

**FACTORS INFLUENCING FOOD SECURITY IN TURKANA EAST
DISTRICT, TURKANA COUNTY, KENYA**

**BY
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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER ARTS OF DEGREE IN PROJECT
PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI**

2013

DECLARATION

This research project is my original work and has never been presented for a degree award in any other university.

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This research project will be submitted for examination with my approval as the university supervisor.

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DEDICATION

This study is dedicated to my wife SaphinaJerubet and my daughter Chelsea Jelagat
Without whose prayers, support and relentless encouragement during my class and research
work, I would not have come this far.

ACKNOWLEDGEMENTS

I thank the Almighty God for enabling me and giving good health and courage throughout my study. My sincere gratitude goes to my supervisor Joseph Awino who challenged and guided me by offering professional advice to carry out my research work.

I also wish to acknowledge my lecturers and classmate for willingly lending a hand and guiding me to put my work in order.

I also thank all my lecturers for teaching me and encouraging me during my studies. Special thanks go to the School of Continuing and Distance Education of the University of Nairobi for giving me an opportunity to further my studies. Finally, thanks to my classmates whose cooperation and support encouraged me to complete my work.

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ABBREVIATIONS AND ACRONYMS

ASALs	Arid and Semi-Arid Lands
CBS	Central Bureau of Statistics
CAADP	Comprehensive African Agriculture Development Programme
FFA	Food for Assets programme
CFA	Cash For Assets
FAO	Food and Agricultural Organization
FAOSTAT	Food and Agricultural Organization Statistics (FAO Statistics)
GDP	Gross Domestic Product
GFD	General food distributions
GOK	Government of Kenya
IFAP	International Food Agricultural Policy
IMF	International Monetary Fund
KShs	Kenya Shillings
LMMS	Last Mile Mobile Solutions
LDC	least developed countries
LIFDC	low-income, food-deficit countries
MA	Master of Arts
MoA	Ministry of Agriculture
NGOs	Non-Government Organization
PRSP	Poverty Reduction Strategy Paper
UON	University of Nairobi
WFP	World Food Programme

ABSTRACT

The purpose of the study was to assess the factors influencing Food security in Turkana East , Turkana County, with reference to Food for Assets programme. This research was guided by the objectives; to establish the influence of bad weather/climatic conditions on household's food security, to determine the effect of insecurity on food security, to assess the effect of cultural practices on food security, to establish the impact of Government policies on agriculture on food security in Turkana East District.

The study targeted 452 households receiving food aid, 4 staffs of the lead Cooperating partner distributing relief food in Turkana East District and 6 government officers from the different line ministries helping in the implementation of the project (Actionaid, 2012). Simple random sampling was used in the study. The information for the study was gathered by use of questionnaires as the main research instruments and interview schedules. The questionnaires were subjected to the head of households, while a key informant questionnaire was administered to the staffs of the Lead Cooperating partner distributing relief food aid and government officers from the different line ministries helping in the implementation of the project. A research instrument is valid depending on how the data collected is related in terms of how effective the items have sampled significant aspects of the purpose of the study (Orodho, 2005). The collected raw data was coded and analyzed by both descriptive and inferential methods using Statistical Package for Social Scientist (SPSS) software. This study revealed that bad weather/ climatic conditions affect food security negatively. The correlation coefficient between bad weather/climate and food security is -0.75 and $P\text{-value} = 0.075$. This shows that there is a strong negative correlation between bad weather/climate and food security. Secondly, the study established that the major form of insecurity in the area is cattle raids which are very persistent in the region. Thirdly, the study established that majority of the respondents (63%) were polygamous while 33% had monogamous families. This culture of having many wives leads to the families having many children. Finally, the study established that 86% of the respondent cultivated less than 2 acres of land and did not use modern farming technique and had poor storage facilities for their produce. This is an indication of insufficient food production. Also the correlation coefficient between agricultural practices and food security is $+0.78$ and $P\text{-value} = 0.075$. This shows that there is a strong positive correlation between agricultural practices and food security.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

According to World Bank report (1986) food aid, representing about 10% of total foreign aid transfers to developing countries, has become a major mechanism for stabilizing domestic supplies in food-insecure countries and for targeting food supply to alleviate hunger. Most projections made in the late 1980s forecast growing shortfalls in domestic food supplies in many least developed countries (LDCs). Thus these states, chronic food-insecure countries, seem unlikely without foreign assistance to be able to meet the needs of their hungry populations in the 1990s as their food consumption requirements outstrip production. As their import needs grow in the 1990s, so were their need for food aid or cash aid to purchase food (World Bank, 1986)

Latest estimates indicate that 826 million people remain undernourished in 1996 – 1998, 792 million people in the developing world and 34 million in the developed world (FAO 2000). Most of them live in regions which can be characterised by low economic returns to agriculture and high transaction costs due to prolonged drought and insecurity. These regions are typically found in developing countries, especially in so-called low-income, food-deficit countries (LIFDCs) (Gabbert, Sand Weikard, H, 1998)

At the global level, the FAO Food Outlook for 2011 reports that estimates of people experiencing chronic hunger increased dramatically over the period 1990 to 2007 and even more with the 2008-2009 financial and economic crises. Political instability, wars, harsh weather and lack of incentives for agricultural transformation played a major role in compounding food insecurity in Africa. Food and agricultural production and productivity have barely improved (except in few cases such as Malawi and Rwanda) and other critical elements such as inter sectoral linkages and diversification in staple production are lacking as well (Uvin, 1993). Rapid

population growth and climate change continue to negatively impact food security and need to be factored in efforts at sustainable strategies and policies. The drought in the Horn of Africa and the Sahel has persisted, leaving millions of people destitute. (FAO,2011)

Uvin (1993) argued that although food production in developing countries has steadily increased during the past twenty years, this was not sufficient to keep pace with population growth. As a consequence, net food imports of developing countries are still increasing as well. It is often stated by scientists that even with an ongoing population growth enough food can be produced world-wide to guarantee all human beings an adequate diet.

By early 1980s, the volume of food aid to Africa had increased tenfold, relative to the 1970s. In particular international food aid grew. Food imports also grew during the same period. This was dramatically alarming because over the same period worldwide food aid declined by roughly 35% (Hopkins: 1986: 197).

The proportion of food aid to Africa has continued to rise. This has led to some critics for instance Raikes (1988) and Rau (1991) to attribute the Africans food crises to food aid. Criticisms raised in this regard are: food aid serves as a disincentive to local food production: Food Aid distorts consumer preference and creates an undesirable demand for imported food, it encourages wasteful projects and it props up unresponsive government and thus postpones reforms.

Achieving food security in Africa remains a challenge. The root causes of food insecurity in Africa are still not well addressed. Low production, induced by low productivity and the inability of people to gain adequate access to food due to poverty are the core challenges (Hopkins, 1986). The fact that 239 million (30 per cent of Africa's total population) of the total of the world's 1 billion undernourished live in Africa. The region is still recovering from the 2008 financial and

food crises. The hike in oil prices contributed to the high food prices in many parts of the world, including Africa. Political instability in Africa, coupled with adverse weather conditions and lack of agricultural inputs played a role in the persistent food insecurity this year. African countries need to shape their policy response around increased agricultural productivity and production, development of markets and building resilience of vulnerable populations (UN Economic and Social Council, 2012)

Despite a good performance with high economic growth rates over the last few years, Kenya has not made significant progress on some of its major challenges, especially food security and employment for the growing youth population (MoA, 2012). From 2011 to 2012, the state of food security has not changed much. The situation is still under the impact of the food crisis of 2007-2008, which reinforced the need for effective commitment to the development of the food and agriculture systems. In this regard, Kenya has aligned its agricultural strategies with the Comprehensive African Agriculture Development Programme (CAADP Kenya) process, which has received renewed commitment and support for its implementation since 2008. Many African countries have also developed national agricultural strategy blueprints within which national food security priorities have been identified for investment and policy support. (Kenya CAADP, 2010)

In Kenya arid and semi – arid Districts, there is limited food availability. These districts experience prolonged and frequent drought which lead to depletion of the major communities' livelihoods, capacities and coping mechanisms. The regions have over the years experienced a series of short term and long term food crises that have greatly reduced the country's ability to meet its food requirement (FAO:2008)

Since the beginning of 2011, Kenya has been hit hard by the drought in the Horn of Africa, creating a humanitarian emergency. At the same time, higher international commodity prices and continued strong domestic demand have boosted inflation and swelled the current account deficit, creating additional balance of payments risks (IMF African department, 2011)

The Government of Kenya has shifted its policy from emergency to Disaster Risk Reduction (DRR) as envisioned in the Draft National Disaster Management Policy. The negative consequences of emergency relief are everywhere to be seen. Local producers cannot compete with free food, local service provider go out of business and short term thinking removes the incentives for dealing with the underlying problems (Republic of Kenya, 2004). Reduction of food dependency is a policy objective.

In Turkana East District, government has been allocating a lot of resources in food aid interventions, relief seeds which are drought tolerant and other services every year with the aim of increasing food security. This has not been enough due because the resources are never enough but remain to be limited to meet the needs of human population. The trend has not changed thus all the yearlong food crisis has been experienced in this District (Musembi, K. 2011). Significant progress has not been actualized towards creating this much needed resilience in the rural ASAL areas of Kenya as more food is required to feed the hungry and vulnerable every year.

Over the past years, Turkana East District has recorded poor rainfall patterns leading to poor harvest, water scarcity and pasture depletion, insecurity, poor land terrain, poor soil and bad cultural practices which have resulted into hitches to improve livelihood base and mechanisms to improve food security. This worsening climatic situation, pastoralist culture and resultant crop failure has led to increased hunger vulnerability and malnutrition.

1.2 Statement of the problem

Agriculture contributes over 30 per cent of the Gross Domestic Product (GDP) and provides 60 per cent of all employment in Africa (FAO, 2000). Seventy to eighty per cent of the total population lives in rural areas and is dependent mainly on agriculture for its livelihood. Over 70 per cent of the continent's extreme poor and undernourished live in these rural areas. Therefore, agriculture is not only key to economic growth but is also the determinant of equity in development and fundamental to reducing poverty and hunger (CAADP, 2010)

The Government of Kenya's policy is to ensure that the whole population is food secure at all times and that FFA should be used as the main food assistance strategy as much as possible. The FFA project selection is in line with Vision 2030 and the Poverty Reduction Strategy Paper (PRSP) with the key objective of enhancing food security in the respective hunger stricken Districts in the country. FFA activities are also in line with the Agricultural Sector Development Strategy (2009-2020) and the draft ASAL Policy documents especially as they relate to Natural Resource and environmental management.

Food For Assets (FFA)/Cash For Assets (CFA) is an approach where food insecure communities receive food or cash support as an incentive as they work on household or community assets/projects that improve their resilience to common shocks/hazards e.g. droughts, floods and insecurity. FFA is a food security strategy that meets immediate food needs and ensures building of assets for the future. The long lasting effect of FFA is not only for the creation of assets, but also the building of adequate skills to help people plan and manage micro-initiatives, and to continue to invest in their futures. This is a Government of Kenya (GoK) initiative with participation of many stakeholders at community, county, national and international levels. The

targeted communities are the key stakeholders, and so decide on the priority project for them to implement (WFP, 2009)

There has been persistent hunger and starvation in most of the households in Turkana East District, despite the Government of Kenya and international community providing relief food to the people of the region for decades (Actionaid, 2012). Lack of rain has killed livestock—a principle source of income and food and made has made farming virtually impossible. Moreover, the scarce resources have heightened tensions between rival tribes where the animals that they depend on are driven away by raiders (Deriko, 2011). To help people survive the drought, World Vision is distributing Plumpy'nut and a corn-soy blend to prevent starvation. Besides this initiative, majority of the household are still facing widespread food insecurity. There is therefore a need to investigate the factors influencing Food security in Turkana East District.

1.3 Purpose of the study

The purpose of the study is to assess the factors affecting Foodin security in Turkana East , Turkana County, with reference to Food for Assets programme.

1.4 Objective of the study

The study was guided by the following objectives:-

1. To establish the influence the expense to which weather conditions influence food security in Turkana East District
2. Todetermine how security influence food security in Turkana East District.
3. To assess how cultural practices influence food security in Turkana East District.

4. To establish the influence of Government policies on agriculture on household's food security in Turkana East District.

1.5 Research Questions

1. To establish the influence the expense to which weather conditions influence food security in Turkana East District

2. To determine how security influence food security in Turkana East District.

3. To assess how cultural practices influence food security in Turkana East District.

4. To establish the influence of Government policies on agriculture on household's food security in Turkana East District.

1.6 Significance of the study

The study finding may be important to various people, groups, Organizations and governments in several ways. The study may give suggestions to stakeholders in food security on the most appropriate solution to the food insecurity problem. The policy makers in the ministry of Agriculture may get knowledge on how to make radical policy changes in order to arrest the current food insecurity in Kenya. The government may as well understand that relief food aid received from donors and aid agencies is not a suitable alternative for addressing the fundamental problem of food insecurity at household's level in rural areas of Kenya.

Non-Governmental Organizations and donors may use the study in designing their interventions especially those aimed at addressing food insecurity and building community resilience in the face of climate change and other shocks to food insecurity.

The communities in food insecure areas may benefit from the study by understanding food insecurity causes and using that knowledge in prioritizing their needs especially where they can influence public spending like the Constituency Development funds (CDF) and other devolved monies.

The key causes of household food insecurity was researched including, the huge gap between food production by small- scale farmers and high population which should be fed is the one which translates into food shortages, therefore, the policy on increasing food production may offer a long- term solution of scarcity of food.

1.7 Delimitation of the study

This study is designed to investigate the influence of Relief Aid on food security in Turkana East District Turkana EastEast District of Turkana County. This region is within the dry parts of the larger Turkana Eastwhere many households have been receiving relief aid for many years. This avails an opportunity of response from the households who have been benefiting from relief aid in the division.

1.8 Limitation of the study

The researcher did not guarantee that other factors will not affect responses apart from relief food aid and household's food security, because some people may still be receiving relief aid when they are not in danger of starvation. Even though they will have been assured that their identity will remain anonymous, some respondents may give socially correct responses to please the researcher. To counteract the effect from such responses a pilot pretest of the questionnaire was done to establish the validity and reliability of the research tools.

1.9 Basic Assumptions of the study

The following assumptions were made by the researcher in the study:

Turkana East District will have enough households that benefits from relief food aid required to make the number of respondents for the study. The data collection methods was unbiased and the selected samples was representative of the population there was no adverse natural or manmade circumstances that might hamper the successful implementation of the research.

1.10. Definition of significant terms

Food aid: disposing of surpluses from agricultural overproduction to supplement food shortage. Food aid does not only include physical transfers of food commodities from a donor to a recipient country. Monetary grants tied to purchases of food as well as sales and loans on soft credit terms also fall under the definition of food aid presented above (Shaw and Clay 1993)

Food access: adequate resources to obtain appropriate food for a nutritious diet, which depends on income available to the household, on the distribution of income within the household and on the price of food.

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit 1996). Household food security is the application of this concept to the family level, with individuals within households as the focus of concern.

Food insecurity exists when people do not have adequate physical, social or economic access to food as defined above.

Undernourishment exists when caloric intake is below the minimum dietary energy requirement (MDER).

Food availability: sufficient quantities of food from household production, other domestic output, commercial imports or food assistance.

Food utilization: proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, potable water and adequate sanitation, as well as knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper child care and illness management.

Assets: The capabilities of household members, the economic resources to which they have access, as well as the information or influential others they have and their ability to claim from relatives, state or other actors, in times of stress. Therefore assets can be of three types: Human Capital, Economic Capital (Tangible Resources) and Social Capital (Intangible Claims and Access).

Food for Assets (FFA) as an integrated community development strategy involving the use of food aid, labor-based methods and participatory decision-making approaches in order to develop productive assets that are owned, managed and maintained by households and/or the community.

FFA Beneficiaries: Asset Benefited: A person or group of persons, who at the end of food assistance owns or has the right to use, assets created or improved by the activity.

Food Benefited: Individuals in the household of the work-benefited person, who are likely to share in eating the food earned through the activity. **Work benefited:** A person or group of persons receiving food in exchange for his/her/their work.

Food deficiency: people with insufficient nutritious food also called “food shortage”.

1.11 Summary

This chapter defines the meaning of food security in relation to relief food aid and its global outlook and extent it has taken in Kenya and more so in Turkana East District of Turkana East District. It gives the purpose of the study, the problem statement, objective of the study, research questions, significance of the study, limitations of the study, delimitation of the study, assumption of the study and the definition of significant terms.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter mainly contains literature review of the past studies and written documents on food aid and Food for Assets programme as relates to food security in Kenya. The chapter has the following six sections; Governments food security policy and households food security, factors contributing to food security, suitable projects to complement FFA/CFA projects in Turkana East District, FFA/CFA assets/projects benefits and food security, theoretical and conceptual framework for the study.

2.2 The influence of bad weather conditions on household's food security.

The climate of Turkana area is classified as arid to semi-arid with high ambient temperatures and a two to three month "rainy season." Although the Turkana identify a specific time of the year as the "rainy season" (akiporo), usually corresponding to the months of March to May, data demonstrate that the amount it rains, where, and for how long varies tremendously in the area (FAO,2011).

At the global level, the FAO Food Outlook for 2011 reports that estimates of people experiencing chronic hunger increased dramatically over the period 1990 to 2007 and even more with the 2008-2009 financial and economic crises. Political instability, wars, harsh weather and lack of incentives for agricultural transformation played a major role in compounding food insecurity in Africa. Food and agricultural production and productivity have barely improved (except in few cases such as Malawi and Rwanda) and other critical elements such as inter

sectorial linkages and diversification in staple production are lacking as well (Uvin,1993). Rapid population growth and climate change continue to negatively impact food security and need to be factored in efforts at sustainable strategies and policies. The drought in the Horn of Africa and the Sahel has persisted, leaving millions of people destitute. (FAO,2011)

The food security situation on the continent in the first semester of 2012 was overshadowed by a looming food and humanitarian crisis in the Sahel due to drought (Save the Children, Oxfam: march 9.2012). This came on the heels of the crisis in the Horn of Africa in the previous year, when 12 million people required humanitarian assistance and famine was declared in Somalia. Even though famine conditions no longer exist in Somalia, nearly one-third of the population was reported to be in crisis during the first quarter of 2012, unable to fully meet essential food and nonfood needs (AFDB – Africa Food Security: issue 3 July 2012).

It is currently reported that in East Africa, the main seasonal rains started late, shortening the crop-growing period. Furthermore, floods affected areas in Kenya, Somalia, Tanzania and Uganda, while severe dry conditions persist in parts of north eastern and coastal districts of Kenya(FEWS NET: East Africa food security outlook, January 2013). In general, despite some improvement, the food situation of vulnerable groups remains a serious concern in the sub-region, especially in pastoral areas like Turkana East District were affected by the earlier drought.

Bad weather/ climatic conditions in Nakuru, Bungoma, UasinGishu,Turkana East and Narok districts has made food security vulnerability to increase in the areas which were not considered to be chronically vulnerable. Northern and Eastern areas of Kenya were characterized by local conflicts and this restricted the movement of vulnerable communities towards better grazing and water. (FEWS 1995).

The main environmental factor behind food insecurity in the country is deficient rainfall. Many studies of food insecurity divide the country according to their potential for agriculture, which is usually determined by the amount of rainfall they receive. The vulnerability of a household or area to food insecurity is determined not only by the amount of rainfall a place receives but also the seasonality of the rainfall. For example the study by KFSSG (2011) shows that even in high potential areas of Rift valley an uni-modal rainfall pattern subjects households to food insecurity during certain months of the year. (KFSSG 2011)

In deed there is universal agreement that the riskiness of bad weather/ climatic conditions is the major factor impacting upon the food security status of the household. The impact of drought or low rainfall in food crop production in Kenya is aggravated by the fact that food production in Kenya is rain-fed Low production due to drought leads to increased food fluctuations (Mbithi 2000).

Bad weather conditions leads to poverty. The poverty constitute slightly more than half of the population of Kenya. The poor are defined as those who cannot afford basic food and non-food items. The Global Monitoring Report 2013 shows that Kenya poverty cut –off point of \$ 1.25 per person. The poverty level scoring is based on the number of people living below Ksh 105 (\$1.25). The poor including the urban poor, poor pastoralists, poor in drought prone zones, resource poor households have been described as the most vulnerable to food insecurity because they have a low purchasing power. In recent years, it is estimated that at any one time about two million people require assistance to access food. During periods of drought, heavy rains and/or floods, the number of people in need could double.(World Bank and IMF report 2013 – Global monitoring Report 2013).

Loss of harvested crop deals to food insecurity in Kenya. For example, Although the 1997/1998 harvests in Eastern Kenya were above average, rapid disposal of newly harvested grain coupled with the absence of on-farm storage facilities accelerated the state of crop loss in the area. The extent of post-harvest losses in Kenya is wide and varies, and has an average of about 10-15 % (weight loss). Major causes of post-harvest losses in Kenya include unexpected natural circumstances such as heavy rains, poor harvest management and insects. These factors affect the amount of household on-farm foods therefore, affecting household food security. (Ellis 2000)

The main factors behind food insecurity in Turkana East District is bad weather/climate which has led to drought (Actionaid, 2011). The vulnerability of a household or area to food insecurity is determined not only by the amount of rainfall a place receives but also the seasonality of the rainfall. Kenya has suffered from periodic droughts throughout its recorded history. This is particularly true of the arid and semi-arid lands (ASALs) which make up more than 80% of Kenya's total land mass. The economic and social consequences of drought affect not only Turkana but the country as a whole. Severe droughts and floods are estimated to cause an annualized reduction in GDP of 2.4 per cent. Early and appropriate response to emerging drought would therefore not only save lives, it would also enhance Kenya's overall economic and social development, besides improving livelihoods in some of the poorest regions of the country like Turkana. (TutuiNanok, 2011)

2.3 The effect of insecurity on food production.

One of the factors contributing to food insecurity in Turkana East district is insecurity especially in food producing areas. Insecurity tends to reduce farming activity even long after the conflict

has been resolved (Smith & Simon, 1992). Food production in tribal clashes hit areas in 1992-1993 including Nakuru, Bungoma, UasinGishu, Turkana East and Narok districts with high agricultural potential declined and this made food security vulnerability to increase in the areas which were not considered to be chronically vulnerable. Northern and Eastern areas of Kenya were characterized by local conflicts and this restricted the movement of vulnerable communities towards better grazing and water. (FEWS 1995).

Insecurity causes loss of harvested crop due to rapid disposal of newly harvested grain coupled with the absence of on-farm storage facilities. The extent of post-harvest losses in Turkana is wide and varies, and has an average of about 10-15 % (weight loss). Major causes of post-harvest losses in Kenya include unexpected natural circumstances such as heavy rains, poor harvest management and insects. These factors affect the amount of household on-farm foods therefore, affecting household food security. (Ellis 2000)

Moreover, it should not be assumed that all the effects of crises on hunger disappear when the crisis is over. Vulnerable households deal with shocks by selling assets, which are very difficult to rebuild, by reducing food consumption in terms of quantity and variety and by cutting down on health and education expenditures – coping mechanisms that all have long-term (WFP/FAO 2010) A proper understanding of the nature of protracted crises themselves constitutes an essential step towards addressing their specific problems (FAO 2010).

The goal of food self-sufficiency was largely attained in the early years of independence until the late seventies after which massive food shortages set in. Since then the goal of food self-sufficiency and food security has not been attained despite significant policy pronouncements to reform the sector. A number of factors are mentioned in the literature that leads to food insecurity in the country. Among them are policy failures in areas of agricultural pricing,

marketing of input and output, distribution and extension that have introduced inefficiencies and lowered agricultural production and the ability to cope with drought conditions (Nyangito, H. 1999).

2.4 Effect of cultural practices on food security.

The Turkana are nomadic pastoralists who live in the desert regions of northwestern Kenya. These people were one of many affected by a severe drought in 1979 and 1980 (FAO, 2011). Although the famine which resulted from the sharp drop in food production was dramatized by the international press, insecurity of food availability is characteristic of pastoral production systems.

The Turkana people practice no agriculture and live exclusively off the products of their livestock - milk, meat, blood and skins. The inventory of goods acquired with money from the sale of livestock is small, consisting primarily of maize meal, sugar, tobacco, tea leaves, rubber tire sandals, and cloth. Five species of livestock are kept: camels, cattle, goats, sheep and donkeys. Each species has different food and water requirements. Camels are browsers; sheep, cattle and donkeys are grazers; and goats can be classified as either. Browsers must include a large amount of leafy vegetation in their diet, while grazers favor grasses (Nyamwaya 1995).

The Turkana live in small households consisting of a man, his wives, their children and possibly some dependent women. This social unit is referred to as an awi. Household size varies considerably according to wealth, but averages about 20-25 people. All livestock are "owned" by the male head of the household, but within the awi they are allocated to women. The number of animals allocated depends upon a woman's status within the family and the number of children which must be fed. Women milk those animals which are allocated to them; the offspring of

these livestock was the basis of their sons' future herds (Smith & Simon, 1992). Decisions relating to livestock management rest with the household head, or with the herd manager if the herd is separate from the awi. This allows each household head to make decisions based on who can work, herd size, social obligations, and perceptions of the environment and proper herd management (FEWS 1995).

Narayan and Nyamwaya (1995), found that the proportion of female headed households ranked as 'very poor' was high than that of male-headed households as contrasted to the larger proportion of male-headed households ranked rich in every district. In overall, 80% of female-headed households were ranked as 'poor' or 'very poor' as compared with 58% male-headed households so ranked in the entire sample. United Nations (1998) observed that gender disparities systematically disadvantaged women with regard to overall economic status as well as access to basic services. Women have been considered as one of the food insecure vulnerable groups (Kenya Food Security Steering Group 2000).

The climate imposes constraints on the available techniques of livestock management. Because precipitation is extremely variable, there is a high degree of variation in forage quality and quantity, both between seasons and between years. One technique used by the Ngisonyoka to exploit an environment where the availability of food is inconsistent, sparse, and scattered is the management of herds composed of many species. As food diminishes with the onset of the dry season, the Turkana may divide their animals into different herds. Thus a man may have milking and non-milking herds of camels, cattle, and sheep and goats - sheep and goats are herded together. In the wet season the milking and non-milking herds are joined, with all the people and animals together in one awi (FEWS 1995). As the dry season progresses, non-milking herds may

be split off from the awi to pursue different ranges. These non-milking herds are managed by young men who, for the most part, act as the principal decision-makers while the herd is separated. The second important technique used to manage livestock is mobility. The pastoral Ngisonyoka have no permanent settlements. The majority of the people and most of the milking animals live in the major homestead which remains in the plains throughout the year but moves frequently as forage and water resources are depleted. Non-milking stock are often moved to the foothills or slopes of the mountains where the vegetation lasts longer than it does on the plains. Families with large herds may be forced to move more frequently than those with small ones. Some families may be constrained by labor shortages, thus unable to manage a number of different herds. Families with a dominance of one species of livestock may differ in their movements from families whose herds are dominated by another species. The pattern of movements therefore varies seasonally, annually, and among individual herd owners. The pattern of movement of individual herd owners also proved to be highly complex.

2.5 The Government policies on agriculture on food security.

According to FAO, (2010) the agriculture sector is important for poverty reduction since the most vulnerable groups, such as pastoralists, the landless, and subsistence farmers, depend on agriculture as their main source of livelihoods. Policies affecting the performance of agriculture have important implications for the economy as a whole. More importantly, agriculture receives only 3 to 4 percent of development and humanitarian assistance funds in countries in protracted crisis, despite accounting for 32 percent of their gross domestic product and supporting the livelihoods of 62 percent of their populations (FAO, 2010)

Low productivity in Kenya reflected by the low productivity per acre because many farmers cannot afford readily-available modern farming technologies, existence of poor agricultural institutions, poor marketing and storage facilities which help in reducing incentives to produce. High transport costs due to dilapidated roads, and improper handling and wastage of crops also contribute to the malaise Margaret Buchanan (1992).

The Government of Kenya is strongly committed to reducing hunger and malnutrition. This includes efforts to build self-reliance and reduce chronic food insecurity, as well as measures to assist those in need when emergencies occur. Linking relief with longer-term development efforts helps mitigate the potential impact of future emergencies (Smith & Simon, 1992).

The Kenyan constitution, article 238 (1) provides that one of the principles of national security is the protection of all the citizens of Kenya, their rights, freedoms, property, peace, stability, prosperity and other national interests. Some of the rights of all Kenyans that are protected include the right to be free from hunger, to have adequate food of acceptable quality and uninterrupted supply of clean and safe water in adequate quantities at all times (Kenya Constitution, 2010).

With approximately 80% of Kenya's total land classified as arid or semi-arid (ASAL), it is also imperative that government efforts, initiatives and programs under the sector are considered. Whereas detailed information from communities is not available, a brief chronology of overall government policy on ASALs and past initiatives is given below. Most of the projects and programs have been implemented in collaboration with development partners i.e. IFAD, World Bank, IDA, NGOs, research institutions, etc. (World Bank, 2011)

The world bank in 2011 traced the Government of Kenya policies towards development of semi-arid and arid areas of Kenya from the early 70's as follows; An Integrated Rural Development Programmes was introduced in the country under the Special Rural Development Programmes (SRDPs) of 1968 – 1972. Although the focus was not on ASAL areas, some ASAL districts were covered. The Kenya Livestock Development Programme of 1969 – 1979 developed several grazing blocks in northern Kenya and group ranches in southern rangelands with the aim of transforming pastoralists into commercial ranchers. In 1977, an ASAL Development Branch was established in the Ministry of Agriculture for coordination of program and project implementation. During the 1980s, second generation Integrated ASAL Development Programmes coordinated by the Ministry of Planning and National Development were introduced to address development needs in ASAL areas. In 1986, the Government produced a Sessional Paper No. 1 on Economic Management for Renewed Growth, which acknowledged that ASALs have fragile environments and hence they need to manage ASAL development carefully in order to improve income generation, employment creation, and food self-sufficiency goals. (World 2011)

In 1989, the Government created a Ministry of Reclamation and Development of Arid and Semi Arid areas and Wastelands to give greater attention to the development of dry lands and provide coordination for implementation of ASAL programmes. In 1992, draft ASAL Development Policy was developed to address intergraded ASAL development issues holistically. Since 1998, the Government has retained the Department of Land Reclamation and ASAL development but some of its functions have been scattered across various ministries. Other policy initiatives and strategic plans for ASAL development have been highlighted in various National Development plans, strategic plans, and policies such as:- the 1983 District focus for Rural Development; the

1989-93 National Development Plan; National Poverty Eradication Plan (NPEP), 1999 – 2015; Poverty Reduction Strategy Paper (PRSP), 2002; Kenya Rural Development Strategy Paper (KRDSP), 2003; ASAL Development Master Plan, 2002; Economic Recovery Strategy for Wealth and Employment Creation (ERS), 2003-2007; among others. (World Bank 2011)

Sample GoK project: The Arid Lands Resource Management Project, The project runs a community early warning system alongside community-driven development activities centered on livestock and non-livestock income-generating activities in 11 arid districts (phase I) and 11 semi-arid districts (phase II) of Kenya. With the development objective of reducing chronic poverty and enhancing food security in the arid lands, the project was also meant to enable participating line government ministries to adapt their service delivery systems to the arid land populations. With an overall 3- pronged approach, the project activities have targeted drought management, livestock marketing, and community development.

Under drought management, activities have included the operation of an early warning system, preparation of drought strategic and contingency planning and response, the development of water sources, small-scale agricultural schemes, emergency livestock vaccinations and purchase and construction of emergency animal and human health infrastructures (Smith& Simon, 1992). Additionally, GoK and donor agencies spent 28 billion Kenyan shillings on food and non-food items to combat drought emergency during the 2000-2001 period. Also undertaken so far under livestock marketing is the development of strategic livestock handling facilities, training of livestock marketing groups, animal health activities, apiculture and emergency livestock off-take. At the height of the 2000-2001 drought, livestock worth 10 million Kenyan shillings were saved or salvaged. Community development activities have included capacity building for

community groups, implementation of diversified livelihood micro-projects, policy advocacy and lobbying to enable the environment for pastoral policy development.

Kenya Vision 2030 is the country's new development blueprint covering the period 2008 to 2030. It aims at transforming Kenya into a newly industrializing country, "middle-income country providing a high quality life to all its citizens by the year 2030". The Vision has been developed through an all-inclusive and participatory stakeholder consultative process, involving Kenyans from all parts of the country. Kenya's Vision 2030 clearly defines the new framework and policy directions towards achieving the vision of 'A food-secure and prosperous nation'. The agricultural sector is expected to be the key driver for delivering the 10 per cent annual economic growth envisaged under the economic pillar of Vision 2030. (GoK, 2007: vision 2030)

The sectoral policy framework is well laid out in the Agricultural Sector Development Strategy 2010–2020 (ASDS). The ASDS's overall goal is to transform the current subsistence-dominated agriculture into a profitable, commercially oriented and competitive economic activity. The ASDS aims to contribute to the reduction of the number of people living below the absolute poverty to less than 25 per cent, and reduction in food insecurity to less than 30 per cent of the Kenyan population. (Kenya CAADP compact, July 2010)

According to the assessment carried out by Kenya Food Security Steering Group (KFSSG) in 2011 after the short rains, the food security status of pastoralists, agro pastoralists and marginal agricultural farmers has improved considerably after early onset and above average 2011 short rains in many areas. As a result, Emergency food insecurity has ended, and about 2.2 million people are now classified in either the Crisis or Stressed Phases of food insecurity, down from the previous 3.75 million people. The availability of water, browse and pasture has markedly increased, leading to significant improvement in livestock productivity. The 70-80 percent of

livestock that migrated has returned and is currently situated in wet season grazing areas, near settlements. Households are accessing milk though quantities are below normal as most livestock are in gestation. The harvesting of short rains crops has just concluded leading to improved food access, particularly in the southeast and coastal marginal agricultural lowlands and the agro-pastoral livelihood zones. Conflict incidences over resources have markedly declined in many places. Ongoing interventions that have contributed to improvements in food security include food distribution to 3.75 million people by World Food Program (WFP) through general food distribution, food for assets, cash for assets and unconditional cash transfer modalities; school feeding to 584,000 pupils; supplementary feeding to 100,000 beneficiaries; blanket supplementary feeding program targeting 586,000; and hunger safety net to 60,000 households.

The Government and other non-governmental organizations are also providing other assistance programs including food to the food insecure populations. The households that are classified to be in the food crisis are described as experiencing significant food consumption gaps with high or above usual rate of malnutrition. Alternatively, household groups in Crisis are marginally able to meet minimum food needs, only with irreversible coping strategies such as liquidating livelihood assets or diverting expenses from essential non-food items. According to previous studies, household groups in the crisis are situated in localized areas of north eastern and north western pastoral including Wajir, Mandera, Moyale, Marsabit, Turkana, Tana River and Turkana. (GoK – KFSSG Assessment 2012).

As a result of poor transport, high fuel prices and market infrastructure, food either does not reach those who need it most (from surplus regions) or reaches them at excessively high prices. In as many as 17 countries in Africa, conflicts have constrained the flow of food leading to insufficiency even for those who could afford to purchase. In Kenya, 30% of the food consumed

by rural households is purchased, while 70% is derived from own production. On the other hand, 98% of food consumed in urban areas is purchased while 2% is own production. This emphasizes the strategic role played by the rural households in food security of many African countries. Agricultural policies formulated therefore should focus on how to increase productivity and market efficiency in the rural setups (FAO, 2006).

2.5 Theoretical framework

Theoretical framework is used in interpreting the specifics of a research and forming general understanding of the themes or theories involved in the study. This study will use resource dependency theory which emerged with the seminal work of Pfeffer and salancik,(2003). This theory will help in understanding the food security case as well as establish a framework for exploring and interpreting the empirical data on food security. The theory explores how external constraints affect the Organisation and the ways to manage Organisation in order to manage these constraints. The proponents of this theory argue that the main task of the management is to adapt in order to secure essential resources and strive to maximize self-sufficiency, in light of environmental demands.

Oliver (1991), offers an array of strategic response which organization can use to cope with institutional pressure and argues that organizations may react in a variety of ways from passive compliance to active defiance of an institutional environment. Organizational change is recognized as an effect of an Organisations interaction with its environment. Thus the study seeks to use the resource dependency theory as a guide to explain the influence of relief aid food on food security in Turkana East District, a semi-arid area.

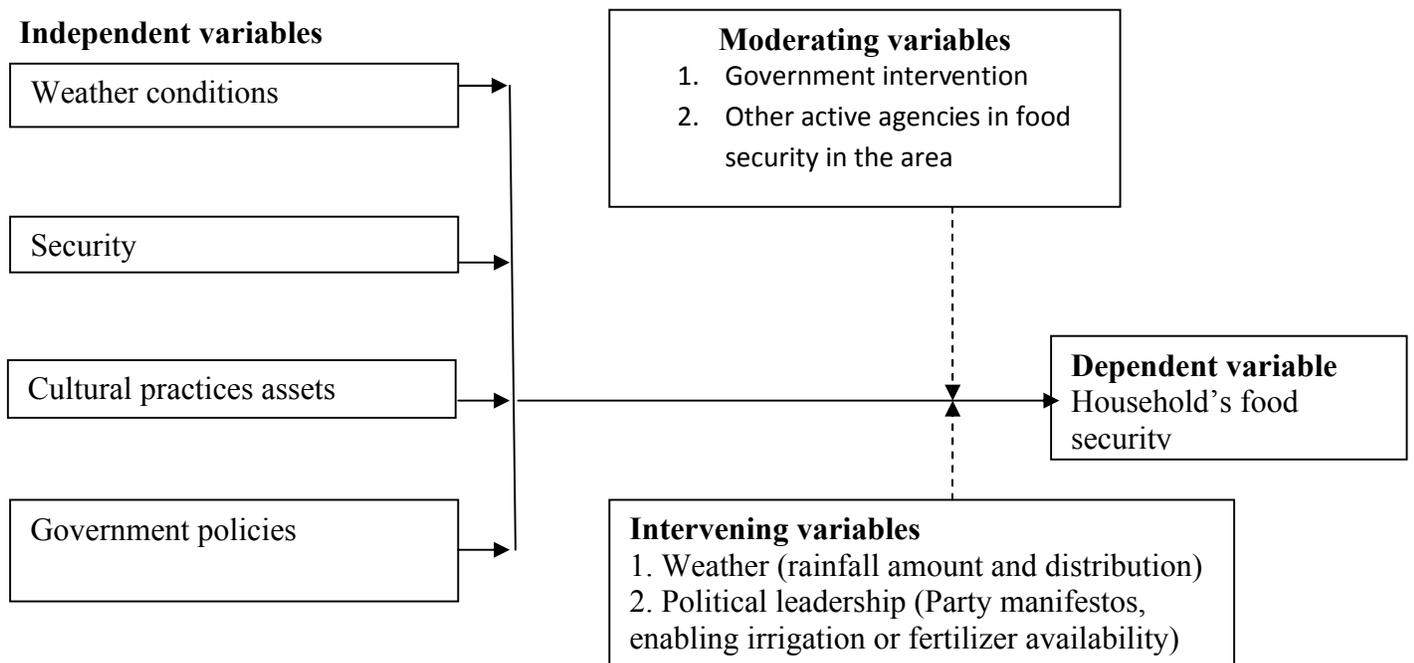
2.6 Conceptual framework

The conceptual framework shows the relationship between different variables in the research. The study conceptualises the independent variables as: This research was guided by the objectives; to establish the influence of bad weather/climatic conditions on household's food security, to determine the effect of insecurity on food security, to assess the effect of cultural practices on food security, to establish the impact of Government policies on agriculture on food security in Turkana East District.

The moderating variables are the government interventions and other active agencies in food security area plus weather 'rainfall amount', use of fertilizer and other inputs as well as the political leadership in the area.

The dependent variable is household's food security.

Figure 2.2 Conceptualization of food security and linkage to relief food aid



The independent variables for this researcher are agricultural food policy, causes of food insecurity, effects of FFA programmes and last mobile solution system. The researcher wishes to

investigate the influence of these variables on of food security. However there are otherModerating variables, Government intervention, and other active agencies in food security in the area. These are indirectly affecting food security. Also there are other Intervening variables weather (rainfall amount and distribution) and political leadership (Party manifestos, enabling irrigation or fertilizer availability).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods that were utilized by the researcher in the study. These included the research design, target population, sampling and sampling techniques, research instruments for data collection, Validity and reliability of instruments, data collection procedure, and data analysis techniques.

3.2 Research design

The study adopted a descriptive survey design. A descriptive survey research is designed to obtain permanent and precise information concerning the current status of the variables under investigation and generalizations from the facts observed (Lukesh, 1994). Kothari (2004) has stated that a descriptive research provides the description of the information about the variables.

3.3 Target population

The study targeted 452 households receiving food aid, 4 staffs of the lead Cooperating partner distributing relief food in Turkana East District and 6 government officers from the different line ministries helping in the implementation of the project (Actionaid, 2012).

3.4 Sampling Procedure and Sample Size

Both simple random sampling and census sampling was used in the study. Simple random sampling was used in selecting 150 households' head out of 452 respondents. This was 33 percent of the households as proposed by Mungenda&Mungenda (2003), that a sample size of at least 30% is sufficient. Census sampling was also used on the 4 staffs of the Lead Cooperating

partner distributing relief food in four centers in Turkana East District, Kapendo, Iomelo, Kamuge Naipetom and 6 government officers from the different line ministries helping in the implementation of the project.

3.5 Research Instruments

The information for the study was gathered by use of questionnaires as the main research instruments including a checklist administered on 4 focus groups. The questionnaires shall be subjected to the head of households, while a key informant questionnaire was administered to the staffs of the Lead Cooperating partner distributing relief food aid and government officers from the different line ministries helping in the implementation of the project.

3.6 Instrument Validity

A research instrument is valid depending on how the data collected is related in terms of how effective the items have sampled significant aspects of the purpose of the study (Orodho, 2005). A pilot study to establish the content validity of the instruments was conducted using three households. Content validity of the instruments was used to measure the degree to which the items represent specific areas covered by the study. Content validity of the instrument was determined by research methodology experts through looking at the measuring technique and how specific areas (objectives) are covered by the instrument. The experts, from the Department of Extra-mural center of the University of Nairobi, gave advice to the researcher on the items to be corrected in the research instrument

3.7 Instrument reliability

Mugenda (1999) defines reliability as the measure or degree to which a research instrument yields consistent results or data after repeated trials. To establish the reliability of instruments, a split-half method was used by a means of a pilot study. During the pretest, the questionnaire was

administered on a random sample of three households from the selected sample of the population. Data values were operationalized and split into two halves using the odd-even item number dichotomy to get 17-17 pair of items of the questionnaire. The paired numerical data values were then correlated using Pearson Product-Moment Correlation Coefficient formula for calculations. The calculated correlation was 0.80 which was sufficient since it is greater than 0.75 as proposed by Fraenkel&Wallen (2008). The item were judged sufficient and the questionnaire had high pre-test reliability

3.8 Data collection procedure

The researcher got a transmittal letter from the University of Nairobi showing that the researcher is a student undertaking a research as a requirement for the award of a Master's Degree. The researcher further got permission from the various government departments so that they were aware that a research was involving some of their officers at the lower levels, for maximum cooperation from the officers concerned. The questionnaires were self-administered, the respondents filled them after which the researcher collected the filled questionnaires. Assurance was given to the respondents on the confidentiality of their identity.

3.9 Data analysis techniques

The collected raw data was coded and analyzed by both descriptive and inferential methods using Statistical Package for Social Scientist (SPSS) software. Statistical tally system were used to generate frequency counts from the responses so as to prepare frequency distributions. Percentages were calculated from the responses gathered. As a measure of central tendency, the mean was used to decide the concentration side of responses.

Table 3.2 Operationalization of the study variables

Objectives	Variables		Indicator(s)	Measurement	Level of scale	Tools of analysis
	Independent	Dependent				
To establish the influence of bad weather/climatic conditions on household's food security in Turkana East District	Bad weather conditions	Creating food security	Social Economic practice	Access to water, food and education	Nominal Ordinal	Descriptive statistics - Frequency distributions - Percentages - Mean - correlation
To determine the effect of insecurity on food security in Turkana East District	Security	Creating food security	-Raids, clashes	Destroyed property	-Interval -Nominal -Ordinal	Descriptive statistics - Frequency distributions - Percentages - Mean - correlation
To assess the effect of cultural practices on food security in Turkana East District.	cultural practices	Creating food security	- Number of beneficiaries	- Access to school, andhouses, food	-Interval -Nominal -Ordinal	Descriptive statistics - Frequency - Percentages - Mean
To establish the impact of Government policies on agriculture on food security in Turkana East District.	Government policies on agriculture on	Creating food security	Number of sacks, cattle.	Government policy	Interval -Nominal -Ordinal	Descriptive statistics - Frequency - Percentages - Mean

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents results from the collected data, interpreted and discussed following the research objectives. The purpose of the study was to assess the factors influencing Food security in Turkana East, Turkana County. The researcher sought to establish the influence of bad weather/climatic conditions on household's food security, to determine the effect of insecurity on food security, to assess the effect of cultural practices on food security and to establish the impact of Government policies on agriculture on food security in Turkana East District.

Data were collected using the questionnaires as the main research instruments and were analyzed using both descriptive and inferential statistics. The questionnaires were subjected to 150 respondents. Frequency tables were constructed and the correlation tables to test the relationship between independent and dependent variables, followed by interpretation of the results.

4.2 Questionnaire return rate

Questionnaire return rate was presented in Table 4.1

Table 4.1: Questionnaire return rate

Response rate	Frequency	Percentage (%)
Returned	150	100
Not returned	0	0
Total	150	100%

Table 4.1 shows that 100% of the questionnaires were filled in and returned. This shows that the questionnaires were well administered by the researcher and that the researcher had a good rapport with the respondents.

4.3 Distribution of respondents by gender

The respondents were asked to indicate their gender. The results were shown in Table 4.2

Table 4.2: Distribution of respondents by gender

Gender	Frequency	Percentage (%)
Female	110	73
Male	40	27
Total	150	100

Table 4.2 showed that 73% of the respondents were female while 27% were male. This indicates that the majority of the respondents living in Turkana East District are female with few men. This would mean the burden of taking care of the households might be on the women rather than on men.

4.4 Distribution of respondents by age

The researcher sought to establish the age distribution of the respondents, in order to ascertain how age disparity affected food security in the District. The results were presented on Table 4.3

Table 4.3: Age distribution of respondents

Age in years	Frequency	Percentage (%)
Less than 30	21	15
30-34	45	30
35- 39	45	30
40 – 44	30	20
Above 45	9	5
Total	150	100%

Table 4.3 shows that majority of the respondents (60%) were aged between 30 and 39 years. This was followed by those who were aged between 40 – 44 years with 20%. This was followed by those aged below 30 year (15%). The least were those who were aged above 45 years making 5%.

4.5 Marital status of respondents

The researcher sought to investigate the marital status of the respondents. The responses were presented in the Table 4.4.

Table 4.4: Marital status of respondents

Married	85	56%
Single	45	30%
Separated	20	14%
Total	150	100%

Table 4.4 revealed that majority (56%) of the respondents were married. The single respondents were 30%. The separated respondents were 14%. This shows that the single and separated together makes 44% indicating a possibility of high poverty levels hence need for relief food.

4.6 The influence of bad weather conditions on household's food security

The first objective for this study was to establish the influence of bad weather/climatic conditions on household's food security influence of agricultural food policy on household's food security. The researcher first investigated the major economic activities for the respondents. The results were presented in Table 4.7.

Table 4.5: Main economic activity for the respondents

Economic activity	Responses	Percentage (%)
Crop family	30	21
Cattle keeping	100	66
Employed	20	13
TOTAL	150	100%

Tables 4.5 revealed that majority of the respondents were keeping cattle (66%) as their main economic activity while 21% were doing crop farming. The least were 13% of the respondents who were employed. Further the researcher sought to investigate whether rainfall was enough for their social economic activities. The responses were presented in table 4.6.

Table 4.6: Rainfall

Amount	Frequency	Percentage (%)
Not enough	120	80
Enough	30	20
Total	150	100

Table 4.6 shows that majority of the respondents (80%) indicated that there was no enough rainfall in Turkana east district while only 20 percent stated that it was enough. This implies that there was no enough water for their use at home and for their animals. This would obviously affect their food security. Also Turkana is classified under the ASAL areas where there is little rainfall and long span of drought. This forces residents to keep on moving from one place to another in search for green pastures and water.

Further the researcher tested the hypotheses to establish the relationship between the independent and dependent variables.

H₀: There is no significant relationship between bad weather/climate and food security.

H₁: There is significant relationship between bad weather/climate and food security.

and food security

Table 4.7 Relationship between bad weather and climate and food security

		Bad weather conditions	Food security
Bad weather/ climate	Pearson Correlation	1	-0.75
	Sig. (2-tailed)		0.074
	N	150	150
Food security	Pearson Correlation	-0.75	1
	Sig. (2-tailed)	0.074	
	N	150	150

Table 4.7 shows that the correlation coefficient between bad weather/climate and food security is -0.75 and P- value = 0.075. This shows that there is a strong negative correlation between bad weather/climate and food security. We do therefore reject the hypothesis and conclude that there is a significant relationship between bad weather/climate and food security in Turkana east district.

4.7 The effect of insecurity on food production.

The second objective for this study was to establish the influence of insecurity on food production in Turkana. The researcher first investigated the type of insecurity in Turkana East district. The responses were shown on Table 4.8.

Table 4.8: Insecurity type

Insecurity	Frequencies	Percentage(%)
Cattle raids	100	66
Tribal clashes Political hostility	35	24
Total	15 150(100%)	10 150

Table 4.8 revealed that 66% of the respondents indicated that the major form of insecurity in the area is cattle raids which is very persistent in the region. This has affected them in such a way that apart from reducing the numbers of their animals, it affects their farming. In the event of a cattle raid the resident loses their livelihood since they mostly depend on the livestock for

their livelihood. According to 24% of the respondents, tribal clashes also affect their security and consequently their food security.

Further the researcher tested and hypotheses to establish the relationship between the independent and dependent variables.

H₀: There is no significant relationship between insecurity and food security.

Table 4.9 Relationship between insecurity and food security

		Insecurity	Food security
Insecurity	Pearson Correlation	1	-0.85
	Sig. (2-tailed)		0.064
	N	150	150
Food security	Pearson Correlation	-0.85	1
	Sig. (2-tailed)	0.064	
	N	150	150

Table 4.9 shows that the correlation coefficient between insecurity and food security is -0.85 and P- value = 0.064. This shows that there is a strong positive correlation between insecurity and food security. We do therefore reject the hypothesis and conclude that there is a significant relationship between insecurity and food security in Turkana east district.

4.8 The effect of cultural practices on food security.

The third objective for this study was to assess the effect of cultural practices on food security in Turkana east district. To achieve this objective, respondents were required to give information about their family type. The responses were presented in Table 4.10.

Table 4.10: Family type of respondents

Category	Frequency	Percentage (%)
Monogamous	50	33
Polygamous	100	67
TOTAL	150	100

Table 4.10 revealed that majority of the respondents (63%) were polygamous while 33% had monogamous families. This culture of having many wives leads to the families having many children. This meant more food was required for the big families leading to food insecurity. Further the researcher investigated the family size for the respondents. The results were shown in Table 4.11

Table4.11Family size of the respondents

Family size	Number of households	Percentage %
Less than 4	10	7
4 – 7	60	40
over 7	80	53
Total	150	100

Table 4.11 shows that 53% of the respondents have more than 7 members in their households and was followed by those with more than 4 -7 family members with 40%. The least is those with less than 4 members making 7%. This shows majority of respondents have very big families hence needing more food. Further the researcher investigated the length of stay of the respondents in the present location.

Table 4.12 Length of stay in the present location

Length in years	Responses	Percentage %
Less than 1	35	23
1-3	75	50
4 – 6	25	17
More than 6	15	10
Total	150	100

It was established that majority (50%) of the respondents has stayed in their current location for 1-3 years. This is because majority were nomads who kept on moving from one place to another in search of pastures for their animals and water. This was followed by those who had only stayed for less than one year (23%). This culture of moving from one place to another affected their crop production as they could not settle for farming. Also the cattle were exposed to new diseases every time they were moved to new areas hence threatening their food security. To establish the relationship between cultural practices and food security, the researcher tested the hypothesis below.

H₀: There is no significant relationship between the cultural practices and food security in Turkana east district.

H₁: There is significant relationship between cultural practices and food security in Turkana east district.

These hypotheses were tested using Pearson's correlation coefficient to see the strength of the relationship between the independent and dependent variables.

Table 4.13 Relationship between cultural practices and food security

		Cultural practices	Food security
Cultural practices	Pearson Correlation	1	-0.81
	Sig. (2-tailed)		0.065
	N	150	150
Food security	Pearson Correlation	-0.81	1
	Sig. (2-tailed)	0.065	
	N	150	150

Table 4.13 shows that the correlation coefficient between cultural practices and food security is -0.81 and P- value = 0.065. This shows that there is a strong negative correlation between cultural practices and food security. We do therefore reject the hypothesis and conclude that there is a significant relationship between culturalpractices and food security in Turkana east district.

4.9 Influence of agricultural food policy on household's food security

The last objective for this study was to establish Influence of agricultural food policy on household's food security. The researcher first investigated the land size and cultivation level for the respondents. The responses were shown on Table 4.14.

Table 4.14: Land size and use

Acres of land	Owned	Cultivated
Less than 2	15	130
3 – 5	65	20
6 – 8	55	0
Above 8	15	0
Total	150	150

Table 4.14 revealed that 43% of the respondents owned 3-5 acres of land while 37% owned 6-8 acres of land. Also 86% of the respondent cultivated less than 2 acres of land while 14% cultivated 3-5 acres of land. However none of the respondents cultivated more than 5 acres of land. This is an indication of insufficient food production. Some of the reasons given for not cultivating a big portion of land were insufficient rainfall, poor soils for farming; desire to keep more animals among others. This level of cultivation shows there might not be enough food in the households thus leading to food insecurity.

Further the respondents were to answer questions concerning the number of months in a year they consumed both their food crops in a year. The responses were shown in Table 4.15.

Table 4.15 Number of months in a year crops lasted

Months	Responses	Percentage
1 to 3	150	100
4 to 6	0	0
7 to 9	0	0
10 to 12	0	0
Total	150	100

According to Table 4.15 all the respondents reported that their food crops lasted them only 1 -3 months in a year. This shows a very high level of food insecurity in the region and thus great need for relief food in the area.

4.9.1 Income from sale of food crops per year

To further investigate the level of food insecurity, the researcher sought to investigate the income per year from livestock and food production. The responses were shown in Table 4.16.

Table 4.16 Income from sale of food crops and livestock per year.

Sales in Kshs per year	Livestock	Food crops
Ksh	Percentage	Frequency
1,000-5,000	40 (27)	105(70)
6,000-9,000	92(61)	35(30)
10,000 -15,000	18 (12)	0
16,000 -20,000	0	0
Above 20,000	0	0
Total	150(100)	150(100)

Table 4.16 shows that 61% of respondents earned ksh. 6,000 – 9,000 per year from the sale of livestock. This was followed by 27% and 12% who earned ksh. 1,000 -5,000 and Ksh10,000-15,000 respectively with none of the respondents earning above Ksh. 16,000. On the other hand, 70% of the respondents earned ksh. 1,000 – 5,000 per year from the sale of food crops. This was followed by 30% who earned Ksh. 6,000 - 9,000 with none earning over shs10,000 per year. This is because majority are keeping cattle in small scale with majority keeping goats. The food crops grown included maize, sorghum, millet, greengrammes, and peas which was also grown in small scale. These together with livestock earned little amount compared to the many needs a household has hence increasing the state of food insecurity.

Further the researcher tested the two hypotheses for this study to establish the relationship between the independent and dependent variables.

Table 4.17 Relationship between household agricultural practices and food security

		Agricultural practice	Food security
Agricultural practice	Pearson Correlation	1	0.78
	Sig. (2-tailed)		0.074
	N	150	150
Food security	Pearson Correlation	0.78	1
	Sig. (2-tailed)	0.074	
	N	150	150

Table 4.17 shows that the correlation coefficient between agricultural practices and food security is +0.78 and P- value = 0.075. This shows that there is a strong positive correlation between agricultural practices and food security. We do therefore reject the hypothesis and conclude that there is a significant relationship between agricultural practices and food security.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of the findings, discussion of the findings, conclusions from the study, recommendations and suggestions for further research.

5.2 Summary of the Findings

The researcher sought to establish the influence of bad weather/climatic conditions on household's food security. The study revealed that majority of the respondents were keeping cattle (66%) as their main economic activity while 21% were doing crop farming. The least were 13% of the respondents who were employed. Also majority of the respondents (80%) indicated that there was no enough rainfall in Turkana east district while only 20 percent stated that it was enough. This implies that there was no enough water for their use at home and for their animals.

The correlation coefficient between bad weather/climate and food security is -0.75 and P-value = 0.075 . This shows that there is a strong negative correlation between bad weather/climate and food security. It is currently reported that in East Africa, the main seasonal rains started late, shortening the crop-growing period. Furthermore, floods affected areas in Kenya, Somalia, Tanzania and Uganda, while severe dry conditions persist in parts of north eastern and coastal districts of Kenya (FEWS NET: East Africa food security outlook, January 2013). In general, despite some improvement, the food situation of vulnerable groups remains a serious concern in

the sub- region; especially in pastoral areas like Turkana East District were affected by the earlier drought.

Secondly, the study established that 66% of the respondents indicated that, the major form of insecurity in the area is cattle raids which are very persistent in the region. This has affected them in such a way that apart from reducing the numbers of their animals, it affects their farming. In the event of cattle raid the residents do lose their livelihood since they mostly depend on the livestock for their livelihood.

Thirdly, the study sought to assess the effect of cultural practices on food security. The study established that majority of the respondents (63%) were polygamous while 33% had monogamous families. This culture of having many wives leads to the families having many children. This meant more food was required for the big families leading to food insecurity. Also shows that 53% of the respondents have more than 7 members in their households and was followed by those with more than 4 -7 family members with 40%. The least is those with less than 4 members making 7%. This shows majority of respondents have very big families hence needing more food. The study also revealed that most majority (50%) of the respondents has stayed in their current location for 1-3 years implying they had adopted a nomadic culture which had a great impact on their food security.

Finally, the study investigated the impact of Government policies on agriculture on food security in Turkana East District. The study established that revealed that 43% of the respondents owned 3 -5 acres of land while 37% owned 6 -8 acres of land. Also 86% of the respondent cultivated less than 2 acres of land while 14% cultivated 3- 5 acres of land. However none of the respondents cultivated more than 5 acres of land. This is an indication of insufficient food production. Also the correlation

coefficient between agricultural practices and food security is +0.78 and P- value = 0.075. This shows that there is a strong positive correlation between agricultural practices and food security.

5.3 Discussion of the findings

This study revealed that bad weather/ climatic conditions affect food security negatively. The correlation coefficient between bad weather/climate and food security is -0.75 and P- value = 0.075. This shows that there is a strong negative correlation between bad weather/climate and food security. This agrees with FEWS (1995) report which indicated that bad weather/ climatic conditions in Nakuru, Bungoma, UasinGishu, Turkana East and Narok districts has made food security vulnerability to increase in the areas which were not considered to be chronically vulnerable. Northern and Eastern areas of Kenya were characterized by local conflicts and this restricted the movement of vulnerable communities towards better grazing and water.

Secondly, the study established that the major form of insecurity in the area is cattle raids which are very persistent in the region. This has affected them in such a way that apart from reducing the numbers of their animals, it affects their farming. In the event of cattle raid the residents do loss their livelihood since they mostly depend on the livestock for their livelihood. This agrees Smith& Simon, (1992). Who argued that One of the factors contributing to food insecurity in Turkana East district is insecurity especially in food producing areas. Insecurity tends to reduce farming activity even long after the conflict has been resolved. Food production in tribal clashes hit areas in 1992-1993 including Nakuru, Bungoma, UasinGishu, Turkana East and Narok districts with high agricultural potential declined and this made food security vulnerability to increase in the areas which were not considered to be chronically vulnerable. Northern and Eastern areas of Kenya were characterized by local conflicts and this restricted the movement of vulnerable communities towards better grazing and water (FEWS 1995).

Thirdly, established that majority of the respondents (63%) were polygamous while 33% had monogamous families. This culture of having many wives leads to the families having many children. This meant more food was required for the big families leading to food insecurity. Also shows that 53% of the respondents have more than 7 members in their. The study also revealed that majority (50%) of the respondents has stayed in their current location for 1-3 years implying they had adopted a nomadic culture which had a great impact on their food security. This agrees with FAO (2011) report which indicated that the Turkana are nomadic pastoralists who live in the desert regions of northwestern Kenya. Most of these people are polygamous with many children which tend to threaten their food security. These people were one of many affected by a severe drought in 1979 and 1980. Although the famine which resulted from the sharp drop in food production was dramatized by the international press, insecurity of food availability is characteristic of pastoral production systems.

Finally, the study established that 86% of the respondent cultivated less than 2 acres of land and did not use modern farming technique and had poor storage facilities for their produce. This is an indication of insufficient food production. Also the correlation coefficient between agricultural practices and food security is +0.78 and P- value = 0.075. This shows that there is a strong positive correlation between agricultural practices and food security. This agrees with Margaret Buchanan (1992) who argued that low food productivity in Kenya is associated with farming I a small piece of land, farmers cannot afford readily-available modern farming technologies, existence of poor agricultural institutions, poor marketing and storage facilities which help in reducing incentives to produce. High transport costs due to dilapidated roads, and improper handling and wastage of crops also contribute to the malaise.

5.4 Conclusions of the study

This study revealed that bad weather conditions affect food security negatively. The correlation coefficient between bad weather and food security is -0.75 and $P\text{-value} = 0.075$. This shows that there is a strong negative correlation between bad weather and food security.

Secondly, the study established that the major form of insecurity in the area is cattle raids which are very persistent in the region. This has affected them in such a way that apart from reducing the numbers of their animals, it affects their farming. In the event of cattle raid the residents do lose their livelihood since they mostly depend on the livestock for their livelihood.

Thirdly, the study established that majority of the respondents (63%) were polygamous while 33% had monogamous families. This culture of having many wives leads to the families having many children.

Finally, the study established that 86% of the respondent cultivated less than 2 acres of land and did not use modern farming technique and had poor storage facilities for their produce. This is an indication of insufficient food production. Also the correlation coefficient between agricultural practices and food security is $+0.78$ and $P\text{-value} = 0.075$. This shows that there is a strong positive correlation between agricultural practices and food security.

5.5 Recommendations of the study

In view of the research findings, the research recommends the following:

- i) The government should increase the relief food distribution in Turkana East district due bad weather which has affected food security in the area.
- ii) The local communities should be encouraged to plant drought resistant crops so as to reduce food insecurity.

- iii) The local communities should also be advised on modern farming which includes use of machines and improved seeds.
- iv) More non- governmental organizations should be encouraged to start projects in Turkana East district geared towards providing food security to the local communities.

5.6 Suggestions for further research

Based on the findings of the study, the researcher makes the following suggestions for further research;-

- i) The impact of food insecurity on children's' education.
- ii) The impact of livestock farming on the livelihood of local communities in Turkana East district.
- iii) The impact of Non- Governmental organizations services on livelihood of local communities in Turkana East district.

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APPENDICES

APPENDIX I: Transmittal Letter

JULIUS SIRMA

P.O Box 23 Kapcheno

.....

3th JULY, 2013

The Respondents

Turkana East District,

Turkana County

Dear Sir/Madam,

REF: TRANSMITTAL LETTER

I am a Post graduate student at the University of Nairobi (.....Campus) pursuing a Master of Arts Degree in Project Planning and Management. As part of the requirements for the award of this degree I am conducting a study on the effects of Relief Aid on Food security in Turkana East District of Turkana County, with reference to Food for Assets programme. I hereby request you to assist me in completing this questionnaire. Your information will only be used for the purpose of this study and it will also be kept confidential, thus to uphold privacy, please do not write your name anywhere on the questionnaire.

I am very grateful for your participation and co-operation.

Thank you,

Yours faithfully,

Sign-----

JULIUS SIRMA

Appendix II: Households ‘Head questionnaire

The aim of this study is to investigate the effects of Relief Aid on Food security. You have been selected for this study. You are requested together with others in the District to complete this questionnaire.

Instructions to the Respondent

1. Please respond to all the items in this questionnaire.
2. Do not write your name anywhere on this questionnaire.
3. Tick your appropriate choice and write down the brief statements in the open-ended questions.

Section I: Demographic data for the respondents

1. What is your gender? a) Male () b) Female ()
2. What is your age bracket? a) Less than 30 years () b) 30-34 years ()
c) 35-39 years () d) 40-44 years () e) Over 45 years ()
3. What is your highest educational level? a) PhD () (b) Masters () (c) Degree () (d) Diploma () (e) Certificate (f) Other.....
4. What is your marital status? (a) married () (b) single () (c) widowed ()
(d) Divorced ()
5. What is your family size? (a) < 3 () (b) 4 -7 () (c) >7 ()

SECTION B: The influence of weather conditions on household’s food security.

6. How many rain seasons per year are in Turkana district?
(a) 1- 2
(b) 2-3
(c) 3- 4
7. Do you receive enough rainfall?
(a) Yes
(b) No
8. What crops do you plant _____
9. Why do you plant them _____
10. How long have you lived in the area you are in now?
(a) Less than a year
(b) 1 -2 years

- (c) 3 -4 years
 - (d) More than four years
11. To what extent has bad weather/ climate affected food security?
- (a) Neutral
 - (b) Great extent
 - (c) No extent

SECTION C: The effect of insecurity on food production.

12. Have you ever been affected by insecurity?
- (a) Yes
 - (b) No
13. If yes, how did it affect your food production_____
14. What kind of insecurity do you experience?
- (a) Cattle raids
 - (b) Tribal clashes
 - (c) Political
 - (d) Other_____

SECTION D: To assess the effect of cultural practices on food security.

15. What is your family type?
- (a) Monogamous
 - (b) Polygamous
16. If polygamous, how many wives?
- (a) 2-3
 - (b) 4-5
 - (c) More than 5
17. What is your main economic activity?
- (a) Crop Farming
 - (b) Cattle keeping
 - (c) Fishing
 - (d) Other(specify)
18. What is your family set up?

- (a) Nuclear
- (b) Extended

19. Does your culture affect food production?

- (a) Yes
- (b) No

20. If yes, how?

SECTION B: Influence of agricultural food policy on household's food security

21. What is your main economic activity? (a) Farming () (b) Business () (c) Employed ()
(d) None

22. What kind of farming do you practice? (a) Subsistence () (b) Crop () (c) Livestock

23. What is your land size in acres? (a) > 2 () (b) 3 - 5 () (c) 6- 8 () (d) >8

24. What size of land is cultivated? (a) > 2 () (b) 3 - 5 () (c) 6- 8 () (d) >8

25. What size of land is not cultivated? (a) > 2 () (b) 3 - 5 () (c) 6- 8 () (d) >8

26. What are the reasons for not cultivating?.....
.....

27. How do you acquire your food?(a) Farming () (b) Buying () (c) Relief food ()

28. How many months do harvested food crops last you?

- (i) 1-3
- (ii) 4-6
- (iii) 7-9
- (iv) 10-12

Appendix III: Questionnaires for staffs of the lead Cooperating partners and Government officers.

The aim of this study is to investigate the effects of Relief Aid on Food security. You have been selected for this study. You are requested together with others in the District to complete this questionnaire.

Instructions to the Respondent

1. Please respond to all the items in this questionnaire.
2. Do not write your name anywhere on this questionnaire.
3. Tick your appropriate choice and write down the brief statements in the open-ended questions.

1. What is your gender? a) Male () b) Female ()

2. What is your age bracket? a) Less than 30 years () b) 30-34 years ()

- c) 35-39 years () d) 40-44 years () e) Over 45 years ()
3. What is your highest educational level? a) PhD () (b) Masters () (c) Degree () (d) Diploma () (e) Certificate (f) Other.....
4. How many government supported crop production projects are there in the district? (_____)
5. Do you distribute any relief food in Nguuni? (a) Yes () (b) No ()
6. If yes, what kind of food?.....
7. How much food per household do you supply per year?.....
8. What other assistance do you give the residents to enhance food security?.....
9. In your own assessment which ministry between livestock and agriculture receives more funding in the annual government allocations?
10. How would you rate the state of food security in your ?
 (a) Excellent () (b) Very good () (c) Good (d) Fair () (e) Poor ()
11. What is the impact of food distributions using last mile mobile solutions (LMMS) systems? _____