council and the Baringo Governor's office. Polite language was used in the interviews and respondents were highly respected in the process of data collection and afterwards. The respondents were also assured of their confidentiality during the study and as such they were not allowed to leave contacts or names in the research instruments.

3.9 Operational definition of variables

Indicators were denoted by the main variables under the study in order to render them measurable.

Table 3. 2 Operationalization Framework

Objectives	Type of Variable	Indicators	Measure	Scale of Measurement	Tool of Analysis
Sustainability of donor funded food security projects	Dependent	<ul style="list-style-type: none"> • Year round access to food • Replication of production • Income from food 	Continuity and spread of project after donor withdrawal	Nominal Interval ordinal	Descriptive Inferential
Community contribution	Independent	<ul style="list-style-type: none"> • Donation of land • Provision of labour • Contribution of money 	Commitment to project	Nominal ordinal	Descriptive Inferential
Adoption of new technologies	Independent	<ul style="list-style-type: none"> • Cost of agricultural inputs • New technologies • Use of irrigation 	Improved production as a result of technology	Ordinal Ratio	Descriptive Inferential
Involvement in decision making	Independent	<ul style="list-style-type: none"> • Training in decision making techniques • Involvement in decision making • Delegation of responsibilities 	Efficiency and effectiveness in decision making	Nominal ordinal	Descriptive Inferential
Monitoring and evaluation of projects	Independent	<ul style="list-style-type: none"> • Project status assessment • Identification of challenges • Objectivity of project mission 	Cost implications and flexibility	Nominal ordinal	Descriptive Inferential

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents results arising from the analysis of data collected using questionnaires. The data collected was analysed using descriptive and inferential statistical methods for each variable and the findings presented in tabular summaries, and their implications discussed.

4.1.1 Response Rate

Table 4.1 shows the response rate of the questionnaires.

Table 4.1: Instrument Response Rate

No. of questionnaires		
Returned	Target No. of respondents	Response Rate (%)
164	186	88

The high questionnaire response rate (88%) shown in Table 4.1 resulted from the method of administration of the instrument, which was in this case researcher administered. This was acceptable according to Mugenda and Mugenda (2003). This method also ensured that the respondents' queries concerning clarity were addressed at the point of data collection; however, caution was exercised so as not to introduce bias in the process it also reduced the effects of language barrier, hence, ensuring a high instrument response and scoring rate.

4.2 Descriptive Statistics

This section presents the results of the descriptive statistical analyses of the data and their interpretations. The descriptive statistics used are the frequencies and percentages. The descriptive statistics helped to develop the basic features of the study and form the basis of virtually every quantitative analysis of the data. The results are presented in terms of the study objectives.

4.2.1 Demographic Characteristics of the Respondents

The study sought to determine the demographic characteristics of the respondents as they are considered as categorical variables which give some basic insight about the respondents. The characteristics considered in the study were; range of ages of the respondents; gender and

highest level of education attained by them. The findings on these are summarized in Table 4.2

Table 4.2: Demographic Characteristics of the Respondents

Gender	Frequency	Percent
Male	83	50.3
Female	82	49.7
Total	164	100.0
Age	Frequency	Percent
19 - 29 years	40	24.2
30 - 40 years	58	35.2
41 - 51 years	29	17.6
52 years and above	37	23.0
Total	164	100.0
Marital Status	Frequency	Percent
Married	101	61.2
Separated	9	5.5
Single	41	25.5
Widowed	13	7.9
Total	164	100.0
Highest level of education	Frequency	Percent
Never attended school	45	27.9
Primary	53	32.1
Secondary	38	23.0
College/University	28	17.0
Total	164	100.0
Number of years lived in the area	Frequency	Percent
0 - 5 years	1	.6
6 - 10 years	6	3.6
11 years and above	156	95.2
5	1	.6
Total	164	100.0

The findings on the demographic characteristics of the respondents in Table 4.2 indicate that the project most likely strived to ensure gender parity in the implementation of the project with both genders at 50% each. The results also indicate that the project targeted young people majority (35.2%) of who were aged between 30 to 40 years of age and most of who were married (61.2%). Majority (32.1%) of the respondents had primary level of education and had lived in the area for more than 11 years (95.2%) indicating that they were either the original inhabitants of the area or had become permanent residents of the area in a way.

4.2.2 : Community contribution on sustainability of food security projects

The first objective of this study was to determine the influence of community contribution on sustainability of donor funded food security projects in Baringo South Sub County . This objective was achieved by asking the respondents to respond to several questions describing how the community efforts to make contributions towards the World Vision funded food projects in the area. Specifically, the respondents were asked whether they had contributed land, money and labour and whether they thought that their contribution was worthwhile. The status of this variable was rated on a 5 point Likert scale ranging from; 5 = strongly agree to 1 = strongly disagree. The results on this are summarized as follows.

The study first sought to establish the status of land ownership of the respondents. The results on this are given in Table 4.3.

Table 4.3: Land ownership on status of ownership

		Do you own land in the area?		
		Yes	No	Total
		Freq (%)	Freq(%)	Freq (%)
What is the status of your ownership?	Inherited	36 (23)	4 (2)	40 (25)
	Purchased	15 (9)	2 (1)	17 (10)
	Lease	4 (2)	0	4 (2)
	Squatter	9 (5)	13 (8)	22 (13)
	Family land	45 (27)	36 (23)	81 (50)
Total		109(66)	55 (34)	164 (100)

The results in Table 4.3 suggest that majority (66%) of the respondents owned land in the area, however, most of it was either family land (50%) or inherited land (25%). This meant that most of the land in the area was under family control and that it was them who ultimately decided how the land will be used. It is also evident from the results that the land seldom attracted commercial farmers from within and outside the area as a very small part (2.4%) of the land was under lease. Consequently, the study sought to establish whether the respondents had donated part of their land to the donor funded food security projects. The results on this are given in Table 4.4.

Table 4.4: Donation of land on its perceived usefulness to the project

		Status of Donation		
		Yes	No	Total
		Freq (%)	Freq(%)	Freq (%)
If your answer in 2 above is yes, do you think you should have given more land for the project?	Strongly agree	36 (22)	29 (18)	65 (40)
	Agree	15 (9)	42 (26)	57 (35)
	Neutral	2 (1)	30 (18)	32 (19)
	Disagree	1 (1)	4 (2)	5 (3)
	Strongly disagree	0	5 (3)	5 (3)
Total		54 (33)	110 (67)	164 (100)

Looking at the findings in Table 4.4, it is evident that the majority (67%) of the respondents had not given part of their land to the project. The reluctance of the respondents to donate land for the project was mostly arising from the fact that the land was family owned and its usage or donation was pegged on the family members approval which was in turn contingent on the perceived benefits of the project. However, majority (95%) of those who had donated their land to the project felt that that they should have donated more due to the benefits they were deriving from the project in terms of food sustainability.

An assessment was also made on the farmers monetary contribution to the project and their perceptions on the returns. The cash contributions were meant to increase the farmers sense of commitment to and ownership of the projects, however, this was only a very small amount meant to cater for secretarial services. The results are given in Table 4.5.

Table 4.5: Perceived benefits of contribution to the food security projects

Statement	SA	A	N	D	SD
	Freq(%)	Freq(%)	Freq(%)	Freq(%)	Freq(%)
Have you ever contributed money towards the project?	25(15.2)	63(38.2)	21(12.7)	49(29.7)	6(3.6)
Have the returns been good so far?	57(34.5)	64(38.8)	30(18.2)	7(4.2)	6(3.6)
Do you feel as though your contributions have been significant to the Projects?	65(39.4)	78(47.3)	20(12.1)	0	1(0.6)

The results in Table 4.5 suggests that majority (38.2%) of the respondents had contributed money towards the project and that they of the opinion that the returns had been good so far (38.8%). The results also show that overall, majority (47.3%) of those who had contributed towards the project in any way felt that contributions have been significant to the project's success in the area. Most of these contributions were in the forms of; labour, where the project managers encouraged families to get their members to work on the farms, thereby, offsetting the labor costs; building and construction materials; transportation, security and storage.

4.2.3: Adoption of new technologies and sustainability of food security projects

The second objective of this study was to examine the relationship between adoption of new technologies and sustainability of donor funded food security projects in Baringo South Sub County . This objective was realized by asking the respondents to react to various statements pertaining to the adoption of new technologies in their farms and the challenges they faced with these new technologies. This variable was defined in terms of the types of technology, their usefulness and accessibility of the technologies. The responses of this variable were rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. These results are summarized in Table 4.6.

Table 4.6: Adoption of new technologies in the food security projects

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
Does World Vision support you in any way in purchasing the farm inputs?	25(15.2)	64(38.8)	54(32.7)	15(9.1)	6(3.6)
Are you able to purchase farm inputs in good time?	4(2.4)	83(50.3)	35(21.2)	22(13.3)	20(12.1)
Do you think that World Vision Kenya has brought new farming methods in the area?	76(46.1)	71(43)	8(4.8)	9(5.5)	0
Do you support these methods?	109(66.1)	44(26.7)	9(5.5)	1(0.6)	1(0.6)
Are you satisfied with the irrigation methods in use in the projects?	82(49.7)	55(33.3)	24(14.5)	2(1.2)	1(0.6)
In your opinion, have these technologies improved production of farm produce?	60(36.4)	94(57)	9(5.5)	1(0.6)	0

The findings in Table 4.6 suggest that the donor organization, World Vision, supported the farmers in purchasing the farm inputs (38.8%) and as a result, the farmers were able to

purchase the farm inputs in good time (50.3%). Majority (46%) of the respondents also affirmed that the donor organization had brought new farming methods which included irrigation in the area and they supported these methods (66.1%). In addition, majority (49.7%) were satisfied with the irrigation methods used in the projects (49.7%) and also felt that these new technologies had improved the production of their farms (57%). These findings imply that technology was critical to improved production of food in the area but this largely depended on the adoption of the technologies, their types and the capacity of the users to fully utilize the technologies. Moreover, in order to successfully adopt the new technologies, it was required that the farmers adopt new farming methods consistent with the technologies.

4.2.4 : Community participation in decision making and sustainability of food security projects

The third objective of this study was to assess the influence of community participation in decision making on sustainability of donor funded food security projects in Baringo South Sub County . In determining this objective, the respondents were requested to respond to several statements regarding the participation of the community in decision making in the donor funded food projects in the area. The status of this variable was measured in terms of training, level of involvement and delegation of responsibilities. The responses to the statements were rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. These results are presented in Table 4.7

Table 4.7: Participation of farmers in decision making in food security projects

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
Have you ever been trained on decision making by World Vision?	49(29.7)	80(48.5)	23(13.9)	8(4.8)	4(2.4)
Do you think that training in decision making for the farmers in your area would enable you to make better choices for farming?	57(34.5)	85(51.5)	16(9.7)	4(2.4)	1(0.6)
Initial stages	51(30.9)	75(45.5)	28(17)	3(1.8)	7(4.2)
Development stages	61(37)	86(52.1)	9(5.5)	7(4.2)	2(1.2)
Later stages	69(41.8)	61(37)	25(15.2)	8(4.8)	1(0.6)
Do the project managers often assign you some responsibilities and let you discharge them on your own?	52(31.5)	80(48.5)	18(10.9)	5(3.0)	9(5.5)

Looking at the results in table 4.7, it can be deduced that the sponsoring organization, World Vision, had taken the initiative to train the farmers in decision making (48.5%) as part of capacity building and that this training enabled the farmers in the area to make better choices for farming (51.5%). However, it emerges from the findings that majority of the farmers were involved in decision making during the development stages (52.1%) than the initial stages (45.5%) and the later stages (41.8%). This probably explained the sustainability gap evident in the projects future after the withdrawal of the donors. The results also indicate that the project managers often assigned the farmers some responsibilities and let them discharge them (48.5%). However, the findings do not indicate whether there was sufficient exposure to project implementation methods for the farmers in terms of they being given projects to develop from scratch to test their capability of handling the projects on their own in the future.

4.2.5 : Community involvement in M&E of projects and sustainability of food security projects

Monitoring and evaluation plays an overarching role in the successful implementation of projects and the approaches taken by organizations in carrying out monitoring and evaluation is critical. This informed the need for the current study to analyze the extent to which community participation in monitoring and evaluation of projects influences sustainability of donor funded food security projects in Baringo South Sub County . The respondents were requested to respond to various statements regarding their involvement in the monitoring and evaluation of the donor funded food security projects in the area. The status of this variable was rated on a 5 point Likert scale ranging from; 1 = strongly agree to 5 = strongly disagree. These results are presented in Table 4.8.

Table 4.8: Community involvement in monitoring and evaluation of projects

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
Are you often allowed to assess the development of the projects in your capacity as a stakeholder?	48(29.1)	64(38.8)	17(10.3)	15(9.1)	20(12.1)
Do you often write and present assessment reports during stakeholders meetings?	40(24.2)	71(43)	15(9.1)	21(12.7)	17(10.3)
Are you at times compelled to recommend that some objectives be changed?	40(24.2)	54(32.7)	17(10.3)	23(13.9)	30(18.2)
Insecurity	98(59.4)	4(2.4)	2(1.2)	3(1.8)	57(34.5)
Water shortages	100(60.6)	37(22.4)	1(0.6)	26(15.8)	5(3.0)
Pests	88(53.7)	41(25)	4(2.4)	26(15.9)	5(3.0)
Storage	56(34.1)	49(29.9)	8(4.9)	30(18.3)	21(12.8)
Marketing the produce	72(44.2)	46(28.2)	4(2.5)	35(21.5)	6(3.7)
Poor cooperation among members	61(37.2)	52(31.7)	0	35(21.3)	16(9.8)

The results in Table 4.8 suggests that majority (38.8%) of the farmers were often allowed to assess the development of the food security projects in their capacity as stakeholders and often wrote and presented assessment reports during stakeholders meetings (43%). During their assessment, they were at times compelled to recommend that some objectives of the projects be changed (32.7%). This was especially so when they felt that particular approaches being taken in the implementation of the projects were not achieving the set objectives. The findings also reveal that insecurity (59.4%) and water shortages (60.6%) were among the most prominent challenges encountered by the farmers. Being an area prone to cattle rustling the levels of insecurity in the area could be inordinately high at times demand that adequate security measures be taken to ensure the success of the projects. The area has also been described as an ASAL area meaning that water shortages in the area are high, hence, there is need for the farmers to harvest water during rainy seasons to ensure adequate supply of water for the projects. The findings also indicate that the farmers also faced challenges from pests (53.7%) and storage (34.1%) in addition to marketing their produce (44.2%). These challenges were in part attributed to poor cooperation among the members of the projects

(37.2%). These findings imply that not much emphasis was being placed on monitoring and evaluation by the farmers probably as a result of lack of adequate training on the same. Also given the previous finding (Section 4.2.4) that the farmers were not mainly involved at the initial, that is, planning stages, it was difficult for them to ascertain the various aspects of the projects objectives.

4.2.6 : Sustainability of World Vision funded food security projects in Marigat ADP

Finally, the study sought to determine the levels of Sustainability of World Vision funded food security projects in Marigat ADP. This was the dependent variable and was measured by asking the respondents to respond to various statements describing the nature of the projects sustainability in their area. This objective was determined on the basis of access to year round supply of food, the level of appreciation of the projects by the farmers and their replication in the area. The status of this variable was rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. These results are presented in Table 4.9

Table 4.9: Sustainability of World Vision funded food security projects in Marigat ADP

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
The residents of the area are assured of year round supply of food at fair prices	24(14.6)	65(39.4)	46(28)	20(12.2)	5(5)
Majority of the farmers have learnt the new techniques of farming	54(32.9)	66(40.2)	36(22)	7(4.3)	1(0.6)
The farmers fully appreciate the need to continue with the projects	91(55.5)	53(32.3)	16(9.8)	4(2.4)	0
Farmers in the area have been able to start similar projects on their own	21(12.8)	87(53)	30(18.3)	21(12.8)	5(3.0)
Farmers have influenced other non-beneficiary farmers to the new farming	41(25)	68(41.5)	34(20.7)	15(9.1)	6(3.7)
We have challenges in marketing our produce	48(29.3)	40(24.4)	27(16.5)	31(18.9)	18(11)
We have challenges in accessing new technologies	4(21.1)	12(63.2)	3(15.8)	0	0

The results in Table 4.9 suggest that most of the residents in the area had been assured of year round supply of food at fair prices (39.4%) as a result of the food security projects in the area. The findings also indicate that most (40.2%) of the farmers had learnt the new techniques of farming and that they appreciate the need to continue with the projects (55.5%). Most of the farmers have also been able to replicate the projects on their own (53%) and were influencing other farmers who were not direct beneficiaries of the donor funded food security projects (41.5%). However, most of the farmers were experiencing challenges in marketing their produce (29.3%) and accessing new technologies (63.2%). These findings imply that the projects were demonstrating elements of sustainability but were held back with challenges on the part of the farmers notably their access to markets and their ability to purchase technology without assistance.

4.3 Inferential Statistics

To evaluate the relationships between the dependent and independent variables, correlation and multiple regression analysis was done and the findings presented in the following subsections.

4.3.1 Correlation Analysis

In this subsection a summary of the correlation and regression analyses is presented. It seeks to first determine the degree of interdependence of the independent variables and also show the degree of their association with the dependent variable separately. These results are summarized in Table 4.10

Table 4.10: Summary of Correlations

		Community Contribution	Adoption of new technologies	Community participation in Decision Making	Community involvement in M&E	Sustainability of World Vision Projects
Community Contribution	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	164				
Adoption of new technologies	Pearson Correlation	.216**	1			
	Sig. (2-tailed)	.001				
	N	164	164			
Community participation in Decision Making	Pearson Correlation	.188**	.115	1		
	Sig. (2-tailed)	.008	.077			
	N	164	164	162		
Community involvement in monitoring and evaluation	Pearson Correlation	-.237	.037	-.048	1	
	Sig. (2-tailed)	.328	.879	.845		
	N	164	164	164	164	
Sustainability of World Vision Projects	Pearson Correlation	.599**	.718**	.161	-.124	1
	Sig. (2-tailed)	.007	.001	.510	.614	
	N	164	164	164	164	164

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation summary shown in Table 4.10 indicates that the associations between the independent variables were significant at the 95% confidence level but much smaller in comparison to their associations with the dependent variable. This means that the inter-variable correlations between the independent variables were not strong enough to affect the relationship with the dependent variable. The results also reveal that there was indeed a strong positive relationship between the community contribution towards the projects and the adoption of technologies and the sustainability of the food security projects while community

involvement in decision making had a weak relationship with the sustainability of the food security projects. The findings also interestingly reveal that the community involvement in monitoring and evaluation had a negative correlation with sustainability of the food security projects in the area.

A correlation analysis to determine whether community contribution towards the projects had influence on the sustainability of the food security projects in the area shows a relationship exists ($r = 0.599$, $\alpha = 0.05$). The Karl Pearson's product moment coefficient of correlation $r = 0.599$ suggests that a strong positive relationship existed between the two variables. This means that the contribution by the community towards the projects was very important to their sustainability as it created a sense of ownership of the projects by the beneficiary community.

The study also sought to determine whether there existed a significant relationship between the adoption of new technologies and the sustainability of the food security projects in the area. The correlation analysis shows that a relationship exists ($r = 0.718$, $\alpha = 0.05$). The Karl Pearson's product moment coefficient of correlation $r = 0.718$ indicates that a strong relationship exists between the variables. This implies that the adoption of new technologies was of central importance to the sustainability of the food security projects as it effectively meant that the farmers adopt new farming techniques that were much better than the ones they were used to and had better yields.

The correlation analysis to determine whether community involvement in decision making had a significant influence on the sustainability of the food security projects in the area shows a relationship exists ($r = 0.161$, $\alpha = 0.05$). The Karl Pearson's product moment coefficient of correlation $r = 0.161$ is low and suggests a weak relationship between the two variables. This rather sends a strong message that a lot needs to be done on community involvement in decision making as most of the farmers came into the decision making of the projects at the development level and were not exposed much to the planning and later stages of the projects.

Finally, the correlation analysis to determine whether there was a significant association between community involvement in monitoring and evaluation and the sustainability of the food security projects in the area shows that a relationship exists ($r = -0.124$, $\alpha = 0.05$). The Pearson's product moment coefficient of correlation $r = -0.124$ is significantly lower than zero

and hence cannot be ingored but it is negative. This rather sends a strong message that alot still needs to be done on community involvement in monitoring and evaluation because the results suggest that the approach to monitoring and evaluation used by the farmers was not likely to ensure their sustainability in the long run.

Hence, it can be concluded that all the variables were significant to the study problem although the degrees of influence varied. This aspect is investigated further in the regression analysis in the following section.

4.3.2 Regression Analysis

Multivariate regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. The value obtained for R, which is the model correlation coefficient, $R = 0.769$ which was higher than any zero order value in Table 4.11. This indicates that the model improved when more variables were incorporated when trying to examone the influence of comunity participation on the sustainability of donor funded food security projects in the area. The R-square value 0.592 also indicated that all the independent variables combined accounted for up to 59% of the changes in sustainability of the food security projects in the regression model. A summary of the multiple linear regression analysis correlation coefficients is given in Table 4.11.

Table 4.11: Multiple Linear Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.769 ^a	.592	.475	4.04950	2.605

a. Predictors: (Constant), Community involvement in moniotoring and evaluation, Adoption of new technologies, Community involvement in Decision Making, Community Contribution

b. Dependent Variable: Sustainability of World Vision Projects

Table 4.12 provides a summary of the multiple linear regression analysis correlation coefficients.

Table 4.12: Multiple linear regression results

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	11.737	7.257		1.617	.128	-3.827	27.302		
Community Contribution	.888	.927	.286	.957	.355	-1.101	2.876	.327	3.062
Adoption of new technologies	1.754	.715	.631	2.451	.028	.219	3.288	.441	2.270
Community involvement in Decision Making	-.649	.505	-.273	-1.285	.220	-1.733	.434	.644	1.552
Community involvement in monitoring and evaluation	-.117	.235	-.093	-.498	.627	-.621	.387	.842	1.187

a. Dependent Variable: Sustainability of World Vision Projects

The beta value was used to determine which independent variable was more important in influencing the sustainability of donor funded food security projects in the area. It can be deduced from the findings in Table 4.12 that the most important factor was adoption of new technologies ($\beta = 0.631$). Community contributions towards the projects ($\beta = 0.286$) community involvement in monitoring and evaluation ($\beta = -0.093$) and community involvement in decision making ($\beta = -0.273$) in that order respectively indicate that the dependent variable, sustainability of donor funded food security projects in the area, would change by a corresponding number of standard deviations when the respective independent variables change by one standard deviation. These findings imply that the introducing new technologies to farming in the area and encouraging their adoption was very important in ensuring the sustainability of the food security projects in the area. New technologies improved production in terms of land under cultivation and also the yield per unit piece of land. The findings also indicate that creating a sense of ownership was very important in ensuring the sustainability of donor funded food security projects in the area. The farmers needed to own the projects in order for them to want to continue with them. However, the findings also indicate that decision making was negatively affecting the sustainability of

donor funded food security projects in the area. This could be attributed to the fact that in most cases strategic decisions in the NGOs are made by the sponsors based on baseline survey reports some of which are subject to change as a result of intervening factors (Riddell, 2008). According to IFAD (2009) failure to recognize these changes and report them early enough might lead to failure of the interventions to achieve the desirable goals and consequently lead to wastage of resources. These changes on the other hand required close monitoring and evaluation in order to make the right decisions about them. In the current findings, it is apparent that monitoring and evaluation was not receiving sufficient attention from the farmers and failure to develop such capacities would affect the future of the projects after donor withdrawal.

4.3.3 ANOVA Results

The results of the ANOVA performed on the independent and dependent variables are summarized in Table 4.13.

Table 4.13: Summary of ANOVA – Based on the Sustainability of World Vision Projects

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	332.843	4	83.211	5.074	.010 ^b
	Residual	229.578	159	16.398		
	Total	562.421	163			

a. Dependent Variable: Sustainability of World Vision Projects

b. Predictors: (Constant), Community involvement in monitoring and evaluation, Adoption of new technologies, Community involvement in Decision Making, Community Contribution

The results of Table 4.13 indicate that there is a significant difference between means of community involvement factors and the sustainability of donor funded food security projects in the area. ($F_o = 5.074 > F_c = 2.37$; $\alpha < 0.05$; $df = 4, 159$; $p = 0.010$). This finding confirms the finding suggested by Table 4.11. The study therefore establishes that Community Contribution, Adoption of new technologies, Community involvement in Decision Making and Community involvement in monitoring and evaluation were all important factors influencing the sustainability of donor funded food security projects in the area. This means that all these factors made a notable difference in the sustainability of donor funded food security projects in the area and, therefore, needed to be emphasized.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes and concludes on the research findings as carried out. It presents the summary of the findings and the conclusions drawn from them, and lastly the recommendations. The implications of the research are discussed and suggestions made on areas of further study. Some useful recommendations for all the stakeholders are proposed by this study at the end of the chapter to enlighten and enable them to craft viable solutions with regard to the problem statement based on the research findings. Therefore, the purpose of this study is to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo South Sub County as a case. Specifically it seeks to determine the influence of community contribution, the relationship between adoption of new technologies, the influence of community involvement in decision making and the extent to which community involvement in monitoring and evaluation of projects influences sustainability of donor funded food security projects in Kenya.

5.2 Summary of the Findings

This section presents the summary of the findings in terms of the objectives, the types of analysis and the major findings of the research.

5.2.1 : Community contribution on sustainability of food security projects

The findings on community contribution to the projects revealed that most of the land in the area was under family control and that it was them who ultimately decided how the land will be used. It is also evident from the results that the land seldom attracted commercial farmers from within and outside the area as a very small part of the land was under lease. Most of the residents had not given part of their land to the project, their reluctance to donate land for the project was mostly arising from the fact that the land was family owned and its usage or donation was pegged on the family members approval which was in turn contingent on the perceived benefits of the project. However, for those who had donated their land or made other contributions to the project, the returns were impressive and most felt that they should have contributed more to derive maximum benefits from the project. The correlation analysis

to determine whether community contribution towards the projects had influence on the sustainability of the food security projects in the area shows a relationship exists

5.2.2: Adoption of new technologies and sustainability of food security projects

The findings on the adoption of new technologies on the sustainability of the food security projects in the area reveal that, the donor organization, that is , the World Vision, supported the farmers in purchasing the farm inputs and as a result, the farmers were able to purchase the farm inputs in good time. The donor organization had also introduced new farming methods in the area which included irrigation and these methods were receiving good support from the farmers. Notably, the farmers were impressed with the irrigation methods used in the projects and also felt that these new technologies had improved the production of their farms. The strong positive correlation existing between the adoption of new technologies and the sustainability of the food security projects in the area implied that the adoption of new technologies was of central importance to the sustainability of the food security projects in the area. This effectively meant that the farmers adopt new farming techniques that were much better than the ones they were used to and had better yields.

5.2.3 : Community participation in decision making and sustainability of food security projects

There was also need to investigate how community involvement in decision making affected the sustainability of the donor funded food security projects. The results on this objective reveal that the sponsoring organization, World Vision, had taken the initiative to train the farmers in decision making as part of capacity building and that this training enabled the farmers in the area to make better choices for farming. However, it emerges from the findings that majority of the farmers were involved in decision making during the development stages than the initial stages and the later stages. The correlation analysis to determine whether community involvement in decision making had a significant influence on the sustainability of the food security projects in the area showed that a weak but significant relationship existed between the two variables. This finding could be attributed to the observation that most of the farmers came into the decision making of the projects at the development level and were not exposed much to the planning and later stages of the projects.

5.2.4 : Community involvement in M&E of projects and sustainability of food security projects

Finally, the findings on community involvement in monitoring and evaluation revealed that that most of the farmers were often allowed to assess the development of the food security projects in their capacity as stakeholders and often wrote and presented assessment reports during stakeholders meetings. The need to change the objectives of the projects at times arose and the farmers were compelled to recommend that some objectives of the projects be reviewed. This was especially so when they felt that particular approaches being taken in the implementation of the projects were not achieving the set objectives. The correlation and regression findings also suggested that monitoring and evaluation negatively affected the sustainability of the donor funded food security projects probably because of the difference in the objectivity of the donors and the beneficiaries of the projects.

5.3 Discussions of Findings

The findings on community contribution revealed that it largely determined the availability of local resources such as land, security and labour for the implementation of the projects. This findings agreed with Riddell (2008) who noted that Many governmental and non-governmental agencies are recognizing the growing influence of community-based approach in addressing developmental agenda. In essence, involving the community as a whole in development increases the stakeholder base and the level of commitment to the agenda. Community involvement has also been found to not only downgrade the political perceptions of projects but also ensure their sustainability. Though present study also found that community contribution towards the projects was very important to their sustainability as it created a sense of ownership of the projects by the beneficiary community, it was not as forthcoming as desired. This was largely influenced by the perception of the community towards the projects. Hence, it was imperative for the other stakeholders to step up their campaign to win over the communities at the family level.

The findings on the adoption of technology on the sustainability of the food security projects imply that technology was critical to improved production of food in the area but this largely depended on the adoption of the technologies, their types and the capacity of the users to fully utilize the technologies. Moreover, in order to successfully adopt the new technologies, it was required that the farmers adopt new farming methods consistent with the technologies.

Correlation analysis reveal that adoption of technologies had a strong positive relationship with the sustainability of the food security projects a finding also supported by the multiple regression analysis that showed that this was the most influential variable in the study. These findings are consistent with the views expressed in the IFPRI (2001) report that technology was significant to the improvement of food production although there were still certain concerns about the impact of technology adoption (irrigation, hybrid seeds, fertilizer and machinery) on commodity production, poverty and malnutrition, farm size and input use in agriculture, genetic diversity and a variety of social issues. Jayne et al., (1990) also noted that technology was capable in improving food security but this was contingent on the limitations of technology in providing food sustainability and, hence, needs to be supported by other components for food access such as policy and community involvement and empowerment.

The results concerning the influence of involvement of farmers in decision making on the sustainability of the food security projects in the area suggested that most of the farmers were not involved in the planning of the projects and as such could not fully grasp their objectives. Consequently, their limited involvement in decision making was having a negative impact on the sustainability of the projects as evidenced by the multiple regression results. This meant that the level of ownership of the projects was limited as it was likely that the farmers still saw the project as a donor project. Hence, it was imperative to involve them more in the decision making processes of the project. However, their involvement in decision making was mostly dictated by donor preferences and overall approaches to the projects implementations. These findings reflect the views of Hailey (2006) who observed that NGOs are strategic actors and must also be attentive to organizational imperatives in regard to funding. These concerns relate to donor preferences and the reality that aid projects must demonstrate tangible results (Kraner and Kinsela, 2012).

Finally, the findings on the influence of the involvement of farmers in monitoring and evaluation sustainability of the food security projects in the areas concur with Mulwa (2007) who observed that, any judgment that emanates from evaluation would largely depend on the value system from which evaluating party originates. Conventionally, evaluating party is usually part of evaluation missions contracted and dispatched from the donor world. In the case of World vision funded food security projects the organization identifies projects, implement, then monitors and evaluates them or engages technical persons. This can be a

weakness that needs to be addressed. However, involving the farmers in part for these processes can be instrumental in ensuring that they know how to ensure that the projects implementation remain consistent with the laid down objectives. These findings imply that not much emphasis was being placed on monitoring and evaluation by the farmers probably as a result of lack of adequate training on the same. The negative but significant correlation obtained on this variable indicates that it was a critical area that needed to be addressed as sustainability critical part of ensuring sustainability of the projects.

5.4 Conclusions

Based on the findings of the study certain facts about community contribution to the sustainability of the food security projects emerge; first, most of the land in the area was under family control and that it was them who ultimately decided how the land will be used. This implied that donating resources for use was dependent on the family approval. Second, technology was critical to improved production of food in the area but this largely depended on the adoption of the technologies, their types and the capacity of the users to fully utilize the technologies. Moreover, in order to successfully adopt the new technologies, it was required that the farmers adopt new farming methods consistent with the technologies. Third, it emerges from the findings that majority of the farmers were involved in decision making during the development stages than the initial stages and the later stages. This meant that most of the farmers were not involved in the planning of the projects and as such could not fully grasp their objectives. Consequently, their limited involvement in decision making was having a negative impact on the sustainability. Fourth, at times arose and the farmers were compelled to recommend that some objectives of the projects be reviewed. This was especially so when they felt that particular approaches being taken in the implementation of the projects were not achieving the set objectives. Multiple regression results revealed that all the independent variables combined could influence upto 59% change in the sustainability model of the food security projects. Finally, the study concludes that Community Contribution, Adoption of new technologies, Community involvement in Decision Making and Community involvement in monitoring and evaluation were all important factors influencing the sustainability of donor funded food security projects in the area.

5.5 Recommendations

Based on the study findings, it is recommended that;

The communities in the vulnerable areas be encouraged through their leadership in all sectors to avail their land and also provide all necessary support for the food security projects. In particular more focus should be placed in urging families who as it emerged from the study played the determinant role in availing such resources for the projects. Mobilizing household support can prove to be very instrumental in getting them to see the actual benefits of the projects in improving not only their food security but also their livelihoods. For example, the land situation in the area and the country at large is a contentious issue and needs to be approached with caution while involving the family extensively.

The government should consider subsidizing the costs of farm inputs earmarked for the food insecure areas. However, this needs a more structured approach that will ensure high levels of accountability of these inputs so as to ensure that they are not diverted to other areas. This can be approached both at the policy and industrial levels where in the former entails the national government working together with the county government to ensure that appropriate technology becomes available to local communities as intended. In the latter sense, there is need to encourage local industries to develop technologies which can be cheaper in the long run.

Furthermore, there is need to involve most of the farmers at all stages of the planning and implementation of the projects. Their involvement especially at the beginning of the projects has a significant bearing on the future of the projects as they may provide much needed historical information on the area in terms of security, climate and food security practices.

Finally, it is salutary to train the farmers on monitoring and evaluation techniques so as to enable them to keep the progress of the projects in a tractable state even long after the withdrawal of the donors. In particular, this kind of training will instill in them the much required objectivity that is often lacking in communities when sustainability of projects is considered.

5.6 Recommendations for further research

The study also recommends that further research should be carried out on;

The challenges of implementing food policies in Baringo County

The factors affecting the internal food markets in Baringo County

5.7 Contribution to the Body of Knowledge

Table 5.1 Contribution to the Body of Knowledge

Objective	New Knowledge
To determine the influence of community contribution on sustainability of donor funded food security projects in Baringo South Sub County	Reluctance to donate resources such as land for donor funded projects was mostly arising from the fact that the land was family owned and its usage or donation was pegged on the family members approval which was in turn contingent on the perceived benefits of the project. The perception of the projects usefulness is a key determinant in ensuring continuity and expansion.
To examine the relationship between adoption of new technologies and sustainability of donor funded food security projects in Baringo South Sub County	Successful adoption of new technologies required that the farmers adopt new farming methods consistent with the technologies, that is, it was not just enough to adopt the new technology but also to have a change in the approach to farming.
To assess the influence of community participation in decision making on sustainability of donor funded food security projects in Baringo South Sub County	Limited involvement in decision making for the farmers who were also stakeholders was having a negative impact on the sustainability of the projects. The farmers needed to see the projects as their own and not as donor projects. The future of the projects depended on the involvement of the farmers as key stakeholders from the beginning of the projects, that is, the planning stages.
To analyse the extent to which community involvement in monitoring and evaluation of projects influences sustainability of donor funded food security projects in Baringo South Sub County	Training and involving the farmers in the M&E processes was instrumental in ensuring that they know how to ensure that the projects implementation remain consistent with the laid down objectives. The farmers needed to have their own credible way of assessing the performance of the projects in the future.

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APPENDICES

APPENDIX I

Letter of Transmittal

Richard Tumeiyo
P.O. Box 8,
Marigat

25th July 2014

The Project Manager
World Vision Kenya- Marigat ADP,
P.O. Box 22
Marigat

Dear Sir/Madam,

RE: REQUEST TO CARRY OUT RESEARCH WITHIN MARIGAT ADP FOOD SECURITY PROJECTS

I do request to be allowed to carry out the above research within World Vision Kenya- Marigat ADP food security projects.

I am a post graduate student in Nairobi University -Student No. **L50/62243/2012**, and currently taking a course in Project Planning and Management. I am doing a research on the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County, Kenya. This research is meant for purely academic purposes only; however, evaluation results may be made public after the completion of the study for future researchers and other relevant stakeholders to guide them in their work.

Every care will be taken in the data collection procedure to ensure that it is within ethical limits.

Thank you in advance for your cooperation.

Yours faithfully

Richard Tumeiyo

Appendix II: Questionnaires for the Farmers

The aim of this study is to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County as a case. Your opinions as captured in this questionnaire will form the basis of this study and will be held in confidentiality. Therefore you are requested to fill this questionnaire in the most free and honest way possible.

Please tick the appropriate answers in the boxes provided and also write down the appropriate answers in the spaces provided. Do not write your name on the questionnaire. Thank you in advance for your time and cooperation.

Respondent No.....

Section A: Background Information

1. Gender : Male Female
2. Age :19-29 yrs 30-40 yrs 41-51 yrs 52 and above
3. Marital Status: Married Divorced Single widowed
Other (specify)
4. Highest level of education
Never attended school Primary Secondary
College/University
5. How many years have you lived in the area;
0-5 yrs 6-10 yrs 11 yrs and above
6. Have you previously done farming in different locations? If so please indicate the place and number of years served

.....
.....

Section B: Community contribution on sustainability of World Vision funded food security projects in Marigat ADP

1. a) Do you own land in this area?
Yes No
- b) If your answer in (a) above is yes, what is the status of your ownership? (Tick the appropriate box below)

Inherited Purchased Lease
Squater Family land

2. Have you ever donated part of your land for the World Vision food security project?
Yes No

3. If your answer in 2 above is yes, do you think you should have given more land for the project?
Strongly agree agree neutral disagree
Strongly disagree

4. What about money, have you ever contributed money towards the project?
Very much Much Not so much
Not at all Not aware

5. If you have contributed money towards the projects, have the returns been good so far?
Strongly agree agree neutral disagree
Strongly disagree

6. What other contributions have you ever made to the World Vision food security projects in your area?
.....
.....

7. Do you feel as though your contributions have been significant to the Projects?
Strongly agree agree neutral disagree
Strongly disagree

Section C: Adoption of new technologies and sustainability of World Vision funded food security projects in Marigat ADP

8. How do you go about purchasing seeds and fertilizers for your farm which is under the project?
.....
.....

9. Does World Vision support you in any way in purchasing the farm inputs?
Very much Much Not so much

Not at all Not aware

10. Are you able to purchase farm inputs in good time?

Most of the times Sometimes On average

Not always Rarely

11. Do you think that World Vision Kenya has brought new farming methods in the area?

Strongly agree agree neutral disagree

Strongly disagree

12. Do you support these methods?

Very much Much Not so much

Not at all Not aware

13. Are you satisfied with the irrigation methods in use in the projects?

Very much Much Not so much

Not at all Neutral

14. In your opinion, have these technologies improved production of farm produce?

Strongly agree agree neutral disagree

Strongly disagree

Section D: Community involvement in decision making and sustainability of World Vision funded food security projects in Marigat ADP

15. Have you ever been trained on decision making by World Vision?

Strongly agree agree neutral disagree

Strongly disagree

16. Do you think that training in decision making for the farmers in your area would enable you to make better choices for farming?

Strongly agree agree neutral disagree

Strongly disagree

17. At what stage are you involved in decision making in the projects?

Stage of the projects	Ratings				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Initial stages					
Development stages					
Later stages					

18. Do the project managers often assign you some responsibilities and let you discharge them on your own?

Strongly agree agree neutral disagree
 Strongly disagree

Section E: Community involvement in monitoring and evaluation of projects and sustainability of World Vision funded food security projects in Marigat ADP

19. Are you often allowed to assess the development of the projects in your capacity as a stakeholder?

Very much Much Neutral
 Not so much Not at all

20. How often do you write and present assessment reports during stakeholders meetings?

Very often Often Neutral
 Rarely Not at all

21. Are you at times compelled to recommend that some objectives be changed?

Very often Often Neutral
 Rarely Not at all

22. Please rate how some of these challenges affect the food security projects?

Statements	Rating				
	Very much	Much	Not sure	Not so much	Not at all
Insecurity					
Water shortages					
Pests					
Storage					
Marketing the produce					
Poor cooperation among members					

24. How do you as stakeholders address those challenges?

.....

.....

Section F: Sustainability of World Vision funded food security projects in Marigat ADP

25. Please rate how you agree with the following statements regarding the sustainability of World Vision funded food security projects in Marigat ADP? (tick as appropriate)

Statements	Rating				
	Excellent	Good	average	poor	Very poor
The residents of the area are assured of year round supply of food at fair prices					
Majority of the farmers have learnt the new techniques of farming					
The farmers fully appreciate the need to continue with the projects					
Farmers in the area have been able to start similar projects on their own					
Farmers have influenced other non-beneficiary farmers to the new farming					
We have challenges in marketing our produce					
We have challenges in accessing new technologies					

Appendix III: Questionnaires for World Vision Kenya staff

The aim of this study is to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County as a case. Your opinions as captured in this questionnaire will form the basis of this study and will be held in confidentiality. Therefore you are requested to fill this questionnaire in the most free and honest way possible.

Please tick the appropriate answers in the boxes provided and also write down the appropriate answers in the spaces provided. Do not write your name on the questionnaire. Thank you in advance for your time and cooperation.

Respondent No.....

Position.....

Section A: Community contribution on sustainability of World Vision funded food security projects in Marigat ADP

1. a) Did you find the farmers in this area cooperative enough in donating land?

Yes No

2. Do you think they should have given more land for the project?

Strongly agree agree neutral disagree

Strongly disagree

3. What about money, did you require them to contribute money towards the project?

.....
.....

4. In terms of labour, do you require that they and their family members work in the World Vision projects?

Yes No

Please explain

Section B: Adoption of new technologies and sustainability of World Vision funded food security projects in Marigat ADP

8. Does your organization assist the farmers in purchasing seeds and fertilizers for their farm which are under the project?

Very much Much Not so much
Not at all Neutral

9. Does the organization recommend purchasing only certain types of farm inputs?

Strongly agree agree neutral
Disagree Strongly disagree

10. Are they able to purchase farm inputs in good time?

Very much Much Not so much
Not at all Neutral

11. Has World Vision brought new farming methods in the area?

Yes No

12. Have you introduced any modern tools World Vision for the projects?

Yes No

13. How have the farmers received them?

.....
.....

14. Are you satisfied with the irrigation methods in use in the projects?

Very much Much Not so much
Not at all Neutral

Section D: Community involvement in decision making and sustainability of World Vision funded food security projects in Marigat ADP

15. Have you trained the farmers on decision making?

Strongly agree agree neutral disagree
Strongly disagree

16. Do you think that training in decision making for the farmers would enable them to make better choices for farming?

Strongly agree agree neutral disagree

Strongly disagree

17. At what stage do you involved farmers in decision making in the projects?

Stage of the projects	Ratings				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Initial stages					
Development stages					
Later stages					

18. Do the project managers often assign the farmers some responsibilities and let them discharge them on your own?

Most of the times Sometimes On average

Not always Rarely

Section E: Community involvement in monitoring and evaluation of projects and sustainability of World Vision funded food security projects in Marigat ADP

19. Do you often allow the farmers assess the development of the projects in their capacity as stakeholders?

Most of the times Sometimes On average

Not always Rarely

20. Do they write and present assessment reports during stakeholders meetings?

.....

21. Do they know how to ensure objectivity in the assessments?

.....

22. Are you at times compelled to recommend that some objectives be changed?

Yes No

23. What are some of the challenges the projects face?

.....

24. How do you as stakeholders address those challenges?

.....

Section F: Sustainability of World Vision funded food security projects in Marigat ADP

25. Please rate how you agree with the following statements regarding the sustainability of World Vision funded food security projects in Marigat ADP? (tick as appropriate)

Statements	Rating				
	Excellent	Good	average	poor	Very poor
Access to food at affordable prices is now ensured throughout the year in the area					
Majority of the farmers have learnt the new techniques of farming here					
The farmers fully appreciate the need to continue with the projects					
Farmers in the area have been able to start similar projects on their own					
Farmers have influenced other non-beneficiary farmers to the new farming					
We have challenges in marketing our produce					
We have challenges in accessing new technologies					

Appendix III: Questionnaires for World Vision Kenya staff

The aim of this study is to examine the influence of community participation on sustainability of donor funded food security projects using World Vision Marigat ADP in Baringo County as a case. Your opinions as captured in this questionnaire will form the basis of this study and will be held in confidentiality. Therefore you are requested to fill this questionnaire in the most free and honest way possible.

Please tick the appropriate answers in the boxes provided and also write down the appropriate answers in the spaces provided. Do not write your name on the questionnaire. Thank you in advance for your time and cooperation.

Respondent No.....

Position.....

Section A: Community contribution on sustainability of World Vision funded food security projects in Marigat ADP

1. a) Did you find the farmers in this area cooperative enough in donating land?

Yes No

2. Do you think they should have given more land for the project?

Strongly agree agree neutral disagree

Strongly disagree

3. What about money, did you require them to contribute money towards the project?

.....
.....

4. In terms of labour, do you require that they and their your family members work in the World Vision projects?

Yes No

Please explain

.....

Section B: Adoption of new technologies and sustainability of World Vision funded food security projects in Marigat ADP

8. Does your organization assist the farmers in purchasing seeds and fertilizers for their farm which are under the project?

Very much Much Not so much

Not at all Neutral

9. Does the organization recommend purchasing only certain types of farm inputs?

Strongly agree agree neutral

Disagree Strongly disagree

10. Are they able to purchase farm inputs in good time?

Very much Much Not so much

Not at all Neutral

11. Has World Vision brought new farming methods in the area?

Yes No

12. Have you introduced any modern tools World Vision for the projects?

Yes No

13. How have the farmers received them?

.....
.....

14. Are you satisfied with the irrigation methods in use in the projects?

Very much Much Not so much

Not at all Neutral

Section D: Community involvement in decision making and sustainability of World Vision funded food security projects in Marigat ADP

15. Have you trained the farmers on decision making?

Strongly agree agree neutral disagree

Strongly disagree

16. Do you think that training in decision making for the farmers would enable them to make better choices for farming?

Strongly agree agree neutral disagree

Strongly disagree

17. At what stage do you involved farmers in decision making in the projects?

Stage of the projects	Ratings				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Initial stages					
Development stages					
Later stages					

18. Do the project managers often assign the farmers some responsibilities and let them discharge them on your own?

Most of the times Sometimes On average
 Not always Rarely

Section E: Community involvement in monitoring and evaluation of projects and sustainability of World Vision funded food security projects in Marigat ADP

19. Do you often allow the farmers assess the development of the projects in their capacity as stakeholders?

Most of the times Sometimes On average
 Not always Rarely

20. Do they write and present assessment reports during stakeholders meetings?

.....

21. Do they know how to ensure objectivity in the assessments?

.....

22. Are you at times compelled to recommend that some objectives be changed?

Yes No

23. What are some of the challenges the projects face?

.....

24. How do you as stakeholders address those challenges?

.....

.....

Section F: Sustainability of World Vision funded food security projects in Marigat ADP

25. Please rate how you agree with the following statements regarding the sustainability of World Vision funded food security projects in Marigat ADP? (tick as appropriate)

Statements	Rating				
	Excellent	Good	average	poor	Very poor
Access to food at affordable prices is now ensured throughout the year in the area					
Majority of the farmers have learnt the new techniques of farming here					
The farmers fully appreciate the need to continue with the projects					
Farmers in the area have been able to start similar projects on their own					
Farmers have influenced other non-beneficiary farmers to the new farming					
We have challenges in marketing our produce					
We have challenges in accessing new technologies					