

**INFLUENCE OF NON-FARM ACTIVITIES IN POVERTY
ALLEVIATION IN KATHONZWENI SUB-COUNTY, MAKUENI
COUNTY-KENYA**

BY

MUTUNGA EVERLYN VAATI

**A THESIS SUBMITTED TO THE SCHOOL OF HUMAN
RESOURCE DEVELOPMENT IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN DEVELOPMENT STUDIES**

**MOI UNIVERSITY
ELDORET**

2016

DECLARATION

Declaration by Student

I hereby declare that this thesis is my original work and has not been presented for a degree in any other university.

Mutungu Everlyn Vaati

Date

SHRD/PGD/07/11

Declaration by the Supervisors

This thesis has been submitted for examination with our approval as university supervisors

Prof. Mulongo, L.S

Date

Department of Development Studies

School of Human Resource Development

Prof. Omboto Peter

Date

Department of Quantitative Skills and Entrepreneurial Studies

School of Human Resource Development

DEDICATION

This thesis is dedicated to the rural residents of Kathonzweni who, despite the many hardships they encounter, tirelessly toil to sustain their households.

ACKNOWLEDGEMENT

I would like to sincerely thank my supervisors, Professor Leonard Mulongo and Professor Peter Omboto for their valuable guidance and worthy insights during this research.

My sincere appreciation goes to the local administration of Kathonzweni location, specifically the sub-chief Thavusub location Mr. Joseph Mbote and the sub-chief Ituka sub-location Mr. Muasya for offering all manner of support needed in the course of the research work. Thanks are due to Ms. Kavata, the chairperson of *nyumba kumi* initiative in Kathonzweni location and to the village heads, who in their busy schedules afforded some time to walk with us and make us acquainted with the community. Very special thanks to the participants who cooperated and willingly responded to our questions. I also thank Mr. Samuel Kitheka, who tirelessly worked as my research assistant during data collection.

I would also like to appreciate my classmates for their friendship and encouragement as well as the lectures in the department of Development Studies for their valuable and inspiring lectures. To my family, I say thank you for the love and moral support that you have constantly offered me.

God bless you all!

ABSTRACT

Poverty has been a major challenge for development in the developing world. In Kenya, available statistics indicate that poverty has been getting severe as evidenced by the alarming rates of unemployment, food insecurity and the inability by a vast majority of the population to meet their basic needs. While various strategies have been employed to tackle the poverty menace, not much has been achieved, especially because such strategies have overrelied on agriculture as the main pathway out of poverty. Overreliance on rain fed agriculture and the worsening climate change conditions has seriously eroded the livelihoods of many farmers in Arid and Semi-Arid Lands (ASAL) thus rendering agriculture not only ineffective but also costly in addressing poverty. Thus, poverty alleviation, especially in the rural ASAL areas calls for diversification of the strategies employed in addressing the challenge. While there has been growing evidence world over indicating that the non-farm sector has enormous potential for reducing rural poverty, no tangible evidence has been presented in Kenya to that effect. This study, therefore, assessed the influence of non-farm activities on poverty alleviation in Kathonzi sub-county in Makueni County. The study objectives were to: Analyse the level of poverty in Kathonzi sub-county, assess the nature and types of non-farm activities and assess the effects of non-farm activities on poverty alleviation. The study was guided by the Sustainability Livelihood Framework propagated by the Department for International Development (DfID), which depicts how households navigate around capital assets and vulnerability contexts to choose sustainable livelihood options. A survey design was employed while purposive and multistage sampling techniques were used to determine a sample size of 313 respondents. Data collection was effected using a semi-structured questionnaire. Collected data was subjected to SPSS version 21 and analysed descriptively and inferentially and presented in tables and charts. The study established that poverty incidence in the study area was higher than the national average. Non-farm activities play an important role in reducing poverty as evidenced by the significant correlation ($r = 0.873$) between non-farm activity income and total household income. However, most of the non-farm activities were manual labour based and lowly remunerated, thus explaining the high prevalence of poverty despite many households participating in non-farm activities. Several factors were found to hinder the establishment of the non-farm sector. The study recommends a reduction of the entry barriers to non-farm activity engagement, especially enhancing training in non-farm activities. Future studies could examine the impacts of inequality brought about by engaging in non-farm activities.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
LIST OF FIGURES.....	x
LIST OF PLATES.....	xi
DEFINITION OF TERMS.....	xii
LIST OF ABBREVIATIONS.....	xiii
CHAPTER ONE: INTRODUCTION.....	1
1.1 Overview.....	1
1.2 Background to the Study.....	1
1.3 Statement of the Problem.....	5
1.4 Objectives of the Study.....	6
1.5 Research Hypothesis.....	7
1.6 Justification of the Study.....	7
1.7 Significance of the Study.....	7
1.8 Scope of the Study.....	8
1.9 Limitation of the Study.....	8
CHAPTER TWO: LITERATURE REVIEW.....	12
2.1 Overview.....	12
2.2 Poverty.....	12
2.3 Measurement of Poverty.....	13
2.3.1 Poverty Lines.....	13
2.3.2 Poverty Incidence (P_0).....	14
2.3.3 Poverty Gap Ratio (p_1).....	15
2.3.4 The Squared Poverty Gap Index (P_2).....	15
2.3.5 The Multi-dimensional Poverty Index (MPI).....	15
2.4 Rural Livelihoods.....	17
2.4.1 Types of Rural Livelihood Diversification.....	18
2.4.2 Rural Non-farm Enterprises.....	20
2.5 Rationale for Non-farm Activity engagement.....	22
2.5.1 Risk Management.....	22
2.5.2 Wealth Accumulation and Survival.....	23
2.5.3 Household Consumption and Sustenance.....	23

2.5.4. Allocation of Surplus Labour.....	24
2.5.5 Coping and Adaptation.....	24
2.5.6 Pursuit of Available Opportunities.....	25
2.6 Factors Influencing Farmers' Engagement in Non-farm Activities.....	25
2.6.1 Income and Non-farm Activity Engagement.....	27
2.6.2 Gender and Non-farm Activity Engagement.....	28
2.6.3 Non-farm activity Engagement and Educational Attainment.....	29
2.6.4 Non-farm Activity Engagement and Age.....	31
2.6.5 Non-farm Activity Engagement and Access to Key Resources.....	31
2.7 Linkages between Farm and Non-farm Activities.....	32
2.8 The Rural Non-farm Sector and Poverty Alleviation.....	33
2.9 A Theoretical Framework for Understanding Non-farm Activities and Poverty Alleviation.....	35
2.10 Rural Poverty Alleviation Strategies in Kenya.....	38
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	45
3.1 Overview.....	45
3.2 Study Area and Research Design.....	45
3.2.1 Description of the Study Area.....	45
3.2.2Administrative Units.....	45
3.2.3 Biophysical features.....	46
3.2.4 Climate and Rainfall.....	46
3.2.5 Demographic Characteristics.....	47
3.2.6 Socio-economic Characteristics.....	47
3.2.7 Study Design.....	48
3.3Study Population.....	49
3.4Sample Size Determination.....	49
3.5Sampling Techniques.....	50
3.6 Data Collection Instruments.....	51
3.7 Reliability and Validity of Research Instruments.....	51
3.8 Data Analysis Techniques.....	52
3.9 Ethical Issues.....	52
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION	53
4.1 Overview.....	53
4.2 Socio-demographic Characteristics of Respondents.....	53
4.3 Poverty Incidence.....	54
.....	55

4.4 An Evaluation of Non-farm Activities in Kathonzwani Sub-county.....	55
4.4.1 Distribution of Non-farm Activities by Gender.....	58
4.4.2 Distribution of Non-farm Activities by Educational Level.....	60
4.4.3 Distribution of non-farm activities by marital status.....	62
4.4.4. Distribution of Non-farm Activities by Age of Household Head.....	63
4.5 Factors Associated with Non-farm Activity Engagement.....	64
4.5.1: Human Factors.....	64
4.5.2: Social Factors.....	67
4.5.3 Financial Capital.....	68
4.5.4 Physical Capital.....	69
4.5.5 Natural Capital.....	71
4.6 Challenges Faced by Households Engaging in Non-farm Activities.....	71
4.7 Influence of Non-farm Activity Income on Poverty Reduction.....	73
4.7.1 Hypothesis Testing.....	77
4.7.2 Effects of Non-farm Activity Income on Household Welfare.....	77
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND	
RECOMMENDATIONS.....	80
5.1: Overview.....	80
5.2 Summary of Findings.....	80
5.3 Conclusions.....	82
5.4 Recommendations.....	83
REFERENCES.....	85
APPENDICES.....	93
APPENDIX 1: LETTER OF INTRODUCTION.....	93
APPENDIX2: HOUSEHOLD SURVEY QUESTIONNAIRE.....	94
APPENDIX 3: MAP OF THE STUDY AREA.....	100
APPENDIX 4: MAP SHOWING LOCATION OF KATHONZWANI LOCATION.....	101
APPENDIX 5: LETTER FROM MOI UNIVERSITY.....	102
APPENDIX 6: RESEARCH AUTHORIZATION FROM NATIONAL COMMISSION FOR SCIENCE TECHNOLOGY AND INNOVATION.....	103
APPENDIX 7: RESEARCH AUTHORIZATION FROM MAKUENI COUNTY.....	104
APPENDIX 8: PHOTOGRAPHS TAKEN DURING DATACOLLECTION.....	105

LIST OF TABLES

Table 2.1:Classification of livelihood activities.....	19
--	----

Table 4.1: Socio-demographic characteristics of Respondents.....	54
Table 4.2: Human factors associated with non-farm activity engagement.....	61
Table 4.3: Social factors associated with non-farm activity engagement	63
Table 4.4: Financial factors associated with non-farm activities engagement.....	64
Table 4.5: Physical factors associated with non-farm activity engagement.....	65
Table 4.6: Average annual incomes from various sources.....	69
Table 4.7: Correlation between various types of income and total household income.....	70
Table 4.8: Uses of non-farm income.....	78

LIST OF FIGURE

Figure 1.1: Conceptual framework.....	9
Figure 4.1: Poverty incidence in Kathonzwi Sub-county.....	55
Figure 4.2: Participation in non-farm activities in Kathonzwi Sub-county.....	56
Figure 4.3: Percentage distribution of non-farm activities.....	57
Figure 4.4: Distribution of non-farm activities by gender.....	55
Figure 4.5: Percentage distribution of major non-farm activities by gender.....	56
Figure 4.6: Percentage distribution of non-farm activities by educational level... ..	57
Figure 4.7: Percentage distribution of major non-farm activities by educational level	58
Figure 4.8: Percentage distribution of major non-farm activities by marital status....	59
Figure 4.9: Percentage distribution of non-farm activities by age of household head..	60

LIST OF PLATES

Plate 4.1: Rope making, a major non- farm activity	54
Plate 4.2: Withering maize crop in the study area.....	71

DEFINITION OF TERMS

Farm income: Earnings directly emanating from the farm sector, including the sale of animals and crops as well as their products.

Household: All persons residing together related by blood or law such that they constitute a family and acknowledge a single household head.

Livelihood: A means of living; the totality of a peoples' assets and the strategies they pursue to achieve their desired life goals.

Non-farm activities: All economic activities other than the production of primary agricultural commodities. Includes such activities as mining, commerce, and various rural industries

Non-farm income: earning from non-farm income

Nyumba kumi: A concept intended to create national security among citizens at grassroots level by use household clusters which come together and decide to collaborate on matters of security.

'Other' sources of income: Household income that cannot be categorised as either farm income or non-farm income. Includes such earnings as cash transfers, pensions and contributions from socio-economic groups.

Poverty line: A threshold of income below which a household is deemed poor.

Rural: Dispersed settlements which are primarily agricultural, together with the small centres that serve these settlements.

LIST OF ABBREVIATIONS

ALRMP	Arid Lands Resource Management Authority
ASAL	Arid and Semi-arid Lands
DfID	Department for International Development (of the British Government)
DFRD	District Focus for Rural Development

ERS	Economic Recovery Strategy
FAO	Food and Agriculture Organization of the United Nations
FTF	Feed the Future initiative of the United States Government
HDI	Human Development Index
HDRO	Human Development Report Office
HPI	Human Poverty Index
IDS	Institute of Development Studies
IFRC	International Federation of the Red Cross/Red Crescent societies
ILRI	International Livestock Research Institute
INE	Instituto Nacional de Estadística (The Institute of National Statistics of the Spanish Government)
KANU	Kenya African National Unity
KES	Kenya Shillings
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KRDS	Kenya Rural Development strategy
LUCID	Land-Use Change Impacts and Dynamics
MDGs	Millennium Development Goals
NPEP	National Poverty Eradication Plan
ODG	Overseas Development Group
PAI	Population Action International
PPP	Probability Proportional to Size
PREMU	Poverty Reduction and Economic Management Unit
PRSP	Poverty Reduction Strategy Paper
RNFA	Rural Non-farm Activities
SAPs	Structural Adjustment Programs

SDD	Social Dimensions for Development
SDGs	Sustainable Development Goals
SRA	Strategy for Revitalizing Agriculture
UN	United Nations
UNISDR	United Nations International Strategy for Drought Reduction
US \$	United States Dollar
WB	The World Bank
WFP	World Food Program

CHAPTER ONE: INTRODUCTION

1.1 Overview

This chapter presents key issues that lay the foundation of the study. They include: Background to the study, statement of the problem, objectives of the study, justification, significance, scope and limitations of the study as well as the conceptual framework adopted.

1.2 Background to the Study

Majority of the population in Africa reside in rural areas, with Kenya not being exceptional. In Kenya, 74% of the population resides in rural areas (Republic of Kenya, 2011). Most of these people derive their livelihoods from agriculture (Republic of Kenya, WFP, and FEWSNET, 2012). In Kenya, the role of the agricultural sector cannot be overemphasized. The sector for instance, directly contributes 24% of the gross domestic product. It also contributes to 65% of the total annual exports as well as 60 % of employment especially in rural areas (Republic of Kenya, 2009a). It is a source of food for the rural as well as the urban population. Thus, the sector is not only an important driver of the economy, but also the means of livelihood for the majority of the Kenyan people.

Despite the centrality of agriculture to Kenya's development, numerous challenges acting and reacting upon each other have contributed to its inability to fully support rural livelihoods, especially in the arid and semi-arid regions (ASALS). Bulk of the Kenyan landmass (84 %) is either classified as arid or semi-arid (Republic of Kenya, 2009a). This leaves a very small proportion of the total land mass having high agricultural productivity. Thus, limited availability of productive land has been major constraint to Kenya's agricultural productivity. Besides, the climatic conditions in

ASAL regions do not favor agriculture. Most of these areas are characterized by low erratic and unreliable rainfall that cannot support rain fed agriculture. Since a large proportion of the population in Kenya (about 74%) resides in ASAL areas and heavily relies on rain fed agriculture, the losses occasioned by arid conditions have been eroding livelihoods of a vast majority. Other challenges include: Frequent droughts and increasing rates of desertification, loss of soil fertility, limited government support, crop and animal diseases and high costs of production associated with high levels of inflation (Nelson, 2000).

In an attempt to improve productivity in the agricultural sector and thus reduce rural poverty, the government has put in place several efforts. Such efforts include the Kenya Rural Development Strategy (KRDS) which emphasized on enhancing access to productive resources and reducing the cost of agricultural productivity. The Economic Recovery Strategy (ERS) in a similar manner envisaged a revival of the agricultural sector while the Strategy for Revitalizing Agriculture (SRA) was aimed at turning agriculture into a profitable and commercially oriented sector both nationally and internationally. Most of these interventions have not yielded much due to lack of focus in addressing agricultural challenges as well as lack of government support, especially funding (Nyoro, 2002; Republic of Kenya, 2009a). Currently, the government is pursuing the vision 2030 development strategy, which seeks to undertake major projects in agriculture, especially irrigation (KIPPRA, 2013). The implementation of vision 2030 agricultural flagship projects has been marred by allegations of corruption and misappropriation of funds. Thus, rural farmers are finding it exceedingly difficult to solely rely on agriculture as a source of livelihood. The uncertainties in agricultural productivity have exacerbated the poverty levels of many over time, and more especially rural farmers who mainly rely on rain fed

subsistence agriculture as the main source of livelihood. Such farmers have increasingly become food insecure and have not been able to meet other basic needs over time (KIPPRA, 2013). Farmers in these circumstances have thus been forced to turn to rural non-farm activities (RNFA) to cushion themselves from the prevailing harsh climatic as well as economic circumstances.

The importance of rural non-farm income cannot be underestimated. It has been found to account for about 40 to 45 percent of rural incomes in sub-Saharan Africa (Barret, Reardon and Webb 2001). Engaging in non-farm activities can have positive impacts on a household's wellbeing. Barret *et al.* (2001) found that participation in non-farm activities positively correlated to household welfare and nutritional status in Ethiopia. The rural non-farm sector also absorbs surplus labour that would otherwise congest urban areas. In terms of employment, Dary and Kuunibe (2012) acknowledge that the rural non-farm sector employs 20% to 50% of the population. This sector has the potential to boost agricultural productivity as documented by Ellis (2004) who found a strong positive association between non-farm sector engagement and agricultural productivity in many countries in sub-Saharan Africa.

An emerging concern from literature is the fact that non-farm activities are, and will still be inevitable in the future. Although non-farm activities are common in all parts of the country, due to various motivations and needs, the rural ASAL regions of the country will definitely need them more than other regions. There are various motivations for non-farm activity engagement in these ecological zones, but the most pressing is the need to adapt to climate change and to avert risks associated with the same process.

According to the United Nations International Strategy for Drought Reduction (UNSIDR), drought will be more severe and more frequent in the ASAL regions of the world in the forthcoming decades (UNSIDR, 2012). This implies that the rural agricultural populations inhabiting these regions will be more vulnerable, considering the fact that their livelihoods are highly dependent on rain-fed agriculture. Rapid population increase, high poverty levels, political instability, conflicts, urbanization, environmental degradation as well as the prevalence of other natural hazards will also increase these populations' vulnerability to drought (ibid). Higher levels of vulnerability will definitely result to higher levels of poverty. This will not only be an issue of concern for the affected households, but also a major concern for the government and concerned non-state actors. Increased levels of want, coupled with rising levels of food insecurity will demand more from the government and other agencies in terms of humanitarian assistance. The arising challenges will also present an impediment to the achievement of the country's development aspiration of building a productive and prosperous economy as enshrined in the Vision 2030 document (Republic of Kenya, 2011).

Based on the foregoing, the current study sought to investigate the contribution of non-farm activities to poverty reduction in Kenya. The study was undertaken in Kathonzi, which is found in Makueni County. This is one of the regions in the country classified as drought prone (Republic of Kenya, 2007). The poverty prevalence in the region stands at 64.1 percent, way much above the national average of 43 per cent (Republic of Kenya 2010a). Overreliance on rain fed agriculture coupled with the high rainfall variability has had serious negative impacts on the agricultural sector in this region (Musembi, 2005).

Drought has been a major impediment to the development in the area, with major droughts having been recorded in 1975, 1980, 1984/85, 1995/96, 1999/2000 (UNDP 2005) and most recently the major drought experienced in 2011 and 2012 (the Poverty Reduction and Economic Management Unit 2012; IFRC, 2011; Republic of Kenya, 2012).

The region is endowed with a range of resources which, if utilised could boost the non-farm sector and subsequently reduce the high poverty rate. Such include precious minerals such as sand, limestone, marbles, dolomites, magnetite, vermiculate, feldspar, Mica, quartz and various gemstones (Nelson, 2000; Republic of Kenya, 2008). Solar and wind energy, which are so abundant in the county can also make a significant economic contribution not only to the livelihoods of the people within the study area, but also for other regions within the country (Republic of Kenya, 2008).

Owing to this great potential from the non-farm sector, it was imperative to study the sector, with a view to understanding its potential for poverty reduction in this and other similar regions in the country.

1.3 Statement of the Problem

Poverty has been a major impediment to development in Kenya since independence. While the government has been employing various strategies to tackle the menace, not much has been achieved, especially owing to the fact that most of the strategies adopted mainly target the agricultural sector. This approach has been worsened by the fact that bulk of the county's total landmass (84 %) is classified either as arid or semi-arid. Unfortunately, 74 % of Kenya's total population resides in these ASALs and mainly rely on agriculture as their main livelihood option. Overreliance on rain fed agriculture for livelihood sustenance has affected many households negatively,

especially given the harsh climatic conditions experienced in ASAL regions. Achievement of sustainable livelihoods has therefore proven elusive in the face of frequent droughts; which have not only rendered rural households food insecure but also poor. Thus, poverty alleviation, especially in the ASALs calls for a diversification of the strategies employed in addressing poverty.

While there has been growing evidence world over indicating that the non-farm sector has enormous potential in poverty alleviation, accounting for 40-60 per cent of total household income in Africa, no tangible evidence has been presented in Kenya to that effect. In Kenya, the non-farm sector has largely remained untapped, especially due to limited information on its potential for poverty reduction. Thus, if well understood, the sector has the potential of offering an alternative route out of poverty by complimenting and at times supplementing agricultural incomes in arid ecological areas.

Thus, a study on the non-farm sector in Kathonzi sub-county, which is endowed with a range of resources but whose poverty prevalence stands high at 64.1 per cent, would be very relevant. Thus, this study sought to investigate the extent to which rural non-farm activities contribute to poverty alleviation of participating households and to explore the ways through which the performance of these activities may be enhanced.

1.4 Objectives of the Study

This study sought to achieve the following objectives to:

1. Analyse the socio-demographic characteristics of the respondents.
2. Analyse the level of poverty in Kathonzi Sub-county.
3. Evaluate the factors associated with non-farm activity engagement.

4. Assess the influence of non- farm activities on poverty reduction in Kathonzwani Sub-county.

1.5 Research Hypothesis

H₀: There is no significant relationship between non-farm activities and improved livelihood outcome.

1.6 Justification of the Study

With increasing climate shocks, engaging in non-farm activities will become an indispensable coping as well as an adaptation strategy for many households in Kenya and beyond. Although numerous studies have been done in the African continent about the non-farm sector, such have not been conducted extensively, especially in the ASALs of Kenya. Where studies on this theme have been conducted, the focus has in most cases been on the pastoralist communities. Similarly, such studies have not addressed the issue of prevalent poverty, even among the most diversified households. As ascertained by Ellis (1999) and Kartunnen (2009), livelihood diversification experiences are context specific. Thus, there is need to carry out more studies, especially on the non-farm sector to better prepare a big number of people who are expected to face harsh climatic conditions in the future. Similarly, a better understanding of the non-farm sector will be much needed in facilitating livelihood strategies necessary for boosting productivity as the country gropes to attain her vision 2030 aspirations.

1.7 Significance of the Study

Findings from this research will help policy makers in understanding and possibly in designing new approaches in addressing rural poverty. Secondly, the research findings will enable identification of the various non-farm activities that shape household adaptability to climate change impacts, some of which may be supported, enhanced,

modified or done away with in the future, if long term adaptation is to be achieved. Lastly, the research will add to the existing literature on livelihoods and adaptation to climate change. This will in turn enhance the adaptability of a big number of rural households whose livelihoods are constantly getting eroded by frequent droughts and other climate related impacts. Thus, the study will significantly contribute to the achievement of the sustainable development goals (SDGs), especially the theme on poverty reduction as well as the achievement of the country's vision 2030 agenda.

1.8 Scope of the Study

This study was restricted to the investigation of the non-farm sector in Kathonzwi Sub-county. As such, it did not examine other forms of livelihood diversification such as those practiced within agriculture.

1.9 Limitation of the Study

A major limitation during the data collection period was elephant invasion, which at times meant that data collection would be delayed for fear of attacks.

1.10 Conceptual Framework

INDEPENDENT VARIABLE

DEPENDENT VARIABLE

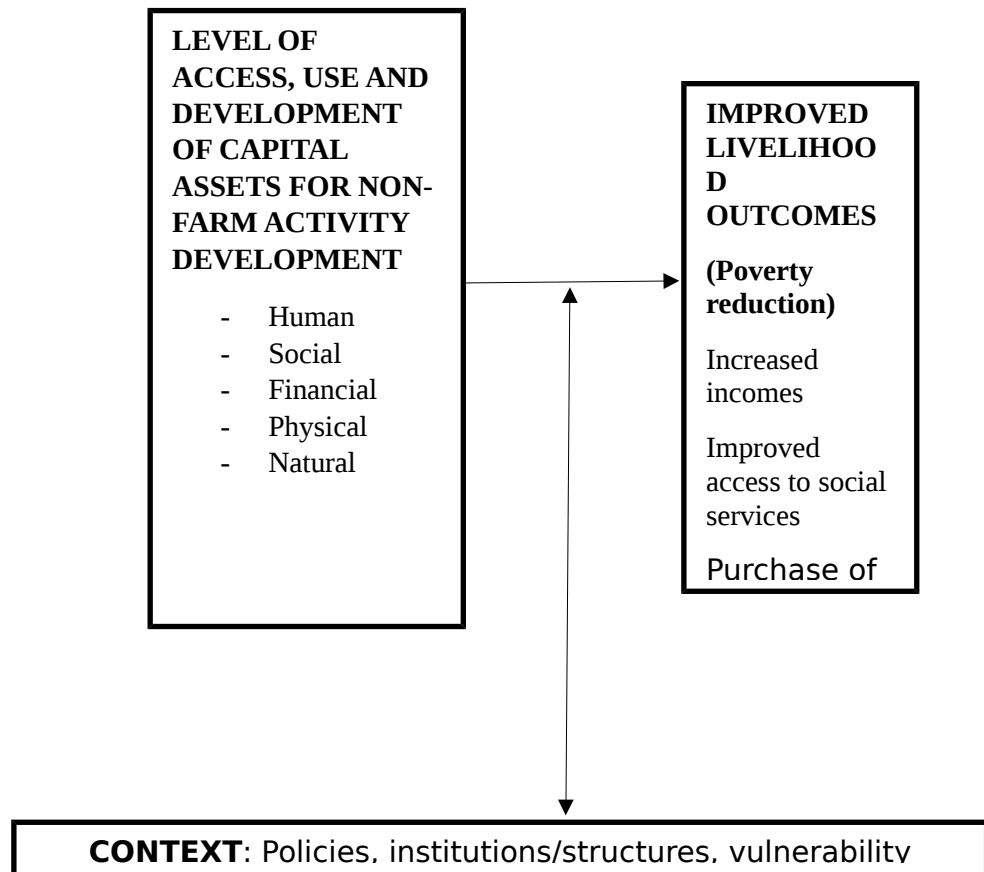


Figure 1.1: Conceptual framework based on the Department for International Development's (DfID) Sustainable Livelihood Framework (1997)

This study was guided by the sustainable livelihood framework (SLF) developed by the (DfID) to facilitate efficiency of development cooperation through investment in people for poverty reduction (DfID, 1997). The framework depicts stakeholders as functioning in a context of vulnerability, within which they access livelihood assets. Access to livelihood assets is in turn influenced by the prevailing social, institutional and organizational environment (Carney, 1998; Kollmaire and Gamper, 2012). Thus, based on the aforementioned (access to livelihood assets and institutional contexts),

people in various vulnerability contexts construct livelihood strategies in pursuit of their self-defined beneficial livelihood outcomes.

Components of the Sustainable Livelihood Framework

Vulnerability context: This is the external environment in which people exist, consisting of trends, shocks and seasonality. Whereas shocks are sudden, traumatic and unpredictable situations, trends and seasonality comprise of continuous, predictable cumulative and distressing events (Chambers and Conway, 1991).

Livelihood assets: Five types of livelihood resources have been identified: human capital, social, natural capital physical and, financial capital.

Human capital - Consists of the skills, knowledge, ability to labour and good health that enable people to pursue different livelihood strategies and achieve their livelihood objectives (DfID, 2000).

Social capital- Entails networks and connectedness that increase peoples trust and ability to cooperate, together with memberships into formal and informal organizations.

Natural capital- These are the natural resources from which resource flows useful for livelihoods are derived.

Physical capital- Comprises of basic infrastructure and producer goods needed to support livelihoods

Financial capital- These are monetary resources and their equivalents that can be accessed to purchase production and consumption.

Structures: They represent the institutions, organizations, policies and legislation that shape livelihoods. They determine access, terms of exchange between different types of capital and returns to any given livelihood strategy.

Livelihood strategies: The range of activities and choices that people undertake in order to achieve their livelihood goals.

Livelihood outcomes: The achievement of livelihood strategies; including such outputs as increased income, more-self-esteem, access to services, reduced vulnerability through enhanced resilience, and improved food security.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview

This chapter contains a synthesis of literature related to the study with a focus on the following thematic areas: poverty, measurement of poverty, rural livelihoods and non-farm activities.

2.2 Poverty

Poverty has been a major challenge for humanity in the twenty first century. This can be echoed by the collective agreement by United Nations (UN) member states in 2000 to half poverty by 2015 (Laderchi *et al.*, 2003) and the need to prioritize poverty reduction in the post 2015 development agenda (Shepherd, 2014; UNDP, 2014). Despite the various efforts to reduce world poverty, over 2.2 billion people still live in multidimensional poverty (UNDP 2014) and a billion others live in extreme poverty (Shepherd, 2014; World Bank, 2015).

While a lot of concern has been given to poverty reduction, the term ‘poverty’ is still not a universally agreed upon concept with regard to its meaning (Rumbewa, 2005). People often give different meanings to the concept according to their social, political and economic circumstances. Often times, poverty has been misunderstood as economic (income) deprivation only. Although this is an essential dimension of the concept, other equally important dimensions relating to social, cultural and political circumstances do exist. Thus, poverty has been defined from a multidimensional perspective, characterized by deprivation of basic goods and services, hardship, powerlessness, limited choices and capabilities, and lack of resources (Mokaka and Marcus, 2004).

Distinctions have been made between absolute and relative poverty. Absolute poverty, on the one hand is associated with subsistence below minimum socially acceptable living standards, usually established based on nutritional and other essential requirements. Relative poverty on the other hand is established through comparisons of the lowest segments of the population with the upper segments, and usually measured in income quintiles or deciles. Shepherd (2014) also makes distinctions between extreme poverty, severe poverty and chronic poverty. Individuals living in extreme poverty consume less than US \$1.25 a day, while those living in severe poverty consume less than US\$0.70 (based on the average consumption of the poor in Sub-Saharan Africa). Chronic poverty exists when severe poverty persists over years, or even a lifetime and is often transmitted generationally (ibid).

2.3 Measurement of Poverty

The definition accorded to poverty is very critical in determining how poverty is measured and consequently, the subsequent policy and program interventions to alleviate it (Mokaka and Marcus, 2005). Thus, poverty measurement is a critical process in understanding and thus alleviating poverty. Despite the fact that poverty is a multi-dimensional phenomenon, many poverty analyses focus on quantitative approaches that make use income or expenditure. This is attributable to the fact such approaches use indicators based on monetary value thus making data collection and quantification easy (INE, 2006).

2.3.1 Poverty Lines

A common method of establishing levels of poverty has been the use of poverty lines, which reflect the value of resources needed to maintain a minimum level of welfare

(INE, 2006). Although poverty lines may have limitations such as non-applicability among regions, they are preferred due to their ease of interpretation (ibid). Just like poverty, poverty lines can be absolute or relative. An absolute poverty line reflects the value of goods and services needed for minimum welfare. The international absolute poverty line is US \$1.25 per person per day (Shepherd, 2014; World Bank, 2015). Countries may also fix their own poverty line given their poverty situation.

Relative poverty lines classify people into two groups (the disadvantaged and the rest) using indicators based on monetary values of either income or expenditure. A minimum level (of income or expenditure) is fixed below which individuals or households are classified as poor. This level depends on the distribution of income or expenditure, and normally, the average (mean) is used. The poverty line may be fixed at a percentage of 40, 50 or 60 of the mean (INE, 2006), or even at 20 or 25 percent in the case of severe poverty (ibid). Ravillion and Bidani (1994) advise on using 50 percent of the mean to fix the relative poverty line. Relative poverty lines as opposed to absolute poverty lines, are useful in making comparisons between groups of individuals or households.

2.3.2 Poverty Incidence (P_0)

This is a measure of poverty that provides information on the extent of the poverty problem by giving the share of the population below the relative poverty line (INE, 2006). The measure is advantageous in that it is easy to construct, easy to understand and adequate in measuring the overall progress towards poverty reduction (ibid). The measure may be limited because it assumes that all the poor are in the same poverty situation. When the unit of analysis is the household, the measure is referred to as the head count index. This measure is suitable for determining the extend of poverty in

the study area, owing to its ability to capture those living below the poverty line for purposes of comparisons with those whose income falls above the poverty line. Thus, the measure is the most suitable for the current study.

2.3.3 Poverty Gap Ratio (p_1)

This poverty measure, also known as the depth of poverty index, measures the degree to which the mean income or expenditure of the poor differs from the established poverty line (Rumbewa, 2005; INE, 2006). The measure is useful, especially for policy makers in determining how much should be transferred to the poor to make them come out of poverty. It is also useful in determining the cost of alleviating poverty by targeting the poor. The measure, however, does not capture the severity of poverty among the poor and also ignores inequalities among the poor.

2.3.4 The Squared Poverty Gap Index (P_2)

This measure, also known as the severity of poverty index, captures average of the squared poverty gaps (INE, 2006). By so doing, the measure not only takes into account the distance separating the poor from the poverty line, but also captures the inequality between the poor. The measure is however not widely used and is not easy to interpret.

2.3.5 The Multi-dimensional Poverty Index (MPI)

The multi-dimensional poverty index (MPI) is a multidimensional poverty measure developed by the Human Development Report Office (HDRO) in 2010 (Alkire *et. al*, 2013; Dotter and Klasen, 2014). The measure replaces the previously used human poverty index (HPI) of the UNDP. Just like the absolute poverty line, it has been used

in assessing multi-dimensional poverty in more than one hundred developing countries (Ravallion, 2011; Alkire *et. al*, 2013).

The measure was developed owing to the recognition that command over market commodities is not the only determinant to human wellbeing. Thus, the measure determines human deprivation based on three dimensions and ten indicators. These dimensions are: health, education and standard living (Ravallion, 2011; Alkire *et.al*, 2013; Dotter and Klasen, 2014).

The education dimension is reflected by the years of schooling and school attendance. According to Alkire *et.al*, (2013) a household is considered educationally deprived if no household member has completed five years of schooling; and any school aged child is not attending school between the first to eight years of education. The health dimension uses child mortality and nutritional status to determine the health poverty of households. A poor household in this dimension will have experienced death of a child (or children) and will have at least one member of the household malnourished. Living standards in the measure are reflected using six indicators: Electricity, drinking water, sanitation, flooring, cooking fuel and assets (radio, television, a bike/motorcycle, a refrigerator, a car or truck).

To determine the level of multidimensional poverty, the three dimensions (health, education and living standards) are weighted. Thus, a household is considered multidimensional poor if it is deprived in one third or more of the weighted indicators (Alkire *et.al*, 2013). The measure has not been without criticisms. Ravallion (2011) for instance argues that the choice of indicators used in compiling the index, especially those pertaining to living standards are not adequate in capturing human welfare. He also brings forth the idea of intrinsic versus instrumental values. He argues that,

education, for instance is not more of an intrinsic value compared to health yet the two are given the same weighting when computing the index (ibid). Nevertheless, the measure, can be useful in showing interconnectedness between various deprivations, and in identifying the poorest among the poor thus useful in targeting the most affected (Alkire *et.al*, 2013).

2.4 Rural Livelihoods

A livelihood, as defined by Warren (2002) is a means of living. Other expanded definitions equate livelihoods to the range of capabilities, assets (stores, resources claims and access) and activities required for a means of living (Chambers and Conway, 1991); to people, their capabilities and their means of living, including food, assets and income (Chambers, 1991). Rural inhabitants use various strategies in the pursuit of their livelihoods goals. The DFID defines a livelihood strategy as “the range and combination of activities and choices that people make in order to achieve their living” (DFID, 2000). These strategies demonstrate how people combine their income generating activities, use their assets, choose the assets for investment, and manage their existing assets and income (ibid). Four main livelihood options have been identified: intensification, extensification, diversification and migration (Carswell, 2000; Warren, 2002). Agricultural intensification involves gaining a means of living from the practice of agriculture. Under this livelihood, farmers strive to achieve maximum yields per unit area through capital investment and increases in labor outputs. In extensification households seek to increase productivity by bringing expansive land into cultivation. Diversification involves engaging in a range of farming activities or pursuing a series of non-farm activities. Lastly, migration entails seeking a livelihood by moving away, temporarily or otherwise (ibid). The current

study will focus on literature on livelihood diversification; specifically in the non-farm sector.

2.4.1 Types of Rural Livelihood Diversification

Literature on livelihoods lacks consistency on the classification of rural livelihood activities. Some seemingly synonymous and confusing terms such as ‘on-farm’, ‘off-farm’, ‘non-agricultural’ and ‘non-traditional’ have been used to describe types of livelihood activities in relation to agriculture. To avoid confusion, Barret *et. al*, (2001) advice on sticking to national accounting sectoral classification terminologies of the country in focus. In spite of this potential confusion, most typologies distinguish between ‘on-farm’ and ‘non-farm’ activities (Ellis and Allison, 2004; Barret *et. al*, 2001; Warren, 2002). Under this classification, on-farm activities include the different types of undertakings that a farmer would pursue within his/her farm. This would include growing a wide range of crops, combining crop farming with animal keeping or keeping different types of animals. Non-farm activities on the hand represent all activities undertaken out of the farm and include among others: trading, handicraft making, charcoal burning, gathering wild fruits, brick making, and sand harvesting.

Iiyama (2006) has classified livelihood activities under three broad categories: crop, livestock and off-farm income activities. This classification is however not different from the previous in that the first two elements of the classification simply refer to agricultural activities (on-farm activities); and the second category includes activities not undertaken within the farm. An important input into the understanding of livelihoods is that this scholar further gives several forms of livelihood diversification under each of the identified broad categories. As such, diversification in crop farming

includes growing of resistant crops (millet, sorghum) growing of staple foods (maize, beans) and the growing of fruits. Diversification in animal keeping may involve keeping of indigenous or exotic breeds while off-farm activities include regular (business, formal employment) and casual off-farm activities such as charcoal burning, remittances and informal waged labor (ibid).

Warren (2002) distinguishes between occasional and strategic livelihood activity engagements. Occasional engagements involve temporary changes in livelihood portfolios whereas strategic engagement involves deliberate attempts to optimize household capacity to take advantage of available opportunities (ibid).

While acknowledging the relevance of the aforementioned simple typologies, Carswell cautions about the potential oversimplification of livelihood activity typologies, given that diversification is a complex process with spatial dimensions and carried out within spatial boundaries (Carswell, 2000). She advocates for classification of livelihood activities based on changes in space and changes in activity as shown in table 2.1.

Table 2.1. Classification of Livelihood Activities

	No change in space	Change in space
No change in activity	Base livelihood-cultivation of maize, beans, sweet potatoes etc. and livestock keeping by the household	Migration to work as a labourer
Change in activity	Trade, artisan activities such as weaving), casual Labour	Circular migration-such as women as domestic workers in urban centres And for men as labourers in urban centres and distant mines

Adapted from Carswell, 2000

In spite of the slight differences inherent in the approaches to classifying livelihood activities, all classifications seem to end up with two broad categories: those related with agriculture and those dealing with non- agricultural ventures. This classification is less complex and agreeable to many authors and will thus be adopted in the current study in the analysis of non-farm activities.

2.4.2 Rural Non-farm Enterprises

Rural non-farm enterprises play an important role in sustaining rural households' subsistence in Africa. Mahabub (2004) observes that the rural non-farm sector is relatively small, often consisting of part-time subsistence oriented activities in its early stages of development. This is consistent with Nagler and Naude's (2014) comparative study findings on the rural non-farm sector using data from some African countries: Ethiopia, Niger, Nigeria Malawi and Tanzania. Their findings confirm that, albeit a few differences across countries, the non-farm sector is predominantly small scale and informal. Most of the activities are seasonal and most often operated within the household dwelling or the immediate surrounding (ibid). Similarly, Dary and Kuunibe (2012) found that 89 per cent of the non-farm activities carried out in Ghana were in the informal sector.

Rural non-farm enterprises can be classified as manual labor-based activities, human capital based operations and physical and human capital intensive activities (Mahabub, 2004). Manual labor based activities include self-employment in cottage industries, wage employment in rural businesses, households or farm, transport operations and construction labor. These enterprises have limited entry barriers and are less remunerative.

Human capital based operations include salaried services in the public and private sectors such as teaching, religious leadership, the medical profession as well as other types of personal services such as laundry and midwifery among others. Physical and human capital intensive operations include such things as agro-processing medium and large scale trading as well as offering contractor services.

Non-farm enterprises can be as those ventures that cannot be classified as primary production activities. Based on this understanding, Onwuemele (2011) classifies non-farm enterprises into three categories: Secondary activities, small scale distribution and tertiary activities. Secondary activities comprise traditional crafts such as blacksmithing, carving, and wood working. They also include modern crafts such as tailoring, shoemaking, welding, watch repair, bicycle repair, and auto repair among others. The small scale distribution activities include all trading activities whether in wholesale or retailing. Tertiary activities are comprised of enterprises such as transport operations, house ownership, and restaurants among others (ibid).

Gordon and Craig (2001) as well as UNCTAD (2015) outline three major stages in the development of the rural non-farm enterprises. During the first stage, most of the enterprises tend to be closely linked with agriculture and mainly encompassing manual labor operations, most especially in rural setups. The second stage, rural-urban interlinks are noticeable, with some tendency towards commuting (away from the household dwelling), rapid growth towards agro-processing, and industrialization, albeit in small scales. In the third stage, a greater emphasis on rural-urban linkages, employment in sectors unrelated to agriculture and agro-industrialization are observable (ibid). According to this classification, non-farm activities in sub-Saharan Africa are in their early stages of development, partly explaining their insignificant contribution to employment (Nagler and Naude, 2014, UNCTAD, 2015).

2.5 Rationale for Non-farm Activity engagement

Engaging in the non-farm sector has been considered the norm rather than the extraordinary in sub-Saharan Africa (Kurtinnen, 2009; Dary and Kuunibe, 2012; Madaki and Adefila, 2014). Literature on non-farm activities indicates that there are various motivations behind farmers' participation in these activities. Generally, rural households engage in non-farm livelihoods to achieve a set of goals, which, among others include: risk mitigation and management, coping and adaptation during times of shocks and stresses, satisfying household consumption needs, accumulation of household savings, and allocation of surplus labour (Watson and Van Binsbergen, 2008; Carswell, 2000; Little, 2001; Hussein and Nelson, 1998; Smith *et. al*, 2001).

2.5.1 Risk Management

Rural farmers at times opt to pursue non-farm livelihoods so as to insulate themselves against risks associated with unstable ecological, economic and political environments. Risk management is not a new concept in rural African communities. Anthropological studies for instance, suggest that risk management was common in Africa during the 19th century. Soja (1968) for instance notes that during the pre-colonial times, the Turkana community of Kenya used to switch back and forth between a range of livelihood activities depending on the prevailing conditions (mainly drought) by mobilizing a set of livelihoods which they resorted to in times of stress. Barret *et. al*, (2001) associate the massive involvement into non-farm activities by many households in Africa to the diminishing role of governments to provide safety nets. This, however, does not necessarily mean it is the only reason for non-farm engagement in these areas. Thus, Reardon (1997) argues that risk management alone is not sufficient to account for non-farm activity engagement in Africa.

2.5.2 Wealth Accumulation and Survival

Literature on livelihoods acknowledges the role of non-farm activities in enhancing accumulation of wealth and supporting survival (Watson and Van Binsbergen, 2008; Carswell, 2000; little, 2001; Hussein and Nelson, 1998; Smith *et. al*, 2001). The well-off in society in many occasions enter into non-farm enterprises so as to accumulate wealth through gaining profits. As such, they venture into investments with high returns. For the majority of the poor, limited options for diversification due to limited skills and capital make them reap limited benefits from diversified portfolios, thus trapping them in poverty (Barret and Swallow, 2005). The poor in this case are more likely to engage in environmentally destructive non-farm activities which often require little or no skill and capital.

2.5.3 Household Consumption and Sustenance

Households at times engage in non-farm activities so as to satisfy their own demand for certain products, especially in locations where physical markets are inexistent or otherwise costly (Barret *et.al*, 2001). Other motives for engaging in non-farm diversification revolve round meeting the ever increasing demand for household goods and services amidst declining agricultural productivity coupled with economic instability. Warren (2002) observes that the emergence of a new set of social needs such as education, modern healthcare and technological commodities among the rural people has increased the importance of cash transactions in the rural household economy. As such, families are forced to look for extra income, sometimes from non-agricultural sources to meet these demands.

2.5.4. Allocation of Surplus Labour

Non-farm activities are not always pursued due to desperation. Households have been found to engage in non-farm activities as a way of allocating surplus labour (Kartunnen, 2009). Households with many household members, as opposed to those with fewer members supply more labour to the rural non-farm sector (Gordon and Craig, 2001). This is so because such households have sufficient members to meet their household chores as well as their farm labour demands. As such, larger households as opposed to smaller households are more likely to engage in non-farm activities so as to make use of their idle labour. In Ethiopia, Demissie and Legesse (2013) found that having a large number of economically household members had a positive influence on non-farm activity engagement.

2.5.5 Coping and Adaptation

The existence of non-farm activities for purposes of coping and adaption among rural farmers has been widely acknowledged (Kartunnen, 2009; Warren, 2002; Barret, *et.al*, 2001; Ellis, 1999, Watson and Van Binsbergen, 2001). A distinction between coping and risk management in relation to livelihoods has been clearly drawn by Smith *et. al*, (2001) and Ellis (1999). Whereas risk management strategies are pursued before a shock occurs, coping strategies are pursued after a shock event. Thus, unlike risk management strategies which are proactive in nature, coping strategies are reactive.

Coping behaviour is distinguishable from adaptive behaviour in that the former is short-term as opposed to the latter (Smith *et. al*, 2001). Rural farmers often pursue non-farm activities so as to survive during major shocks. As such a farmer may decide to switch to charcoal burning to support the household in times of famine when

agricultural productivity is not feasible. Adaption implies that a farmer puts in place long-term strategies so as to insulate the household against shocks and stresses for a long period of time because agriculture as the main economic activity cannot adequately satisfy the household needs.

2.5.6 Pursuit of Available Opportunities

Engaging in non-farm diversification activities is at times motivated by the need to take advantage of existing opportunities, what Warren (2002) considers strategic diversification. Rural farmers often take advantage of new or existing infrastructure such as market centres, roads, credit facilities, and electricity among others to undertake non-farm activities such as trade. A study conducted by Little (2001) on income diversification among East African pastoralists found that pastoralists living less than forty kilometres from towns had more diversified non-farm livelihoods than otherwise. This implies that rural people often take advantage of the benefits of existing infrastructure to better their living. Similarly, a study by Smith *et.al*, (2001) found that the construction of new market centres and a new road network was an impetus for the rural population to engage in non-farm activities in Uganda.

2.6 Factors Influencing Farmers' Engagement in Non-farm Activities

Non-farm activities contribute about 40 – 60 % of household income in Africa (Barret *et.al*, 2001; Ellis, 2004; Ellis and Biggs, 2005). Access to non-farm activities is therefore very critical for sustenance of a vast majority of households, more so those inhabiting the ASALs who are negatively affected by the impacts of climate change. Although non-farm activities are spread all over the African continent, the rural population does not have equal access to these activities. This can be explained by the existence of some factors that influence a households' engagement in non-farm

activities. These factors are broadly classified as 'push' or 'pull' factors (Davis, 2003; Brons, 2005; Saha and Bahal, 2010; Babatunde and Lelived, 2012).

Whereas 'push' factors are associated with unfavourable conditions within agriculture, 'pull' factors are linked with a conducive investment environment out of agriculture (Ellis, 2004). 'Push' factors include such conditions as limited risk bearing capacity, a degraded environment and diminishing land sizes. 'Pull' factors on the other hand include possession of skills, knowledge and the availability of attractive investment opportunities out of agriculture. This implies that the zeal to participate in non-farm activities is not only guided by risk, but also by the presence of viable opportunities. Research however suggests that the reasons for non-farm activity engagement go far beyond the conventional 'pull' and 'push' factors to other factors associated with long-term demographic and economic trends and policies (Ellis, 2004).

Ellis (1999) acknowledges that diversification experiences are context specific, implying that the factors that influence farmers' engagement into the RNF sector vary from region to another. Nevertheless, a review of existing literature on non-farm activities pinpoints some factors that significantly influence the extent to which households participate in non-farm activities. Some of these include: Level of household income, gender, level of education, skills and experience, age, availability of key assets/resources, access to physical markets. These factors revolve around the asset bases and institutional contexts provided for in the SLF. An examination of these factors thus pin points those areas where additional efforts need to be put so as to boost the non-farm sector.

2.6.1 Income and Non-farm Activity Engagement

Income plays an important role in facilitating participation into non-farm activities, especially for those activities that require substantial capital to start. Several studies have confirmed that a households' income level affects its participation in non-farm activities. Within the SLF, regular and reliable flows of income, including pensions and remittances are essential for livelihood formation (Kollmaire and Gamper, 2012).

In Rwanda, Reardon (1997) found that those with the least income were least able to cover this deficiency through non-farm income activities because they were not able to meet the entry requirements for remunerative non-farm activities. Similarly, Barret *et.al*,(2001) found that high levels of non-farm income positively correlated with higher household welfare (measured in terms of income and nutrition) in Kenya, Tanzania, and Ethiopia. In a review of eighteen field studies, Reardon (1997) found a strong positive correlation between high household income and rural non-farm income. This implies that rural non-farm income is more important (in terms of returns) to higher income households. Income differentials have been noted to widen the gap between the poor and the well-off in their participation in non-farm activities. In Uganda, for instance, non-farm earnings (whose acquisition depends on the level of household income) are noted to have caused great income inequalities (Barret *et.al*, 2001). It has been noted that rural non-farm incomes tend to bring about inequalities in places where there is shortage of labor intensive activities with low entry barriers (Reardon, 1997).

2.6.2 Gender and Non-farm Activity Engagement

Gender relations are usually shaped during the socialization process. Within the SLF, the construction of gender roles and associated beliefs falls within the transforming structures and processes element (Kollmaire and Gamper, 2012). As such, Gender considerably determines access to various livelihood assets and consequently shapes the vulnerability contexts of men and women (ibid). Womens' participation in non-farm income generating activities has been viewed as important. Gordon and Craig (2001) note that womens' participation in non-farm employment strengthens their decision making power through enhanced incomes, reduces family size and improves child nutrition and education. Despite these benefits, women have for long been constrained in the activities they are permitted or able to undertake by tradition, religion or other social mores.

Considerable differences between men and women in non-farm activity engagement have been noted. Gordon and Craig (2001) for instance attribute the dominance of women in the informal sector to differential access to education, child care responsibilities and social expectations on their part. In Uganda, Smith *et. al*, (2001) identified men as the most active beneficiaries in both the range and number of activities undertaken. They also found a difference in the nature of activities pursued by men and women, with the former taking up non-traditional higher income generating activities as opposed to the traditional activities (such as illicit brew making and handicraft making) dominated by women. There have been mixed findings regarding the levels of non-farm activity engagement between male headed households and female headed households. In Ethiopia, Demissie and Legesse (2013) found that male headed households were more able to participate in all non-farm

activities compared to female headed households. In some studies, however, female headed households were found to be more diversified in the range of activities undertaken compared to male headed households, confirming a conclusion reached by Field (2005) that single women with children were more likely to try out new income generating activities. This finding is consistent with that of Ackah (2013) who found that female headed households were more diversified in Ghana. Ridgers and Costa (2012) also found female headed households more likely to engage in non-farm activities in Ethiopia.

2.6.3 Non-farm activity Engagement and Educational Attainment

The human capital sub-component of the SLF entails people's skills and knowledge relevant to the utilization of other livelihood assets so as to achieve desired livelihood outcomes (Chambers and Conway, 1991, Ellis, 1999; Kollmaire and Gamper, 2012). Several studies document a strong positive association between access to education and the level of educational attainment on the one hand and participation in non-farm activities on the other (Ellis, 1999; Barret, Reardon and Webb, 2001; Dary and Kuunibe, 2012; Demissie and Legesse, 2013).

According to Gordon and Craig (2001), non-farm earnings tend to rise steadily with higher levels of income as the probability of being employed in regular salaried employment rises with advanced levels of education. The positive association between education and non-farm activity engagement can be explained by the fact that it (education) increases the skill levels of some non-farm activities and thus acts as an employment rationing device (ibid). Reardon (1997) notes about the power of education in increasing confidence as well as establishing useful networks required for non-farm activity establishment and success. This is especially made possible

when people migrate from their remote rural areas in pursuit of educational opportunities. Education influences attitudes, values and to information, which in turn gives educated persons a higher leverage to the command over non-farm employment as opposed to uneducated people (Islam, 1997).

It is noteworthy to stress the reinforcing effect education has on other factors that influence non-farm activity engagement. Gordon and Craig (2001) for instance note that educated household members are more likely to earn more non-farm income which they can use to educate other household members; who eventually become active in the non-farm sector. Non-educated members may also benefit from informed advice from their educated relatives and thus succeed in the non-farm sector. Reardon (1997) notes that better educated rural people have better access to any non-farm employment and are more likely to establish their own non-farm enterprises as opposed to their uneducated counterparts. Similarly, more educated rural dwellers are more likely to migrate and take up employment in other areas. Earnings from such employment may be invested in rural areas (such as education of household members) thus resulting into an intergenerational dominance of the rural non-farm sector by a subset of local educated families (ibid).

Skill development, just like education is an important requirement in the establishment and success of rural non-farm activities. In a study on womens' enterprises in Mozambique, Horn et al. (2000) found that women who had been trained on financial management succeeded in their enterprises than otherwise.

Education and skills are entry barriers to non-farm activities that have high remuneration. This implies that focusing on non-farm engagement without giving due attention to skill and educational attainment may not improve the situation of the poor.

2.6.4 Non-farm Activity Engagement and Age

Age is an element of human capital. Although not much has been discussed about the relationship between non-farm activities and age, it is important to know which non-farm activities are suitable for which age groups. In a study on livelihoods diversification in Uganda, young men as opposed to the aged were found to have more diversified livelihoods, in part because they were more receptive to new ideas unlike the older men, who dominated lower rewarding traditional activities (Smith *et al.*, 2001). In Ethiopia, Demissie and Legesse (2013) found the sex of household head to be significantly and negatively associated with engaging in sole wage, self-employment and multiple wage employment activities. According to this finding, supply of labour to sole and combined non-farm activities was higher for younger households than for older household heads. This implies that younger households depend more on non-farm activities than the households headed by older peoples, which mainly depend on agriculture. Entry barriers such as exposure to modern technology and information as well as networks established through social media could be important push factors for the aged in the non-farm sector (Demissie and Legesse, 2013).

2.6.5 Non-farm Activity Engagement and Access to Key Resources

The SLF identifies natural and physical resources (together with those discussed above) as essential determinants of the livelihood formation process. (Kollmaire and Gamper, 2012) Access to key resources (such as land, access to water bodies, markets) has been found to significantly influence participation in RNFAs. The poor, who often have little or no access to vital resources have been secluded from some of the most rewarding non-farm activities, especially those that require payment of rent,

licensing and taxation (Barret et.al, 2001). Other key resources that have been found to limit poor people's entry into non-farm activities include lack of credit facilities and lack of physical infrastructure, such as road networks (Smith *et. al*, 2001).

2.7 Linkages between Farm and Non-farm Activities

Literature on farm and non-farm livelihoods confirms a set of linkages between the two sectors. Until the 1960s, agriculture was viewed as the only credible engine for economic growth in rural areas (Haggblade *et.al*, 2007). Thus, the rural non-farm sector was seen as an inferior source of livelihood whose benefits largely remained insignificant (*ibid*). There has, however, been growing recognition that there are forward and backward linkages between the farm and non-farm sectors and thus the need to promote the two. This is contrary to the conventional view that investment in the non-farm sector would lead to reduced attention to agriculture, what Bryceson (1996) refers to as de-agranization.

Gordon and Craig (2001) identify some linkages between the farm and non-farm sectors. Specifically, they considers production and expenditure linkages between the two sectors. Production linkages can either be down ward or upward linkages, in which case, downward linkages are associated with the non-farm sector providing inputs for the agricultural sector. It has been noted that the non-farm sector significantly supports the farm sector through production of agricultural supplies such as fertilizers and machinery (Davis, 2003; Haggblade, Hazel, and Reardon, 2007). Upward linkages are realized when agricultural output is used as input in the non-farm sector (Gordon and Craig, 2001). Thus, the farm sector provides incentives for investment into the non-farm sector through generation of products that can be processed within the non-farm sector.

Linkages between the farm and non-farm sectors can be both adverse and beneficial. Ellis (1998) considers adverse competition between the farm and non-farm sector as detrimental to the farm sector, especially if such competition significantly withdraws labour and credit from agriculture. On the same note, Ruben and Van den Berg (2001) observes that high return non-farm activities often lead to concentration of resources in such activities, thus hampering the modernization and commercialization of agriculture.

The farm and non-farm sectors should be understood as mutually complementary and not necessarily as competing sectors. Policy makers should therefore strike a balance between the two sectors so as to foster rural development. Thus, it is of paramount importance to examine the linkages between the farm and non-farm sectors of an economy so as to promote an equitable growth of the two and consequently improve on human wellbeing.

2.8 The Rural Non-farm Sector and Poverty Alleviation

Non-farm activities have been recommended for poverty reduction in rural Africa, more especially in those areas which experience frequent and severe climatic and economic shocks (Barret *et.al*, 2001). The rural non-farm sector offers numerous benefits to households and the economy in general. Gordon and Craig (2001) pinpoint a range of such benefits. These include among others: Absorbing surplus labour in rural areas, offering more remunerative activities to supplement agricultural income, offering a coping mechanism during drought, and helping farm-based households to reduce risks. Rural non-farm activities can significantly improve food security, in the short term through purchase of food items (Ellis and Allison, 2004). However, research findings on the long term impacts of non-farm activity income on food

security are relatively few and inconclusive (Gordon and Craig, 2001). Ellis (1999) contends that non-farm activities ensure sustainability of rural livelihoods through increased resilience and flexibility among households, as well as increasing family income (for household use and asset improvement). They also have some potential environmental and gender benefits. Environmental benefits may be attained if the proceeds of the non-farm sector are used for undertaking environmental conservation measures. Similarly, gender benefits can be achieved if men and women have access to equitable diversification activities (ibid). Other scholars acknowledge the role of non-farm activities in reducing rural-urban migration, thus reducing the potential challenges of urban poverty and congestion in towns and cities (Ellis, 1997; Gordon and Craig 2001; Abudlaziz and Siddique, 2014).

Despite the aforementioned benefits, non-farm livelihood diversification has not been without adverse effects to rural welfare. Watson and van Binsbergen (2008) note that livelihood diversification into the non-farm sector has in part been responsible for environmental degradation. This has been the case when alternative activities are relatively profitable to undertake and environmental management is not prioritized to the extent that communities' sustainability is compromised through unsustainable utilization of the very resources that the society depends on for survival. Some of the activities that have led to serious environmental degradation include among others: charcoal burning, unscrupulous mining activities, and logging.

Non-farm activity engagement has also been responsible for gender and income differences in society, more especially if equitable access to these activities is not guaranteed to men and women as well as the well-off and the poor (Smith *et. al*, 2001). Participation in the non-farm sector has also been criticized for diverting

labour from agriculture to other activities, thus threatening food security by neglecting agriculture (Bryceson, 1996). This observation is contrasted by empirical study findings from Sub-Saharan Africa, which indicate that agricultural productivity per hectare rises steeply with increase in income (Ellis, 2004). Ellis and Freeman (2004) argue that agricultural production and non-farm engagement should be viewed as mutually reinforcing processes rather than exclusive activities.

The positive attributes of engaging in non-farm activities outweigh the demerits of the same venture. This suggests that non-farm activities should not be ignored in the fight against poverty in Africa, especially in ASAL areas where agricultural income must be supplemented.

2.9 A Theoretical Framework for Understanding Non-farm Activities and Poverty Alleviation

Over the years, there has been an increasing attention to rural poverty reduction. This has been due the understanding that overall poverty cannot be significantly reduced without a serious focus on rural poverty (Gordon and Craig, 2001). Donors and other development partners have in the last few decades adopted a rural poverty reduction approach that emphasises on reducing vulnerability, increasing resilience, and improving livelihood sustainability (ibid). Bryceson (1996) notes that a broad range of capital assets as well as a holistic analysis of multiple determinants of livelihood outcomes have become common in the analysis of rural poverty. The centrality of rural livelihoods in the development of rural economies has led to the adoption of frameworks for fostering rural development through enhanced rural livelihoods. Livelihood thinking dates back to the 1980s, and is associated with the Robert Chambers, who later developed the Sustainable Livelihood Framework (SLF) for the

DfID in 1997 (Kollamaire and Gamper, 2012). Other frameworks revolving around the livelihoods thinking have been developed by other organizations (Institute of Development Studies, Care international and the UNDP). The DfID sustainable livelihood framework has however been viewed as the most complete and representative of all available livelihood frameworks (Oduro *et.al*, 2015). Thus, this framework is used in this study to explain the linkage between non-farm activities (as a livelihood strategy) and poverty alleviation (as a desired outcome) following a household's engagement in the said activities.

The sustainable livelihood framework can be viewed as a way of organizing the complex issues surrounding poverty in rural settings (Harikrishnan and Krishna, 2015). This is so because it views people on the basis of their capabilities and vulnerability contexts and thus aiding in the formulation of relevant poverty reduction strategies.

The sustainable livelihood framework has four components: Livelihood assets, external environment, livelihood strategies and livelihood outcomes (DfID, 1997; Kollamair and Juli, 2002; Oduro *et.al*, 2015). Livelihood assets are the resources that individuals and households draw upon to build livelihoods. Five major type of assets have been identified: natural, physical, financial, human and social assets.

Natural assets encompass natural resources that can be consumed directly, sold or converted into consumables or merchantable products (Oduro *et.al*, 2015). Physical assets are man-made tangible assets that directly or otherwise contribute towards livelihoods. They include among other things: Roads, electricity, markets and buildings. Financial assets are all forms of financial resources and services used in the pursuit of livelihoods. They are such things as personal savings, loans from relatives,

friends and money lenders and credit and financial services from formal financial institutions. Human capital refers to the quality and quantity of labour available to households. This includes such things as education, vocational and managerial skills as well as the health status of a people. Finally, social capital is embodied in rules, norms, obligations, reciprocity and trust embedded in social structures, and institutional arrangements that help (or hinder) the construction of livelihoods.

The level of access as well the development of these five capital assets is a major determinant to non-farm activity establishments. Access may be constrained by non-availability of the said assets. Alternatively, it (access) may be impeded by legislative as well as cultural norms (DfID, 1997). The level of development of the said capital assets is similarly critical for the development of the non-farm sector. Poorly developed infrastructure (road networks, markets, electricity and others) constrains the ability of the poor to construct and maintain non-farm activities. Similarly, limited education and skill development as well as the absence of financial capital (and associated resources) may curtail the ability of the poor to engage in non-farm activities, even when opportunities for such ventures exist (Oduro et.al, 2015).

Livelihood strategies are the actions taken by individuals or households to improve upon or maintain their current wellbeing. These strategies are largely depended on the quality and variety of livelihood assets available (Harikrishnan and Krishna, 2015). Livelihood strategies in this study refer to the various non-farm activities pursued by rural households.

The external environment consists of threats, vulnerabilities and opportunities (Oduro et.al, 2015). As a result, households construct their livelihood strategies depending on the external environment available to them. Thus, a household whose wellbeing is

threatened by such vulnerabilities as climate change might be forced to undertake some livelihood activities out of the farm to cushion themselves.

Livelihood outcomes are the direct outcomes of livelihood strategies pursued by individuals and households (DfID, 2000). Examples of such outcomes include: Improved food security, increased income and increased ability to meet household needs. Poor livelihood outcomes can occur if households rely on a set of fragile and unbalanced livelihood assets (Harikrishnan and Krishna, 2015). As such, they may be unable to sustain shocks and vulnerabilities within their external environment.

Based on this framework, poor rural households, in the context of vulnerabilities (especially climate change) pursue various non-farm activities (livelihood strategies) so as to increase their adaptability. Such undertakings may lead to poverty alleviation if they are based on the right balance and quality of various livelihood assets. Similarly, rural households may pursue various non-farm activities due to available opportunities offered within their external environment.

2.10 Rural Poverty Alleviation Strategies in Kenya

The fight against poverty has been a top priority on Kenya's development policy agenda. A review of various policies shows the country's commitment towards poverty alleviation, from independence to date. Most of these strategies have heavily relied on the agricultural sector as the main route to poverty reduction, and thus given little attention to the development of the non-farm sector. Moreover, despite the mentioning of rural areas in most of the policies, there has been a generalized approach to poverty reduction which does not take into account the unique poverty experiences of rural populations.

At independence in 1963, the Kenya African National Union (KANU) manifesto spelled out the need to attain a just distribution of national income between different regions and between individuals (Republic of Kenya, 1963). The manifesto further envisaged a reduction of the burden of taxation among low income groups besides giving priority to rural development by raising agricultural and non-agricultural infrastructure (ibid). The manifesto was not without challenges in its capacity to address the poverty challenge. First, its poverty reduction strategy was centered on the assumption that economic growth benefits would trickle down to the poor, a strategy that has not guaranteed poverty reduction (Omiti *et.al*, 2002). Secondly, the manifesto failed to outline a clear strategy and framework for implementing poverty alleviation activities, which Nyamboga *et. al*, (2014) have labelled the genesis of weak poverty reduction policies.

In 1965, Sessional Paper Number 1 of 1965 was prepared. At its core, the paper recognized the need to fight diseases, ignorance and poverty as the core problems affecting the country at that time (Omiti et al. 2002). To achieve this end, the paper advocated for speedy growth of the economy, whose benefits would be redistributed so as to meet the basic needs of the citizenry. Just like the KANU manifesto, the policy did not achieve much, especially because the poor did not benefit from the proceeds of the economic growth. Thus, poverty levels continued to soar.

The 1970s witnessed the introduction of the basic needs approach to development through adoption of subsidies in service provision (Owino and Ombagi, 2000). In 1973, for instance, the government abolished fees in primary education, with a view to widening access to basic education, even for the poorest households. At the tertiary level, the government introduced a loan facility to enable poor students to finance university education. Similarly, health services were also subsidized. Despite the good

intentions behind these approaches, not much was achieved. This was largely attributable to the fact most of them were mere political decrees whose implementation was ineffective due to lack the legal as well the policy frameworks for supporting them (ibid).

Poverty alleviation efforts during the 1980s were largely informed by the Sessional Paper No. 4 on national food policy and decentralization of power to rural areas (Republic of Kenya, 1981). The sessional paper targeted increased agricultural productivity and self-sufficiency in food production. Decentralization on the other hand encompassed shifting planning and implementation of policies from the government to districts as was stipulated in the district focus for rural development (DFRD) in 1983. This shift was to stimulate the development of rural areas (which were largely poor) and to complement government efforts in problem identification, prioritization, resource mobilization and project implementation at local levels (Ng'ethe, 1986). The DFRD was largely hampered by poor coordination, limited funding on the part of the central government, and limited capacity to design and implement projects by districts. Moreover, the decentralized approach did not do much to change the colonial development strategy because the poor were largely excluded from mainstream development processes. Besides, very little efforts were made to empower the people by strengthening social and administrative structures below the district level, even though these structures were closer to the people (Omiti et al, 2002).

The implementation of Structural Adjustment Programs (SAPs) in the 1980s left many people poor, with prices of commodities escalating and well the cost of such services as education and healthcare through cost sharing. Sessional paper No. 1 of 1986 on Economic Management for Renewed Growth was in support of the SAPs as

it focused on reduced government spending on social services (Republic of Kenya, 1986). Similarly the policy document in an effort to correct the economic stagnation at that time also focused on promoting the private sector as well correcting restrictive foreign trade policies (ibid).

Following the implementation of SAPs, the plight of the poor worsened. Reduced government involvement in service provision in such sectors as education, healthcare, agricultural extension resulted in many sinking into poverty. Thus, it became necessary to cushion the vulnerable against further drifting into poverty. In 1994, the government launched the Social Dimensions of Development (SDD) to cushion the poor against the adverse effects of economic reforms undertaken in the 1980s (Republic of Kenya, 1995). The government's commitment to supporting the policy can be seen in the allocation of a proportion of the 1994/5 budget (Ksh.5.58 million) to the SDD program (ibid). Omiti *et. al*, (2002) note that this money was not only inadequate in handling the poverty burden but also misappropriated. Nevertheless, bulk of it went into clearing retrenchment check offs, paying schools and supplying medicine to hospitals, quite a large proportion went into non-poverty alleviation measures. However, it has been observed that money allocated for bursaries benefited the least affected by poverty (ibid). Thus, the SDD, like the previous policies did not do much to change the status as the poor, whose proportion continued to soar.

The National Poverty Eradication Plan (NPEP) (1999) was also drafted, mainly with the chief objective of halting the then increasing poverty incidence through implementation of well-planned poverty alleviation programs (Republic of Kenya, 1999). Following the failure of the previous poverty reduction efforts, the NPEP sought to bridge the gap between national development plans and addressing the needs of the poor. Specifically, this end would be realized through setting up a charter

for social integration, developing pro-poor policies, and improving access to services by the poor. By so doing, the NPEP envisaged a poverty reduction of 20% and 30% by 2004 and 2010 respectively. Other expected outcomes included increase in the enrollment as well as the completion rates, universal education attainment, improved access to healthcare for the rural poor as well as increasing access to safe drinking water (Omiti *et. al*, 2002).

Poverty reduction strategy papers (PRSPs) informed the policy framework on the fight against poverty in 2003, following donor pressure to provide an elaborate plan for poverty reduction (Nyamboga *et. al*, 2014). The document recognized the primary need for the country to attain a broad based sustainable improvement in the living standards for all, and the role of the government in spearheading this objective. Other important features of the document included: the recognition of the role of non-state actors in the fight against poverty, and the realization that growth alone is not a sufficient roadmap to poverty reduction. The document outlined four key areas essential for poverty reduction. These were: rapid economic growth rates, improved governance and security, the need for the poor to raise their incomes, and an improvement in the quality of life for all citizenry.

The Economic Recovery Strategy (ERS) was formulated (2003) to revive the economy (Republic of Kenya, 2003). This framework would guide the country's economic policy for a period of five years. Its main objective was to harmonize a strategy for accelerated growth with the county's poverty reduction strategies. Specifically, the ERS targeted the ASAL regions, as well as slum upgrading for accelerated growth and poverty reduction.

In 2008, Kenya began aligning her development planning priorities under the vision 2030. (Nyamboga et al, 2014). Vision 2030 seeks to transform the economy through rapid economic growth on a stable macro-economic environment, modernization of infrastructure as well as access to global markets. It also envisages improved access to quality education, health and job creation, especially for the unemployed youth. By so doing, the vision anticipates that a big proportion of the poor would be relieved from their burden of poverty.

Despite these efforts, the number of the poor has been on the increase over time. It is for instance estimated that the number of the poor in 1972 was 3.7 million, and increased to 11.5 million in 1994 and further soared to 12.5 million and 15 million in 1997 and 2000 respectively (Omiti et al., 2002). Similarly, the Kenya Institute for Public Policy Research and Analysis (KIPPRA) observes a similar trend, where the proportion of the poor increased from 48.8 % in 2007 to 50.8 % in before gaining a slight marginal decline to 49.8% in 2012 (KIPPRA, 2013). It can thus be concluded that high spending on poverty reduction programs over time has not reduced the numbers of the poor significantly.

The fight against poverty has been hampered by several factors, ranging from lack of political will to design and implement pro-poor policies. Nyamboga *et. al*, (2014) for instance observe that Kenya's Sessional Paper No. 1 of 1965 was mainly intended to silence KANU critics, thus partly explaining its non-implementation. Lack of seriousness as well as lack of authenticity on the part of many strategies hampered the poverty reduction agenda. Some were issued as mere pronouncements or decrees thus lacking both the legal as well as the financial backing to support them. Others, especially political manifestos were just mere public relations instruments to win votes (Omiti, et al, 2002). Weak institutional capabilities as well as exclusion of

institutions dealing with poverty reduction has also contributed significantly to the failure of the poverty reduction strategies.

From the foregoing, it is clear that the country did not take up an integrated approach to poverty reduction, especially in tackling rural poverty. Most of the strategies adopted mainly focused on the agricultural sector, whose productivity has been on the decline due to drought and other climate change related factors. A more balanced approach to poverty reduction that takes into account the vulnerabilities of the rural is thus much needed if rural poverty is to be reduced. Moreover, the inclusion of the non-farm sector into the rural poverty reduction equation would be a good strategy in building the adaption and resilience mechanisms of many poor households residing in ASAL regions.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Overview

This chapter describes the research area, research design, study population, sampling techniques, research instruments, validity and reliability of research instruments, and data analysis.

3.2 Study Area and Research Design

3.2.1 Description of the Study Area

This study was conducted in Kathonzweni sub-county, one of the ASAL regions in the eastern part of Kenya. The sub-county is located within the larger Makueni County; which in turn borders Kitui County to the east, TaitaTaveta County to the south, Kajiado County to the west and Machakos County to the north (Appendix 3). The sub-county lies between latitude 1° 35' and 3° 00' south and longitude 37° 10' and 38° 30' east (Republic of Kenya, 2009b). Therefore, the sub-county is located in the former south eastern province. The sub-county covers a total area of 880.7 square kilometres (Republic of Kenya, 2013).

3.2.2 Administrative Units

Kathonzweni sub-county is one of the nine sub-counties that form the larger Makueni County. The sub-county has four administrative divisions: Kathonzweni, Kithuki, Kitise and Mavindini. Each of these divisions is further divided into locations, each having two locations except Mavindini division; which has three locations. The locations are further divided into sub locations. There are 17 sub locations in Kathonzweni sub-county (Republic of Kenya, 2013). Politically, Kathonzweni Sub-County is made up of three wards, namely: Kathonzweni, Kitise/Kithuki, and Mavindini.

3.2.3 Biophysical Features

There are no major land formations in Kathonzweni Sub-county. Compared to the hilly areas in Makueni County (Mbooni and Kilungu) which rise to as high as 1900 metres above sea level, Kathonzweni is classified as a low lying area. Generally, the land lies slightly below 600 metres above sea level. At the southern part of the county are low lying grasslands, which receive low rainfall and have enormous potential for ranching.

The overall drainage pattern in the sub-county is from west to east. The Athi River is the only major perennial river, otherwise the area is characterised by a few streams. This makes the areas to have high levels of water scarcity especially during drought episodes. The soils are deep, well drained with a medium texture as well as having a low acidity. Generally, the soil has been classified as sandy and is suitable for horticulture (Republic of Kenya, 2001; Republic of Kenya, 2002)

3.2.4 Climate and Rainfall

Kathonzweni sub-county is characterised by extreme rainfall variability, and often, the region experiences extremely dry seasons. Variations in the onset of rainy seasons make food production unpredictable as many crops wither prematurely, rendering inhabitants food insecure. The sub-county experiences two rainy seasons. The long rain season peak in March/April while the short rain season peaks in November/December. A long dry period between June and October is usually experienced, while a short dry season occurs between January and February. Compared to the hilly regions of Makueni county (Mbooni and Kilungu), Kathonzweni sub-county receives relatively low amounts of rainfall which falls between 300 to 400 mm per year. Livelihood sustenance is further complicated by the fact that these rains are not only low but also unpredictable. The mean temperatures

range between 20.2 degrees and 24.6 degrees, although temperatures can rise as high as 35.8 degrees during drought episodes (Republic of Kenya, 2009). High temperatures cause high rates of evaporation, which diminishes the prospects for crop farming.

3.2.5 Demographic Characteristics

The sub-county, according to the 2009 population census had a population comprising 41,878 households. Generally, the county is sparsely populated having a population density of 110 persons per square kilometre. (Republic of Kenya, 2009). The population is generally youthful with those below 15 years accounting for 47% of the total population. Dependency ratio is high at 100:109 as majority population of the population below 15 years and that of the population above 64 years together account for 51.8% of the total population. Moreover, more than 50 percent of the economically active population is unemployed, making poverty severe for a vast majority of the households (Republic of Kenya, 2009a).Kathonzweni sub-county is predominantly composed of a rural population and has a population growth rate of 2.7 % per annum. (Republic of Kenya, 2011).

3.2.6 Socio-economic Characteristics

The sub-county is predominantly inhabited by the Kamba community who are agro-pastoralists whose staple food is maize. Other crops include beans, sorghum, and pigeon peas. On average, agriculture contributes 78% wage employment, and 8% of household income. However, depressed rains in the sub-county hardly sustains crop farming. Unfortunately, traditional crops which are drought tolerant have largely been abandoned. This means livestock rearing remains the common viable economic activity being undertaken by the people. The condition has negatively affected agriculture which is the main economic activity in the county. Thus, rural residents

heavily rely on relief food from the government and non-governmental organizations (Republic of Kenya, 2013).

Makueni county, and by extension Kathonzweni sub-county performs poorly on many socio-economic indicators. On the human development index (HDI) ranking, the region is at par with the national average of 0.56 (Population Action International, 2015). Poverty is rampant, with 64.1 % falling below the poverty line. Poverty in the sub-county manifest itself in such other socio-economic outcomes as poor nutrition, health, and education as well as lack of access to basic services. Majority of the population is employed in agricultural activities which is attributable to limited opportunities in commercial centres as well as in the public service (PAI, 2015). Limited livelihood options has driven rural residents to pursue environmentally unfriendly ventures, mainly charcoal burning and sand harvesting.

In terms of infrastructure, the sub-county is home to four commercial banks whose agents are spread across the relatively big market centres. Mobile banking has however enhanced money transfers, even in places where banking services are not available (Republic of Kenya, 2013). Most of the roads are classified as surface roads, which makes them impassable, especially during the rainy seasons (ibid)

3.2.7 Study Design

The study employed cross-sectional survey research design. According to Creswell (2005), a cross-sectional survey design is useful in collecting data about current trends, opinions, attitudes, and beliefs of a large population. The design is used to collect data at one point in time, as opposed to longitudinal surveys. This was therefore suitable for the study, given the big target population, the data to be collected and the time allocation for the research project.

3.3 Study Population

The study population comprised all households in the study area, whether participating in non-farm activities or otherwise. Child headed households were however excluded from the study. Based on available data from the local administration, there were 2640 households in Kathonzweni location, which were targeted by the study.

3.4 Sample Size Determination

The formula for getting the study sample was informed by Fisher et al. (1991):

$$n = z^2 pq / d^2$$

Where: n= desired sample size/minimal sample size

z= standard deviation of 1.96 which corresponds to 95 per cent

p= prevalence of characteristic being estimated

q= 1-p

d= acceptable error (precision) of +/- 0.05

Thus, $n = 1.96^2 \times 0.64 \times 0.36 / 0.05^2$

*p in this case corresponds to the poverty incidence of Makueni county (64 %)

Based on this formula, a sample size of 354 was derived. Since the population was less than 10,000, the following the next stage following Fisher et al (1991) involved the application of this formula:

$$n_s = \frac{n}{1 + (n/N)}$$

$$n_s = 354 / 1 + (354/2640)$$

Thus, the new sample size was 313 households

3.5 Sampling Techniques

Kathonzweni Sub-County has four administrative divisions: Kithuki, Kitise, Kathonzweni and Mavindini (Republic of Kenya, 2013). The study location was purposively sampled while a multistage sampling procedure was used to determine the study sample. In a multi-stage sampling procedure, a researcher progressively selects smaller areas until the individual members of the study sample are selected through a random procedure (Oso and Onen, 2009). First, the researcher selected Kathonzweni division through a simple random sampling procedure. In the second stage, the locations to be studied were stratified. Kathonzweni location has two sub-locations: Ituka and Thavu which have 1,011 and 1,629 households respectively. Finally, the researcher randomly selected the households which participated in the study from the two sub-locations. To determine the number of households to be studied per sub-location (strata), the probability proportional to size procedure (PPS) was used. In this procedure, the sample size for each stratum (sub-location) is obtained as follows:

$$k = n/N$$

Where: k is a constant

n is the sample size for each strata (sub-location)

N is the total population

Based on this formula, a sample size of 121 households from ThavuSub location and 192 households from Ituka Sub-location was derived.

To determine the specific households to participate in the study, the researcher obtained a list of all households from the local administration. A random sample was then generated using Microsoft Excel, and with the help of local administration, the

household numbers corresponding to the list of numbers generated by excel were identified.

3.6 Data Collection Instruments

The study made use of an interviewer administered semi-structured questionnaire developed by the researcher. Questionnaires were administered to household heads with the help of research assistants. The questionnaire was used to solicit information on personal details such as age, gender, and location of the respondents. It was also used to collect data on the various types of non-farm activities undertaken by the respondents as well as household income. Use of questionnaires was more suitable for this study because of its capacity to collect a lot of information over a short period of time and thus, cost effective. It also helped avoid bias and ease the process of data analysis since all questionnaires contained the same questions.

3.7 Reliability and Validity of Research Instruments

Reliability refers to the ability of individual scores from an instrument to be nearly the same or stable on repeated administrations of the instrument (Creswell, 2005; Mugenda and Mugenda, 2003). To ascertain the reliability of the study instruments, a pilot study was conducted in Kalawa Sub-county. In research, validity means that individual scores from an instrument make sense, are meaningful, and are able to make the researcher draw good conclusions from the study sample (Creswell, 2005). In other words, validity is the extent to which a research instrument measures what it is intended to measure (Darleen, 1997). To determine the validity in the current study, the research instruments were presented to experts in the school of Human resource Development at Moi University for content and face validation. Corrections and recommendations from the experts were used to perfect the research instruments.

3.8 Data Analysis Techniques

Data was analysed using Statistical Package for Social Scientists (SPSS) version 21. In this study, descriptive statistics included means and proportions. A Pearson correlation was used to determine the relationship between total household income and various types of income. A chi-square analysis was used to determine the association between engaging in non-farm activities and various factors. The tests were conducted at 0.05 significance level. Results were presented in tables and charts.

3.9 Ethical Issues

To ensure that that the study met ethical requirements, the researcher obtained permission from Moi University School of Human Resource Development to carry out the research (Appendix 5), The National Commission for Science Technology and Innovation (Appendix 6), and the Ministry of Education, Makueni County (Appendix 7). The researcher verbally obtained full consent of the participants and informed them of the purpose of the study. In addition to this, a cover letter explaining the ethical considerations of the study and an appeal for the respondents to participate voluntarily was attached to the questionnaire. This letter was read and interpreted to the respondents before any data was collected.

Identity of the participants was concealed as no participant was required to disclose his/her identity on the questionnaire. Questionnaires were assigned numbers, which were not in any way attached to the identity of respondents. Respondents were also assured of their safety in the handling of data. As such, confidentiality was kept and the research results were by no means used to jeopardize the status of the respondents in their society. The collected data was exclusively used for the purposes of this research.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Overview

This chapter focuses on the presentation, analysis and interpretation of data. To achieve this end, tables, proportions bar charts and pie charts as well as Pearson correlation and, chi-square analyses were used. A total of 271 questionnaires were filled, analysed and findings discussed based on the research objectives are presented hereunder:

4.2 Socio-Demographic Characteristics of Respondents

The study sample was drawn from the two sub locations of Kathonzweni Location, Ituka and Thavu respectively. More than half of the respondents (57.2%) were from Thavu sub-location while the rest (42.8%) were drawn from Ituka sub-location. More than two thirds of the households were headed by males, with almost a third (32.8%) of the households being headed by females.

The mean age for the respondents was 53 years, with a majority (42.4%) falling within the 40-59 years age bracket. Slightly more than one third (42.4%) of the respondents were above 60 years while the rest (23.24%) were relatively younger, being below 40 years. The highest educational attainment for a vast majority of the respondents (63.8%) was primary education; a fifth of the respondents (20.3 %) did not have any formal education. A relatively small proportion (13.3%) had attained secondary education and the remaining (2.6%) had acquired post-secondary education. On average, there were six members per household, with more than half

the respondents (57.2 %) having more than five members in their households and the remaining proportion (42.8%) having less than five household members.

Table 4.1. Socio-demographic characteristics of respondents

Characteristic (%)	Frequency (No.)	Percent
Sub-location		
Ituka	116	42.8
Thavu	155	57.2
Sex of household head		
Male	182	67.2
Female	89	32.8
Marital status		
Single	22	8.1
Married	167	61.6
Widowed	82	30.3
Educational level		
None	55	20.3
Primary	173	63.8
Secondary	36	13.3
Others	7	2.6
Age of household head		
<40 years	63	23.24
40-59	115	42.43
=>60 years	93	34.31
Household size		
<=5 members	116	42.8
>5 members	155	57.2

4.3 Poverty Incidence

The study employed income based relative line approach to determine the poverty level. In this approach, poverty is defined in terms of income distribution patterns in the study sample. Following the procedure given by Ravillion and Bidani (1994), the incomes of individual households were compared to the mean total annual household income, which was KES 121,971.11. A household was classified as poor if its income

fell below half of the mean income of all households in the study sample, which in this case was KES 60,986. Thus, the poverty incidence in the study area was 53 % with less than half (47%) the respondents living above the poverty line (Figure 4.1).

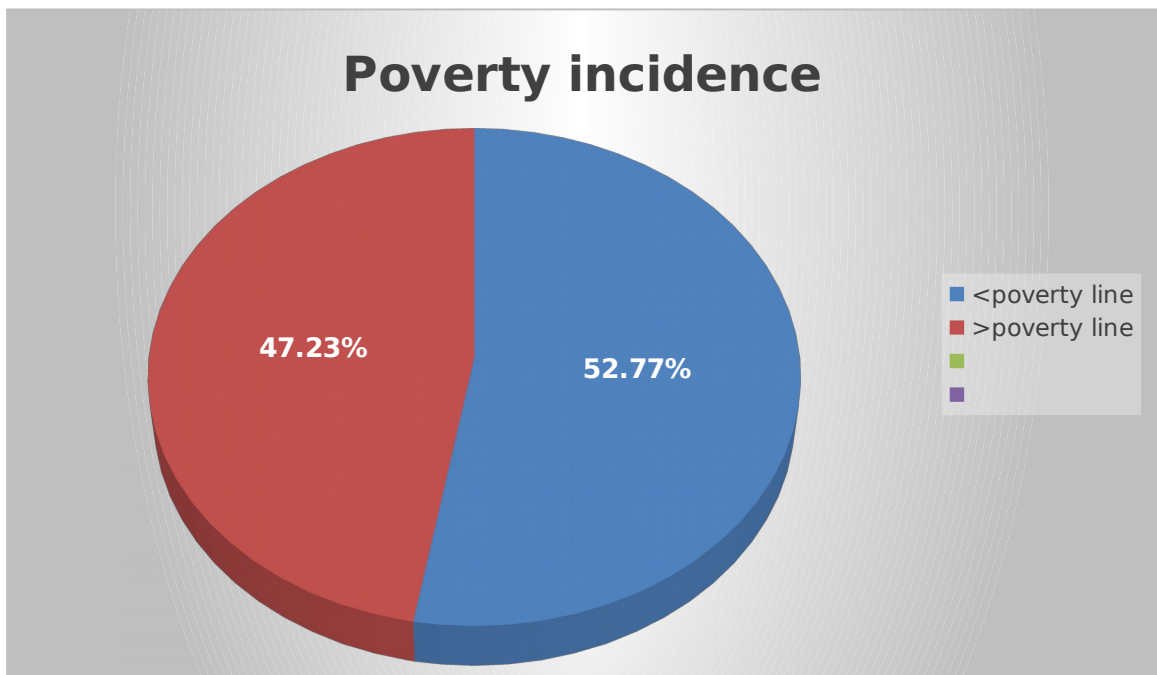


Figure 4.1: Poverty incidence in Kathonzweni Sub-County

This poverty incidence is slightly lower than the poverty level for the entire Makueni County (64.1 %) but way much higher than the national poverty incidence of 43 per cent (Republic of Kenya, 2010a).

4.4 An Evaluation of Non-farm Activities in Kathonzweni Sub-county

Non-farm activities were found to play a very important role in sustaining households through the provision of income. Two thirds of the respondents (67 %) were participating in non-farm activities, and the remaining (33%) were mainly relying on farm income for as shown in figure 4.2. Most of the non-farm activities were not highly remunerated besides being seasonal. This may explain an observed trend that

several households opted to have several non-farm activities that act as a coping strategy in the face of drought. Participation in non-farm activities is mainly driven by push factors as opposed to pull factors, which in part may account for the high poverty incidence in the area despite the high levels of participation into non-farm activities.

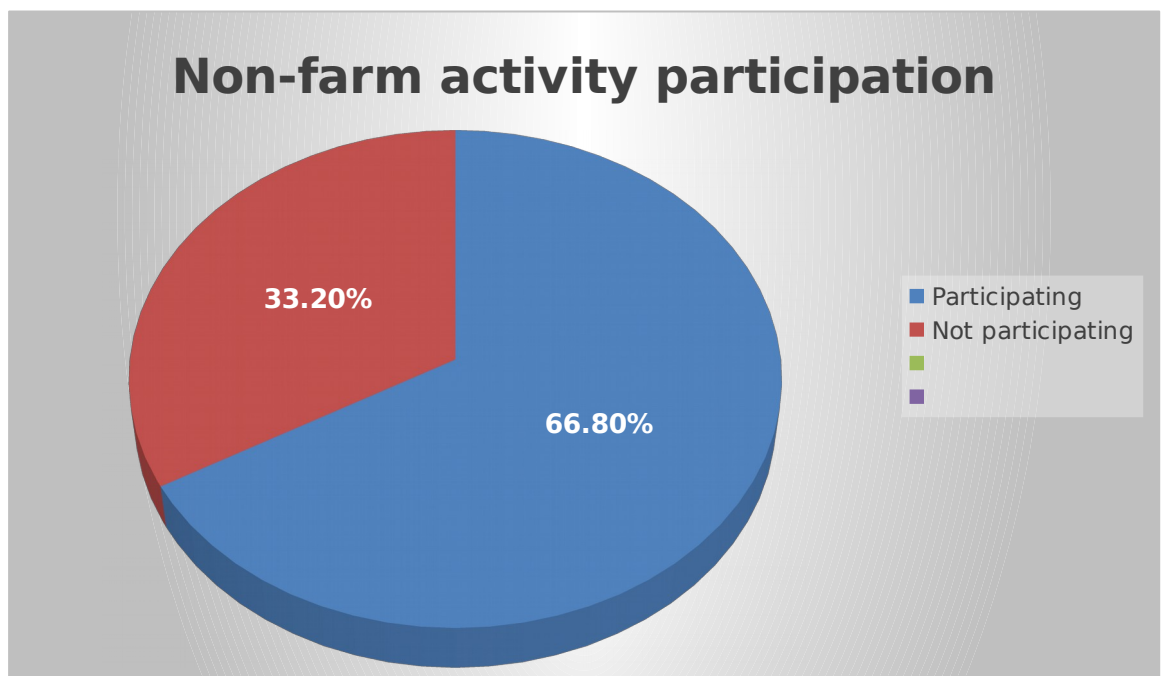


Figure 4.2: Participation in non-farm activities in Kathonzwani Sub-County

The most common types of non-farm activities included labouring in other's farms and homes, mainly as casual labourers (36.5 %), business ventures (22.7 %), with small scale retailing accounting for 20.4% of all business activities. Others were wholesale business and livestock trading accounting for 0.6 % and 1.7% of all business ventures respectively. Masonry and weaving represented a respective 11.0%

and 10.5% of the non-farm activities undertaken. Carpentry, brick making and quarrying as well as civil service were also common as shown in figure 4.3.

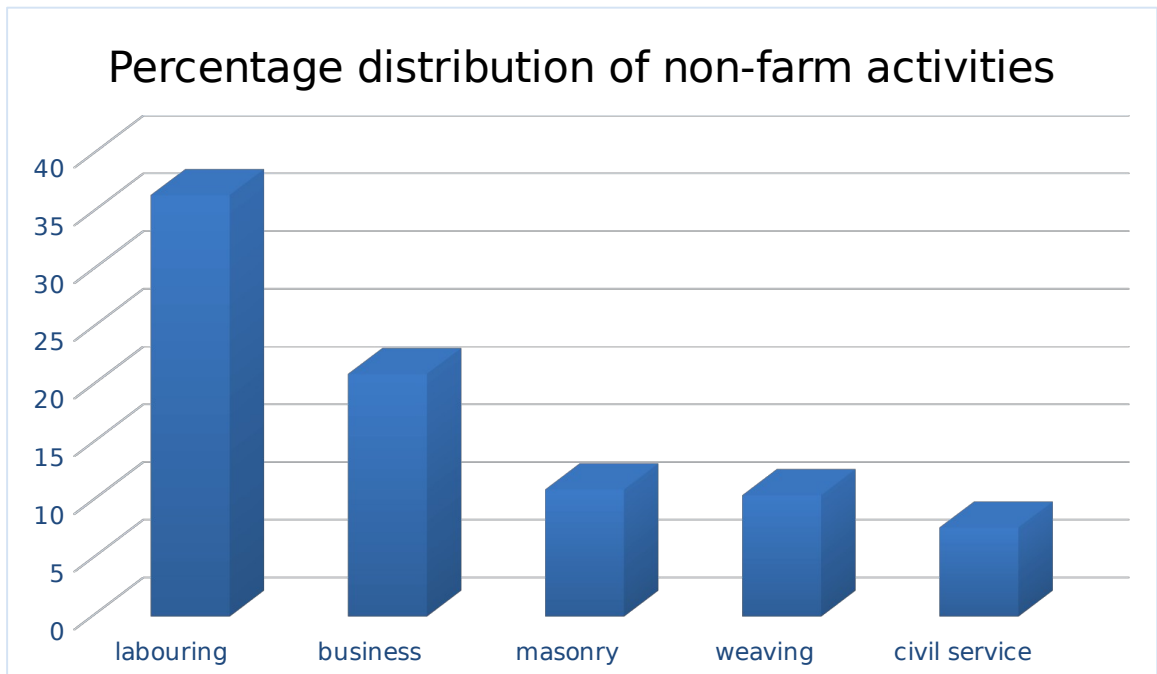


Figure 4.3. Percentage distribution of non-farm activities

The dominance of manual labour based activities in the study area is consistent with Mahabub's (2004) findings that manual labour based activities were dominant in Bangladesh. Moreover, the intensity of participation in these activities negatively correlated with the level of education of the workers were positively associated with poverty. In Ethiopia, Bezezew, Bewkel and Nicolau (2013) similarly found that quite a large proportion of the poor (more than 90 per cent) engaged in manual labour related activities. These findings explain the high level of poverty in the study area despite the fact that many households are engaging in non-farm activities which are mostly manual labour related. The prevalence of manual labour related activities is further affirmed by the fact that 20.3 per cent of the household heads studied had not

received any formal education. Similarly, 63.8 per cent of the household heads had only attained primary education as the highest level of education.



Plate 4.1: Rope making, a common non-farm activity in the study area

4.4.1 Distribution of Non-farm Activities by Gender

Male headed households had the highest level of participation in non-farm activities, accounting for three quarters (75.1%) of all participants in non-farm activities. Female headed households lagged behind, accounting for nearly a quarter (24.9%) of all households engaging in non-farm activities (see figure 4.4).

Distribution of non-farm activities by gender

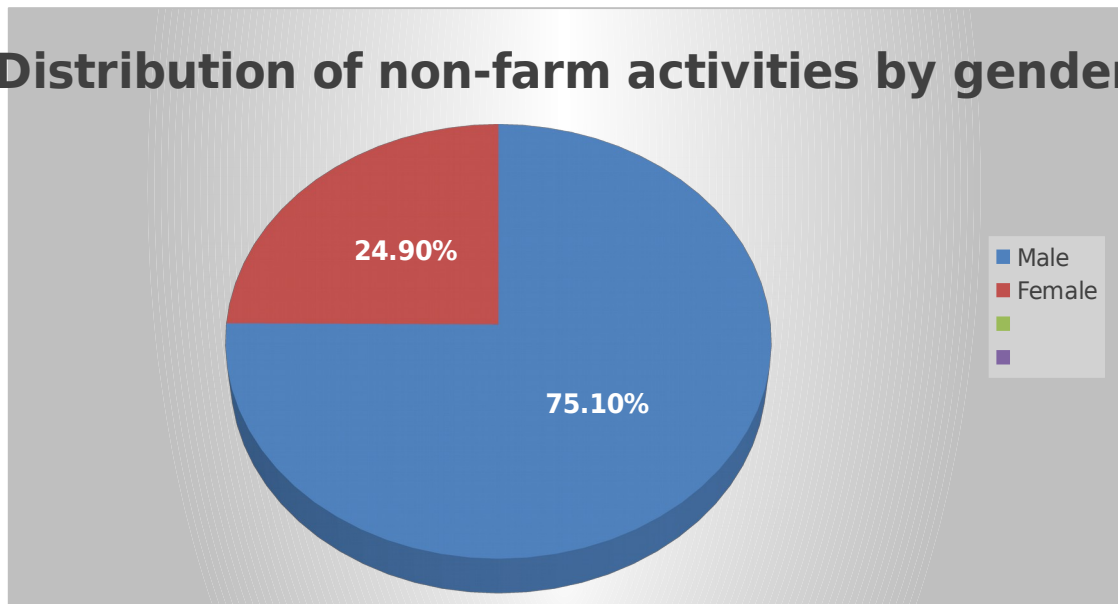


Figure 4.4: Distribution of non-farm activities by gender

This finding is consistent with Dary and Kuunibe's (2012) findings in Ghana as well as Demissie and Legesse's (2013) findings in Ethiopia. The two studies find male headed households are more diversified in terms of non-farm activity engagement as opposed to female headed households. This could be attributed to the historical differential access to education between men and women, in which case, women's education was not given priority. In fact, the current study found that 70 per cent of the respondents who did not have any formal education were women and that only 2 per cent of those who had acquired tertiary education were women. Even among the specific non-farm activities undertaken, there was a noticeable difference between male headed households' and female headed households' participation in non-farm activities. Male headed households denominated all non-farm activities as shown in figure 4.5.

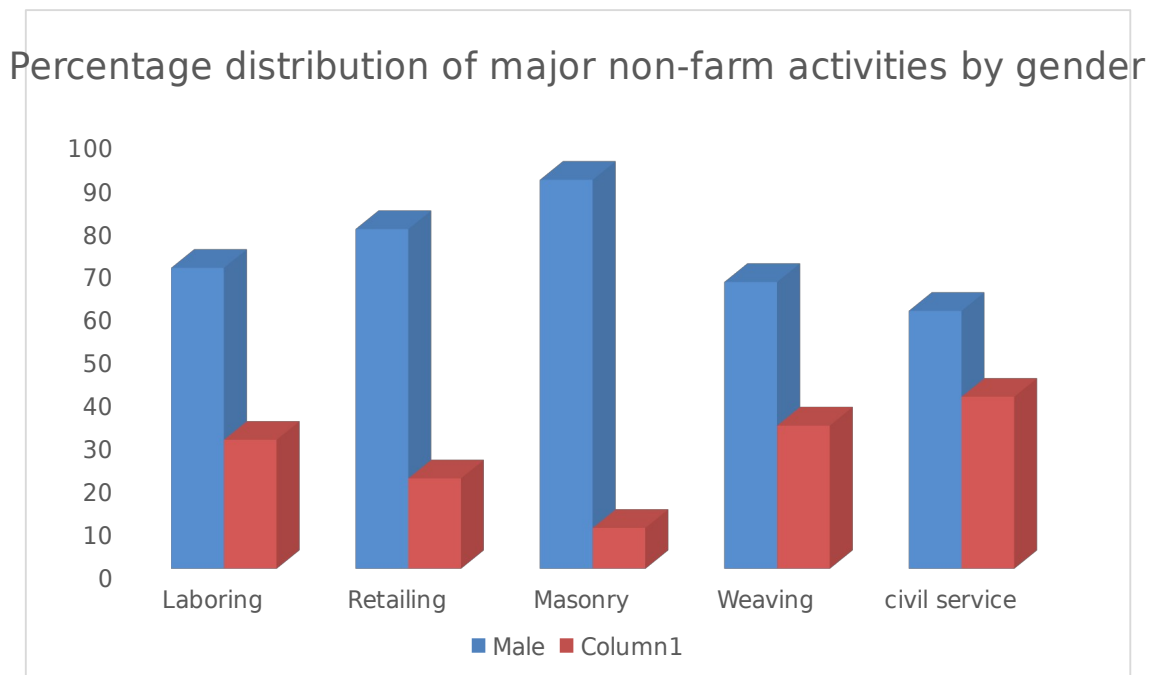


Figure 4.5: Percentage distribution of non-farm activities by gender

This finding could be explained by the fact that most of the activities are manual labour based. Based on existing gender norms and perceptions, these activities are mainly a preserve of males. The burden of child rearing as well as other household chores could also be contributing factors in the low participation of female headed households as they may not have partners with whom to share household tasks.

4.4.2 Distribution of Non-farm Activities by Educational Level

Nearly two thirds (63.8) of all household heads engaging in non-farm activities had primary education as the highest level of education. Slightly more than a fifth (20.2%) had not acquired any education, while only 13.2 and 2.5% of the participants had acquired secondary and tertiary education respectively as shown in figure 4.6.

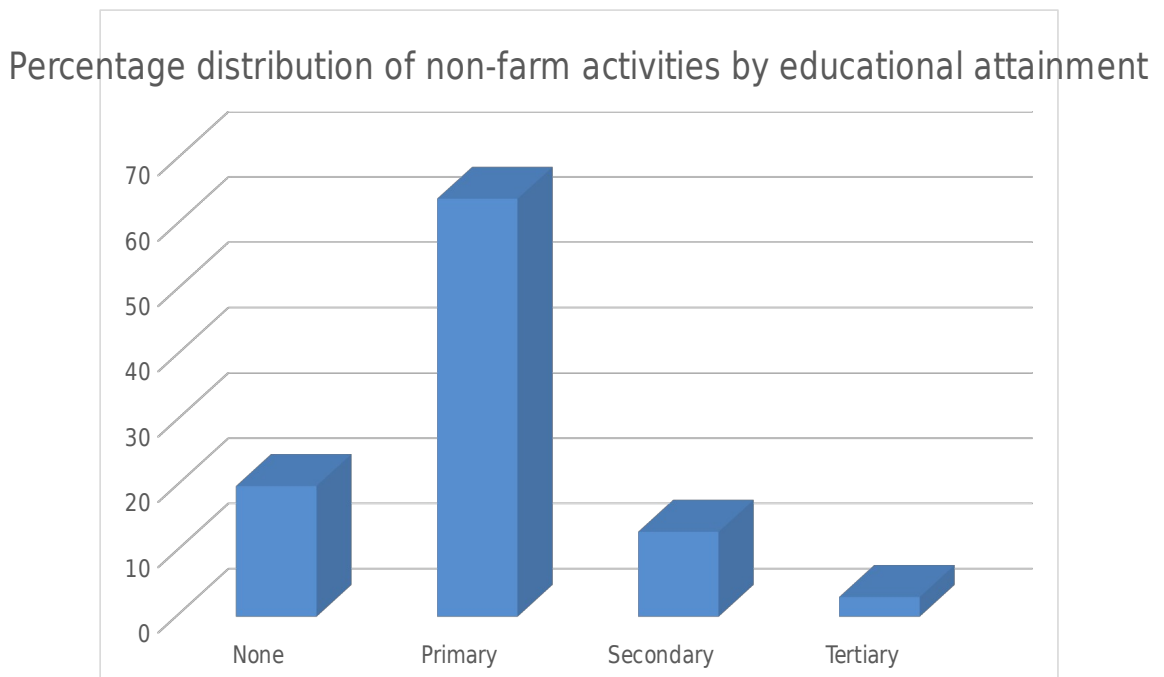


Figure 4.6: Percentage distribution of non-farm activities by educational attainment

In all major non-farm activities undertaken, the greatest number of participating household heads had attained primary education. This may be explained by the fact that most of the activities, especially casual labour, weaving and to some extent small scale retailing do not need formal education and training to start and maintain. On the contrary, tertiary education seems to be very important especially in the civil service. Several studies document the importance of education and training into the non-farm sector, citing higher levels of educational attainment and skill development as a prerequisite for highly remunerative activities. In Nepal, Ghimire, Huang and Shrestha (2014) found that the likelihood to participate in higher remunerative activities increases with increase in level of education. Demissie and Legesse (2013) found the educational level of household head to be significantly and negatively associated with non-farm wage employment in Ethiopia. On the contrary, they found the sex of household head to be significantly and positively associated with participation in sole self-employment and high return ventures (ibid). These findings are also reflected in

the current study. Based on the findings, labour based activities (casual labour, weaving and masonry) that do not necessarily need formal education and training had the highest number of participants had not attained any education or had the primary education as the highest level of education. On the contrary, the same activities (casual labour, Masonry and weaving) did not have any participant who had attained tertiary education (figure 4.7). Thus, limited education for most of the respondents restricts them to lowly remunerated non-farm activities.

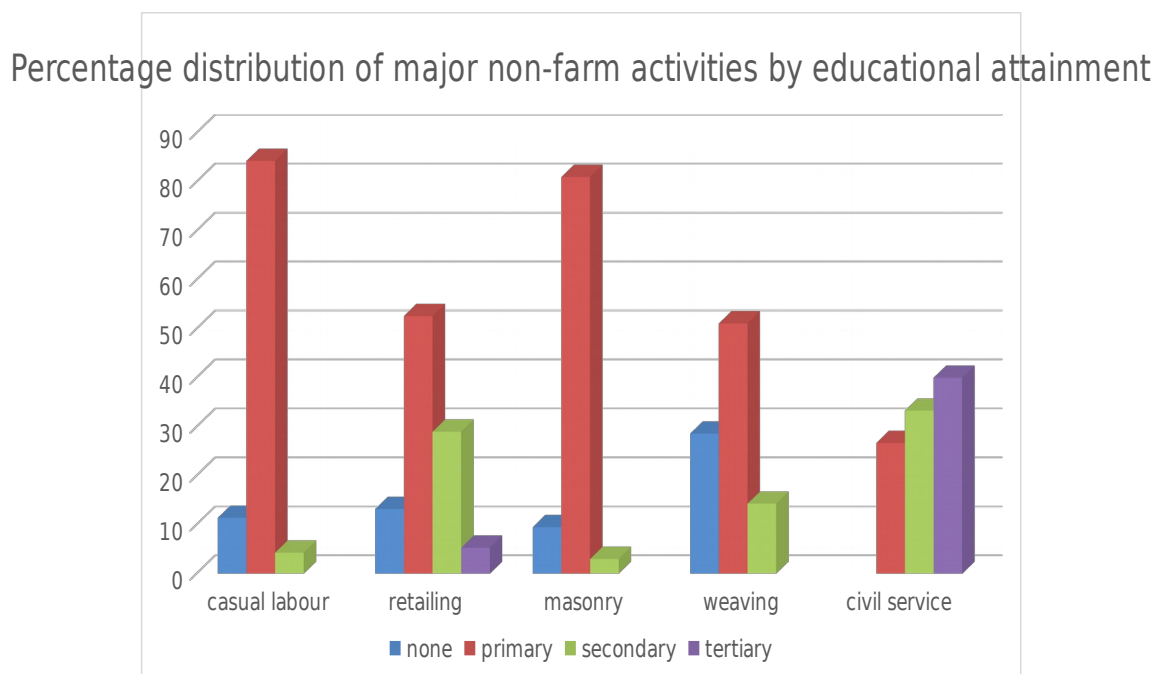


Figure 4.7: Distribution of non-farm activities by educational attainment.

4.4.3 Distribution of non-farm activities by marital status

Based on the findings, the married had the highest level of participation in every major non-farm activity (figure 4.8). Some studies find marital status a significant determinant to non-farm activity participation (Abdulai and Delgado 1999; Ellis, 1998). Households where both partners are present have a higher chance of

diversifying into the non-farm sector because of the ability to share household as well as farm tasks and thus have some time spend in the non-farm sector (Gordon and Craig, 2001). Similarly, where the two partners are economically productive, their combined incomes could be better spread to cater for non-farm enterprises. Persons who are not in a marriage union may not have as much chance to participate in non-farm enterprises, especially when confronted with the responsibilities of child rearing.

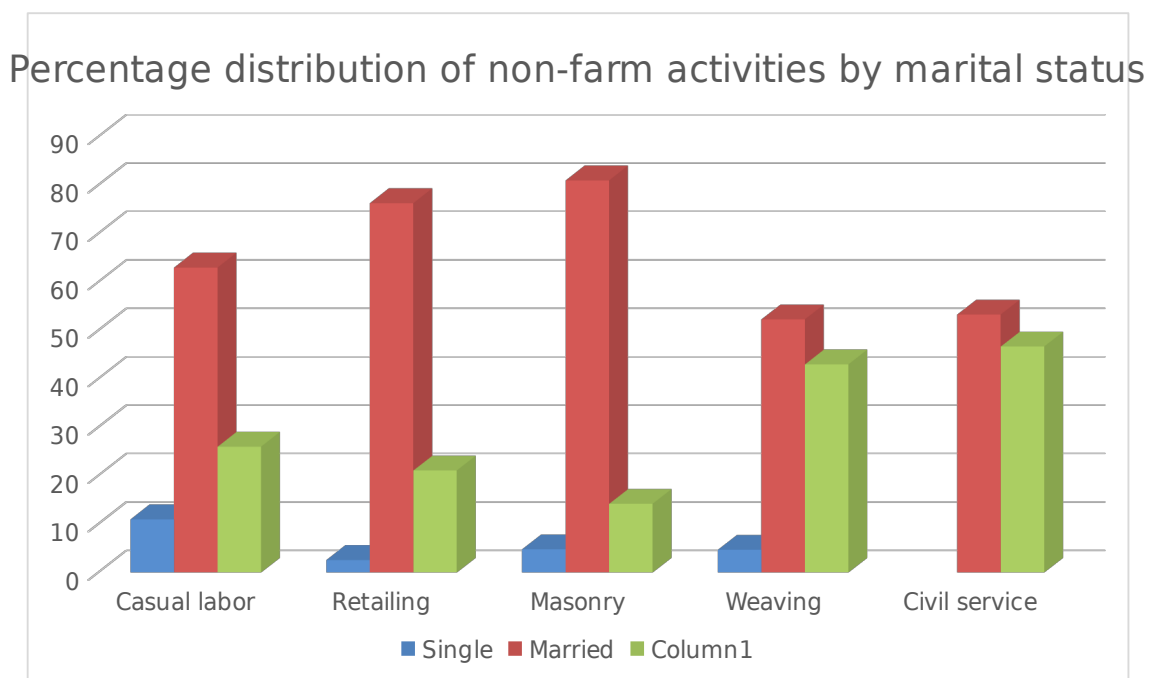


Figure 4.8: Distribution of non-farm activities by marital status

4.4.4. Distribution of Non-farm Activities by Age of Household Head

Several studies conclude that households headed by young people (below 40 years) are the most diversified (Ghimire et al., 2014; Nagler and Naude, 2014; Demissie and Legesse, 2013). The current study however finds that households headed by middle aged households are more diversified into the non-farm sector in every major activity except the civil service. This finding may be due to the unavailability and, or non-utilization of opportunities that favour the economic advancement of the youth related

enterprises. As such the youth may not have accumulated enough wealth to enable them participate in such activities as business enterprises that require large capital to start.

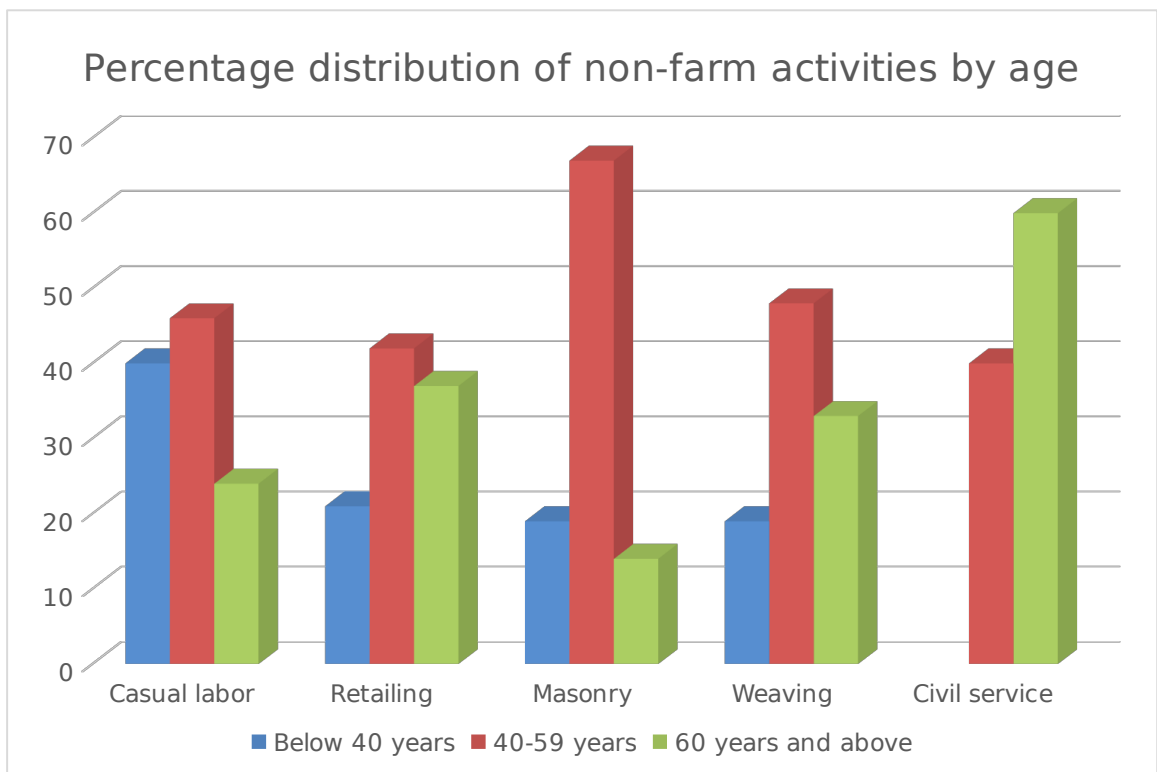


Figure 4.9: Distribution of non-farm activities by age

4.5 Factors Associated with Non-farm Activity Engagement

Participation in non-farm activities was significantly associated with several factors, which were categorized into social, human, financial, natural and physical factors (assets) as provided in the DFID sustainability framework (1997).

4.5.1: Human Factors

A chi-square analysis was conducted to find a relationship between engaging in non-farm activities and human factors which included sex of household head, the

household size, the level of education of the household head, and education and training in non-farm activities (Table 4.2).

Table 4.2: Human factors associated with non-farm activities engagement

Characteristic	Yes	No	Statistical Test
Sex of household head			
Male	136 (75.1%)	46 (51.1%)	$\chi^2=15.734$, 1df, p=0.000
Female	45 (24.9%)	44 (48.9%)	
Educational level			
None	23 (12.7%)	32 (35.6%)	$\chi^2=23.350$, 3df, p=0.000
Primary	123(68.0%)	50(55.6%)	
Secondary	28(15.5%)	8(8.9%)	
Post-secondary	7 (3.9%)	0 (0.0%)	
Education and training			
Yes	56(30.9%)	4(4.4%)	$\chi^2=223.915$, 2df, p=0.000
No	124(68.5%)	6(6.7%)	
Household size			
≤5 members	72(39.8%)	44(48.9%)	$\chi^2=211.508$, 2df, p=0.000
>5members	109(60.2%)	46(51.1%)	

From the analysis, all the human factors were found to be significantly ($p<0.05$) associated with engaging in non-farm activities

The sex of the household head significantly influences a households' decision to undertake non-farm activities. This finding is consistent with that of Gordon and Craig (2001) who found that married partners were better able to share household responsibilities and allocate time for non-farm activities. Similarly, having a larger family size not only provides additional labour for the non-farm sector but also strains the household resources, thus the need to supplement household income.

Household heads who had acquired some vocational training were more likely to engage in non-farm activities. This observation is attributed to the fact that training (formal or otherwise) equips individuals with specialist skills to engage in certain non-farm activities such as carpentry, tailoring, masonry and teaching among others. Such non-farm activities are often characterised by high entry barriers, because of the specialist skills required. Reardon et.al (1998) and Bryceson (1996) stress the importance of specialist skills in non-farm activity engagement.

Several studies document a strong positive association between the level of education and engaging in non-farm activities. Gordon and Craig (2001) found that the more educated a person, the more likely to he/she is to engage in non-farm activities. Similarly, deJanvy and Sadoluet (2001) pointed out education as a major determinant to participation in highly remunerative activities.

The current study has established an inverse relationship between the type of non-farm activity and level of educational attainment. The lower the level of education, the more a household is likely to participate in low paying activities. This finding is consistent with Meharia's finding (2002) that a strong positive association exists between traditional rural non-farm activities and low literacy. This implies that low levels of educational attainment encourage activity diversification into traditional low remunerative activities that may not require any specialist skills. This finding, therefore, corresponds to majority of the respondents (63.8%) had primary education as the highest level of education while slightly more than a quarter of the respondents (20.3%) had not acquired any education. Casual labouring in others' farms and households was the most common non-farm activity (25.8%). Weaving and brick making constituted 14.3% of all non-farm activities undertaken, while 14% of all business activities undertaken (15.8%) were small scale businesses that did not

necessarily require specialist skills to operate. This is contrasted to 5.5 % of non-farm activities in the civil service that mainly require specialised education and training.

4.5.2: Social Factors

A chi-square analysis performed to find the association between engaging in non-farm activities and several social factors. These included: marital status, support from friends and relatives, group membership and government support. From the analysis, all social factors were found to be significantly ($p < 0.05$) associated with engaging in non-farm activities as shown in table 4.3

Table 4.3: Social factors associated with non-farm activity engagement

Characteristic	Yes	No	Statistical Test
Marital status			
Single	16(8.8%)	6(6.7%)	$\chi^2=14.963$, 2df, p=0.001
Married	124(68.5%)	43(47.8%)	
Widowed	41(22.7%)	41 (45.6%)	
Support from friends			
Yes	87(48.5%)	6(6.7%)	$\chi^2=223.047$, 2df, p=0.000
No	92(51.1%)	4(4.4%)	
Group membership			
Yes	67(37.0%)	6(6.7%)	$\chi^2=228.545$, 2df, p=0.018
No	113(62.4%)	3(3.3%)	
Government support			
Yes	35(19.3%)	2(2.2%)	$\chi^2=227.912$.2df, p=0.000
No	145(80.1%)	7(7.8%)	

Household members received support in form of education, financial support and encouragement from their friends and relatives, which they felt was reason behind their participation in non-farm activities.

Formal and informal groups were found to play a role in the establishment and participation in non-farm activities. The most common groups were merry-go rounds and the 'food for assets group' organized by World Vision, Kenya, an international non-governmental organization operating in the region. The merry go rounds are voluntary informal associations where members meet and contribute money (and food stuff at times). The money contributed is essential not only in sustaining household needs but also establishing and maintaining non-farm activities such as businesses. The food for assets program on the other hand entails a grouping of several households from each village, who are deemed needy. These households jointly work in each other's farms and are given food in return. Group members acknowledged that working together lessened their household tasks and thus created more time to participate in non-farm activities.

Government support, especially education and training, influenced the establishment or operation of non-farm activities. Marital status was also found to significantly influence participation in non-farm activities

4.5.3 Financial Capital

A chi-square test was performed to find the association between several financial capital and non-farm activity engagement. The factors included having a stable and reliable income, existence of financial institutions, having a high remuneration and the total household income.

Table 4.4: Financial factors associated with engagement in non-farm activities

Characteristic	Yes	No	Statistical Test
Stable and reliable income			
Yes	43(23.8%)	1(1.1%)	$\chi^2=228.064$, 2df, p=0.000
No	137(75.7%)	8(8.9%)	
Financial institutions			
Yes	28(15.5%)	0(0.0%)	$\chi^2= 228.240$, 2df, p=0.000
No	152(84.8%)	9(10.0%)	
High remuneration			
Yes	25(13.9%)	1(1.1%)	$\chi^2=227.006$, 2df, p=0.000
No	154(85.6%)	8(8.9%)	
Household income			
<KES 60986	69(38.1%)	74(82.2%)	$\chi^2=46.907$, 1df, p=0.000
>=KES 60986	112(61.9%)	16(17.8%)	

All the financial factors were found to be significantly ($p < 0.05$) associated with non-farm activity engagement.

Having a stable and reliable income provides the requisite capital for starting or expanding non-farm activities household's decision to venture into non-farm activities. Similarly, the availability of financial institutions that readily offered required capital for non-farm ventures offered the much needed capital for non-farm activity establishment and expansion. Income is an entry requirement, especially for capital intensive and highly remunerative non-farm ventures. Having a relatively high remuneration and a household's total household income also allowed some members to participate in non-farm ventures, especially businesses.

4.5.4 Physical Capital

A chi-square analysis performed to find the association between physical factors and non-farm activity engagement found all the physical factors considered significantly

($p < 0.05$) associated with non-farm activity engagement. These were access to markets and transport infrastructure.

Table 4: Physical factors associated with non-farm activity engagement

Characteristic	Yes	No	Statistical Test
Ready market			
Yes	69(38.1%)	2(2.2%)	$\chi^2=228.098, 2df,$ $p=0.000$
No	111(61.3%)	7(7.8%)	
Transport and related infrastructure			
Yes	45(24.9%)	2(2.2%)	$\chi^2=227.911, 2df,$ $p=0.000$
No	135(74.6%)	7(7.8%)	

Availability of markets was particularly important for those involved in business ventures as these market centres where goods are sold. This finding is consistent with Dary and Kuunibe's findings (2012) in Ghana where they found out that people having access to urban markets were privy to more non-farm jobs. Similarly, other studies by Johansson (2005) and Abdulai and Delgado (1999) found an association between proximity to markets and viability of non-farm activities.

Households whose members engage in transport and related activities heavily rely on good transport networks for the sustenance of their non-farm activities. Similarly, those engaging in various business ventures also rely on transport infrastructure to deliver their good to various markets. The significant association found between transport infrastructure and engagement in non-farm activities confirms the role of infrastructure in facilitating non-farm activities (Smith et al, 2001). Although the road network in the study area is relatively poor (mainly dominated by earth roads), this finding may be attributed to the fact that household members do not necessarily travel long distances to render their services or sell their non-farm produce. The fact that the

study area is quite dry may mean that respondents may not have experienced the challenges of muddy roads that are characteristic of many humid rural areas.

4.5.5 Natural Capital

Existence of natural resources significantly influenced engagement in non-farm activities in the study area ($p=0.000$). Of importance was the existence of land, which supported many non-farm activities such as providing waged employment on farms and supported the transport industry as well as brick making. Other natural resources that supported the development and survival of the non-farm sector include the existence of sisal (for the small scale weaving industry), stones (for quarrying) and livestock, which supported livestock related business ventures.

4.6 Challenges Faced by Households Engaging in Non-farm Activities

Households engaging in non-farm activities seemed to face two major challenges: limited finances and limited education and training in non-farm activities as shown in fig.

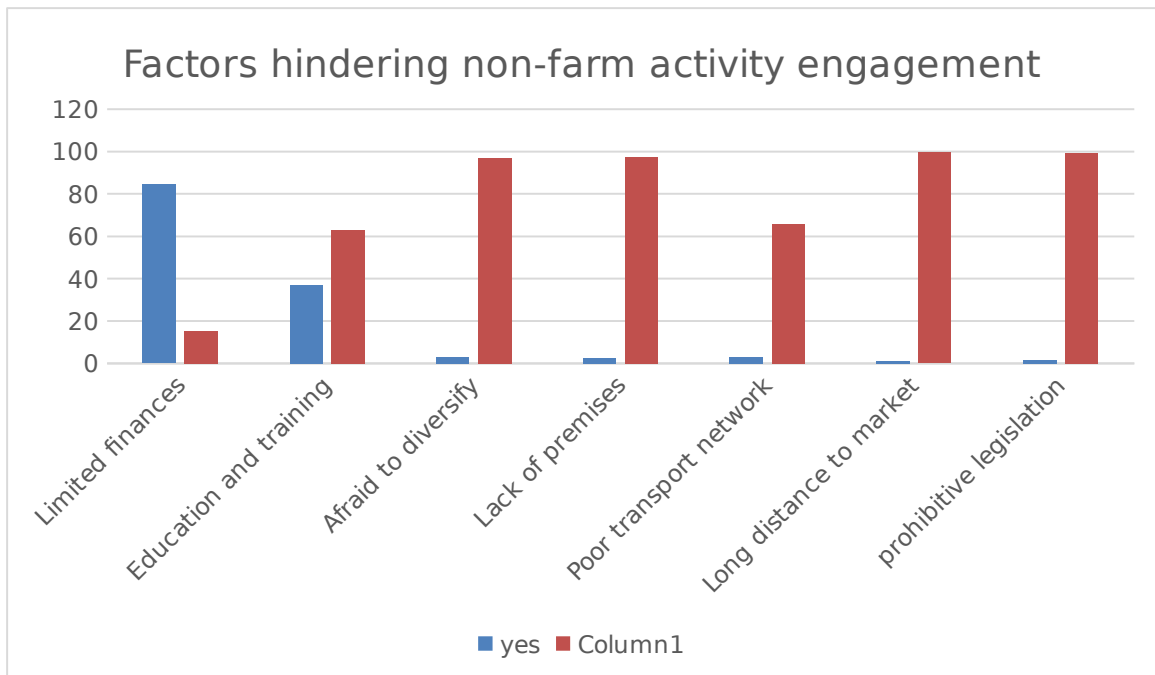


Figure 4.11: Factors hindering non-farm activity engagement

Limited finances could be a major challenge for a vast majority due to the high poverty rates in the study area. Besides most of the households engage in non-farm activities which do not guarantee high returns for re-investment into productive non-farm work. Education and training on the other hand may have affected those whose non-farm activities require some form of training. Since most of the respondents are engaged in manual labour which does not necessarily require any training, close to two thirds may not have found this factor a hindrance to their non-farm engagements.

Transport network may not be a hindrance to non-farm engagement, given that most of the activities are not undertaken very far away from one's households. The fact that the study area is relatively dry and that the soils are well drained may mean that respondents may not have experienced the challenges of muddy roads, even though most of the roads are not tarmacked.

Due to the scourge of climate change, respondents may not have any other choice but to diversify into the non-farm sector, however unproductive. This may be the reason

behind a vast majority indicating that they were not afraid to diversify. This is contrary to Readorn's (1999) observation that households may develop a deep attachment to the farm and even fear to diversify into the non-farm sector.

Given that non-farm activities that require premises (business enterprises) were not dominant, most respondents did not find the lack of premises a major problem in the establishment and development of on-farm activities. Similarly, long distance to the market as well as prohibitive legislation on some non-farm activities did not seem to be a hindrance for many. This could be explained by the dominance non-farm activities that may not necessarily require to travel long distances. Besides, market centres are not located far away from homesteads. Most of the non-farm produce generated by household members (especially handicrafts) may find ready market in nearby market centres or by the roadside. Others such as bricks can be easily collected by the buyer instead of being transport to the market.

4.7 Influence of Non-farm Activity Income on Poverty Reduction

Household income for the study sample was derived from farm, non-farm, and other income generating activities. Farm income included all income directly derived crops, animals and their products. Non- farm income included income derived from such ventures as business establishments, income from primary productive activities, which include among others: charcoal burning, brick making, quarrying and weaving. Other sources of income which could not be categorized as farm or non-farm but contributed to the total household income were also considered. Such include income from remittances, contributions from socio-economic groups, cash transfers (for households living with orphaned children) and pension.

The study made use of monthly incomes to estimate the total annual income from various sources. For farm income, seasonal incomes from both crop and animal produce were used.

As shown in Table 4.6, non-farm activities were the leading source of income (mean income KES 128,078), followed by farm income (mean income KES 29,031) and other sources of income (mean income KES 16, 479). Most of the respondents (N=232, 86.56%) derived their income from farm activities. Non-farm activities played an important role in providing household income as close to three quarters (N=189, 70.52%) derived their income from this source. Close to two thirds of the respondents (N=175, 65.30%) derived their income from ‘other’ sources of income.

Table 4.6: Average annual incomes from various sources

Type of income	N	Mean income
Non-farm income	189	128078.09
Farm income	232	29031.78
Income from other sources	175	16479.89
Overall mean income	268	121971.11

*N - number

Although the study findings show that most of the respondents draw their income from farm activities, non-farm activities generate the greatest amount of income to households. This finding could be attributed to the impacts of drought, which negatively affect the productivity of farm activities as opposed to non-farm activities.

The total annual household income for the study sample was KES 32,688,260. Non-farm income contributed immensely to the total household income, accounting for 71.6% of the total household income. Farm income accounted for 19.9% of the total household income while other sources of income, which included cash transfers,

remittances, contributions from socio-economic groups and pension accounted for 8.5% of the total household income (Figure 4.10).

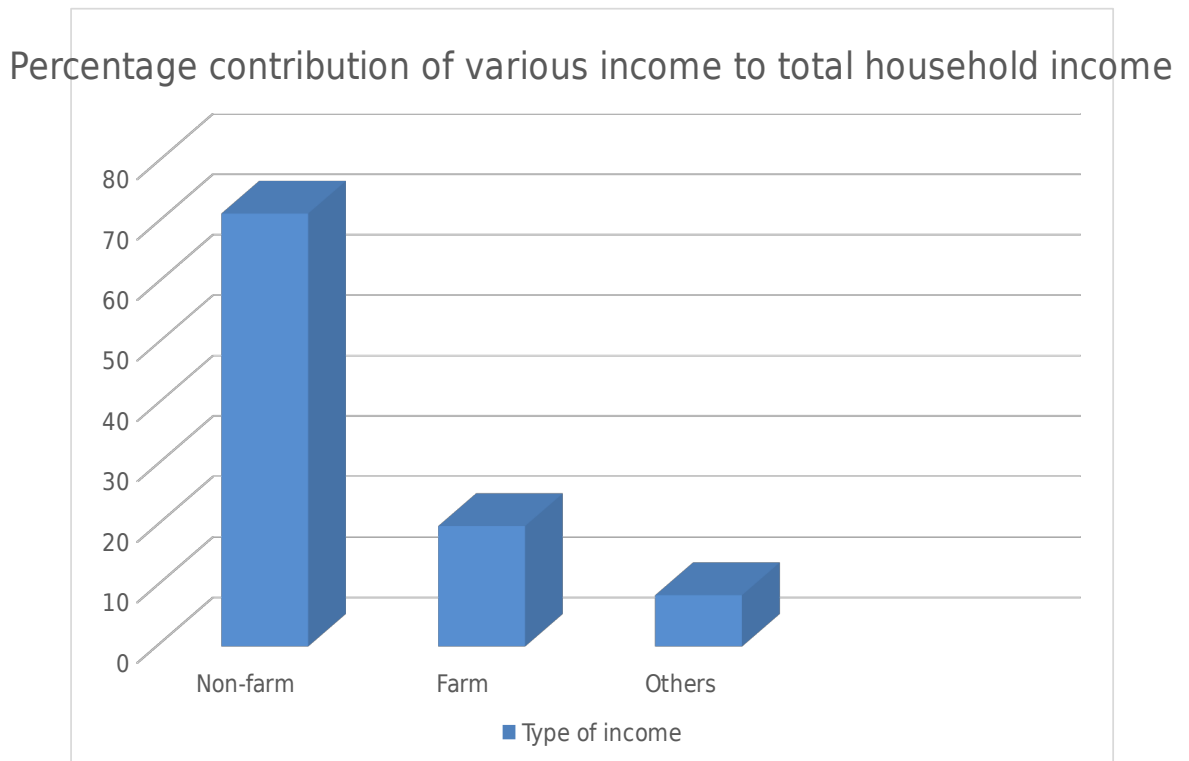


Figure 4.10: Percentage contribution of various income to total household income

A Pearson correlation (r) analysis between various types of income and the total household income found a significant correlation ($r = 0.873$, $p = 0.000$) between non-farm activity income and total household income. Similarly, a significant ($p < 0.05$) correlation was found between the total household income and farm income as well as with income from other sources of income (Table 4.3).

Table 4.7: Correlation between various types of income and total household income

Type of income value	r	p-
Non-farm activity income	0.873	0.000
Farm income	0.474	0.000
Income from other sources	0.171	0.024

These findings confirm the increasing importance of non-farm income in rural economies; which has been reported by Barret, Reardon and Webb (2001) who found that non-farm income accounted for 40-45% of total household income in several developing countries. Similarly, Ellis (2004) found out that non-farm income accounts for about 40-60% of the total income. Overreliance of non-farm income in Kathonzwi sub-county may be attributed to excesses of climate change, with many respondents having had no harvests in subsequent seasons. Plate 4.1 shows a farm with maize crop withering as a result of the unpredictable low rainfall in the study area.



Plate 4.1: Withering maize crop in the study area

4.7.1 Hypothesis Testing

The null hypothesis that presupposed that there was no significant relationship between non-farm activities and improved livelihood outcome was rejected on the basis of the correlation between non-farm income and various types of income. A Pearson moment correlation established a strong positive correlation ($r = 0.873$, $P = 0.000$) between non-farm activity income and total household income. This implies that non-farm activities are very important for households' total income, which in turn determines the level of wellbeing for the same households.

4.7.2 Effects of Non-farm Activity Income on Household Welfare

Non-farm income plays a major role in sustaining household welfare in the study area. Even though most of the non-farm activities are lowly remunerated and seasonal in nature, the significance of these ventures, especially for the rural poor, cannot be overemphasised. Over half of the respondents (60.9 %) reported having used non-

farm income to purchase food items. A relatively large proportion (42.1%) indicated that non-farm earnings were used to educate their household members while quite a small number (13.7%) indicated that non-farm earnings were used to enhance agriculture. Other uses (17.3%) mostly included building and construction, ploughing back non-farm income into business and contributions into welfare groups as shown in table 4.8

Table 4.8: Uses of non-farm income

Activity	Number (N)	
Percentage (%)		
Buying food	165	60.9
School fees	114	42.1
Farming	37	13.7
Others	47	17.3

These findings imply that non-farm income is very critical for household food security, as bulk of the income is used in the provision of food. Enhanced food security has some ripple effects on household productivity, which in turn enhances household income thus improving the overall household welfare through sustained provision on such basic needs as food, shelter, education and clothing (Reardon, 1997). Similarly, the immense support that the non-farm sector offers to the education of household members has great potential for poverty reduction. Education empowers household members with the requisite skills for participating in non-farm activities as well as serving as a key to more remunerative employment. Thus, just like improved food security, education raises household income through enhanced productivity.

Thus, from the study findings, highly remunerative non-farm activities were a preserve of those with higher levels of educational attainment (Figure 4.7) Non-farm activity engagement does not significantly contribute to agricultural expansion as a very small proportion (13.7 %) of respondents reported having used non-farm income to start or improve agricultural ventures. This finding seems to be in agreement with Bryceson's (1996) findings that concentration in non-farm activities could reduce attention to agricultural ventures. However, given the harsh economic and climatic conditions in the study area, households might not have found it very practicable to invest in agriculture.

Based on the study findings, it is clear that engagement in non-farm activities is largely a survival strategy as opposed to an accumulative strategy, where the intent is to make profits out of non-farm activities. Hussein and Nelson (1998) as well as Carswell (2000) associate such a trend with rural poor populations, who often have limited options for diversification due to limited skills and capital. Such households, as observed by Smith et al (2001) may be trapped into long term poverty, especially in the absence of long term adaption strategies.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1: Overview

This chapter presents a summary of the study findings, the conclusions drawn and recommendations to policy makers and researchers.

5.2 Summary of Findings

Majority of the households (67.2%) were headed by males. The greatest level of educational attainment for a vast majority of respondents (63.8%) was primary education. Slightly more than a fifth (20.3%) had not acquired any education while 13.3% and 2.6% of the respondents had acquired secondary and tertiary education respectively.

The mean annual household income was KES 121,971.11. Poverty incidence of the study area, as calculated using the income based poverty line approach was 53%. Thus, majority of the respondents live below the poverty line, with 47% living above the poverty line. This poverty incidence is way much above the national poverty incidence of 43% (Republic of Kenya, 2010a).

Households derived their income from farm, non-farm and other sources such as cash transfers, pensions and welfare groups, that could not be categorised as either farm or non-farm sources. Nearly two-thirds of the respondents (67%) were participating in non-farm activities. A vast majority of the respondents (86.56%) derived their income from farming, 70.52% from non-farm activities and 65.30% from other sources. Non-farm activities however had the greatest share of household income as 71.6% of household income was derived from this source. Only a small fraction of income (19.9%) was derived from farm activities while other income sources such as

pensions, cash transfers and welfare groups accounted for 8.5% of total household income.

A Pearson correlation between different types of income and total household income found a strong positive correlation ($r = 0.0873$, $p = 0.000$) between non-farm income and total household income. A positive correlation, albeit weaker, was found between farm income ($r = 0.474$, $p = 0.000$) other sources of income ($r = 0.171$, $p = 0.024$) and total household income.

The most common types of non-farm activities in the study area were: offering casual labour in other's farms/homesteads (25.5%), business ventures 15.8% (14 % of these were small scale business such as selling vegetables and operating small scale shops), masonry (7.7%) weaving (7.7%), brick making and quarrying (6.6%) and offering services in the civil service sector (5.5%). Others included charcoal burning, repairs and maintenance. Majority of these activities are low-return ventures and do not need specialized training, a fact that can be attributed to the low levels of education and training in the study area.

A chi-square analysis of the factors associated with non-farm activity engagement showed that non-farm activity engagement was significantly associated with several factors. Social factors such as marital status ($p=0.001$), support from friends and relatives ($p = 0.000$), belonging to a group ($p=0.000$), and availability of government support ($p = 0.000$) were found to be associated with engaging in non-farm activities. Financial factors found to be associated with engagement in non-farm activities include: the existence of financial institutions ($p = 0.000$), having a high remuneration ($p = 0.000$), having a stable and reliable income ($p = 0.000$) and the household's total household income ($p = 0.000$). Transport infrastructure ($p= 0.000$) and availability of

markets ($p= 0.000$) were also found to have a significant association with engaging in non-farm activities.

Income derived from non-farm activities was mainly used to cater for households' basic needs. Majority of the respondents (60.9%) used their non-farm income for buying food while 42.1% used this income to educate their household members. Only a small proportion (13.7%) used their non-farm income to support farming.

5.3 Conclusions

Non-farm activities play a very crucial role in the study area. Based on the study findings, close to three quarters (71.6%) of household income emanates from non-farm activities. Besides, the strong positive correlation ($r = 0.0873$, $p = 0.000$) found between non-farm activity income and total household income confirms the importance of non-farm activity income to rural households. Although farm activities also generate income for households, the share of income from this source is quite small, especially owing to the impacts of drought. Thus, it would be very difficult for rural households to survive without non-farm activity income.

It is also evident that the main reason behind engaging in non-farm activities in the study area is survival rather than wealth accumulation. This is supported by the fact that majority of the households spent their non-farm income on basic commodities especially food and education rather than investment in businesses or other more remunerative ventures.

Poverty is widespread, with 53% of the households studied living below the poverty line. The nature of non-farm activities undertaken is consistent with the low level of education and training, which consequently reinforces the poverty situation in the

study area. In the absence of other interventions, this trend is not likely to relieve the poor rural households of their poverty situation.

Although several factors are associated with engaging in non-farm activities, specialized training in non-farm activities is very critical for a vibrant non-farm sector in the study area. Physical infrastructure, especially road networks and markets is of equal importance.

Non-farm activity establishments in the study area do not seem to support agriculture immensely. Ecological and economic hardships in the study area may have made rural households not to invest their non-farm income in agriculture especially with the possibility of not gaining from such investments.

5.4 Recommendations

Rural non-farm activities play an essential role in cushioning rural households against excesses of climate change and economic hardships. To enhance the benefits derived from non-farm activity engagement, the following should be given prime consideration:

Reduction of entry barriers into the non-farm, especially offering training in various non-farm activities so as to improve on the earnings obtained from the non-farm sector. Since training in non-farm activities requires some level of education, there is also need enhance the levels of general education. This could be done through offering financial and other forms of help to support education and training of children from poor backgrounds.

There is need to sensitize residents, especially the youth and women on the availability of government funds that can work to their advantage in the establishment

of remunerative non-farm activities. This is an area that seems to be unexploited, especially with few respondents having used the same funds to start or enhance their non-farm activities.

The government and relevant non-state actors should create an enabling environment for the growth of the non-farm sector. Establishment of agro processing plants, especially fruit processing plant would go a long way in creating employment in the non-farm sector besides reinforcing farm and non-farm activity linkages.

Improving transport infrastructure should be considered, which would go a long way in increasing the non-farm activity engagement through improved access non-farm ventures, especially those can only be performed away from households.

Future research on non-farm activities could investigate the levels of inequality brought about by non-farm activity engagement especially given the fact that different non-farm activities yield different levels of income. Further, there is need to establish the most appropriate adaptation mechanisms to aid rural households in coping with the effects of climate change.

REFERENCES

- Abdulai, A. & Delgado, C. (1999). *Determinants of non-farm earnings of farm-based husbands and wives in northern Ghana*. American journal of agricultural economics. 81 (1)17-130
- Abdulaziz, S., Siddique, S. (2014). *Non-farm enterprises and poverty reduction amongst households in rural Nigeria: a propensity score matching approach*. Journal of humanities and social science 19(4) 57-61. Available online at www.iosrjournals.org
- Ackah, C. (2013). *Non-farm employment and income in rural Ghana*. Journal of international development, 25: 325-339
- Alkire, S., Roche, J. & Seth, S. (2013). *Multidimensional poverty index 2013*. Oxford: oxford poverty and human development institute. Available at www.ophi.org.uk
- Babatunde, R. & Lelived (2012). *On-farm and off-farm works: Complements or supplements? Evidence from rural Nigeria*. Ilorin: University of Ilorin
- Barret, C., & Swallow, B. "Dynamic poverty traps and rural livelihoods", in Ellis, F. & Freeman. (2005). *Rural livelihoods and poverty reduction policies*. London: Routledge
- Barrett, C., Reardon, T. & Webb, P. (2001). *Nonfarm Income Diversification and House- hold Livelihood Strategies in Rural Africa: Concepts, Dynamics, and Policy Implications*. Food Policy 26(4): 315-331.
- Bezezew, A., Bewkel, W., Nicolau, M (2013). *Rural household's livelihood assets, strategies and outcomes in drought prone areas of the Amhara Region, Ethiopia: a case study of Lay Gaint district*. African journal of agricultural research Vol 8 (46) pp 5716 – 5727. Available online at <http://www.academicjournals.org/AJAR>.
- Brons, J. (2005). *Activity Diversification in Rural Livelihoods. The Role of Farm Supplementary income in Burkina Faso*. PhD Thesis. Wageningen University.Netherlands
- Bryceson, D. (1996). *Deagrarianization and Rural Employment in Sub-Saharan Africa*: at: www.fao.org/es/esa/eJADE
- Carney, D. (1998). *Sustainable rural livelihoods*. London: Department for International
- Carswell, G. (2000). *Livelihood diversification in southern Ethiopia*. IDS working paper 117: Brighton: IDS

- Chambers, R. & Conway, G (1991). *Sustainable rural livelihoods: practical concepts for the 21st century*. IDS discussion paper 296. Brighton: IDS
- Chambers, R. (2005). *Sustainable Livelihoods: Developments, reflections and the future*. Brighton: IDS
- Creswell, J. (2005). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. Ohio: Pearson Merrill Prentice Hall
- Danida (2010). *Kenya agricultural sector program support 2005-2010*. Nairobi: Danida
- Danida (2010). *Lessons learned report: Kenyan agricultural sector programme support*. Nairobi: Danida
- Darleen, D (1997). *Understanding educational research: an introduction*. New York. St. Martin's Press.
- Dary, S. & Kuunibe, N. (2012). *Participation in rural non-farm activities in Ghana*. American international journal of contemporary research. 2 (8)154-160.
- Davis, R. (2003). *The rural non-farm economy, livelihoods and their diversification: Issues and options*. New York: Natural resource Institute. Available online at <http://ssm.com/abstract=69182/>
- de Janvy, A., & Sodoulet, G. (2001). *Income strategies among rural households in Mexico: the role of off-farm activities*. Journal of world development vol 3 pp 477-480
- Demissie, A. & Legesse, B. (2013). *Determinants of income diversification among rural households: the case of small holder farmers Hararghre zone, Ethiopia*. Journal of development and development economics 5 (3) 120-128. Available online at <http://www.academicjournal.org/JDAE>
- DFID (1997). *Sustainable livelihoods guidance sheets*. Available online at: http://www.livelihoods.org/info_guidancesheets.html
- DFID (1999). *Sustainable Livelihoods Guidance Sheet*. Department for International Development (DfID), London.
- DfID (2000). *Sustainable Livelihoods Guidance Sheets*. Department for International Development. London
- Dotter, C. & Klasen, S. (2014). *The multi-dimensional poverty index: achievement, conceptual and empirical issues*.
- Ellis, F. & Allison, E. (2004). *Livelihood diversification and natural resources access*. Livelihood support program (LSP) working paper No. 9. Oxford: FAO

- Ellis, F. & Freeman, H. (Eds) (2005). *Rural livelihoods and poverty reduction policies*. London: Routledge
- Ellis, F. (1997). *Rural livelihoods and diversity in developing countries*. Oxford: Oxford University
- Ellis, F. (1998). *Household strategies in livelihood diversification*. Journal of Development Studies Vol. 1.
- Ellis, F. (1999). *Rural livelihood diversity in developing countries: evidence and policy implications*. Oxford: Oxford University Press
- Ellis, F. (2004). *Occupational diversification in developing countries and its implication for agricultural policy: programs of advisory and support to the DFID*. Norwich: DfID
- Ellis, F., & Biggs, S. (2005). *Evolving themes in rural development 1950s -2000s*
- Field, R. (2005). *Where there is no development agency: a manual for pastoralists and their promoters*. Kent: National Resources International (NRI)
- Fisher, A., Laing, J., Stoeckel, J., & Townsend, J. (1991). *Handbook for family planning operations research designs*. (2nded) the population council: New York
- FTF (2011). *Kenya: 2011-2015 Multi-year strategy*. Nairobi: the US Government Feed the Future initiative
- Ghamire, K., Shrestha, W. (2014). *Factors affecting non-farm income diversification among rural farm households in Central Nepal*. International Journal of Agricultural Management and Development. Available online at www.ijamd.com
- Gordon, A. & Craig, C. (2001). *Rural Non-farm Activities and Poverty Alleviation in Sub-Saharan Africa*. Policy Series 14. Chatham: Natural Resources Institute. Hampshire: New York
- Harikrishnan, U., & Krishna, S. (2015). *Promoting sustainable livelihoods and tribal community through handicrafts in Wayanad District India*. International Journal of Advanced Research Vol.3. Available online at: <http://www.journalijar.com>
- Hazell, P., Reardon, T., & Haggblade, S. (2007). *Transforming the rural non-farm economy*: Baltimore: John Hopkins university
- Horn, E., Silva, T., & Ara, S. (2000). *Gender-based market research: Nampula Province, Mozambique*. Final report to the United Nations capital Development Fund and World Relief

- Hussein, K. & Nelson, J. (1998). *Sustainable livelihood and livelihood diversification*. IDS working paper 69
- IFRC (2011). *Drought 2011: How Kenya responded*. Nairobi: IFRC
- Iiyama, M (2006). *Livelihoods diversification patterns among households and their implications on poverty and resource use*. Land-use Change Impacts and Dynamics (LUCID) Project Working Paper No. 51. Nairobi: ILRI
- INE (2006). *Poverty and its measurement: the range presentation of a range of methods to obtain measures of poverty*.
- Islam, N. (1997). *The non-farm sector and rural development: Food, Agriculture and Environment Discussion Paper No. 22*. Washington, D C: International Food Policy Research Institute.
- Johanson, E. (2002). *Rural non-farm employment as rural poverty exit path? Evidence from Peru*. Draft report. Sweden: Lund University
- Kartunnen, K. (2009). *Rural income generation and diversification: a case study in Eastern Zambia*. Lusaka: University of Helsinki
- Kibaara, B. et al. (2009). *Trends in Kenyan agricultural productivity 1997-2007*. Nairobi: Tegemeo Institute of Agricultural Policy Development.
- Kimenju, S & Tschirley, D. (2004). *Agriculture and livelihood diversification in Kenyan rural households: Agricultural productivity, competitiveness and rural poverty in Kenya*. Nairobi: Tegemeo Institute of Agricultural Policy Development
- KIPPRA (2013). *Kenya economic report 2013: Creating an enabling environment for stimulating investment for competitive and sustainable counties*. Nairobi: KIPPRA
- Kollmair, M., & Gamper, M. (2012). *The sustainable livelihoods approach: Input paper for the integrated trainings course of NCCR*.
- Lardechi, C., Saith, R., & Stewart, F. (2003). *Does it matter that we do not agree on the definition of poverty? A comparison of four approaches*. Journal of Oxford Development Studies. Vol 31(3). Oxford: Carfax
- Little P. (2001). *Income diversification among East African pastoralists*. PARIMA
- Madaki, J., & Adefila, O. (2014). *Contribution of rural non-farm economic activities to household income in Lere area, Kaduna state of Nigeria*. International Journal of Asian Social Sciences 4(5) 654-663
- Mahabub, H. (2004). *Rural non-farm economy in Bangladesh: A view from household surveys*. Centre for Policy and Dialogue. Paper No. 5.

- Mensah, E. (2012). "The sustainable livelihood framework: a reconstruction", in Gadhi, V.(ed) *The development review journal: beyond research*. Vol. 1. Nairobi: The Development Café
- Mokaka, D., & Marcus, K. (2005). *Poverty and vulnerability*. Bonn: Centre for Development Research
- Mugenda, O. & Mugenda, A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi, Kenya: African for Technology Studies (ACTS).
- Musembi, D (2005). *The use of indigenous knowledge among the Kamba community and implications on natural resource management and biodiversity conservation in Makueni district*. Kiboko: KARI
- Nagler, P. & Naude, W. (2014). *Non-farm entrepreneurship in rural Africa: patterns and determinants*. IZA discussion paper No. 8008
- Nelson, J (2000). *Makueni district profile: income diversification and farm investment 1989-1999*. Drylands Working Paper 10: Crewkem: Somerset
- Ng'ethe, H. (1986). " *Decentralization for Development: The Case of District Focus for Rural Development* ," A Paper Presented at the congress of the Organization of Social Science Research in Eastern Africa: Eldoret.
- Nyamboga, T., Nyamweya, B., Sisia, A., & Gongera, E. (2014). *The effectiveness of poverty reduction efforts in Kenya: An evaluation of Kenyan government's policy initiatives on poverty alleviation*. International Affairs Journal Vol 23. Available online at www.iiste.org
- Oduro, C., Adamty, R., & Kafui, O. (2015). *Urban growth and livelihoods transformation on the fringes of African cities: A case study of Accra*. Journal of environment and natural resources Vol 5. No 2. Available online at: <http://dx.doi.org/10.5339/envi>
- Omiti, J., Owino, W., Otieno, W. & Odundo, P. (2002). *Poverty reduction efforts in Kenya: Institutions, capacity and policy*; Discussion Paper No. 033/2002
- Onwumele, A. (2011). *The non-farm sector as a catalyst for poverty reduction in the Niger Delta, Nigeria*.
- Oso, D. & Onen, W. (2009). *A general guide to writing research proposals and reports*. Nairobi: The Jomo Kenyatta Foundation
- Owino, W. and O. Abagi. (2000). *Cost-Sharing in Education and Health*. Report of a Desk Study Commissioned by the Department for International Development (DFID): Nairobi.
- PAI (2015). *Population dynamics: environment and sustainable development in Makueni County*

- Poverty Reduction and Economic Management Unit (2012) *The drought and food crisis in the Horn of Africa: Impacts and proposed policy responses for Kenya*. Nairobi: The Poverty Reduction and Economic Management Unit.
- Ravallion, M, Bidani, B, (1994). *How robust is a poverty profile?* The World Bank Economic Review. 8(1):75-102
- Ravallion, M. (2011). *On multi-dimensional indices of poverty*. Policy research working paper 5580. Washington, D C: The World Bank. Available at <http://econ.worldbank.org>
- Reardon, T. (1997). *Using Evidence of Household Income Diversification to Inform Study of the Rural Nonfarm Labour Market in Africa*. World Development, Working Paper Number 25
- Republic of Kenya (1963). *Kenya African National Union (KANU) Manifesto*.
- Republic of Kenya (1965). *Sessional paper No. 1 of 1965 on African socialism and its application to planning in Kenya*. Nairobi: Government Printer
- Republic of Kenya (1981)..*Sessional Paper No. 4 of 1981 on National Food Policy*. Nairobi: Government Printer.
- Republic of Kenya (1986). *Sessional paper no.1 of 1986 on economic management for renewed growth*. Nairobi: Government Printer.
- Republic of Kenya (1998). *First Report on Poverty in Kenya. Vol. 1: Incidences and Depth of Poverty*. Nairobi: Ministry of Planning and National Development.
- Republic of Kenya (1999). *National Poverty Eradication Plan 1999-2015*. Nairobi: Department of Development Co-ordination.
- Republic of Kenya (2001). *Makueni district poverty reduction strategy paper report 2001-2004*. Nairobi: Government Printer
- Republic of Kenya (2001). *Poverty reduction strategy paper 2000-2003 Vols. I & II*. Nairobi: Government Printer
- Republic of Kenya (2002). *National development plan 2002-2008*. Nairobi: Government Printer
- Republic of Kenya (2007). *Arid lands resource management project (ALRMP) II: Makueni District*. Makueni: District Coordinating Unit
- Republic of Kenya (2007b). *Makueni district project annual report July 2006-June 2007*.Nairobi: ALRMAP II
- Republic of Kenya (2008). *Makueni district development plan 2008-2012*. Nairobi: Ministry of State for Development of Northern Kenya and other Arid Lands

- Republic of Kenya (2009 a). *Agricultural sector development strategy plan 2002-2008*. Nairobi: Government Printer
- Republic of Kenya (2009b). *Statistical abstract*, Nairobi: Government Printer
- Republic of Kenya (2010). *2009 Population and housing census results*. Nairobi: Government Printer.
- Republic of Kenya (2011). *Vision 2030 development strategy for Northern Kenya and other arid lands*. Nairobi: Government printer
- Republic of Kenya (2012). *Kenya's climate change action plan: national adaptation plan*. Nairobi: Government Printer
- Republic of Kenya (2013). *Makueni County integrated development plan 2013-2017*. Nairobi: Government Printer.
- Rijkers, B. & Costa, R. (2012). *Gender and rural non-farm entrepreneurship*. World development 40: 2411-2426.
- Rumbewa, S. (2005). *Poverty in three villages in Papua*: doctoral thesis
- Saha, B. & Bahal, R. (2010). *Livelihood diversification pursued by farmers in West Bengal*. Indian Resource Journal 10 (2) 2010
- Shepherd, A. (2014). *The chronic poverty report 2014-2015: the road to zero extreme poverty*. London: Overseas Development Institute
- Smith, D., Gordon, A., Meadows, K., & Zwick, K. (2001). *Livelihood diversification in Uganda: patterns and determinants diversification across two rural districts*. Kent: Elsevier Science
- Soja, E. (1968). *The Geography of modernization in Kenya: a spatial analysis of social, economic and political change*. New York: Syracuse University
- UNCTAD (2015). *the least developed countries report 2015: transforming rural economies*. New York: United Nations
- UNDP (2005). *Kenya national disaster profile*. Nairobi: UNDP
- UNDP (2014). *Human Development Report 2014: Sustaining human progress reducing vulnerabilities and building resilience*. New York: United Nations Development Programme
- UNISDR (2012). *Disaster reduction in Africa: a special issue on disaster risk reduction*. Nairobi: UNISDR
- Warren, P. (2002). *Livelihood diversification and enterprise development: an initial exploration of concepts and issues*. FAO

Watson, D. & Van Binsbergen, J. (2008). *Livelihood diversification opportunities for pastoralists in Turkana, Kenya*. ILRI Research Report 5. Nairobi: ILRI.
Available online at: www.cpd-bagladesh.org

World Bank (2015). *Global monitoring report: Ending poverty and sharing prosperity*. Washington, D C: The World Bank

APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

MUTUNGA EVERLYN

P.O BOX 2500, ELDORET

E-mail: evamu06@yahoo.com

Telephone: 0713-394340

Dear Respondent,

RE: NON-FARM ACTIVITIES AND POVERTY ALLEVIATION IN KATHONZWENI SUB-COUNTY

I am a Master of Science student at Moi University conducting a research on the above mentioned topic.

I would like to request you to participate in this study by answering all the questions. You will need around 30 minutes to answer all the questions. There are no wrong or right answers, just be as honest as possible.

The research is exclusively for academic purposes. Your answers will therefore be treated with utmost confidentiality. Please do not indicate your name anywhere in the questionnaire. You will not be identified or mentioned in any report.

I highly appreciate your valuable help in giving your opinion which will be useful in making the research beneficial to the enhancement of rural livelihoods,

Sincerely yours

Mutunga, EverlynVaati

Moi University, Student Registration No: SHRD/PGD/07/11

APPENDIX2: HOUSEHOLD SURVEY QUESTIONNAIRE

DATE OF INTERVIEW:

PART I: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

1. Name of location _____
2. Sex of household head: Male Female
3. Marital status:
 - a) Single
 - b) Married
 - c) Separated
 - d) Divorced
 - e) widowed
4. Educational level of household head
 - a) None
 - b) Primary
 - c) Secondary
 - d) Tertiary
 - e) Others (specify)-----
5. Age of household head (in years) _____
6. What is your household size? _____

PART II: NON-FARM ACTIVITIES

7. Is your household engaging in any non-farm activity? Yes____/ No____ if no, skip to question 16.
8. If participating, what type of non-farm activity does your household get involved in? Please indicate the year started and the income received.

(i) BUSINESS VENTURES

Type of activity	Year started	Income received per month	Profit earned
Wholesale business			
Retail business			
Livestock trading			
Others (specify)			
Net income from business ventures			

(ii) EXTRACTIVE ACTIVITIES

Type of activity	Year started	Income received per month
Brick making		
Wood carving		
Quarrying		
Charcoal burning		

Sand harvesting		
Weaving		
Others (specify)		
Total income from extractive activities		

(iii) SERVICE PROVISION

Activity	Year started	Income earned per month
Masonry		
Carpentry		
Repairs and maintenance		
Civil servant		
Labouring in others farms/households		
Others (specify)		
Total income from service provision		

(iv) OTHER SOURCES OF INCOME

Activity	Income received
Remittances	
Cash transfers(for orphans and the elderly)	
Contribution from welfare groups	
Others	
Total	

Net income from non-farm activities _____

9. In the non-farm activity involved in, have you (or any of your household members) received any training? Yes _____/ No _____

10. If, yes in question 9. Above, (a) which type of training?

- i. Handicraft
- ii. Carpentry
- iii. Masonry
- iv. Business management/entrepreneurship
- v. Others (specify)

b) Who offered the training?

- i. The county government
- ii. The central government
- iii. Non-governmental organization (specify).....

iv. Others (specify)

11. When does your household (members) engage in the non-farm activity?

- a) All time of the year
- b) During the off-farming season
- c) After farming activities (in the evening)
- d) Others
 (specify)-----

12. Have you ever tried to get credit from any source so that you can start or improve your non-farm activities? Yes_____ / No_____. If no, skip to question

13. If yes, from which institution /source, indicate where the institution is located and whether you succeeded.

Source of funds	Location (within village or town)	Succeeded/ not succeeded
Bank		
SACCO		
Local group		
Friends/relatives		
Others (specify)		

14. On what activities do you spent the income earned from non-farm activities? (use the 1,2,3,4 to rank them in order of magnitude of spending:

- a) Farming activities
- b) Livestock farming
- c) Paying school fees
- d) Health
- e) Others
 (specify)-----

PART III: ENGAGEMENT IN NON-FARM ACTIVITIES

15. What factors motivated your household to engage in non-farm activities?

	yes	No
Education and training non-farm activities		
Having a network of supportive friends and relatives		
Being a member of a socio-economic group in your community		
Having a stable and reliable income to invest in non-farm activities		
Availability of government support such as training, grants etc		
Existence of financial institutions that readily offer financial capital		
Availability of a ready market for non-farm products		
Availability of supplies for the production of non-farm products		
High returns/remuneration associated with engaging in non-farm activities		
Availability of key natural resources such as land, water		
Availability of transport network and related infrastructure		
Others (specify)		

16. Indicate the factors that hinder your involvement in nonfarm activities by ticking appropriately

	yes	No
Limited finances		
Limited education and skills on non-farm activities		
Being afraid to risk or diversify from current activities		
Lack of premises to carry out non-farm activities		
Restrictive gender norms and roles		
Poor transport and communication network		

Long distance from market centre		
Existence of prohibitive legislation/policies (such as taxation)		
Others (specify)		

PART IV: FARM ACTIVITIES

CROP FARMING

CROPS	Kilograms harvested	Price/Kg	Income received
Maize			
Beans			
Sorghum			
Cowpeas			
Horticultural produce			
Others (specify)			
Total income from crop farming			

17. If your household is involved in agriculture, indicate the types, quantities and income received in the last one year from the items listed in the tables below where applicable

LIVESTOCK KEEPING

LIVESTOCK/LIVESTOCK PRODUCTS	Number (amount where applicable)	Income received
Cattle		
Sheep		
Goats		
Chicken		

Donkey		
Milk		
Eggs		
Others (specify)		
Total income from livestock and livestock products		
OTHER FARM ACTIVITIES	Units sold	Income received
Bee keeping		
Quills		
Others (specify)		
Total income		

18. On what activities do you spend the income earned from farm activities? (use the 1,2,3,4 to rank them in order of magnitude of spending:

- a). Farming activities
- b) Livestock farming
- c). Paying school fees
- d). Buying food
- e). Others

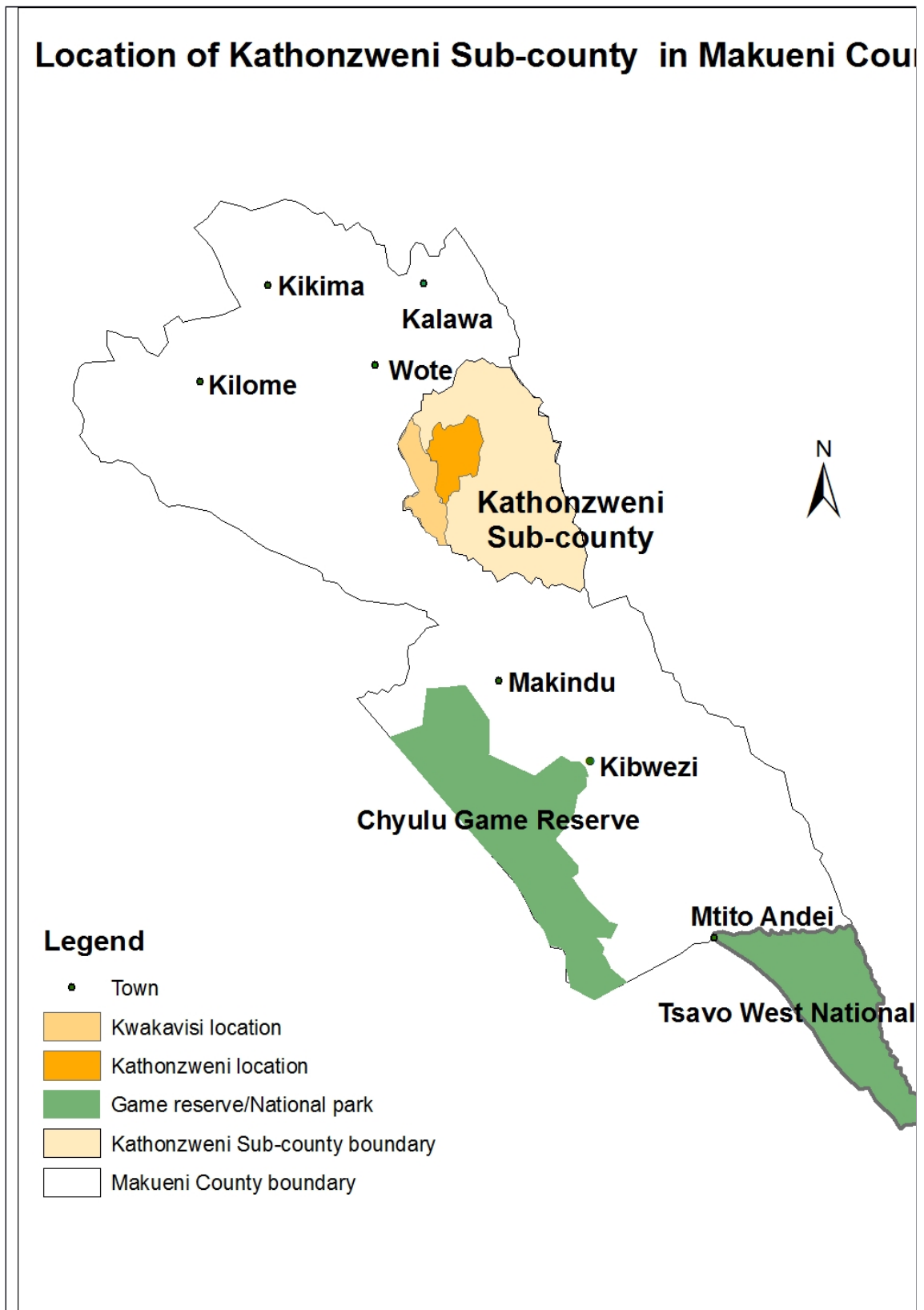
(specify)-----

Thank you for your valuable time and cooperation.

APPENDIX 3: MAP OF THE STUDY AREA



APPENDIX 4: MAP SHOWING LOCATION OF KATHONZWENI LOCATION



APPENDIX 5: LETTER FROM MOI UNIVERSITY



MOI UNIVERSITY
SCHOOL OF HUMAN RESOURCE DEVELOPMENT
DEANS OFFICE

P.O. Box 3900
ELDORET
KENYA.

Fax 254-053-43153/43620 Ext.434

REF: MU/SHRD/PG/77

17th September, 2014

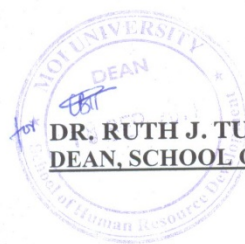
TO WHOM IT MAY CONCERN

RE: MUTUNGA EVERLYN VAATI – SHRD/PGD/07/11

The above named is an Msc. student at Moi University, School of Human Resource Development, Department of Development Studies. She has completed her coursework and successfully defended her proposal titled **“Non Farm Activities And Poverty Alleviation in Kathonzwi Sub – county , Kenya**

It is a requirement of her Msc. Studies that she conducts research and produces a Thesis. Having defended her proposal successfully, vaati has been cleared by my School to proceed to the field and collect data.

Any assistance accorded to her will be highly appreciated.




DR. RUTH J. TUBEY
DEAN, SCHOOL OF HUMAN RESOURCE DEVELOPMENT

APPENDIX 6: RESEARCH AUTHORIZATION FROM NATIONAL COMMISSION FOR SCIENCE TECHNOLOGY AND INNOVATION

THIS IS TO CERTIFY THAT:
MS. MUTUNGA EVERLYN VAATI
of MOI UNIVERSITY, 0-30100
ELDORET, has been permitted to conduct
research in Makueni County
on the topic: NON-FARM ACTIVITIES
AND POVERTY ALLEVIATION IN
KATHONZWE NI SUB-COUNTY, KENYA
for the period ending:
15th April, 2015

Permit No : NACOSTI/P/14/6283/3613
Date Of Issue : 23rd October, 2014
Fee Received :Ksh 1,000



(Signature)
Secretary
National Commission for Science,
Technology & Innovation

Applicant's Signature

APPENDIX 7: RESEARCH AUTHORIZATION FROM MAKUENI COUNTY

REPUBLIC OF KENYA

Tel: 044-33318
FAX: @gmail.com
Email:cdemakueni@gmail.com
When replying please quote



County Director of
Education Office,
P.O. Box 41,
MAKUENI.

MINISTRY OF EDUCATION

MKN/C/ED/5/33 VOL 1/30

3rd December 2014

Mutunga Everlyn Vaati
Moi University
P.O Box 3900-30100
Ekkoret

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION- MUTUNGA EVERLYN VAATI

This is to confirm to you that **Mutunga Everlyn Vaati of Moi University** has been authorized to conduct out a research as per letter dated 23rd October 2014 ref. no **NACOSTI/P/14/6283/3613** on **"Non -farm activities and poverty alleviation in Kathonzweni Sub County , Makueni County,"**

You are however expected to ensure that you conduct the exercise professionally.

Kindly give her all the assistance required.


GN Kimani
for County Director of Education
Makueni.



APPENDIX 8: PHOTOGRAPHS TAKEN DURING DATA COLLECTION



