

**DETERMINANTS OF ADOPTION OF EMERGENT LIVELIHOOD STRATEGIES
AMONG PASTORALISTS IN SOOK DIVISION, WEST POKOT COUNTY, KENYA**

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MOI UNIVERSITY

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DECLARATION

Declaration by the Student

I, the undersigned, declare that this thesis is my original work and has not been presented in any other university or institution for academic credit. No part of this thesis may be reproduced without the prior written permission of the author and/or Moi University.

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DEDICATION

To my dear wife Elizabeth and our children; Roy, Ezra, Joy and Jael. They always urged me on.

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ABSTRACT

Pastoralism evolved as a response to two factors; medium human population densities and the presence of extensive rangelands. This is however no longer the case because of the increase in both human and livestock populations. Encroachment into rangelands coupled with persistent droughts has meant that traditional pastoralism is no longer tenable. In order to survive, the pastoralists have to adapt to these changes by moving into emergent livelihood strategies. The Pokots in particular have for many years over relied on traditional pastoralism and have remained in abject poverty. This is despite immense natural resource endowment in their area of habitation. Many reasons have been given for this state of abject poverty, including failure by the community to adapt to changes in their environment by embracing emergent livelihood strategies. Based on this scenario, this study investigated determinants of adoption of these emergent livelihood strategies among pastoralists in Sook Division, West Pokot County and proposed means of enhancing their adoption. The study therefore aimed at achieving the following objectives: to find out how new technologies are contributing to adoption of emergent livelihood strategies; to assess how change in weather patterns has brought about emergent livelihood strategies; to examine the role of non state actors in the adoption of emergent livelihood strategies; and to examine the role of state actors in the adoption of emergent livelihood strategies. This study was guided by the Expected Utility Theory advanced by Hillel Einhorn. The study was qualitative in nature and as such case study research design was used. The target population was the 29,916 pastoralists in Sook Division. Purposive sampling technique was used to get a sample size of five groups for focus group discussions and 13 participants for in-depth interviews. To collect data, the study used semi-structured interview schedule, focus group discussions and secondary data. The data collected was analyzed using thematic analysis where categories of responses for each objective from the respondents were identified, classified and combined into themes. The data was then interpreted and presented based on these categories and themes. This study has four major findings. First, the application of new technologies has increased efficiency and raised productivity hence making it profitable and attractive to practice emergent livelihood strategies. Secondly, changes in weather patterns have created conditions in which emergent livelihood strategies are more profitable and guarantee survival. Thirdly the numerous non state actors in Sook have improved the socioeconomic infrastructure and built capacity among the people, hence enabling people to adopt emergent livelihood strategies. Fourthly, the state actors have improved security and socioeconomic infrastructure, therefore enabling people to adopt emergent livelihood strategies. The study therefore recommends that all stakeholders make concerted effort to increase the use of new technologies, improve weather change survival, and adaptation strategies, and increase the activities of both state and non-state actors.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT.....	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	xi
LIST OF TABLES	xii
LIST OF ACCRONYMS AND ABBREVIATIONS	xiii
OPERATIONAL DEFINITION OF TERMS.....	xiv
CHAPTER ONE	1
INTRODUCTION.....	1
1.0 Overview	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem	4
1.3 Purpose of the study.....	5
1.4 Objectives of the Study	5
1.5 Significance and Justification of the Study	6
1.5.1 Significance of the Study.....	6
1.5.2 Justification of the Study	7
1.6 Scope of the Study	7
1.7 Assumptions of the Study	7
1.8 Limitations of the Study.....	8
1.9 Theoretical Framework	8
1.10 Conceptual Framework	9

CHAPTER TWO	11
LITERATURE REVIEW	11
2.0 Overview	11
2.1 The Concept of Pastoralism	11
2.2 The Concept of Emergent Livelihood Strategies	12
2.3 New Technologies and Adoption of Emergent Livelihood Strategies among Pastoralists	13
2.4 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies among Pastoralists	17
2.5 Non-State Actors and Adoption of Emergent Livelihood Strategies among Pastoralists	19
2.6 State Actors and Adoption of Emergent Livelihood Strategies among Pastoralists	22
2.7 Chapter Summary and Knowledge Gap	29
CHAPTER THREE	30
RESEARCH METHODOLOGY	30
3.0 Overview	30
3.1 Research Design	30
3.2 Description of the Study Area	31
3.3 Target Population	33
3.4 Sampling Technique and Sample Sizes	33
3.4.1 Sampling Technique	33
3.4.2 Sample size	34
3.5 Description of Data Collection Instruments	36
3.5.1 Secondary data	37
3.5.2 Focus Group Discussion	37
3.5.3 Interview Schedule	38
3.6 Data Collection Procedures	39
3.7 Validity and Reliability of Research Instruments	40
3.8 Data Analysis	41
3.9 Ethical Considerations	42

CHAPTER FOUR.....	44
DATA ANALYSIS, PRESENTATION, DISCUSSION AND INTERPRETATION	44
4.1 Introduction	44
4.2 Background Information of the Respondents.....	44
4.3 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies	45
4.3.1 Livelihood Strategies before Application of the New Technologies	46
4.3.2 Types of New Technologies Applied in Sook Division.....	48
4.3.3 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies...	49
4.3.4 Whether the Application of New Technologies Has Led To Modification of Already Existing Strategies or Emergence of Totally New Ones.....	62
4.3.5 Rating the Contribution of New Technologies	63
4.4 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies.....	66
4.4.1 Main Livelihood Strategies before Changes in Weather Patterns	67
4.4.2 Changes in Weather Patterns Experienced In Sook	67
4.4.3 Notable and Memorable Changes in Weather Patterns and their Effects.....	70
4.4.4 Contribution of Changes in Weather Patterns towards Adoption of Emergent Livelihood Strategies	72
4.4.5 Whether the Changes in Weather Patterns have led to Modification of already existing Livelihood Strategies or Emergence of Totally New Ones.....	74
4.4.6 Rating the Contribution of Changes in Weather Patterns towards Adoption of Emergent Livelihoods	75
4.5 The role of Non State Actors in the adoption of Emergent Livelihood Strategies.....	78
4.5.1 Livelihood Strategies Practiced Before the Intervention of Non-State Actors.....	78
4.5.2 Non-State Actors That Operate In Sook Division.....	79
4.5.3 Role Played By Non-State Actors in Enhancing Adoption of Emergent Livelihood Strategies	79
4.5.4 Whether the Intervention of Non-State Actors Have Led to Modification of Already Existing Strategies or Emergence of Totally New Ones.....	87

4.5.5 Rating the Contribution of Non-State Actors towards the Adoption of Emergent Livelihoods	88
4.6 The Role of State Actors in the Adoption of Emergent Livelihood Strategies	91
4.6.1 Livelihood Strategies Practiced Before the Intervention of State Actors.....	92
4.6.2 State Actors That Operate in Sook Division.....	93
4.6.3 Roles Played By State Actors in Enhancing Adoption of Emergent Livelihood Strategies	93
4.6.4 Whether the Intervention of State Actors has led to Modification of Already Existing Strategies or Emergence of Totally New Ones	99
4.6.5 Rating Contribution of State Actors Towards Adoption of Emergent Livelihood Strategies	100
CHAPTER FIVE.....	103
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	103
5.1 Overview	103
5.2 Summary of the Findings.....	103
5.2.1 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies.....	103
5.2.2 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies	105
5.2.3 Role of Non-State Actors in the Adoption of Emergent Livelihood Strategies	109
5.2.4 Role of State Actors in the Adoption of Emergent Livelihood Strategies	111
5.3 Conclusions	114
5.4 Recommendations.....	115
5.5 Suggestions for Further Research.....	117
REFERENCES.....	118
APPENDICES.....	122
APPENDIX A: INTERVIEW SCHEDULE.....	122
APPENDIX B: FOCUS GROUP DISCUSSION GUIDE	125
APPENDIX C: LETTER OF INTRODUCTION FROM MOI UNIVERSITY.....	129
APPENDIX D: LETTER OF AUTHORIZATION BY COUNTY COMMISSIONER.....	130

APPENDIX E: LETTER OF AUTHORITY FOR RESEARCH FROM NACOSTI	131
APPENDIX F: RESEARCH PERMIT FROM NACOSTI	132
APPENDIX G: PHOTOS OF RESEARCHER IN ONE OF THE FGDs	133
APPENDIX H: MAP OF KENYA SHOWING THE LOCATION OF WEST POKOT COUNTY	134
APPENDIX I: MAP OF WEST POKOT COUNTY SHOWING THE LOCATION OF SOOK DIVISION.....	135
APPENDIX J: MAP OF SOOK DIVISION.....	136
APPENDIX K: BUDGET.....	137
APPENDIX L: WORKPLAN	138

LIST OF FIGURES

Figure 4.1: A Modern Beehive	51
Figure 4.2: Ayrshire Crossbreed in Sook	52
Figure 4.3: Life Fence Protecting Pastureland	54
Figure 4.4: A Farmer Irrigating His Vegetable Farm in Cheptam.....	56
Figure 4.5: A student Installing Solar Lamp Donated by Exodus CBO.	61
Figure 4.6: River Empough Now a Permanent River	68
Figure 4.7: A Girls' Dormitory Constructed by World Vision Kenya	81
Figure 4.8: Beneficiaries Receive Chicken, Goats and Wire Meshes	87
Figure 4.9: A Road to Kriich under Construction	95

LIST OF TABLES

Table 3.2: Sample Size	36
Table 4.1 New Technologies and their Contributions towards Adoption of Emergent Livelihood Strategies	46
Table 4.2 Changes in Weather Patterns and their Contributions towards Adoption of Emergent Livelihood Strategies	66
Table 4.3 Roles of Non-State Actors in bringing about Adoption of Emergent Livelihood Strategies	78
Table 4.4 Roles of State Actors in bringing about Adoption of Emergent Livelihood Strategies	92

LIST OF ACCRONYMS AND ABBREVIATIONS

ASALs- Arid and Semi- Arid Lands

CDF- Constituency Development Fund

CRA - Commission on Revenue Allocation

CSO- Civil Society Organization

CBO- Community Based Organization

ECDO- Ewaso Community Development Organization

FBO-Faith Based Organization

ICT- Information and Communication Technology

IDP- Internally Displaced Persons

KCB-Kenya Commercial Bank

KPR-Kenya Police Reservists

KRCS- Kenya Red Cross Society

MNC- Multinational Corporation

MOA -Media Owners Association

NACOSTI-National Commission for Science, Technology and Innovation

SARD-Society for All-Round Development

UKAID-United Kingdom Agency for International Development

UPDF-Uganda People's People's Defence Forces

USAID-United States Agency for International Development

OPERATIONAL DEFINITION OF TERMS

The following are the operation definitions of terms used throughout this study.

Determinants: Those things that control or influence what happens. In this study therefore, determinants of emergent livelihoods strategies influence or control their development or adoption by pastoralists.

Elder: A member of a Locational Land Committee.

Emergent Livelihood Strategy: The latest or the most current means of making a living and will be characterized by new or latest socioeconomic practices in crop farming, mining, fishing, formal employment, trade and commerce, sports and arts among others.

Livelihood strategy: An activity that a person chooses to undertake in order to achieve his or her livelihood goals. This could be a productive activity, an investment strategy or a reproductive choice.

New Technology: Novel, latest, modern or innovative practical application of science on commerce and industry.

Non-state Actors: Organizations that do not belong to any established institution of a state but wield enough power to influence and cause a change. They include: Non-governmental

Organizations or the civil society, Multinational corporations (MNCs), the International Media, Violent non-state actors (armed groups), and Religious Groups.

State Actors: Any persons, bodies, institutions or organizations that act on behalf of the government and are therefore subject to regulations and laws under the same government.

Opinion Leader: A person who has influence in the community by virtue of his/her position, education and profession. Because of this, he/she have power to shape opinions.

Pastoralism: A way of life of a people who depend primarily on livestock or livestock products for income and food and typically graze their animals on communally-managed or open-access pastures, and move with them seasonally.

Weather Patterns: Conditions of the atmosphere at a given place and time as regards to temperature, cloud cover, wind, precipitation and sunshine. Weather patterns on the other hand are persistent type of weather experienced in a location over time.

Woman: A female member of society and a member of a registered Women Group.

Youth: A member of a registered Youth Group.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter presents an introduction to the study and covers the background of the study, statement of the problem, purpose and objectives of the study, research questions, significance and justification of the study, scope of the study, assumptions and limitations, theoretical as well as conceptual framework.

1.1 Background of the Study

Pastoralism, the world over, has been a successful strategy to support a population on less productive land and adapts well to the environment. According to Blench (2001), pastoralism evolved as a response to two factors, medium human population densities and the presence of extensive rangelands. This is however no longer the case because of the exponential increase in both human and livestock populations. Encroachment into rangelands coupled with other changes in the pastoral environment has meant that traditional pastoralism is no longer tenable. This has therefore generated a lot of debate by scholars and governments at both national and global levels on how the millions of people dependant on this livelihood can survive.

The pastoral environmental change is a large scale and global phenomena as it has taken place in all continents albeit in different magnitudes. Dong et al. (2011) did case studies of global pastoral environmental changes and recorded decline of pastoral systems with expansion of agriculture in African Sahel, marginalization of pastoral systems with collapse of command

economy in Central Asia and Mongolia, degradation of pastoral ecosystem with overusing and warming on Qinghai-Tibetan Plateau of China, erosion of pastoral systems with regional development in the European Alps, decline of pastoral systems with ‘modernizing’ agricultural reform in Bolivian and Peruvian Andeans of South America and deterioration of pastoral systems with agricultural expansion and climatic warming in the Great Plains of USA.

In Kenya, pastoralist communities occupy the largest percentage-70% of the countries’ total land area. The population of the livestock keeping pastoralist communities in Kenya is estimated at about 20% of the total population of the country. Most of these people occupy the vast arid and semi-arid regions of Kenya. These pastoralists are nomadic ethnic groups that are highly mobile and are mainly the Maasai, Turkana, Samburu, Pokot, Borana, Rendile, Orma, and Somali. They move from one area to another in search of water and pasture for their livestock. Their movements are not restricted to one area or even country. They move into and out of the neighboring countries such as Somalia, Ethiopia, Sudan and Uganda. These movements are one of the major sources of misunderstanding and conflict between them and their neighbors (Ng’ang’a, 2012). In Kenya, just as in the global arena, the pastoral environment has significantly changed. Whereas it is generally accepted by many scholars that climate change is the main reason for the changing pastoral environment, Johnson et al. (1987) adds social and political factors. Fratkin, Nathan, and Roth (2011) documented factors responsible for the changing pastoral environment as rapid population growth, drought and famine, loss of common property resources, commoditization, sedentarization, urban migration, and civil wars.

West Pokot County where Sook Division is found has not been spared by environmental changes. According to Blench (2001), pastoralism evolved as a response to two factors, medium human population densities and the presence of extensive rangelands. Today, both human and livestock populations in the county is high and the rangelands have been encroached by both rain fed and irrigated crop-farming activities. These changes have undermined pastoralism as the major source of livelihoods. It is worth noting that West Pokot County is one of the poorest counties in Kenya with more than half of the population living below the poverty line. Apparently, most of the bottom ten poorest counties are pastoralist dominated counties that also includes: Mandera, Wajir Marsabit, Tana River, Samburu, Turkana and Isiolo, (Omari, 2011).

Many reasons have been given for this state of abject poverty among the pastoralists, but their failure to change with the changing environment and embrace emergent livelihoods, has however been underestimated. Based on this scenario, this study on determinants of the adoption of these emergent livelihood strategies among pastoralists in Sook Division, West Pokot County will be completely necessary. The study sought to find out how new technologies, changes in weather patterns, state and non-state actors enhance adoption of emergent livelihood strategies with a view of proposing means of improving them.

The two variables in this study are: the determinants of adoptions (independent variable) and the adoption of the emergent livelihoods strategies (dependent variable). In this study, determinants of adoptions mean those factors that influence or control the adoption of emergent livelihood strategies by pastoralists. These are new technologies, change in weather patterns and roles of both state and non-state actors. On the other hand, emergent livelihoods strategies are the latest

or the most current means of making a living and will be characterized by new or latest socioeconomic practices in crop farming, mining, fishing, waged employment, trade and commerce, sports and arts.

1.2 Statement of the Problem

Pastoralism thrives most in expansive dry lands mostly rangelands and arid areas. It presents the most sustainable way of utilizing arid and semi arid lands. Pastoralism is therefore a successful strategy to support a population on less productive land. This has been the case for a long time among the Kenyan pastoralists and in particular the Pokots where livestock has been the most important natural resource and supported the main livelihood system.

The above ideal scenario of pastoralism is no longer the case. The changes in the pastoral environment have badly challenged pastoralism. The manifestations of these changes include persistent droughts, reduced mobility of livestock, spread of rain-fed crop farming into rangelands, and increased human population among others. Pastoralism is therefore at the verge of collapse and those still sticking to it will remain backwards in development as is the case among pastoralists in Kenya. In Kenya, pastoralist areas have the highest incidences of poverty and the least access to basic services if any in the country. In these areas, huge proportions of the population fall below the national poverty line. West Pokot County is one of these poorest counties in Kenya with more than half of the population living below the poverty line.

The way forward is for the pastoralists to be innovative and move into emergent livelihood strategies. These emergent livelihood strategies are to be found in the latest socioeconomic

practices in crop farming, dairy farming, mining, fishing, formal employment, trade and commerce, sports and arts. Attempts should therefore be made to ensure the foregoing activities hence the importance of this study which sought to examine the determinants of adoption of emergent livelihood strategies among pastoralists in Sook Division of West Pokot County, Kenya. In particular, the study sought to find out how new technologies, changes in weather patterns, state and non-state actors enhance adoption of emergent livelihood strategies with a view of proposing means of improving them.

1.3 Purpose of the study

The purpose of the study was to examine the determinants of the adoption of emergent livelihood strategies among pastoralists in Sook Division of West Pokot County, Kenya.

1.4 Objectives of the Study

This study was guided by the following objectives:

1. To find out how new technologies are contributing to adoption of emergent livelihood strategies.
2. To assess how the change in weather patterns has brought about adoption of emergent livelihood strategies.
3. To examine the role of non-state actors in the adoption of emergent livelihood strategies.
4. To examine the role of state actors in the adoption of emergent livelihood strategies.

1.5 Significance and Justification of the Study

1.5.1 Significance of the Study

The study should be of great significance to the Pokot community in particular and all pastoral communities in Kenya and the entire region as they will be able to understand how new technologies, changes in weather patterns, state and non-state actors enhance adoption of emergent livelihood strategies. Proposals on the means of improving these determinants will enable them to adopt emergent livelihood strategies and therefore make a meaningful contribution to the development of their regions and that of the entire country. This study is also expected to suggest significant policy statements through its recommendations that will touch on the above issues. Such recommendations will inform policy makers both at the county and national level. Policy makers among non state actors-both local and international will also be informed. The policies formulated are expected to guide the governments and the non-state actors in planning and implementing development programmes that will enable pastoralist dominated areas develop and catch up with the rest of the country.

The study is also expected to contribute valuable knowledge to the field of development in general. It is the only study that has focused on the determinants of the adoption of emergent livelihood strategies specifically among the Pokot pastoral community. As such, it is expected to produce hitherto unavailable knowledge in this area. It will therefore form a useful material for reference to other researchers and readers.

1.5.2 Justification of the Study

The study is justified because of the need to enable the Pokot community and other pastoral communities embrace the emerging livelihoods strategies hence improve their living standards and also survive in the modern competitive world.

1.6 Scope of the Study

This study on the determinants of adoption of emergent livelihood strategies among pastoralists in Sook Division of West Pokot County was conducted in Sook Division between March to May 2014 through case study design. Sook Division was selected purposively because its climatic conditions is a replica of those of the entire county and therefore a home to Pokots who still practice pure pastoralism as well those who have embraced modern livelihood strategies or a mix of both such as agro-pastoralism. These conditions are more conducive for a wider range of the adoption of emergent livelihood strategies hence suitable for such study. The data was collected by the researcher using focus group discussions, in-depth interviews and secondary data. The participants for focus group discussions were the youths, women, and elders while those of the in-depth interviews were opinion leaders.

1.7 Assumptions of the Study

It was assumed that the respondents would cooperate and would not be suspicious so as to hoard information. It is also assumed that the purposive selection of Sook Division and the participants yielded data that would be applied to entire Pokot and other pastoral communities in Kenya. Another important assumption is that there are emergent livelihoods strategies among the

pastoralists and that new technologies, changes in weather patterns, and the activities of both state and non-state actors are key determinants of their adoption.

1.8 Limitations of the Study

Language barrier was a limitation to this study. Some of the respondents were illiterate. The success of in-depth interviews and focus group discussions may be limited by this language barrier. The researcher however surmounted this challenge since he is competent in all languages spoken in the area. He also used probes, clarifications and paraphrases which was possible in semi-structured interview schedule and focus group discussion guide.

Another limitation was that most of the respondents especially the men were not found easily because of their nomadic lifestyle. This was surmounted by coordinating with the group leaders and the chiefs who arranged and ensured that all are available for the interviews and discussions. Since the study was a case, only few respondents were selected and therefore limited in clear-cut generalizations. The researcher overcame this by carefully selecting participants who fully represented the community. These were women, youth, elders and opinion leaders.

1.9 Theoretical Framework

This study was guided by the Expected Utility Theory advanced by Hillel Einhorn, in 1981 which suggests that choices are coherently and consistently made by weighing outcomes of actions (alternatives) by their probabilities. The alternative which has the maximum utility is selected (Einhorn & Hogarth, 1981). This theory is based on three fundamental tenets about the processes that occur during decisions made under risk and uncertainty: consistency of

preferences for alternatives; linearity in assigning of decision weights to alternatives and judgment in reference to a fixed asset position. Based on these assumptions, expected utility theory predicts that the better alternative will always be chosen. This theory does not allow for influences on choice due to characteristics of the context of the decision. Expected utility theory predicts a preference for dominant alternatives. Alternatives which produce greater utility will always be chosen over those which provide less utility. Decision makers are assumed to rank their preferences and discard alternatives offering lower utility (Kahneman & Tversky, 1984).

In addition, expected utility theory predicts that the choice is invariant, that is, the manner of presentation of the alternatives should not influence the choice. Such a view assumes that decision makers seek to be aware of multiple outcomes and are able to sift through the complexities of problems to determine clearly a dominant prospect (Einhorn & Hogarth, 1981).

In relation to this study, the pastoralists for many years opted to engage in pastoral activities because this kind of life had the highest utility for them. It provided them with the necessary income, food, security and prestige. However due to changes in the pastoral environment, this is no longer the case hence the emergence of other livelihood strategies which offer greater utility.

1.10 Conceptual Framework

The conceptual framework of the study consists of dependent and independent variables. The independent variable is determinants of adoption of emergent livelihoods strategies while the dependent variable is the adoption of emergent livelihoods strategies. The framework is shown in the Figure 1.1.

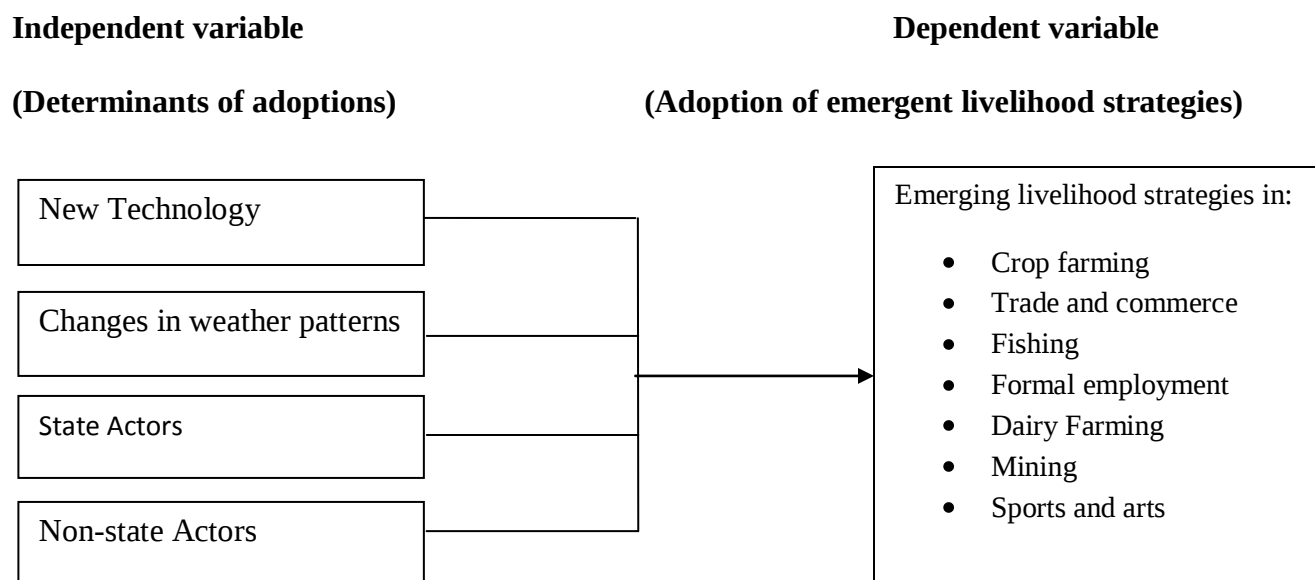


Figure 1.0: A conceptual Framework for the Relationship between Emergent Livelihood Strategies and their Determinants

Source: Researcher, 2013.

In the conceptual framework depicted in Figure 1.0, determinants of the adoption of emergent livelihoods strategies are hypothesized to influence adoption of emergent livelihoods strategies among the Sook pastoralists. The framework postulates that the influences of new technologies, changes in weather patterns and the actions of both state and non-state actors will determine the rate of adoption of emergent livelihood strategies in crop faming, mining, fishing, dairy farming, formal employment, trade and commerce, sports and arts.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter presents literature related to the topic of the determinants of adoption of emergent livelihood strategies among pastoralists in Sook Division of West Pokot County, Kenya. The review is particularly conceptualized under the objectives of the study. The related literature review was obtained from books, several websites on the internet, seminar papers, journals, periodicals and newspapers. The purpose of this literature review is to form a basis for the present study and to show gaps which this research seeks to address. The chapter ends with a summary giving the knowledge gap.

2.1 The Concept of Pastoralism

Pastoralism is a way of life of a people who depend primarily on livestock or livestock products for income and food and typically graze their animals on communally-managed or open-access pastures, and move with them seasonally (Dyer, 2012). Pastoralism is a way of life for millions of people across the globe and some 20 million people across sub-Saharan Africa. Pastoralism thrives most in expansive dry lands mostly rangelands and arid areas. To most pastoralists, quantity and not quality is most important. Therefore, larger herd size is more prestigious than a quality smaller herd size.

To some scholars, pastoralism presents the most sustainable way of utilizing arid and semi arid lands. For example, Bayer, Bayer, and GebreMichael, (2010) reckons that studies over the last

30 years or so have shown that traditional pastoral systems are relatively productive and represent an ecologically sustainable way of using arid and semi-arid lands and there are indications from a number of African countries (Botswana, Ethiopia, Mali, Mozambique, South Africa, Tanzania, Uganda, Zimbabwe) that traditional pastoral systems can produce up to ten times more food per unit area than can modern ranching. This is due to a large extent to the multiple uses of resources and the multiple functions of livestock in traditional pastoral systems (Bayer et al., 2010).

According to Kirkbride and Grahn (2008), for pastoralism to be practiced effectively, freedom of movement for all herds between pastures and water sources is important; this is usually facilitated through some form of common-property regime. But where mobile livestock-production continues unhampered, Kirkbride and Grahn state that pastoralism has helped in the conservation of biodiversity, improved livelihoods, and resulted in sustainable land management. And where it is constrained by land use or land tenure changes, sedentarization, and policy disincentives, it has led to serious overgrazing, land degradation, and poverty. The latter is the case in Kenya where pastoralist counties have recorded the highest poverty levels with huge proportions of the population falling below the national poverty line.

2.2 The Concept of Emergent Livelihood Strategies

Livelihood strategies are the combination of activities that people choose to undertake in order to achieve their livelihood goals and they include productive activities, investment strategies and reproductive choices (Chambers & Conway, 1992).

A major influence on people's choice of livelihood strategies is their access to assets and the policies, institutions and processes that affect their ability to use these assets in order to achieve positive livelihood outcomes (Alinovi, D'Errico, Mane, & Romano, 2010).

Traditionally livelihood strategies among the pastoralists were economic activities that are directly related to livestock keeping i.e. livestock production for meat and milk and direct sale and barter of livestock. However with the changes in the pastoral environment, new livelihoods strategies have emerged and are continuing to do so. In a nutshell, emergent livelihoods strategies among the pastoralists are new socioeconomic activities that revolve around improved pastoralism, crop farming, trade and commerce, fishing, formal employment, dairy farming, mining, sports and arts. There are also totally new livelihoods that do emerge especially as a result of technology and innovations.

Within pastoralism, Smith (1998) recorded emergent livelihoods strategies to include value added livestock activities such the exchange, processing and marketing of livestock by-products such as milk and meat products processing and marketing, hides and skins processing and marketing, and fodder production etc which are complementary to livestock keeping.

2.3 New Technologies and Adoption of Emergent Livelihood Strategies among Pastoralists

Level of technological development is a major determinant of emergent livelihoods strategies among the pastoralists. Among the pastoralists today, the use of mobile phones for communication, money transfers and internet services have gained roots. This technology has created employment among the educated youths and has also assisted in the marketing of

livestock and their products. Using the latest information and communication technology (ICT), modern pastoralists and livestock traders collect and disseminate reliable and timely livestock market information. Rural communities can request market information via text message, website or weekly radio broadcasts.

Improved infrastructure such as improved rural road networks and access to markets for pastoral products and developing marketing opportunities are essential to the ability of pastoralists to get the best value for their products (SRA, 2003). The level of provision of appropriate financial and technical services to pastoralists, for example micro-credit, insurance, veterinary care, and agricultural extension (Campel, 2000) also determines the rate at which emergent livelihoods strategies are adopted.

A transformed pastoralism is also one of the emerging livelihoods strategies that has immensely benefitted from advancement in technology. Curtis (2014, January 3), records that pastoralists have adopted new ways of conserving water and monitoring grazing lands that have made them more efficient, leading to greater milk production, better breeds and improve quality of life. Curtis ventures into details of the technologies and innovations that pastoralists have applied hence transforming pastoralism. First, is the digging of dams and lining them with plastic, then getting bowsers to fill them with water. Second is the use of donkey-drawn carts instead of carrying jerricans for themselves. Third is the use of mobile phone technology to check conditions of water, pasture, security, and markets for their livestock. The fourth technology is the use of hay as source of food for their animals. Hay is cut and stored for feeding in the dry season. This according to Curtis has relieved burden pastoralist women and children who

traditionally searched for hay for calves and weaker animals during the dry season. This has also allowed pastoralist children to stay at home and attend school. Lastly, Curtis notes that the pastoralists have borrowed Unicef's idea to make a more user friendly birthing kit for their livestock which is safer, simpler and more portable.

To emphasize the role of new technologies in determining successful adoption of emerging livelihoods among the pastoralists, Dyer (2012) lamented of constraints to productive and broadly beneficial livelihoods strategies among the pastoralists which include: weak transport, power and telecommunications infrastructure, irregular incomes making it difficult to get bank loans, low cash incomes and thin markets, cultural practices and restrictive policies

Improved livestock keeping is an emergent livelihood strategy among the modern pastoralist that has been made possible by the application of new technologies. This attests to the opinion among many scholars that pastoralism albeit an improved one is still the best way to utilize rangelands. Nkedianye, Radeny, Kristjanson and Herrero (2009) noted some evidence that livestock production is becoming more intensified (e.g. improved breeds and management practices, increased off-take and sales aimed at increasing productivity rather than herd size alone), particularly by younger, more educated households in Kitengela.

One way of improved livestock keeping that succeeded due to new technologies is livestock intensification which according to Galaty and Johnson (1990) (as cited in BurnSilver, 2009) refers to an increase in the units of livestock produced (e.g. meat, milk, hides) based on a given level of inputs (e.g. feed, water, veterinary drugs or labour). The model of intensified livestock

production advocated for pastoral areas in Kenya by development specialists revolved around increasing off-take rates, better veterinary care, water provision and lowered rates of transhumance (Hedlund, 1971; Rutten, 1992). Many pastoralists have also come up with an additional component of livestock intensification where local zebu breeds of cattle are cross-bred with improved breeds such as Sahiwal and Borana for cattle. These are current indications that pastoral households are making efforts to raise the productivity of their herds.

Another form of improved livestock keeping that is emerging among the pastoralists is dairy farming. This is a class of agriculture where production of milk mainly from dairy cows for domestic consumption and sale is the main objective. According to Ronoh (2013), cooling plants and even dairy cows and goats in zero-grazing units have become common among pastoralists in Kenya. With advancement in science and technology, pastoralists have also started keeping dairy goats, sheep and camels.

The new technologies in seed development, mechanization of farming, and irrigated farming have also enhanced crop farming as an emergent livelihood strategy among the pastoralists. Agriculture and pastoralism are not separated clearly from one another. Many households among the pastoralists combine the two activities especially where irrigation projects have been launched by the government and other development partners.

Small-scale enterprises mainly by women such as packing of milk, yoghurt, aloe and honey for sale in urban supermarkets or hotels (Dyer, 2012) has been made possible by application of the new technologies. Dyer also notes that some women entrepreneurs are already significant

employers in pastoral areas and that new educational and training opportunities and new technology (e.g. mobile phone banking) can empower pastoralist women.

2.4 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies among Pastoralists

The weather is the conditions of the atmosphere at a given time and place. The term usually refers to the activity of these phenomena over short periods (hours or days), as opposed to the term climate, which refers to the average atmospheric conditions over longer periods of time (normally 25 years or more). The major weather/climatic elements important for agriculture are solar radiation, rainfall, maximum temperature, minimum temperature, humidity, sunshine duration, photo-period or maximum possible sunshine hour, night temperature, and wind speed (Ali, 2010). According to Ali, weather and climate are important factors in determining day-to-day and long-term activities in agriculture with rainfall being the leading weather variable that affects agricultural cropping pattern, irrigation planning, and water resources development planning. Weather patterns on the other hand are persistent type of weather experienced in a location over time.

Changes in global climatic conditions have caused considerable change in weather patterns. In East Africa, change in weather pattern have been manifested in successive poor rains, unpredictable and sometimes heavy rainfall events, high return rate of droughts and increase in temperatures (Kirkbride & Grahn, 2008).

The change in weather patterns is a key determinant of the emergent livelihoods strategies among pastoralists. Its manifestations have led to reduced livestock quality and subsequent

deaths, forcing pastoralists to diversify into agriculture, the market economy and other emergent livelihoods strategies. According to the coordinator of Narok's Ewaso Community Development Organization (ECDO);

Pastoralist communities love their culture but if there is one thing that will make them adapt to changing realities, it is climate change...drought means you do not have enough pasture for huge herds of livestock and you have to reduce the herd size or move into something else (Lenges (2012) (as cited in IRI Africa, 2012).

Bayer, Bayer, and GebreMichael (2010), argue that pastoralists have a long history of exposure to climatic variability and they have – out of necessity – developed mechanisms to cope with it. The pastoral areas on which they depend are usually arid and semiarid lands with low and erratic rainfall that also varies in terms of space and time. Thus, uncertainty and risk are the rule, not the exception. Bayer et al. (2010) also add that this variability requires flexibility in resource use (grasping opportunities and coping with shortages) and a high degree of adaptability to constantly changing conditions. The mechanisms used by pastoralists to cope with high climatic variability include moving their livestock and families, keeping different animal species (and, within species, sometimes different types of animals), making reciprocal arrangements with other pastoralist groups for access to pasture and water, developing water-conservation techniques, observing early-warning signs of impending drought and practicing complementary livelihood activities (e.g. trade or, where possible, cultivation). According to McKee, (2008) (as cited in Bayer, Bayer, & GebreMichael, 2010), such adaptations and practices were developed long before the concept of climate change became known.

Drought is a product of adverse changes in weather patterns. Drought has occurred with greater frequency in the second half of the 20th century compared to the first, with severe droughts reported in Kenya in 1960-61, 1968-69, 1974-76, 1979-81, 1991-93, 1996, 2000, 2008-09. Pastoralists have historically adapted to conditions of drought or low and erratic rainfall by physical mobility, dispersion of their herds and people, and seeking different food sources through fishing, hunting, gathering, and agriculture (Fratkin et al. 2011). The physical mobility strategy today, is however no longer possible because of scarcity of grazing land which has occurred as a result of increase in population and privatization of land ownership.

To conclude this section, it is worth noting that the strategies used by East African pastoralists to track climate variability in the past are now working less effectively. This is not only due to the onset of climate change and the new weather patterns that come with this, but also to the inability of pastoralists to implement their strategies for dealing with the changes (Kirkbride & Grahn, 2008). The changes according to Kirkbride and Grahn are caused challenges such political and economic marginalization, inappropriate development policies and increasing resource competition. In order to survive in these conditions, pastoralists will have to move into alternative livelihood strategies. Change in weather patterns is therefore an important determinant of adoption of the emergent livelihoods strategies among the pastoralists.

2.5 Non-State Actors and Adoption of Emergent Livelihood Strategies among Pastoralists

Non-state Actors (NSA) are organizations that do not belong to any established institution of a state but wield enough power to influence and cause a change. They can be grouped into Non-

governmental Organizations (NGOs) or the Civil Society Organizations (CSOs), Multinational corporations (MNCs), both national and international media, violent non-state actors (Armed groups), philanthropists and religious groups.

According to Mohamud and Pkalya (2005), in most of the pastoral areas, the presence of the CSOs is much heavier than that of the government because virtually all schools, dispensaries and water points have been built by aid agencies. Many projects that have been initiated and implemented by these actors dot the pastoral landscape. Examples include the water project by the World Vision worth millions of shillings. The World Vision has initiated many other development projects. On education, the World Vision has worked with the local schools to build classrooms and dormitories, easing overcrowding and improving the learning environment. Orphans and vulnerable children have also been helped to continue their education by providing scholarships. On economic Development, the World Vision Kenya has facilitated vocational and technical training for young people, increasing their job opportunities. It has also enhanced households' economic well-being through access to markets, training, technology, information, and financial services.

Insecurity is one of the major drawbacks to development in pastoral areas. Any contribution towards reducing conflicts and improving security is therefore the greatest contribution ever made to the pastoral communities. Efforts by the government to restore security have been an exercise in futility. In these areas, the presence of respective governments is limited to presence of chief's office, Administration Policemen and of course during military operation to flush out cattle raiders. Other government security organs such as the Home Guards and Police Reservists

have always been overwhelmed because of lack of support and incentives. On the other hand, Mohamud and Pkalya (2005), states that the civil society commands a lot of legitimacy and play a facilitator role in three ways. Firstly, they stimulate and facilitate the formation of peace committees at various levels in most of the conflict prone areas in Eastern Africa. Secondly, the CSOs have played a pivotal role in the construction of what has been popularly known as peace agreements/declarations/pacts such as the Kolowa peace declaration and the burying of the hatchet at Lokiriana in the then Turkana district. Thirdly, the CSOs have also excelled in its role of maintaining checks and balances on the respective governments in conflict and other policy issues. Lastly, the CSOs have also come to the aid of Internally Displaced Persons (IDPs) by providing foodstuffs, medicine and temporary shelter to those evicted from their homes by conflicts. The Catholic Justice and Peace Commission (CJPC), Red Cross and Christian Children's Fund (CCF) are among the prominent players in this area.

The Kenyans for Kenya Drought Initiative in 2011 is a classic example of the role of non-state actors in enabling pastoralists to adopt emergent livelihoods strategies. Unlike numerous other relief initiatives before it, the program aimed at building community resilience and enhancing food security. This initiative was spearheaded by Safaricom Foundation, Kenya Commercial Bank (KCB), Media Owners Association (MOA) and Kenya Red Cross Society (KRCS). The groups mobilized corporates and members of the public to raise millions towards relief for 3 million Kenyans faced by starvation that year in the Northern part of Kenya. According to the Kenya Red Cross Society (2012), the pastoralists were helped to adapt to future droughts through the provision of agricultural inputs including irrigation equipment, seeds, fertilizers, pesticides, livestock, modern beehives, and water and sanitation facilities. The program also builds capacity

among the beneficiaries by training them on agricultural best practices, operation of the water and irrigation equipment and on hygiene promotion. The Kenya Red Cross Society reports that currently, results of the initiative in the dry area, that had never been thought to produce farm products, can be seen as farmers are reaping from the project after growing assorted vegetables that include kales and maize, among other products.

The Equity Group Foundation's Wings to Fly program is another non-state actor that has significantly played a role in uplifting the living conditions of poor Kenyans through education scholarships. Although its activities run across the entire country, poor pastoralists families have seen their bright children continue with their education past primary school level. According to Karanja (2014), the scholarship caters for everything school related and the beneficiaries are among top performers in KCPE who cannot afford to further their education. The program benefits 2,000 children annually. These secure a four-year secondary school sponsorship, courtesy of the Equity Bank Foundation, MasterCard Foundation, United States Agency for International Development (USAID), United Kingdom Agency for international development (UKAid) and the Government of Germany. Karanja avers that for the determined young men, their lives have changed for the better.

2.6 State Actors and Adoption of Emergent Livelihood Strategies among Pastoralists

State actors are any persons, bodies, institutions or organizations that act on behalf of the government and are therefore subject to regulations and laws under the same government. There are many documented ways in which state actors have and can determine the rate of adoption of new livelihoods strategies among the pastoralists. The state for example has influenced the loss

of common property resources. Since Independence, Kenya has moved away from recognizing communal land tenure in favor of individual tenure rights. According to Galaty, (1994) (as cited in Fratkin, Nathan, & Roth, 2011), in pastoral Maasai regions the government established “group ranches” in the 1960s and subsequently promoted private and individual land titles since the 1980s, leading to a scramble for land. Creation of national game parks by the state has led to loss of former grazing lands. Examples include Amboseli, Masai Mara, Tsavo, and Samburu Parks in Kenya and the Serengeti, Ngorongoro Crater, and Mkomazi in Tanzania (Brockington, 1999 & Homewood, 1995) (as cited in Fratkin, Nathan, Roth, 2011). While pastoralists in northern Kenya’s Marsabit District live in more arid and less populated conditions, they too are experiencing land crowding and, in highland locations including Marsabit Mountain, are beginning to privatize and title farm plots (Adano & Witsenburg, 2005) (as cited in Fratkin, Nathan, Roth, 2011).

Loss of grazing land among the pastoralists was also noted in Kitengela because of its proximity to the Kenyan capital city, Nairobi. According to Nkedianye, Radeny, Kristjanson, and Herrero, 2009), Kitengela was one of the first areas in Maasailand where group ranches were subdivided into private land holdings. These scholars argue that since subdivision in the mid to late 1980s, land has continued to change hands and the process of land subdivision has had considerable implications for land use, distribution and access, with associated impacts on household economies that depended on livestock rearing.

The growing importance of diversification away from livestock production is taking place alongside drastic changes in tenure, with rapidly diminishing access due to land privatization,

subdivision and conservation set-aside. The subdivision of formerly communal rangelands into private holdings, their conversion to commercial cultivation or their designation as conservation estate, have had radical implications for the people of Maasailand (Katherine et al. 2009).

The state has for many years been accused of marginalizing pastoral areas hence determining the pace of adoption of emergent livelihoods strategies. Dyer (2012) notes that pastoralist communities are poorly represented in political circles yet pastoral parliamentary groups need to be heard in national policy and budget decision-making circles. Educating local leaders and building capacities of local institutions will enable them to manage economic and social change. Dyer recommends that political decentralization with genuine devolution of powers to local communities - not captured by elites – is needed to secure a fair deal for pastoralists.

To Guliye (2007), the prioritization of ASALs by the Kenyan government in the 2008/9 budget was the best step towards the emancipation of pastoralists. The government had also established the Constituency Development Fund (CDF) in 2003. The CDF turned previously conventional development practice on its head by prioritizing the poorest areas before high-potential areas. The main purpose of the fund is to ensure that a specific portion of the government's annual revenue is devoted to constituencies for the purposes of development; in particular in the fight against poverty at the constituency level. Each constituency receives approximately 50m Kenyan shillings a year to be spent on identified community needs.

Pastoralists can and should be enabled by the state to play a role in shaping their own future. They must be empowered to influence policy and implementation at the national level because

thousands of years of experience in dealing with climate variability inevitably means that pastoralists have a huge amount of useful knowledge to share with policy makers (Ahuja, 2001).

Promotion of entrepreneurial attitude among the pastoralists and the improvement of access to formal education by the government have also been documented as an important strategy to improve adoption of emergent livelihoods among the pastoralists. Jinghan (2002) argues that developing countries lack entrepreneurship not because they are deficient in capital or raw materials but because they are deficient in persons with right attitude for entrepreneurship. This lack of entrepreneurship can be ascribed to the childhood environment in the traditional society which creates tensions, anxieties, and rage among adults. They suffer from 'respect withdrawal' and develop 'retreatism' as the dominant personality trait. It is over a long period of several generations that there develop a class of entrepreneurs with 'need achievement' motivation. Jinghan says that such psychological motivation emerges when a generation of fathers demand achievement or do not stand in the way of achievement, and mothers play a supporting role in encouraging activity on the part of infants.

Unemployment and lack of capital to start small businesses is a major contributor to the idleness and poverty that afflicts the pastoral areas. It would be viable for the government to initiate projects that would enable groups and cooperatives to start income-generating projects in: livestock rearing and marketing or buying and selling of livestock, buying and selling of hides and skins, posho milling (particularly for women), honey production and marketing (Amisi, Krhoda, Kureiya, & Wandera, 2010).

Access to formal education by pastoralists is of fundamental importance as it enhances adoption of emergent livelihoods strategies. This is the role of state actors. Popular education leads to new methods and new techniques of production and creates self discipline, power o think rationally and to probe into the future (Jinghan, 2002). Jinghan also reiterates that no country can count itself developed, in which education in the way of industrial civilization has not taken place. Development is also impossible if it doesn't take place in the minds of men. Educated pastoralists –particularly women – can increase family incomes, nutrition and health and remittances from urban employment. Provision of flexible education with new technologies can reach large numbers of pastoralist children at low cost (Dyer, 2012).

Investment in education for women and men is of paramount importance as it is the best way for pastoralists to achieve positive diversification through salaried employment. Furthermore, when equipped with education and skills, Dietz (2004) argues that ex-pastoralists have a role to play in integrating pastoralists with the wider economy, providing services for people and a market for pastoral goods

Modernization Strategies by the government determines the adoption of emergent livelihoods strategies among the pastoralists. Jinghan (2002) defines modernization as the social, cultural and psychological framework which facilitates the application of tested knowledge to all phases and branches of production. To Jinghan, the adoption of modernization values and modernization ideas is important for the rapid development of developing countries and modernization ideas with regard to attitudes is the creation of the '*new man*' or the '*modern man*', the '*citizen of the new state*', the '*man in the era of science*', the '*industrial man*'. This

implies change in attitudes so that people have efficiency, diligence, orderliness, punctuality, frugality, scrupulous honesty, rationality in decision on action, preparedness for change and alertness to opportunities as they arise in the changing world. Old ideas and old institutions will have to be dispensed with; the bonds of caste, religion and race will have to be broken (Jinghan).

Another modernization strategy is the need for increased investment in appropriate development in pastoralist areas because the right kind of investment is more likely to enable them to successfully cope with external shocks that come with changes in their environment (Doss, 2008). For example, it is vital that investment plans have climate-change adaptation integrated into them.

Enhancement of gender parity is another very important turnaround strategy to enhance the success of emergent livelihoods strategies among the pastoralists. Scholars have seen enhancement of gender parity as a crucial strategy to overcome the tyranny of culture among the pastoralists. Both women's and men's needs and interests must be taken into account in plans, recognizing the essential non-marketed goods that women typically provide including water, fuel, food, and care (Hoggy, 2009). Gender concerns must be taken into account to ensure that women are given equal rights over land and other critical resources (Kabubo-Mariara, 2002).

On women, another strategy is to ensure that women are not side-lined into low-income alternatives while men have access to more lucrative employment options. Okot (2004) observed that among the pastoralists women's main income-earning activities include milk sales, alcohol brewing, hay making, and other forms of petty trade, while men frequently engage in livestock

trading and other forms of waged employment. This should change so that women get equal opportunities with their men partners.

Another important role of the state actors is improvement of infrastructure such as improved market access and opportunity beyond the provision of basic services like health care and education and injection of investment into the pastoral economy. Improving market access for pastoral products and developing marketing opportunities are essential to the ability of pastoralists to get the best value for their products (SRA, 2003). Improved and flood-proof communication networks and infrastructure will be key to the development of the pastoral economy, as will the provision of appropriate financial and technical services to pastoralists, for example micro-credit, insurance, veterinary care, and agricultural extension. Some experts believe that pastoralists would be better served if their business included a greater cash component (i.e. if they more routinely converted livestock to monetary assets). This would protect them against livestock losses during times of drought and would also speed up their ability to recover (Campel, 2000).

According to Amisi et al. (2010), another way of improving the lifestyles of the communities is the initiation of water projects (both piped and borehole) and improving the existing hospitals and health centres which the people can easily access.

Improvement of security is another very important function of the state. Amisi et al (2010) have the government alongside non-state actors have made various attempts to restore peace and security. Although these efforts have led to some temporary cessation of hostilities meaningful

peace, security and reduction of hatred between the communities in conflict still remains elusive. State actors in collaboration with non-state actors have occasionally convened dispute resolution and reconciliation meetings between the communities in conflict. They have played a key role in bringing together parties to the conflict to resolve their differences and negotiate use of pasture and other resources in the area. They have even presided over oath-taking ceremonies aimed at binding the communities to peace truces. Most of these initiatives are however short-lived as raids have occurred hot on the heels of such peace deals (Amisi et al. 2010).

2.7 Chapter Summary and Knowledge Gap

This chapter presented literature review on past studies. Through the review, it has been noted that a lot of research and studies have been done on pastoralism, its changing environment and the resultant adaptation strategies. These researches and studies have however concentrated on generalities where sweeping conclusions are made on all pastoralists regardless of their socioeconomic, cultural and physical contexts. No specific research has been done on the Pokot pastoralists in regards to determinants of the adoption of emergent livelihoods among them. Again, it is to be appreciated that the culture of the pastoralists is very dynamic and with changing environmental conditions, there is bound to emerge new adaptation strategies from time to time in the name of emergent livelihood strategies. It is therefore important that the roles of key determinants in enhancing adoption of the most recent and emerging adaptation livelihood strategies among the pastoralists are investigated. The research topic is therefore worth studying as it fills the gaps identified in the literature review as described above.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

This chapter presents an in-depth methodology of how this study was undertaken to achieve the objectives. It discusses the research design; a description of the study area; target population; sample size determination and sampling techniques and procedure; data collection instruments and procedures; reliability and validity of the research instrument; data analysis, presentation and interpretation and ethical considerations of the study.

3.1 Research Design

According to Babbie and Mouton (2006), a research design is a plan, or structured framework of how one intends to conduct the research in order to address the research problem. It is a program of all the procedures that guides the researcher in collecting, analyzing and interpreting data. Research design is considered as a blueprint for research.

This study used case study research design which is mostly used in qualitative studies. Jwan and Ong'ondo (2011) allude to this by stating that "*the most commonly used methods in qualitative research are case study, discourse analysis, the narrative and grounded theory*". Gerring, (2004) defines case study as an intensive study of a single unit for the purpose of understanding a larger class of similar units. This design was suitable for this study as it enabled an in-depth study of a single entity in this case the Sook Pastoralists and gain insight into the larger entity-Pokot

pastoralists and all other pastoralists in Kenya. It allowed use of smaller samples for in-depth analysis.

Gerring (2004) argues that what distinguishes the case study method from all other methods is its reliance on covariation. He therefore categorizes case studies into type I, type II and type III each with a different menu of covariational evidence. Type I case study examines a variation in a single unit over time, while type II is where there is no temporal variation and the object of investigation is examined at a single point in time but with covariational patterns within that unit. Type III is where temporal and within unit variations are combined. Gerring concludes that type III is the most common genre of case study analysis. This study used the type III case study where the primary unit of analysis was the Sook Pastoralists who were studied by looking at their adoption of emergent livelihoods strategies before and after application of new technologies, changes in weather patterns and involvement of both state and non-state actors, hence the temporal variation. On the other hand, within unit variations were to be found in the within unit cases consisting of the four categories of youths, women, elders and opinion leaders who were expected to have different perceptions because of their gender, age and experiences. Their perceptions were however found to be the same.

3.2 Description of the Study Area

The study was carried out in Sook Division of West Pokot County, Kenya. Sook Division which is one of the 13 divisions in the county and whose headquarters is Chepnyal, is found in Kapenguria constituency and borders Turkana County to the North, Kasei Division to the North West, Kacheliba Division to the West, Kongelai Division to the South West, Chepareria Division

to the North Easts. Sook Division is classified amongst the ASAL Divisions of West Pokot County.

According to the 2009 population census (RoK, 2010), the population of Sook Division is 29,916 in an area of 750.5 kilometers square. The division entirely inhabited by the Pokots and has six locations which are Chekomos, Endugh, Nakwijit, Ptoyo, Sook and Tamugh.

According to Tuitoek (2010), Sook Division has an altitude between 1500m above sea level (Nakwijit and Turwel) and 2000m above sea level (Cheptam/ Sook Hills). The area falls within ASAL with complex soils of various textures and drainage conditions; sandy clay, sandy loamy, loamy clay, stony loams and fertile loam soils. Some of these soils are saline in nature and characterized by shallow and stony soils with rock outcrops.

Sook Division is adversely affected by lack of adequate rainfall with an average annual rainfall ranging between 600-1000 mm (Tuitoek, 2010). Sook rains are bi-modal with long rains starting at the end of March to July while short rains are at the end of September to November. Sook have been experiencing droughts in some years during which poor harvests and poor livestock performance occurred. The division boasts of diverse climatic conditions and therefore diverse livelihoods strategies. Livestock is however the most important natural resource in the division and supports the main livelihood system. The main livestock species found in this division in order of importance are cattle, goats, sheep, donkeys, camels and poultry. The division also has a potential for the growing of maize, finger millet, sorghum and beans. Higher altitude areas such

as Cheptram and Sook hills have a potential for growing cabbages, potatoes and keeping of merino sheep and dairy cows.

3.3 Target Population

Polit and Beck, (2008), describe target population as the entire set of individuals or objects, having some common characteristics that are of interest to the researcher. A target population comprises of a sample or studied cases as well as the unstudied cases (Gerring, 2004). Gerring continues to say that a sample in case study is comprised of several units which are observed at discrete points in time in regard to the study variables. In this study therefore the target population was the 29,916 pastoralists in Sook Division. It is from this population that a sample which comprises of youths, women, elders and opinion leaders as units were derived.

Sook pastoralists were selected for the case study, because they inhabit an area that boasts of diverse climatic conditions and therefore can practice diverse livelihoods strategies. They are therefore more knowledgeable on the determinants of adoption of emergent livelihood strategies for they have practiced pastoralism and have adopted emergent livelihoods.

3.4 Sampling Technique and Sample Sizes

3.4.1 Sampling Technique

This study used purposive sampling technique. It is a non-probability sampling technique in which units of the sample are selected on the bases of personal judgment or convenience and irrespective of whether they are representative of the population or not (Zikmund, 1991). It also allows a researcher to use cases that have the required information with respect to the objectives of the study (Mugenda and Mugenda, 2003). The researcher also chose purposive sampling

because the target population is large and scattered in a vast area and therefore identifying and locating the respondents considering the time and cost constraints is hard. Also qualitative researches such as this require that the researcher takes the most accessible or the one that he/she can spend most time with (Jwan & Ong'ondo, 2011).

This study therefore purposively selected registered women groups, youth groups and locational land committees for focus group discussions. In addition, the researcher also purposively selected opinion leaders for in-depth interviews. Members of all these groups are expected to give sufficient and reliable information on the determinants of the emergent livelihoods strategies among the Pokot community based on their diverse experiences as a result of their gender, exposure, education and age. They fully understand the dynamics in traditional pastoralism by virtue of being members of the pastoralist community. At the same time, they are involved in emergent livelihoods because of their leadership positions in the community and involvement in active registered pro-development groups or committees.

3.4.2 Sample size

This study used a sample size of five groups for the FGDs and 13 participants for in-depth interviews. As noted above, purposive sampling technique was used to select them. A pilot study of the area by the researcher revealed that there were six locations and therefore six locational land committees. Registered groups were 13 for youths and 14 for women. Many of these groups are however still struggling and are yet to initiate viable projects. This study therefore selected one locational land committee, two most active youth groups and also two most active women groups. On the other hand, the sample size for the in-depth interviews was arrived at by selecting

a member from each of the 13 most active professional bodies and institutions in the division. The member to be selected was the one who enjoys seniority or leadership position in their respective bodies or institutions.

The rationale for the small sample size was that a phenomenon in qualitative studies only needs to appear once to be of value. Therefore one occurrence of a piece of data, or a code, is all that is necessary to ensure that it becomes part of the analysis framework. Qualitative researchers therefore continue to collect data until they reach a point of data saturation. Data saturation occurs when the researcher is no longer hearing or seeing new information. According to Ritchie & Lewis (2003), there is a point of diminishing return to a qualitative sample as the study goes on, more data does not necessarily lead to more information. To Ritchie and Lewis, saturation occurs at around fifty while Strauss (1991) puts it at between ten to thirty interviews. The sample size of 13 participants for in-depth interviews was arrived at based on the saturation principle. It is to be noted that the researcher had initially proposed to interview 14 opinion leaders. The criteria for sample size selection is depicted in Table 3.2.

Table 3.2: Sample Size
Source: Researcher, 2014

BODY/INSTITUTION		POSITION	NO. SELECTED
Professionals	Education	TAC Tutor	1
	Business Community	Chairman	1
	Health Workers	Senior most	1
	Agricultural Officers	Senior most	1
Religious Groups	Roman Catholic Church	Priest in Charge	1
	Lutheran Church	Pastor in Charge	1
	Africa Gospel Church	Area leader	1
Political/Administrative leaders	MCAs	Senior most	1
	Aspirants	2013 aspirant	1
	Chiefs/Ass. Chief	Senior most	2
NGOs	World Vision, Kenya	Co-ordinator	1
	The Exodus	Co-ordinator	1
TOTAL			13

3.5 Description of Data Collection Instruments

Based on the nature of data to be collected, the time available and the objectives of the study, this study employed the use of in-depth interview, focus group discussions and secondary data as the main tools of data collection.

3.5.1 Secondary data

Secondary data refers to data that are already available, that is data which has already been collected and analyzed by someone else and may be published or unpublished. Published data are available in: various publications of the central and county governments, various publications of foreign governments and international organizations, books, magazines, newspapers, reports by research scholars and universities, public records and statistics etc. The sources of unpublished include; diaries, letters, unpublished biographies and autobiographies, works by scholars and researchers (Kothari, 2004). This method was appropriate for this study, because it enabled the researcher to get data at his/her own convenient time. It is also appropriate because data on weather changes, new technologies and the activities of both the state and non-state actors in the area of study can easily be obtained in the respective offices and authorities. The documented data was then critically examined and analyzed.

3.5.2 Focus Group Discussion

Focus group discussion is a form of group interview where a researcher or a moderator facilitates a discussion with a small group of people on a specific topic (Morgan, 1988) (as cited in Jwan, and Ong'ondo, 2011). It combines both elements of individual interviews and participant observation (Casey and Krueger, 2000) (as cited in Jwan, and Ong'ondo, 2011). This method of data collection was chosen because it enabled the researcher to explore the views of the participants and to generate answers to issues, which could have been more difficult in face to face interviews. This method was also suitable because it allowed the gathering of information even when the respondents happened to be largely illiterate (Kothari, 2004) or semi-literate as was the case in this study. Lastly, this approach reduced the amount of time as it generally

yielded detailed qualitative information from a relatively large number of discussants congregated in one place.

3.5.3 Interview Schedule

An interview schedule is a set of questions that the interviewer asks when interviewing and is used to standardize the interview situation so that interviewers can ask the same questions in the same manner (Mugenda and Mugenda, 2003). Interview schedules are structured, unstructured or semi-structured. This study used the latter where some structured questions were used together with some open-ended ones. All interviews were informally conducted. This informal structure was preferred because the researcher felt that it created a more relaxed atmosphere and consequently encouraged more complete and spontaneous response from the interviewees. The in-depth interview schedule was selected because of three reasons. First, it helped to verify the reliability of the information gathered by the focus group discussion and secondary data analysis. The technique was useful in checking in-depth information that cannot be found in other methods. Nsubuga (2000) notes that presenting questions orally is a particularly appropriate means of gathering information from the illiterates. Thirdly, the approach created confidence on the part of the respondents and as they gained interest on the subject, more reliable, valid and objective results were obtained. This was particularly important because the illiterate and semi-literate Pokots are usually reserved, conservative and secretive. They were therefore likely to hoard crucial information.

3.6 Data Collection Procedures

Data collection procedures are the series of events to be followed during the data collecting process. In this study, data was collected by the researcher using secondary data analysis, focus group discussions and the in-depth interviews. The researcher collected data after receiving permission from the School of Human Resource Development, the County Commissioner's office and National Commission for Science, Technology (NACOSTI). Permission to access secondary data from the offices of both state and non-state actors was also sought. The researcher then booked an appointment with the concerned custodians of secondary data, the groups and the interviewees. But before making a formal visit on the day of the appointment for each data collection event, the researcher made a pre-visit to determine the climatic conditions and was also familiarized with the area of study.

Since there are three instruments of data collection, the researcher started by secondary data analysis then proceeded to focus group discussions and interviews in that order. The logic with this order of events was that starting with secondary data equipped the researcher with background information on the study topic and area hence enabled to guide the discussions and interviews.

In the case of secondary data on weather changes, new technologies and the activities of both the state and non-state actors in the area of study, the researcher personally presented himself to the respective offices and authorities and accessed their documents. Guided by the research objectives, the researcher then critically examined and analyzed the data.

The focus group discussion was conducted among the purposively selected registered youth groups, women groups and the locational land committees. These groups were reached through the assistance of the chiefs and the village elders. These groups were dealt with separately and assembled in a conducive place selected by the discussants. The researcher then facilitated the discussion by use of the discussion guide and elicited details through probes, clarifications, paraphrases, reflections and summaries. Information was gathered by taking notes and use of auto-reverse tape-recorder to avoid turning off the tape in the process of discussion.

The respondents selected for the in-depth interviews were put in a relaxed and comfortable setting preferably in a private room to enhance confidentiality and enable them talk freely. All the interviews were tape recorded to capture the dialogue between the interviewer and the interviewee for purposes of analyzing data.

3.7 Validity and Reliability of Research Instruments

The data collection instruments were tested for their validity and reliability. Validity refers to whether an instrument measures what it claims to measure (Nsubuga, 2000). In qualitative research, validity concerns the degree to which a finding is judged to have been interpreted in a correct way. On the other hand, reliability is the measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda, 2003).

In other words, it is the repeatability of measurement.

Although validity and reliability are treated separately in quantitative studies, these terms are not viewed separately in qualitative research. Instead, terminology that encompasses both such as credibility, transferability and trustworthiness is used (Creswell and Miller, 2000).

To achieve validity and reliability, the researcher ensured that the information that was developed was transmitted within essentially social context, and the study probed for deep understanding than a mere examination of surface features. This study also ensured validity and reliability by pilot-testing the instruments in the neighbouring Chepareria Division where one women group and two respondents that were conveniently accessible to the researcher were used to pilot-test the focus group discussion guide and the interview schedule respectively. The items in these instruments were then corrected and modified with the assistance of proven researchers, who include the supervisors. Triangulation method was also adopted to improve validity and reliability of the instruments. According to Creswell and Miller (2000), Triangulation is ‘a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study’. The study therefore used secondary data, in-depth interviews and FGD which form triangulation method.

3.8 Data Analysis

Data analysis is the process of creating order, structure and meaning to the mass of information collected (Mugenda, 2003). In qualitative research, data analysis involves looking at the data, assigning categories and putting together the emerging issues into themes in an attempt to answer the research questions (Jwan & Ong’ondo, 2011). Jwan and Ong’ondo, recommend thematic analysis as one of the most commonly used strategies of data analysis in qualitative research.

Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data (Clarke & Braun 2006, p.78) (as cited in Jwan & Ong'ondo, 2011). This study adopted thematic analysis in the process of analyzing the data. Data was analyzed by classifying the categories of responses for each objective from the respondents and combining them into themes. The term 'category' means a broader headline to which several codes may be grouped (something like a sub-theme) and the term 'theme' means a major topic under which a set of categories may be grouped (Jwan & Ong'ondo, 2011). These two scholars further recommend that data analysis in qualitative research ought to follow a procedure involving transcribing the data, re-familiarization with the data, coding the data and finally producing the report. This procedure was adhered to in this study. The data was repeatedly exposed to analysis until the themes and categories that emerged were regarded as satisfactory. The data was then interpreted and presented based on these categories and themes.

3.9 Ethical Considerations

Ethics has been defined as that branch of philosophy which deals with one's conduct and serves as a guide to one's behavior (Mugenda & Mugenda, 2003). Despite the high value of knowledge gained through research, knowledge cannot be pursued at the expense of human dignity and a researcher should describe how he or she will ensure that ethical requirements are upheld in the study (Oso & Onen, (2009).

To ensure the aforesaid, the researcher obtained verbal consents from the respondents. They were also informed of the study objectives, methods and its relevance. They were assured of anonymity and confidentiality and no person was forced into participating in the study. At the

same time, the researcher ensured that all respondents and informants were treated with respect and their privacy observed. The respondents were informed that their names were not to be indicated in the report. The researcher provided the respondents with his contacts in case they wanted to contact him in future.

In order to conform to the standards of conduct of the various government ministries, a research permit was obtained from the offices of the County Commissioner to carry out the study. A Written permission was also sought from Moi University and NACOSTI. The later also provided the research permit.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, DISCUSSION AND INTERPRETATION

4.1 Introduction

This chapter analyses, interprets, presents and discusses data obtained from the participants and secondary sources. The data from FGDs, in-depth interviews and secondary sources has been analyzed, interpreted, discussed and presented concurrently based on the common themes to avoid repetition. The data on in-depth interviews and secondary sources has however been used to support and beef up that from FGDs which was the main data collection instrument.

4.2 Background Information of the Respondents

The study used five FGDs in which there were two women groups, two youth groups and one group for the elders. Women and youths in this study were very important because in the Pokot Community they are the ones who are mostly engaged in new livelihoods strategies. They are in registered development oriented groups and many have benefitted from women and youth enterprise funds. Women in particular have been known to do most of the agricultural work where most of the emergent livelihoods are to be found. According to Todaro and Smith (2009), women in some cases are found to do over 70% of the total work. The youth, on the other hand, have adopted the new technology more than any other category in the population. Though the elders continue to stick to traditional ways of keeping livestock, they were important in this study since in the Pokot community, the elders are very important in making decisions on socioeconomic activities. Their wide experience by virtue of age also came in handy, because this study also sought to find out the livelihood strategies that were being practiced before

changes in weather patterns, adoption of new technologies and active involvement of both state and non-state actors were experienced.

This study also used 13 opinion leaders for interviews. They are important in the study because of their positions that they hold in the society. The information obtained from interviewing them was used to supplement and beef up that from focused group discussion.

4.3 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies

The first objective of the study was to find out how new technologies are contributing to adoption of emergent livelihood strategies among pastoralists in Sook Division, West Pokot County. To answer this objective, five focused group discussions were engaged with the help of guiding questions which were formulated according to the study objectives. The information was further reinforced and corroborated by secondary data and data obtained through interviews conducted from 13 purposely selected participants. The results are as presented under Table 4.1 and the themes that follow it.

Table 4.1***New Technologies and their Contributions towards Adoption of Emergent Livelihood Strategies******Source: Researcher, 2014***

New Technology	Year of Adoption	Contribution Towards Adoption	Resultant Emergent Livelihood Strategy
Mechanization	1995	Enable early planting Improves soil fertility	Crop Farming
Fertilizer technology	2006	Increased yields Makes crop farming profitable	Crop Farming
Modern beehives	2006	High quantity/quality honey Easy/less dangerous to harvest	Beekeeping
Livestock upgrading	1990	Increased output in terms of milk, meat and market prices	Modern Pastoralism Dairy Farming
Modern athletics training strategies	2003	Enhanced professionalism	Athletics
Irrigation technology	1990	Farmers do not depend on rains Enables farming throughout the year Enables growing of various crops	Irrigated crop farming
ICT	2002	Dissemination of new ideas Monitoring market trends	Businesses in Cyber Cafes/Video shows
Money Transfer Technology	2011	Sending/receiving money	M-Pesa Businesses
Fishing Technology	1995	Effective and efficient	Fishing
Seed technology	1985	Improved quality and quantity	Crop farming

4.3.1 Livelihood Strategies before Application of the New Technologies

When respondents were asked to state the various livelihood strategies that were in place before the onset of new technologies, they mentioned the following:

Crop farming: They said that crop farming was done manually mainly by women on small scale and only for domestic purposes. But these were not enough to sustain people throughout the year. This would sometimes be exacerbated by droughts during which people would feed on wild potato-like roots called ‘*akan*’ and wild fruits called ‘*roko*’. Crude traditional tools were used to prepare farmlands. Later, modern hoes came to be used by manual labourers to till the land. Good seeds were selected during harvests and preserved by smoking. Shifting cultivation was applied. In the end yields were low and not enough to feed a household for a whole year.

Livestock keeping: This was done the nomadic way because there were larger herds and land was owned communally. Pasture and water were always scarce. The livestock were mainly kept for food and cultural purposes where some selected animals were killed during ‘Sapana’ and other ceremonies such as to appease the gods when calamities strike. Herbal drugs were used to treat sick animals. Deaths were however very high.

Beekeeping: Beekeeping was done in a traditional way where honey harvested was used as food and making of liquor for cultural ceremonies.

Barter trade: This was the commonest form of business where goods were exchanged with other goods. For instance, people exchanged millet with livestock.

Loaning of livestock: Participants mentioned this as a common practice during those days when new technologies had not been applied. It was meant to cushion livestock owners from suffering

heavy losses when they lose their herds to droughts and cattle raids. Here, the person who loaned out a cow would get a heifer as interest at a later date when need arises.

Hunting and Gathering: From the interviews, hunting and gathering was named as one of the livelihood strategies among the Sook pastoralists before adoption of new technology. Wild potato-like roots called '*akan*' and wild fruits called '*roko*' were gathered and eaten. Wild animals were also hunted down for meat. In crop farming people used to pull together is an exercise called '*Kiyoch*' to enable them cultivate larger pieces of land using their crude tools. The '*Kiyoch*' participants would be given traditional liquor as payment and inducement. Cultivation was purely manual.

4.3.2 Types of New Technologies Applied in Sook Division

When respondents from the five focused group discussion were asked to state the various types of new technologies that are currently being applied in their area to enhance success of livelihood strategies, they stated various technologies in the following areas: mechanization of farming, fertilizer use, modern beekeeping, livestock upgrading, pasture management, modern livestock diseases control and treatment drugs, irrigation, and certified seeds. Others are: modern transport and infrastructure, soil protection, ICT, solar power, water management, fishing and pest control.

Analysis of secondary data revealed a lot of information on application of new technology that corroborates the one that was obtained from the participants. Data from West Pokot's first county integrated development plan (County Government of West Pokot, 2013) revealed an

ambitious plan on the application of new technologies on production. Some of these technologies had been rolled out and were mentioned by the respondents. They include: soil conservation methods, ICT, solar power, seed and fertilizer technologies and animal husbandry.

4.3.3 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies

In relation to how new technologies (already mentioned) are contributing to adoption of emergent livelihoods strategies, the following answers were obtained from the FGDs, in-depth interviews and secondary sources:

Mechanization of farming: Participants named mechanized farming as a new technology in Sook where tractor-drawn implements are being used to enhance crop farming in three ways. First, is to plough farmlands especially in places where the terrain allows. Through this, more land has been put under cultivation. It also has the advantage of facilitating timely planting unlike manual method that occasions delays. They further acknowledged that tractors and other machines dig deep trenches that allow water to percolate deep into the soils hence maintain moisture in soil for long. This therefore contributes to more production where they approximated to have been harvesting 20 bags of maize from one acre. Secondly, the technology has been used to shell maize instead of manual means thus saving time. Thirdly, tractors are also fitted with trailers and have been used to transport farm produce to stores and markets. According to the respondents, use of tractors in Sook started as recently as 1995.

Other forms of mechanized farming named by the participants are use of power- saws and grains milling machines popularly referred to as ‘posho mills’. The former which came into use around

1996 is used to fell big trees in farmlands and to also produce timber for fencing and construction of farm structures. The latter are used to mill grains to get flour for sale and domestic consumption. Respondents said a ‘posho mill’ is one of the oldest technologies in Sook as it came into use as early as late 1980s.

Fertilizer Technology: Participants said that the use of fertilizers has improved crop yields and have also reclaimed infertile land. Respondents were however quick to note that fertilizer use started as recently as 2006 only with top-dressing and not planting. To do so, farmers apply ammonia and urea. A few farmers are currently applying fertilizers during planting.

Pest Control Technology: Participants mentioned use of herbicides and pesticides to control weeds and pests in Sook. This has led to increased crop yields as opposed to the traditional methods where herbs were used or no pest control at all.

Modern Beekeeping Technology: With modern beehives, residents have been able to get more honey which is less dangerous when harvesting. Through these beehives, residents have been able to sale honey and use the money to pay school fees and even restock their livestock. They further said that the modern beehives such as the Kenya Top Bar and Langstroth are mainly donated by NGOs. With these beehives, participants said that they obtain high quantity as well as quality honey for domestic and commercial purposes. Figure 4.1 shows a photograph of a modern beehive that Sook residents are embracing.



Figure 4.1: A Modern Beehive

Source: Researcher, 2014

Livestock upgrading Technology: Respondents said that farmers started acquiring Sahiwal in 1990s and later Ayrshire, Jersey and even Friesian bulls which they crossbred with their local breeds. For goats, farmers get higher breeds of goats and dorper sheep from Nasukuta Livestock Improvement Centre. Farmers have benefitted with higher milk production and good market prices from livestock sales. Modern livestock keeping has therefore become very attractive. Farmers have benefitted with higher milk production and good market prices from livestock sales. Respondents further said that even sheep are now milked thanks to crossbreeding technology. Figure 4.2 shows an Ayrshire cross breed bull in Sook.



Figure 4.2: Ayrshire Crossbreed (left) in Sook

Source: Researcher, 2014

The participants also gave another form of livestock upgrading in Sook where low yielding local breeds are all sold. The money earned is then used to purchase higher yielding breeds. In the end, the farmer is assured of higher yields from a smaller herd of cattle.

Additional information from interview schedule confirmed the Crossing of local breeds of cows, goats and sheep with higher breeds. For cows, Sahiwal bulls are attained from Chebororwa Farmers Training Centre. Ayrshire and Friesian bulls and heifers are also acquired from markets in West Pokot and Trans-nzoia. White galla and Totenberg goats and dorper sheep are obtained from Nasukuta Livestock Improvement Center. Products of cross breeding mature faster and

brings about increased output in terms of milk, meat and market prices. “A *bullock calved in April this year for example and sold later in December, will fetch between Ksh.15,000 to Ks.17,000 if it is a cross breed but between 10,000 to 11,000 if a local breed*”, Said one interviewee who is a businessman. The study also found that prices of such bulls go up to kshs.50, 000.

Pasture Management Technologies: Fencing off pasturelands by use of cacti (life fence), barbed wire, tree trunks and sticks is a new technology which the respondents said is gaining roots in Sook. They said that such pasturelands are mainly reserved for drier seasons. This has enabled people with large pasturelands to lease out part of it and get income to do other things such as paying fees for children. Farmers also reap higher yields while saving time that was once wasted by moving with livestock from one place to another and looking after livestock as they grace. With this technology, they just drive livestock into fenced plots and get time to do other things. Respondents pointed out that this technology has attracted many residents who have started engaging in other activities alongside livestock keeping. For instance, teachers are nowadays farmers and they still have enough time to attend to their lessons. Figure 4.3 shows a life fence protecting pastureland.



Figure 4.3: Life Fence Protecting Pastureland

Source: Researcher, 2014

Sook farmers have also grown highly nutritious grasses such as nappier and boma rhodes. Stored maize stalks also usually assist during the dry season.

Modern livestock diseases control and treatment: With conventional drugs, respondents said that farmers have been able to eliminate and control pests like ticks through spraying, and de-worming their animals at intervals of three months. Furthermore, residents are also aware of multivitamins and animal skin improvements drugs. Treatment of livestock diseases has also been made possible with availability of modern drugs.

An additional data from interview schedule revealed that prevention of diseases such as East Coast Fever has been made possible through ticks eradication measures such as dipping or

spraying animals with readily available drugs such as triatix, ectomine among others. With modern medicine, residents of Sook are nowadays fearless about keeping less resistant hybrid cows. They are usually less resistant but with availability of drugs, farmers no longer fear keeping them. This has culminated in reduced deaths of vulnerable and less resistant livestock and at the same time increased production.

Irrigation Technology: This according to the respondents is practiced in order to ensure that crops such as onions and vegetables are grown throughout the year especially along the river banks. Irrigated crop farming has become a major livelihood for some people since 1990s. Additional information from interviewees revealed that farmers have learnt not to depend on rain. This is attested to by the fact that farmers would dig furrows; some have used pipes to lead water to their gardens. This has been done to an extent that in Sook division, One would find green vegetables and fruits in the markets during the dry season. *‘Today fruits such as mangoes and oranges and green vegetables can be obtained without travelling far outside the division’*, said one of the interviewees. The study established that irrigation is mainly done in small scale in places where there are permanent rivers such as rivers Pupuu, Cheptram and Chepnyal. Residents as a result take advantage of gravity where farmers pipe their water to gardens and use sprinklers to irrigate their crops especially vegetables throughout the year. Figures 4.4 show irrigation under practice.



Figure 4.4: A Farmer Irrigating His Vegetable Farm in Cheptram

Source: Researcher, 2014

Information and Communication Technology: ICT has also been embraced in Sook where radios, televisions and mobile phones have been common. Mobile phones for instance, are used for communications and monitoring market trends by business people. Secondly, televisions are mainly used to play videos and sometimes watch news. People therefore have benefitted from new ideas. Radio stations such Kalya FM and West FM, air programs that are beneficial to all especially farmers and business people. They get to know market trends and prices. Residents are also benefitting from the new technology of mobile money transfer like M-pesa where they send and receive money via their phones. First M-Pesa came to Sook as recently as 2011.

In addition, data analyzed from interview schedule showed that mobile phones enhance coordination of issues, pertaining to livelihood strategies among the people. The presence of mobile phones enables selling and buying of goods and services without the physical presence of people involved. The cost of travel is reduced as it takes shorter time. Market trends are easily monitored. This therefore implies that mobile phones are not only communication gadgets but banking and business tools as well in which people can transact businesses worth millions using little money: *“With just an airtime of five shillings, a business transaction worth millions of shillings can be effected within minutes”*, said one interviewee. As a result, phones have revolutionized the life of Sook residents.

Solar Power Technology: As a modern technology in energy sector, participants said that solar panels have been adopted by some residents mainly in homes and schools for various purposes including heating of water, lighting, charging batteries for mobile phones, powering water pumps, televisions and computers. As a result, people have been able to save money that would otherwise have been used in buying kerosene and travelling to towns such as Chepareria where there is electricity to charge batteries that are used to power mobile phones, televisions and computers.

Water Technology: Participants said that various strategies have been adopted to ensure that enough water is accessed for both domestic and irrigation purposes. Subsurface dams have been constructed in some villages such as Kakokima in Tamugh Location. There is also piped water from Chesiron river source to Tamugh Trading Centre in Tamugh Location. This was made possible with the assistance of Exodus Community Development Organization. It was also found

that residents of Ptoo and Psapai in Chekomos location have connected water from river sources to their farms, homes and health centers using pipes and taking advantage of gravity. Residents have also been able to use water tanks to harvest rain water. The water tanks were either purchased by individuals, or donated by NGOs. Water management strategies have been adopted to ensure regular water supply for both domestic purposes and irrigated crop farming.

Additional information from the interviews showed that water technology has been embraced in terms of rain water harvesting from roof tops as well as the rocks. It was further established that digging of shallow water pans and boreholes is also another new embraced technology by residents of Sook. Water technology which gained roots around 2008 with the coming in of many NGOs has therefore made water available in homesteads for domestic purposes and kitchen gardens.

Seed technology: In crop farming, Sook residents are now planting certified seeds. For instance, in the case of maize, respondents stated that high breed seeds from the Kenya Seed Company mostly 614 or 628 are commonly planted. The study further found that certified seeds for vegetables such as kale, cabbage, onions, tomatoes and potatoes and for fruits such as mangoes, avocados and oranges are also planted in the area. This has improved the quality as well as the quantity of production from their fields.

Soil conservation technology: The study also found that agricultural officers have assisted farmers to dig terraces and trenches to control soil erosion. Terracing of farmlands is done in order to retain moisture in the soil. This has ensured that soil remain fertile hence increased

output. The agricultural officers only train few farmers who would train the rest on soil conservation methods. Respondents noted that soil conservation methods started in Sook as early as 1970s during which agricultural extension officers were more dedicated to their duty.

Modern transport Technology and Infrastructure: In Sook, the only infrastructure visible and known to people are usually the roads. Graveled/graded roads have enabled easy movement of people, goods and services in the process of livelihoods transactions. This has enabled easy transportation of seeds and harvests from and to markets thus, improving the lives of the residents in Sook.

With motor bikes and public service vehicles such as '*kangaroo*', movement of people has been aided. There is also availability of heavy commercial vehicles such as lorries and tractors which have made transportation of farmers' produce easier and cheaper. Modern transport has also contributed to the health of Sook residents where sick people have been able to access medical services in time.

Fishing Technology: Pokot fishers in Turkwel dam are now using motorboats in fishing and no longer use traditional methods. Commercial fishing is now possible among the Pokot people in the division especially those around Turkwel dam and along big rivers such as river Swam.

Modern Athletics Training Strategies: Youths have known that with organized training regime, athletics is a source of livelihood. From around 2003, professional athletes have continued to increase in Sook. These athletes went to athletics training camps in Mnagei and

Lelan Divisions and got opportunity to access modern training equipment and coaches. Athletics also exposes youths who benefit from bright ideas on modern livelihood strategies. This has assisted in transforming the area.

Veterinary Services: The study found that nowadays, veterinary officers go around to farmers' homes to treat sick cows. They also teach farmers on how to keep their animals healthier.

Tissue Culture: The current County Executive Member for agriculture in West Pokot County has been encouraging farmers to plant tissue bananas called 'Ng'ombe'. Ng'ombe banana takes shorter period- one year to mature and more yields than the formerly popular banana called 'Kampala'. There is ready market for tissue bananas. This is a very new technology in Sook.

Sustainable Agriculture: Sustainable agriculture is a technology that was named and described by one of the interviewees. It is done through Society for All-round Development (SARD) by the Catholic Diocese of Kitale and sponsored by the Germans. SARD aims at the introduction of environmentally sustainable income generating activities. SARD takes a holistic and integrated approach to development that aims at sustainability of the programs by providing people access to training and structures they need. In Sook, SARD encourages people to fence small plots where one can put everything he/she needs. It has an empowerment groups that empowers people with knowledge through seminars before moving to the ground. The interviewee gave his own garden as an example. In this garden, *'I have vegetables, oranges, sugarcane, and sweet potatoes; the garden is also well secured with chain link fence'*, he said. SARD started its activities in Sook in 2012.

A document, (Komong'iro, 2013), obtained from the Exodus Community Development Organization enumerates the activities of the community based organization which mainly revolve around heavy application of new technologies. On water related technologies, the organization has build five dams at Kakokima, Ptira, Ptakach. Kaywolongar and Toyopo. The dams are used by neighbouring communities for small scale irrigation purposes. The organization also donates water harvesting equipment such as water tanks and gutters. Certified maize seeds have been donated to poor farmers. The solar technology is also within the docket of the CBO. Figure. 4.8 show a student, a beneficiary of the program installing a solar panel on their grass thatched house.

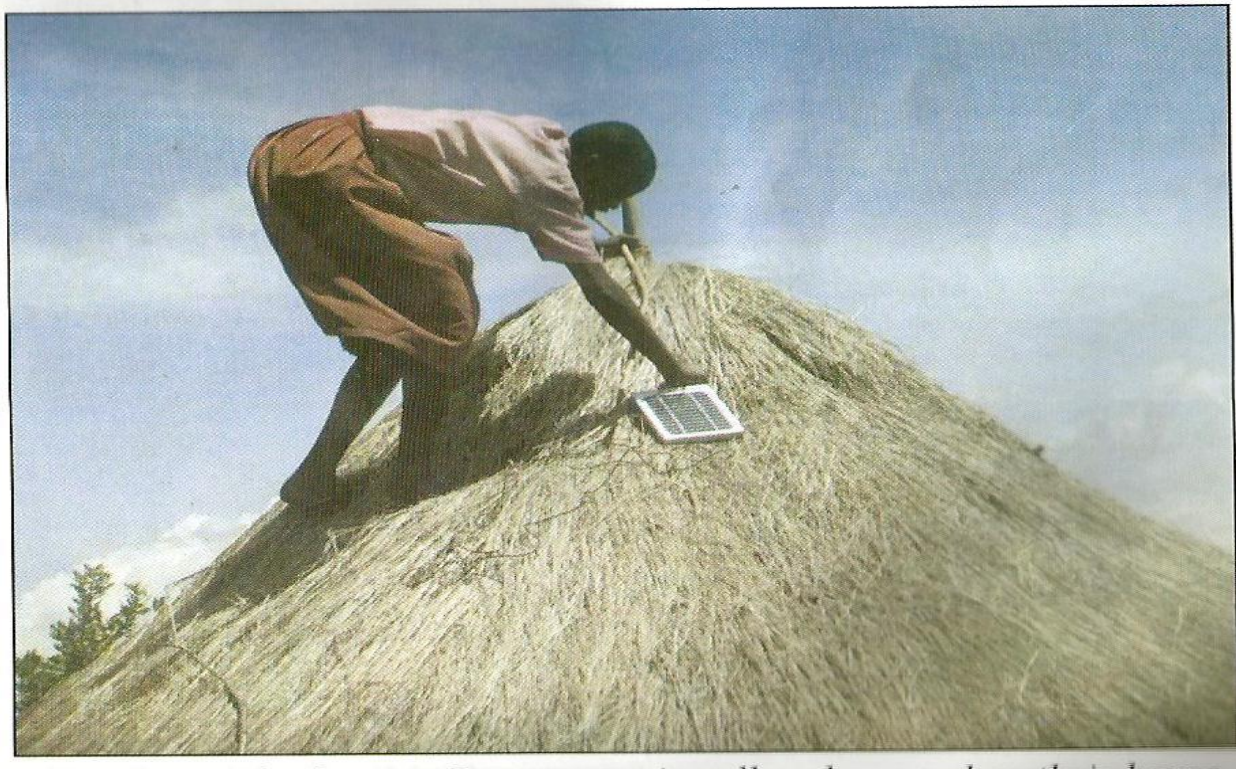


Figure 4.5: A student Installing Solar Panel Donated by Exodus CBO Source: Komongiro, 2013.

The World Vision Baseline Survey for Sook Area Development Programme indicated that only twenty four percent (24.4 %) of households in Sook harvest water. The survey gives reasons for this as lack of storage tanks and knowledge about the water harvesting technology (Tuitoek, 2010). The report recommended that community members be educated on this technology and issued with water tanks a fact that was found through the interviews and FGDs.

4.3.4 Whether the Application of New Technologies Has Led To Modification of Already Existing Strategies or Emergence of Totally New Ones

When participants were asked to state whether the application of new technology has led to modification of already existing livelihood strategies or emergence of totally new ones, most of the group members said that both scenarios have been experienced. They argued that the application of new technology has led to modification because what is being done currently e.g. trade, livestock and crop farming were being done but in traditional ways by use of crude technologies. In livestock keeping, they said that improved animal husbandry technologies have been adopted like crossbreeding and modern pasture management strategies. Crop farming has also been taken to greater heights through mechanization, application of fertilizers as well as use of chemicals to prevent pests and diseases. This has seen increase in production.

On the other hand, new technology has led to emergence of totally new strategies such as white color jobs and beekeeping by women thanks to arrival of modern beehives that can easily be harvested by all. Other new strategies are M-Pesa businesses and fishing. Sending and receiving money using their mobile phones is a totally new technology that has brought about a totally new livelihood strategy. On fishing, the participants noted that availability of motorboats in the

Turkwel dam has enabled people to practice commercial fishing and with availability of ready market, it has become a livelihood strategy for many people.

4.3.5 Rating the Contribution of New Technologies

When participants were asked to rate the contributions made by new technology toward adoption of emergent livelihood strategies, most of them said that its contribution has been very significant. When probed to explain further, they gave examples of livelihood strategies that emerged or have been modified due to application of new technology. For instance, irrigation has increased food production among households who practice it, adoption of modern beehives has increased production of honey and therefore more sales are being realized. ICT has enabled Sook people to access new information and ideas through mobile phones (that are internet enabled), television and radios where valuable programs to farmers are available. In addition, the solar technology and use of vehicles have for example revolutionized socioeconomic activities.

However, few other respondents rated the contribution of new technology as being insignificant. These dissenting voices argued that access to modern technology in Sook is still very low. They gave the example of irrigation technology which has been adopted by very few people who live along permanent rivers and are able to channel water to their farms to be able to practice irrigation. Again, traditional pastoralism is still being embraced where livestock still graze freely in communally owned land.

All interviewees rated the role of new technology in enhancing adoption of emergent livelihood strategies as being significant. Accessibility to technology has exposed people and induced them

to adopt emergent livelihood strategies. According to them, it has reduced poverty among Sook residents. They further reiterated that with globalization, Sook will soon become part of the global village such that *“what is happening in Sook happens in Britain since the area is really transformed thanks to technology”* one of them emphasized.

From the above analysis of data, it is clear that residents of Sook division have adopted various emergent livelihood strategies due to new technologies. New technology is therefore a determinant of adoption of emergent livelihood strategies among pastoralists in Sook Division. New technology must therefore be taken into account when looking for ways in which to assist pastoralists move from traditional pastoralism to emergent livelihood strategies a process that will make them achieve high standards of living. To emphasize the role of new technologies in determining successful adoption of emerging livelihoods among the pastoralists, Dyer (2012) lamented of constraints to productive and broadly beneficial livelihoods strategies among the pastoralists which include: weak transport, power and telecommunications infrastructure.

According to the Expected Utility Theory which was advanced by Hillel J. Einhorn, in 1981, people choose livelihood strategies that guarantee them maximum utility (Einhorn & Hogarth, 1981). Sook pastoralists practiced traditional pastoralism for a long time because it provided them with greater utility based on the prevailing circumstances. Again, they were not exposed to a wider range of alternative livelihoods from where to choose one that offered greater utility. This is however no longer the case today as they have been able to embrace ICT which has bombarded them with a wider range of ideas and livelihood strategies. Data obtained from the

participants also revealed that they have also adopted other new technologies that have enabled them to select and adopt emergent livelihood strategies that offer greater utility.

Crop farming which used to be on small scale with lack of quality seeds, with no organic fertilizers, as well as chemicals, such as herbicides has now been taken to a different level. Sook residents have now embraced modern and mechanized agriculture with the assistance of tractors for land preparation where quality seeds from Kenya Seed Limited are used with appropriate fertilizers and chemicals. Crop rotation is also highly practiced in order to control pests and diseases that occur due to monotonously planting similar crops over a long period of time.

In addition, the adoption of livestock upgrading technologies has led to rearing of highly productive animals and this has replaced traditional pastoralism. This is in agreement with the study findings of other scholars among them Nkedianye et al. (2009) who noted some evidence that livestock production is becoming more intensified (for example, improved breeds and management practices, increased off-take and sales aimed at increasing productivity rather than herd size alone), among the pastoralists. Production has also been increased due to the availability of pesticides as well as insecticides which have kept pests and insects at bay.

Technologies that pastoralists have adopted to efficiently utilize water resources were mentioned by the respondents to have enabled them to increase food production and remain with surpluses thus engaging in agribusiness and commercialized agriculture. According to Curtis (2014), pastoralists have adopted new ways of conserving water and monitoring grazing lands that have made them more efficient, leading to greater milk production, better breeds and improved quality

of life. Curtis ventures into details of the technologies and innovations that pastoralists have applied hence transforming pastoralism.

4.4 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies

The second objective of the study was to assess how the change in weather patterns has brought about adoption of emergent livelihood strategies among pastoralists in Sook Division, West Pokot County. Table 4.2 gives a summary of how changes in weather patterns have brought about adoption of emergent livelihood strategies.

Table 4.2
Changes in Weather Patterns and their Contributions towards Adoption of Emergent Livelihood Strategies
Source: Researcher, 2014

Weather Pattern Change	Year(s) of Change	Contribution Towards Adoption	Resultant Emergent Livelihood Strategy
Positive/Improved changes in weather patterns	2003-2014	Enabled people to diversify their farming activities Water availability Funds generated from the sale of farm produce have enabled people to educate their children	Irrigated crop farming Dairy farming Fishing Beekeeping Salaried employment
Negative /Worse changes in weather patterns	Before 2003	Forced people to adopt survival strategies-avoid weather dependent livelihoods Forced people to be innovative	Salaried employment Trade and commerce Mining Irrigated crop farming Athletics

4.4.1 Main Livelihood Strategies before Changes in Weather Patterns

Participants were asked to state livelihood strategies that were being practiced before changes in weather patterns and to describe how the prevailing weather conditions favoured them. The responses were as follows:

Firstly, livestock keeping was the main livelihood strategy. It was done amidst frequent bouts of droughts and famine and nomadism was practiced. Livestock deaths were high due to inadequate pasture and water resources. Goats were favoured because of their high level of resistance to diseases and drought. Livestock were kept for domestic and cultural purposes. Secondly, crop farming was practised in which mainly millet and sorghum were grown for domestic purposes. This was done mainly by women and children as men were engaged in looking after livestock and security matters. Thirdly, there was hunting and gathering. Persistent droughts forced people to supplement by surviving on wild fruits and vegetables. Common ones were ‘Akan’ and ‘Loma’ which could be boiled for long hours to reduce poisoning effects. Fourthly, there was traditional beekeeping because there were trees like cacti which could flower with little rains.

Additional information obtained from analysis of responses from interview schedule revealed that before the changes in weather patterns, nomadism was being practiced because pasturelands were vast and owned communally.

4.4.2 Changes in Weather Patterns Experienced In Sook

When respondents were asked to show how the weather patterns have changed in the area, it was found that contrary to the common knowledge that there has been increase in temperatures,

prolonged droughts, as well as, unreliable rainfalls globally, most participants said that Sook area has experienced more rains, reduced droughts in addition to reduced temperatures. They corroborated their views by use of various indicators that include more rivers that were seasonal now flowing with water throughout the year. Water volume has increased as well. A good example is Empough River shown in Figure 4.7 flowing with water in March which is usually the peak of the dry season in Sook and is supposed to have dried up.



Figure 4.6: River Empough Now a Permanent River

Source: Researcher, 2014

Another indicator is availability of enough pasture for livestock and people no longer migrate in search of pasture for their livestock. *“Droughts have reduced because our older people used to tell us that drought used to be more severe and frequent than it is currently”*, said one of the

participants. They further said that initially, lowlands such as Kochar and Empough were uninhabitable and no crop farming took place because of harsh weather conditions. But now people are doing farming and living there. In fact highlanders are scrambling for a piece of land in the lowlands because it has become more productive.

Few members who participated in the study however dissented and said that rains have continued to reduce and become unpredictable, temperatures have increased and droughts are more frequent. One female member attributed the positive indicators of climate change described above to increased use of modern ploughing methods thus: *“what has saved people is technology where for example, when people ploughed their lands by use of modern hoes and tractor drawn ploughs, water run-off reduced and instead water sunk deep into the soil thus making rivers to flow with water throughout the year’*. According to these members, rivers have become permanent because dry seasons have become shorter and rains have decreased but well spread throughout the year. Also, current ploughing methods and terracing reduces run-offs. They also justified their assertion that temperatures have increased because people now inhabit peak of hills that were once too cold for anybody to survive comfortably.

Just like the focused group discussions, information obtained from the interviewees revealed that all participants acknowledged that there is change in weather patterns in Sook. There was however divided opinion on how the changes have occurred. Majority said that rains have improved because according to them rains used to start in April and disappeared immediately around June, crops would dry up hence food shortage but today rains don’t disappear for long. On the other hand, they said that temperatures have increased because natural forests have been

cleared and there is no longer any regulation of cool air. The study further found that rains have increased as evidenced by the fact that there used to be only two permanent rivers in Sook which are Pcholpogh and Chepnyal, but now there are around 10 permanent rivers. It was also established that rains have increased following the absence of drought for the last five years while at the same time Sook pastoralists have not migrated in search for pasture for their livestock. The last time they did so was in 2002.

Secondary data revealed information that corroborated what was collected from the FGDs and interviews. According to the World Vision Baseline Survey for Sook Area Development Programme, the main sources of water for households include rivers, springs and streams which are numerous in the area (Tuitoek, 2010). This proves the respondents' assertion that the number of permanent rivers have increased. According to the World Vision Baseline Survey in the area, it was established that water was fairly available both in dry and wet seasons (ibid). This therefore implies that the weather patterns have changed and to the better since residents can now do farming through irrigation and other methods in order to ensure that food is there throughout the year. However, the report further says that few residents of Sook have piped water. This may be due to the cost involved in accessing piped water which majority cannot afford due to their disadvantaged socio-economic backgrounds.

4.4.3 Notable and Memorable Changes in Weather Patterns and their Effects

When participants were asked to give any memorable change in weather patterns, some were not aware, while others said that there were droughts in 1984, 1991, 1999, 2001 and 2009. As a result, livestock died in large numbers forcing pastoralists to migrate in search of pasture mainly

to Uganda. They ended up engaging in violent conflicts with other tribes and the Uganda People's Defence Forces (UPDF). The other memorable weather change according to the respondents was the El-nino rains in 1998. There were also a lot of rains in 2012. Lives and properties were lost through landslides and floods.

The study also found that notable memorable changes from weather patterns were given names corresponding with their effects and aftermath. However, this applies to droughts that occurred before 1965. They include: (a) *Lokimurio* of 1933. During this drought, Sook pastoralists got divided and fled in different directions with their livestock looking for pasture and water; (b) *Ptapayaw* of 1943 when people burned sticks at night to light their way into boreholes to water their cattle. They also did this to scare away wild animals also coming to drink water; (c) *Katarng'any* of 1953 when pastoralists got scattered looking for survival; (d) *Lopiluk* of 1954 when drought recurred in a span of one year without allowing people to recover from the preceding one; (e) *Kura* of 1965 when pastoralists were fed by relief food that came in small metal tins that Pokot call '*kura*' (f) Others that differ in magnitude and effects happened in 1984, 1991, 2002 and lastly, 2009.

Information from the interviews confirmed the drought of 1984 and the 1998 El-Niño rains as the worst changes in weather patterns ever experienced in Sook. To the older respondents however, the droughts which they experienced or heard of before 1965 were the worst.

4.4.4 Contribution of Changes in Weather Patterns towards Adoption of Emergent Livelihood Strategies

When participants were asked to describe how the changes in weather patterns had contributed to the adoption of emergent livelihood strategies, the study found that increased rains has made it possible for improved agriculture to take place, thus increased production. The conducive conditions created by improved weather conditions have enabled people to diversify their farming activities. High yielding high breed cattle are now reared in Sook due to increased availability of pasture. A wider range of crops are now grown. Modern beekeeping is now a reality because of increased flowering as well as availability of water for bees throughout the year. The presence of permanent rivers has enhanced agriculture and most people are now earning a living from irrigated farming where horticultural products like tomatoes, vegetables, carrots and even fruits are being produced throughout the year. Furthermore, the positive change in weather patterns has improved the literacy levels in the area. Schools are now full of children because of ready food and parents can pay fees from farming proceeds.

For those who said that rains have reduced, become unpredictable and unreliable coupled with increased temperatures, they argued that people have become more innovative and no longer depend on livestock alone. Farmers are now keeping goats more than cows because cows are heavy feeders. They have bred the white galla goats obtained from Nasukuta Livestock Improvement Center. This is to utilize the little pasture due to droughts and unpredictable rains. While those who still keep livestock have been forced by scarcity of pasture to keep smaller herds that are more productive. Residents have also embraced the idea of sending their children to school as a result of unpredictable weather patterns. They send their children to school to gain

salaried employment and also engage in trade to generate income. Education for instance, does not depend on weather. *“Education is the only resource we will have when weather fails us”* said one participant.

On the other hand, information from the interview schedule in relation to how the changes in weather patterns have contributed to adoption of emergent livelihood strategies showed that: People now avoided entirely depending on livestock keeping which has become unreliable while farmers who keep livestock have started to reduce their numbers in order to manage them. In addition, cross breeding of livestock is highly embraced in order to get more resistant breeds with higher yields. Others have resorted to trade and commerce that is not dependent on weather. *“People have now woken up and seen that it is possible to grow maize, plant nappier grass and keep even merino sheep. You can nowadays see big trucks in Sook coming to transport maize direct to the cereal boards. This is because of improved rains and application of modern seed technology”* said a 35 year old CEO of Exodus Community Development Organization.

It was further established that changes in weather patterns has made people to adopt new ways of doing things like digging of boreholes, dams and harvesting of roof water. Conducive weather condition have also enabled people to grow crops hitherto not grown in Sook division such as bananas, sugarcane and fruit trees. Interviewees further said that funds generated from the sale of milk and livestock have enabled people to educate their children. Changes in weather have also enhanced food security which implies that people are healthier to engage in development activities. It is interesting to learn from the interviewees that people have learnt to predict

drought, sale their livestock, keep the money and restock when conditions become favourable. Many use the money to engage in trade, which does not depend on weather.

West Pokot's first county integrated development plan (County Government of West Pokot, 2013), indicates climate changes as one of the impediments of development in the county. It also states that; *"temperatures have risen throughout the county, rainfalls have become irregular and unpredictable, and when it rains, downpour is more intense"*. Though this disagrees with the opinion of the respondents, it is still a pointer to the fact that weather changes have played a significant role in influencing adoption of emergent livelihood strategies.

In summary, it is clear that weather changes coupled with population increase, have taught pastoralists to avoid over relying on livestock and engage in new livelihood strategies.

4.4.5 Whether the Changes in Weather Patterns have led to Modification of already existing Livelihood Strategies or Emergence of Totally New Ones

When participants were asked to state whether the changes in weather patterns have led to modification of already existing livelihood strategies or emergence of totally new ones, most of them said that it has led to both but mostly modification. Similar responses from interviews were also realized. Totally new livelihoods that emerged include modern trade and commerce, salaried or waged employment, athletics, mining, fishing and irrigated farming. Mining was noted to have been adopted mainly by people who lost entire herd of cattle to droughts. Crop farming and livestock keeping have been modified to suit to the prevailing weather conditions. This has been done by applying soil conservation methods, modern fertilizers and seed technology in order to

be assured of good harvest in any weather conditions. Livestock keeping has been modified, because farmers have learnt to keep smaller but high yielding herds. They have also learnt to manage their pasture resources.

4.4.6 Rating the Contribution of Changes in Weather Patterns towards Adoption of Emergent Livelihoods

When respondents were asked to rate the contribution made by changes in the weather patterns in enhancing the adoption of emergent livelihoods, all participants said that its contribution is very significant. This fact was reinforced by the concurrence of all interviewees.

When probed to explain further, they were particularly divided in opinion into two groups: the majority who noted that weather pattern in Sook has changed positively and the minority who see weather changes in a negative perspective. The majority noted increased rains, reduced temperatures and decrease in droughts frequencies and magnitude in Sook. To these respondents, these are favourable conditions that have enabled Sookians to adopt a wider range of new livelihood strategies.

To the minority, rains have continued to decrease, become more unpredictable and unreliable. Temperatures have also continued to rise. To this school of thought, Sook people have adopted new livelihood strategies as a matter of survival. One of them, a 31 year old agricultural officer observed that; *“Almost all emergent livelihoods in Sook today resuled from weather changes coping strategies. For example, many people have sent their children to school to get salaried employment or practice trade that do not depend on weather changes”*.

From the analysis of data, it is clear that Sook Division has experienced change in weather patterns. It is also clear that the changes have enhanced adoption of emergent livelihood strategies among the pastoralists in Sook Division. This confirms the arguments of Bayer, Bayer, and GebreMichael (2010) that pastoralists have a long history of exposure to climatic variability and they have – out of necessity – developed mechanisms to cope with it. Bayer et al. also add that this variability requires flexibility in resource use (grasping opportunities and coping with shortages) and a high degree of adaptability to constantly changing conditions. Ali, (2010) also concurs and notes that weather and climate are important factors in determining day-to-day and long-term activities especially in agriculture with rainfall being the leading weather variable that affects agricultural cropping pattern, irrigation planning, and water resources development planning. Lenges (2012) (as cited in IRI Africa, 2012) emphasized that; *“If there is one thing that will make pastoralists adapt to changing realities, it is climate change”*.

The mechanisms used by Sook pastoralists to cope with high climatic variability and which this study found, is moving into the ‘something else’ that Lenges (2012) (as cited in IRI Africa, 2012) advised. They include modern livelihood strategies especially those that are not dependent on weather changes such as trade and commerce, salaried/waged employment, and professional athletics. Those that are mainly weather dependent have also emerged as coping strategies. They include both modified and totally new practices in crop farming and livestock keeping.

Although there was unanimity among participants that weather patterns in Sook have changed, opinion was divided on how these changes have occurred. To most participants however, Sook area has experienced more rains, reduced return rate and severity of droughts as well as reduced

temperatures. This is contrary to globally concluded viewpoint and which is in agreement with the opinion of some participants that in East Africa, changes in weather patterns have been manifested in successive poor rains, unpredictable and sometimes heavy rainfall events, high return rate of droughts and increase in temperatures (Kirkbride & Grahn, 2008). Bayer et al. (2010), also argue that the pastoral areas are usually arid and semiarid lands with low and erratic rainfall that also varies in terms of space and time.

It is also a fact that global warming would cause an increase in rainfall in some areas, which would lead to an increase in atmospheric humidity and the duration of wet season (Fischer, Shah & Van Velthuisen, 2002). Fischer et al. also recorded that the areas that usually get two rainfalls in a year will probably get more, and those that get one rainy season will get far less. Sook Division has two rainy seasons in a year. This therefore explains why the division has continued to experience more reliable rains. It is also to be noted that increase in rains combined with fairly high temperatures and humidity create favourable conditions for pastures to develop faster. This explains why Sook pastoralists have enjoyed abundance in the recent past and have not migrated in search of pasture and water.

The increase in rains experienced in Sook division as reported by the respondents has also been corroborated by a report on climate change indicating an increase in rainfall levels in ASAL areas of Kenya to where crop farming will shift (Gitonga, 2013). Indeed, respondents reported manual labourers thronging Sook division from Trans-Nzoia in large numbers to offer labour on maize farms. Before the year 2000, this was unimaginable because vice versa applied, that is Sook labourers used to travel to Trans-Nzoia to work on farms. It was also reported that there has

been an increase in the number of tractors and lorries moving to Sook to plough farmlands and transport harvests respectively. These are indicators of weather patterns changing for the better.

4.5 The role of Non State Actors in the adoption of Emergent Livelihood Strategies

The third objective of the study was to examine the role of non-state actors in the adoption of emergent livelihood strategies. Table 4.3 summarizes the roles of non-state actors in bringing about adoption of emergent livelihood strategies.

Table 4.3

Roles of Non-State Actors in bringing about Adoption of Emergent Livelihood Strategies

Source: Researcher, 2014

Non-State Actors	Years of Operation	Role Towards Adoption	Resultant Emergent Livelihood Strategy
World Vision Kenya, Churchers/ Missionaries, Daughters of Charity, Exodus CBO, Tumainin CBO, Safaricom, Equity Bank, Tumaini CBO, ACTED, UNICEF, and ACF,	1990-2014	Capacity Building Participate in security initiatives Improvement of education standards Direct involvement in the development of socioeconomic infrastructure Donations and relief initiatives during droughts and emergencies	Trade and commerce Salaried/ waged employment Irrigated farming Dairy farming Athletics Modern pastoralism

4.5.1 Livelihood Strategies Practiced Before the Intervention of Non-State Actors

Before the intervention of non state actors, participants mentioned traditional way of keeping livestock and crop farming as the main livelihoods that were practiced. Cattle used to roam freely

with herders in search for water and pasture. Ordinary seeds that were preserved through smoking were used in crop farming. People depended on traditional medicine men for cure of the various livestock and crop diseases. The medicine men were accorded a lot of respect because they were wise and would identify herbs that could cure many diseases. Many children who never attended schools helped in tendering the livestock and crops. The study also found that during this period, projects such as schools and roads were built by the residents pulling together their resources through the spirit of Harambee.

4.5.2 Non-State Actors That Operate In Sook Division

The following are non state actors present in the study area according to the participants: World Vision Kenya, United Nations Children's Fund (UNICEF), Churches/Missionaries, Exodus Community Development Organization, Safaricom, Equity Bank, Tumaini CBO, Individuals through Harambees/charity and Daughters of charity.

West Pokot County first integrated development plan, acknowledges the presence of various NGOs that include World Vision, ACTED, UNICEF, ACF, and USAID (County Government of West Pokot, 2013). All these were mentioned by the respondents.

4.5.3 Role Played By Non-State Actors in Enhancing Adoption of Emergent Livelihood Strategies

Participants enumerated roles played by each non state actor in enhancing adoption of emergent livelihood strategies in the study area as follows:

World Vision Kenya: It creates awareness on effects of Female Genital Mutilation (FGM) through Anti-FGM campaigns, has constructed boarding facilities for girls for instance in Ptoyo and Tamugh Primary Schools and provide schools with water tanks as well. It also has created capacity building particularly in women through seminars and workshops. Women have also been donated chain-links for fencing their kitchen gardens. World vision has also subsidizes fees for orphaned children. World Vision, provides teachings on health issues to the residents especially by emphasizing the importance of having and using toilets in homesteads.

Similarly, information from the key informants showed that the World Vision has boosted education standards in the division by constructing classrooms and dormitories, and sponsorship the education of needy children. Justice for the vulnerable members of the community is also in the domain of the World Vision; *“World Vision ensures that children who are abused get justice and support. It empowers young girls by giving them sewing machines so that they become self reliant”*, said a 28 year old lawyer. Figure 4.6 shows a Girls’ dormitory constructed by World Vision Kenya.



Figure 4.7: A Girls' Dormitory Constructed by World Vision Kenya Source: Researcher, 2014

United Nations Children's Fund (UNICEF): Engage in health improvement activities such as campaigns against HIV/AIDS, educating people to construct pit latrines and take clean water. This is because good health enables people to engage in emergent livelihood Strategies.

Churches/Missionaries: churches like the Catholic, Lutheran and Africa Gospel (AGC) have started schools in Sook. Early Childhood Development centres (ECDs) have been established by Daughters of Charity- catholic nuns based at Chepnyal. The churches also provide religious teachings which make people to be ethical and not engage in quarrels, disputes, idle talks and gossips. They therefore engage in productive activities. Some churches have also engaged to

greater heights in the health of residents. Vaccination activities for instance done by the AGC where helicopters are used to reach remote areas to vaccinate children is remarkable. In addition, some churches in the area have also provided basic needs to the needy students like paying of school fees.

According to the interviewees, churches have played very crucial roles by bringing God life to society; God is a reality not a far away God. They teach people how to live well with neighbours hence peace. *“A peaceful society is a developing society; peace and development are synonyms; church preaches peace”* said a 40 year old priest. Churches have build and started schools especially in remote places. They have engaged in water projects to alleviate water shortage by donating water pumps. The Catholic Church for instance, through the Daughter of Charity has put up a modern ECD called St. Mary’s at Chepnyal which according to one interviewee, a 40 year priest, *“is as modern as those in Europe”*. According to interviewees, the church has been in the forefront in educating the community on their civil rights and how to get better leadership. The church is however impartial and non-partisan when it comes to politics. But people are just educated on how to choose good leaders. As a result therefore, it is clear that the church has a holistic approach to issues.

Daughters of Charity: They have also among others, dug boreholes and fitted with water pumps in every location, use their tractor to help the poor plough their plots and transport building materials, offer ambulance services using their vehicles, assist people with complicated medical problems to access treatment in good hospitals. They also run a tailoring polytechnic. Interviewees added that the Daughters of Charity have helped many with complicated health

problem to access specialized treatment at Moi Teaching and Referral Hospital, Kijabe Mission Hospital and a specialized eye clinic Hospital in Sabatia, Vihiga County.

Exodus Community Development Organization: It has been involved in various activities among them construction of water dams, improving lives of poor people like the widows by donating goats and poultry, donating solar panels to poor households as well as building houses, donate water tanks and subsidize fees for children from poor households especially those headed by widows.

From the interviews, Exodus has supported farmers with chain link wires to fence their gardens, and watering cans to be able to irrigate their gardens of fruits and vegetables. They now grow greens, oranges and mangoes. The organization has also donated goats, poultry, chicken houses to poor families especially those headed by widows. *“As Exodus we have donated water tanks to families to be able to harvest rain water- complete with gutters. So far, over 79 families have benefited from 1000 litres water tanks”* said a 35 year old CEO of Exodus who was one of the interviewees. He also said that the organization has donated uniforms and paid school fees to children from poor and disadvantaged families. Since inception in 2009, the organization has helped over 200 children.

Tumaini CBO: This is also a non-state actor which has started a health centre at Kotit with assistance of a white lady who has been visiting to see the progress. It also assists children from poor or disadvantaged family backgrounds access subsidized fees of kshs.20, 000 every year.

Equity Bank: It provides sponsorships to bright but needy students through its wings to fly program.

Safaricom Kenya: It has constructed classrooms like in Kaptemow and Kapkata Primary Schools and given tree seedlings to schools as well. According to a 48 year old education officer who was one of the interviewees; *“Safaricom has installed solar panels in conjunction with the ministry of energy in many schools such as Kapkata and chepnyal primary schools”*. It has also placed their boosters hence enabling easy communication in the division. The M-pesa technology currently at Chepnyal, Kotit and Tamugh trade centres have made transfer of money easier, among farmers, traders and civil servants.

Charitable Individuals: Through self help Groups, *harambees* and acts of charity, individuals come together and pull their resources to solve problems. In case of problems such as failure to raise school and medical fees, people run to individuals to assist. Many projects have been implemented using funds raised through *harambees*. Charitable individuals especially the priests, nuns and politicians have used personal wealth to build schools and roads, give relief food during famine, become chief guests in fundraisings and help youth secure salaried employment.

Agency for Technical Cooperation and Development (ACTED): It was established that ACTED engage in health improvement activities especially in institutions which they make sure are clean fenced, making roads such as Tamugh to Letwa and Tombul to Kochar and donating animal disease control drugs such as de-wormers to farmers.

According to interviewees, ACTED crossed from Uganda to Kenya's Sook Division. Through it, farmers have realized improvement of their livestock health through de-worming and ticks control (cattle dips). In the process, people have become knowledgeable and are able to continue and sustain the exercise. It has also opened rural roads by using labour from poor people who are paid wages to uplift their living standards. An example is the chepkaliang-Mungit road. "*ACTED should be applauded for its efforts on health matters among other initiatives*", said a 40 year old priest. ACTED also educates the community on the importance of using latrines and not bushes in order to control cholera.

The West Pokot County first integrated development plan, documents that the various NGOs in the county work in their various capacities to complement the development initiatives of the government by supporting rural communities in the areas of agriculture, nutrition, water, disaster relief, health and education.

Secondary sources also revealed that the World Vision Kenya, conducts various surveys in order to determine the status of residents in Sook in order to induce action. For instance, the organization conducted a baseline survey between 14th and 20th September 2009 in order to assess the baseline status in the identified projects of water and sanitation, education, health, HIV and AIDs and program management (Tuitoek, 2010). This findings of the surveys further necessitated action from World Vision Kenya who later came in together with other non-state actors to improve the living standards of Sook residents. The activities initiated by World Vision Kenya together with other non-state and state actors have highly contributed to the adoption of emergent livelihood strategies among Sook residents.

Further review of secondary data showed that Exodus has engaged itself in a lot of activities especially on water technology to ensure that residents utilize water for their own benefits. The non-state actor has trained and empowered members in various activities (Komong'iro, 2013). The study also established that Exodus also provide chain link wires in support of agricultural activities. Vulnerable families are provided with chain links to fence their gardens. This is to ensure that whatever crops are grown in the garden are free from destruction by both domestic and wild animals. This has contributed to the adoption of emergent livelihood strategies by ensuring that residents have intensified growing of varieties of vegetables and fruit trees. From the study findings, it was established that beneficiaries of chain link wires now have enough vegetables for use as well as extra for sale.

According to Komong'iro (2013), the Exodus CBO seeks to fight poverty among the Pokots by involving the widows, widowers and grannies by providing them with four goats, four chickens and a chicken house. The beneficiaries are then also required to give back one chicken and one goat for the organization to redistribute to the other poor families.

The Exodus Community Development Organization has contributed beyond reasonable doubt to the welfare of Sook residents. It has ensured that children from poor families access education, widowers and widows engage in income generating activities, residents access water, among other services. Figure 4.9 show widows, widowers and grannies receiving chicken, goats and wire meshes.

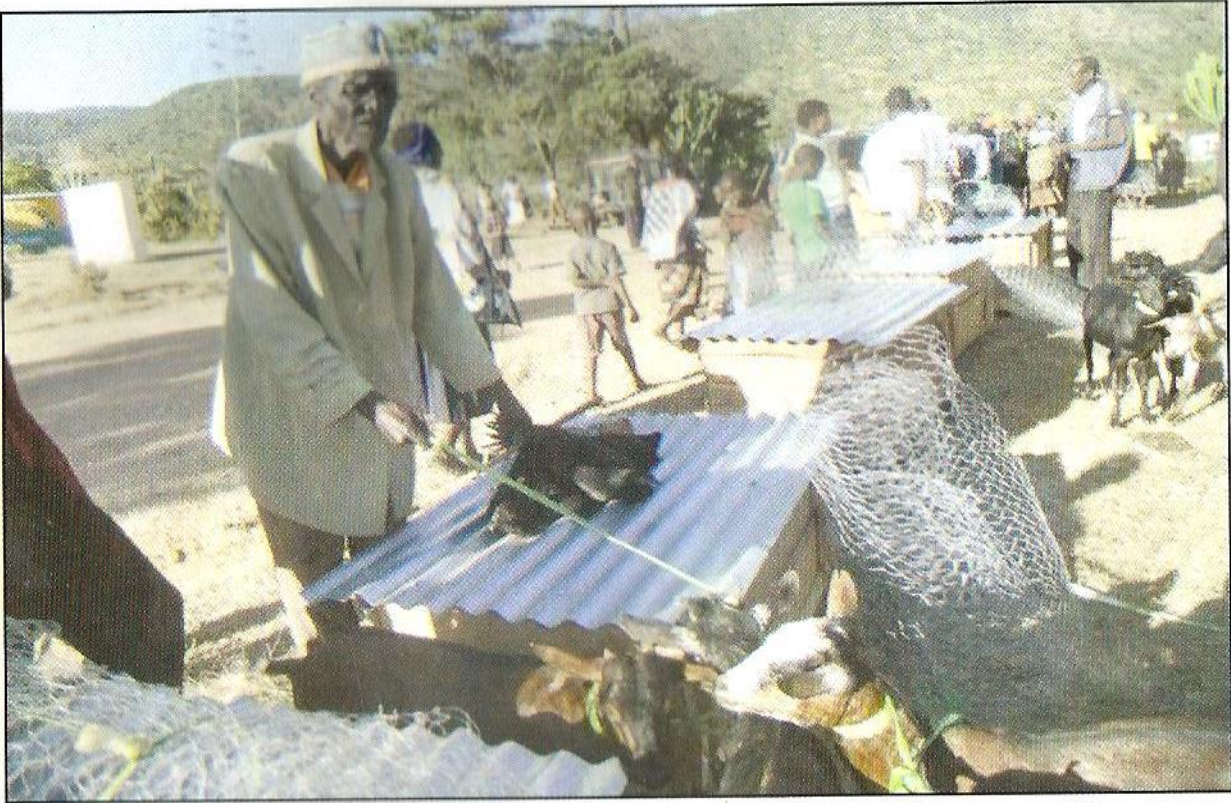


Figure 4.8: Beneficiaries Receive Chicken, Goats and Wire Meshes

Source: Researcher, 2014

4.5.4 Whether the Intervention of Non-State Actors Have Led to Modification of Already Existing Strategies or Emergence of Totally New Ones

When participants were asked whether the intervention of non-state actors have led to modification of already existing strategies or emergence of totally new ones, they unanimously agreed that the intervention has led to both modification and emergence of new ones.

All interviewees except were however of the view that the non-state actors have mainly helped modify or modernize already existing strategies in both livestock keeping and crop farming. Totally new strategies that emerged include irrigated farming in kitchen gardens and along river banks using water harvesting technology donated by non-state actors. Through capacity building,

new livelihood strategies such as tailoring, hospitality businesses, building and construction services and many forms of salaried employment have emerged in the division.

One interviewee however saw all livelihood strategies in Sook Division as modifications of the ones that existed before non-state actors became active in the division.

4.5.5 Rating the Contribution of Non-State Actors towards the Adoption of Emergent Livelihoods

When participants were asked to rate the contribution of non state actors toward enhancing adoption of emergent livelihoods in Sook, all of them were unanimous that they have made a significant contribution. On being probed to explain further, they argued by giving examples of livelihoods and supporting projects that came with their involvement. These are: rise in the enrollment of both girls and boys in schools, availability of scholarship from Equity Bank and World Vision Kenya, rise in number of people engaged in salaried employment, new business strategies such as M-pesa and in offering internet services, expanded education, health and transport infrastructure among others.

From the analysis, it is evident that non-state actors determine the adoption of emergent livelihood strategies among the pastoralists in Sook Division. These actors have played a significant role both directly and indirectly in enabling pastoralist move from heavy reliance on livestock related economy to new alternative livelihoods strategies. Their focus revolves around education, capacity building, peace initiatives, environmental issues and direct involvement in construction of physical infrastructure. According to Mohamud and Pkalya (2005), in most of

the pastoral areas, the presence of the non-state actors is much heavier than that of the government.

Through education, adoption of emergent livelihoods has been made possible because popular education leads to new methods and new techniques of production and creates self discipline, power to think rationally and to probe into the future (Jinghan, 2002). Jinghan also reiterates that no country can count itself developed, in which education in the way of industrial civilization has not taken place. To Jinghan, development is also impossible if it doesn't take place in the minds of men.

The education of women in particular has been prioritized in Sook since their education can increase family incomes, nutrition and health and remittances from urban employment. Dyer (2012) notes that investment in education for women and men is of paramount importance as it is the best way for pastoralists to achieve positive diversification through salaried employment. Furthermore, when equipped with education and skills, ex-pastoralists have a role to play in integrating pastoralists with the wider economy, providing services for people and a market for pastoral goods (Dietz, 2004).

Capacity building by the non-state actors among the Sook pastoralists has enhanced their adoption of emergent livelihood strategies since it imparts them with modernization values and ideas which are important for any meaningful and rapid development. Jinghan (2002) defines modernization as the social, cultural and psychological framework which facilitates the application of tested knowledge to all phases and branches of production. To Jinghan, the

adoption of modernization values and modernization ideas of developing countries and modernization ideas with regard to attitudes is the creation of the '*new man*' or the '*modern man*', the '*citizen of the new state*', the '*man in the era of science*', the '*industrial man*'. This implies change in attitudes so that people have efficiency, diligence, orderliness, punctuality, frugality, scrupulous honesty, rationality in decision on action, preparedness for change and alertness to opportunities as they arise in the changing world. Jingham continues to say that old ideas and old institutions will have to be dispensed with. These have been dispensed with among many of Sook pastoralists through teachings, seminars, workshops, tours and other capacity building programs organized by the non-state actors.

Infrastructural development is a sure way of enabling people to make a meaningful engagement on livelihood strategies. Therefore, the role of the socioeconomic infrastructure developed by the non-state actors in enabling Sook pastoralists adopt emergent livelihood strategies cannot be underestimated. Businesses in internet service provision and money transfers via M-Pesa have been made possible courtesy of solar power infrastructure installed by the World Vision and Safaricom Kenya. Another good example is the education infrastructure which has enabled residents of Sook to acquire quality education that has enabled them secure white color jobs in both the public and private sector. Many of them have also been able to venture into modern agricultural activities.

Insecurity is one of the major drawbacks to development in pastoral areas and impedes the adoption of emergent livelihood strategies in Sook. Any contribution towards reducing conflicts and improving security as has been done by the non-state actors is therefore the greatest

contribution ever made to the Sook pastoralists. Efforts by the government to restore security have been an exercise in futility. In these areas, the presence of respective governments is limited to presence of chief's office, Administration Policemen (APs) and of course during military operation to flush out cattle raiders (Mohamud & Pkalya, 2005). Other government security organs such as the Home Guards and Police Reservists have always been overwhelmed because of lack of support and incentives. The non-state actors have filled this gap in a great way.

To underscore the fact that development can be achieved where there is peace, former West Pokot County commissioner Mr. Peter Okwanyo lauded peace initiatives by NGOs among pastoralist communities in Kenya and Uganda (Obare and Osinde, 2012, October 27). The commissioner particularly commended the tremendous peace activities by all nongovernmental organization based in West Pokot County. Because peace has prevailed, Sook pastoralists have been able to upgrade their livestock to high yielding breeds because they are sure that they will not be stolen by cattle rustlers.

4.6 The Role of State Actors in the Adoption of Emergent Livelihood Strategies

The fourth objective of the study was to examine the role of state actors in the adoption of emergent livelihood strategies. Table 4.4 summarizes the roles of State Actors in bringing about adoption of emergent livelihood strategies.

Table 4.4
Roles of State Actors in bringing about Adoption of Emergent Livelihood Strategies
Source: Researcher, 2014

State Actors	Years of Operation	Roles Towards Adoption	Resultant Emergent Livelihood Strategy
Government ministries, agencies, personnel, and funds Foreign bodies and Governments	1963-2014	Capacity Building Maintain peace and security Improvement of education standards Direct involvement in the development of socioeconomic infrastructure Respond to droughts, disasters and emergencies	Trade and commerce Salaried/ waged employment Irrigated farming Dairy farming Athletics Modern pastoralism

4.6.1 Livelihood Strategies Practiced Before the Intervention of State Actors

Participants argued that state activities have been there since independence but were mainly through members of the then powerful provincial administration, teachers and agricultural extension officers. However, participants argued that the turning point of state's involvement in the development of Sook was the coming in of the Kibaki administration in 2003 and currently the county government. The Kibaki administration ushered in the CDF and Free Primary Education programme. Before this, livestock keeping was mainly for domestic and cultural purposes. Herbal medicine was used to treat sick animals because veterinary services were scarce or non-existent as it is currently. Livestock deaths were high. Residents were also engaged mainly in crop farming with recycled seeds and no application of fertilizers. Bee keeping which was done using crude technology and low yields were realized.

Information from key informants revealed that before the coming in of Kibaki Administration and the devolved governments, the state role was seen in a bad light. The powerful provincial administration forcefully collected taxes in form of money and even livestock for ‘development projects’ probably in other parts of Kenya because nobody saw any project in Sook initiated by the government during that period. This was done mainly through the chiefs and Administration Police. Each chief would be allocated an amount which he must collect from the people in his location. *“The situation was such that there was subtraction on the side of the people and an addition on the side of the government”* said a 48 year education officer. Furthermore, livestock keeping was done in a traditional way. The interviewees also added that before the active involvement of state actors livestock were treated using herbs and could be kept till they die of old age because they were never sold.

4.6.2 State Actors That Operate in Sook Division

According to the participants, state actors present in the study area work through their respective ministries, various government funds, and programs. The funds and programs include the CDF, LATF, USAID, Netherlands Harambee Foundation, Home Grown School Feeding Program, Youth Enterprise Fund and Older Persons Cash Transfer Fund.

4.6.3 Roles Played By State Actors in Enhancing Adoption of Emergent Livelihood Strategies

The following are the established roles played by state actors in enhancing adoption of emergent livelihood strategies in the study area:

The Ministry of Education: It provided bursary to children from poor families, facilitated construction and staffing of schools. As a result, educated people gain knowledge and have been able to engage in emergent livelihoods since educated people are the ones mostly engaged in new livelihoods and even teach others to follow suit.

The Ministry of Health: This ministry has set up health facilities. Examples are Kesot and Ptoyo health centers. It has availed drugs and staff who have ensured availability of maternity services, healthy living among the people. Interviewees added Tamugh, Kriich and Empough dispensaries as examples of health facilities established and run by the ministry. To the respondents, these health services have improved people's health which has really contributed towards successful engagement in new livelihood strategies.

The Ministry of Roads and Public Works: Has opened up many roads in Sook hence facilitating movement of people as well as transportation of goods and services to markets. The ministry has ensured that there is a road linking all schools, health centers and government offices. Staff quarters for government workers have also been constructed. Many new roads are being done. Participants gave an example of a new road being done by the county government to link up to the 'rest of the world' a remote agricultural and a gold-mining village called Kriich in Endugh location. According to one interviewee, "*the village will soon see the first vehicle ever to arrive there*". Figure 4.7 shows the road to the Kriich village being done.



Figure 4.9: A Road to Kriich under Construction

Source: Researcher, 2014

Ministry of Agriculture: Agricultural Extension Officers have visited and taught farmers on modern farming techniques. For example, in the recent past, farmers have been taught how to grow beans and green grams that mature faster. Through Barazas, demonstrations, workshops and field days, these agricultural officers have trained farmers on new agricultural technologies such as use of certified seeds and fertilizers, soil conservational methods, modern storage methods, pasture management, pest and disease control and livestock upgrading techniques. They have demonstration plots and information desks in the division. Modern agricultural activities in Sook are now possible.

Constituency Development Fund: The participants named Constituency Development Fund (CDF) as the most visible state actor in the development of Sook. Through the fund, roads, classrooms, health facilities, cattle dips have been constructed. Children from poor families have accessed the funds and have been able to remain in school. The fund has also increased the number of people in salaried/waged employment-people who are involved in projects and those employed as staff.

Additional information from the interviews revealed that the CDF has purchased school buses and vehicles. For example, St Catherine Girls has received a pick up and Sook Boys secondary school a bus worth kshs. 6.3 m that is fully sponsored by CDF.

Local Authority Transfer Fund: Although Local Authority Transfer Fund (LATF) became defunct with the promulgation of the new constitution, participants said it constructed classrooms in schools, cattle dips and water pans.

The Chiefs, Kenya Police Reservists and Administration Police: Participants said that cattle rustling are rampant in some remote areas of Sook. The chiefs, Kenya Police Reservists (KPR) and the APs have however managed to bring a semblance of security in the area. This has enabled people to freely move and continue with their socio-economic and cultural activities without fear of insecurity. The chiefs in the area have also been instrumental in ensuring that ignorant parents send their children to benefit from the free and compulsory primary education as well as subsidized secondary education.

The interviewees stated that in Sook, barazas are used to educate people on the importance of sending their children to school. They also used force on uncooperative parents. *‘The chiefs and APs have also helped resolve disputes especially on land matters hence development’*, said a 44 year pastor who was one of the interviewees.

Home Grown School Feeding Program: This program provides schools with money to locally purchase foodstuffs at prevailing market prices. This has encouraged locals to start farming and open business ventures to win supply tenders.

Older Persons Cash Transfer Fund: This is a government initiated program where a total of Ksh.1, 500 is given monthly to each elderly and disabled person. The money has improved health and longevity of the beneficiaries hence contribute to socioeconomic development and reducing dependency levels.

Kenya Agricultural and Productivity Programme (KAPP): This program is under the ministry of agriculture and is sponsored by the World Bank. It has empowered farmers in Sook by creating awareness on modern livestock keeping, pasture management and bee keeping. The programme does this through agents who are recruited to cover all the locations.

Foreign Governments and Bodies: This is an addition from the interviews. Interviewees named the governments of the United States of America, Norway, and Germany to have either directly or indirectly participated in sponsoring and executing projects that have enhanced adoption of emergent livelihoods among Sook pastoralists. State funded bodies and organizations such as the

United Nations, World Bank and the United States Agency for international Development (USAID) were also named to have contributed in the development of Sook.

USA and USAID assisted in donating and distributing relief foods especially during the 1984 and 2002 droughts. People survived to continue with their activities. The relief maize is popularly referred to as '*lonyang'ados*' because of their yellow colour. The UN also helped to distribute the yellow maize on behalf of USA. Norway and German governments have worked through churches and NGOs. According to one interviewee, who is a priest, "*ELCK programmes are sponsored by both individuals from Norway and Norwegian government. The Exodus Community Development Organization also receives help from USA, Germany and Norway*".

Review of secondary data has also revealed and confirmed that state actors play a significant role in enhancing adoption of emergent livelihood strategies in among the pastoralists in Sook division. The Kenya Agricultural Productivity and Agribusiness Project (KAPA) has also initiated certain activities in the area including extension services, education system to farmers, providing agribusiness ideas, among other activities (KAPP, 2011). The West Pokot County first integrated development plan (County Government of West Pokot, 2013), also documents several development priority programmes and projects in the county. In the flagship projects, Sook division's priority is the opening up of roads which the respondents in the interviews and FGDs indicated are being done. Sook division is also earmarked for projects such as sunflower processing plant, cereals training facilities, rangelands rehabilitation, and strategic livestock feed reserve programme.

This secondary data corroborates what was obtained from the focus group discussions and the interviews. The secondary data however adds the planning role of the government which is of fundamental significance for any meaningful development to take place. In the County's first integrated plan, all development initiatives which are meant to uplift the living standards of the people have been documented and backed up by the implementation strategies. The plan is to be executed in a five year period that is from 2013 to 2017.

4.6.4 Whether the Intervention of State Actors has led to Modification of Already Existing Strategies or Emergence of Totally New Ones

When participants were asked whether the intervention of state actors have led to modification of already existing strategies or emergence of totally new ones, they unanimously agreed that the intervention has led to both modification and emergence of new ones. They said that livestock keeping, crop farming and beekeeping were being done but in traditional way and for domestic and cultural purposes. But now, through the activities of state actors, these livelihoods have been modernized such that yields have increased and the objective of production is no longer purely for domestic but also for commercial purposes. This scenario has therefore brought about newer livelihoods such as trade and commerce.

All interviewees were of the same opinion and added the totally new strategies that have emerged to include many forms of salaried employment.

4.6.5 Rating Contribution of State Actors Towards Adoption of Emergent Livelihood Strategies

When asked to rate contributions by state actors toward the adoption of emergent livelihood strategies among the pastoralists in Sook division, participants were unanimous that it is very significant. The state especially starting with the Kibaki regime has created an enabling environment through capacity building, development of socioeconomic infrastructure and providing security. Currently, there is devolution where services have been moved closer to the people.

From the analysis, it is clear that state actors determine the adoption of emergent livelihood strategies among the pastoralists in Sook Division. The state has for many years been accused of marginalizing pastoral areas hence determining the pace of adoption of emergent livelihood strategies. Indeed for a very long time, the Pokots were marginalized to the extent that whatever little they managed to produce under the circumstances was taken away from them through forced taxation and military operations that ended up destroying livelihoods of innocent people. The activities of the government through the then powerful provincial administration were therefore an impediment to development. One interviewee put it correctly by stating that; *“The situation was such that there was subtraction on side of the people and an addition on the side of the government”*.

Dyer (2012) notes that pastoralist communities are poorly represented in political circles yet pastoral parliamentary groups need to be heard in national policy and budget decision-making

circles. But with the current activities of the devolved governments and devolved funds such as the CDF, marginalization is no longer there.

With the coming in of the NARC government or Kibaki Administration in 2003, the state actors were found to have contributed immensely to the improvement of education, other socioeconomic infrastructure and security.

Improved education is of fundamental importance as it enhances adoption of emergent livelihoods strategies. According to Jinghan (2002), popular education leads to new methods and new techniques of production and creates self discipline, power o think rationally and to probe into the future. Jinghan also reiterates that no country can count itself developed, in which education in the way of industrial civilization has not taken place. Development is also impossible if it doesn't take place in the minds of men. Educated pastoralists –particularly women – can increase family incomes, nutrition and health and remittances from urban employment.

Improvement of socioeconomic infrastructure led to improved provision of basic services like health care, education and transportation of both goods and services. In Sook, many health facilities, schools and roads have been constructed by the government. Todaro and Smith (2009), confirms this role of the state by stating that the government makes a deliberate use of domestic saving and foreign finances to carry out public investment projects and to mobilize and channel scarce resources into areas that can be expected to make greater contribution towards the realization of long-term economic objectives.

Insecurity mainly due to cattle rustling is high in some parts of Sook such as Kasitoi and Endugh. The KPRs, APs and the chiefs have however managed to restore peace and security. This has enabled people to freely move and continue with their socio-economic and cultural activities without fear. They have achieved this by collaborating with non-state actors. They have occasionally convened dispute resolution and reconciliation meetings between the communities in conflict that is the Pokots and Turkanas. They have played a key role in bringing together parties to the conflict to resolve their differences and negotiate use of pasture and other resources in the area. They have even presided over oath-taking ceremonies aimed at binding the communities to peace truces.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Overview

This chapter presents a summary of the findings, conclusion and recommendations of the study based on the study objectives.

5.2 Summary of the Findings

The purpose of the study was to investigate the determinants of adoption of emergent livelihood strategies among pastoralists in Sook Division, West Pokot County. To answer the objectives of the study, five focused group discussions were engaged with the help of guiding questions which were formulated according to the study objectives. The information was further reinforced by interviews conducted from 13 purposely selected participants and the secondary data. The results are as summarized under the objectives as follows:

5.2.1 Contribution of New Technologies to Adoption of Emergent Livelihood Strategies

The first objective of the study was to find out how new technologies are contributing to adoption of emergent livelihood strategies. The study found that the application of new technologies have increased efficiency and raised productivity hence making it profitable and attractive to practice emergent livelihood strategies.

The new technologies that have been applied to bring about new methods of crop farming include; Mechanized farming, use of fertilizers, irrigation technology, seed technology, soil

conservation methods, ICT and pests/herbs control technology. New ways of livestock keeping in the study area have been made possible because of the application of new technologies such as livestock upgrading technology, pasture management technologies, modern control and treatment methods of livestock diseases, ICT, and water harvesting technologies.

As a result of the application of new technologies in agricultural activities, agribusinesses were found to have been embraced by many. This is where people no longer practice agriculture on a small scale for domestic purposes but on large scale and for both domestic and commercial purposes in order to generate income. The incomes generated were also found to have enabled the farmers educate their children who eventually secured salaried and waged employments. Traditional pastoralism is also fading away as residents are now abandoning large herds of local livestock breeds for the small and manageable modern ones where the quality and quantity of production is very high. Livestock keeping has also been abandoned by some who have concentrated in other new livelihoods in crop farming such as irrigated farming.

ICT has also played a vital role in ensuring that residents of Sook access vital information. This has transformed their lives. The presence of FM radios, televisions as well as mobile phones, have drastically changed their lives. Radios and televisions air vital programs on modern farming and agriculture while mobile phones through money transfer system enable them to transact businesses cheaply. Many youths have utilized these technologies as income generating activities that include M-Pesas, internet service provision and video shows. Additionally, residents also use solar technology in schools, health centers and individual homes for various purposes. Solar

energy has also become a business venture for many. It is used to charge batteries for mobile phones at a fee.

The study also found that the application of new technologies have led to both modifications of already existing livelihood strategies and emergence of totally new ones. Those that have been modified are mainly in livestock and crop farming. Totally new strategies that have emerged include irrigated farming, businesses in service provision through M-pesas and internet access, video shows and battery charging. Salaried employment, athletics and engagement in trade and commerce are also new strategies.

Before the adoption of new technologies, livelihood strategies that were being practiced were found to be crop farming, Livestock keeping, bee keeping, barter trade, loaning of livestock, hunting and gathering. All these were being done by use of crude traditional technologies that resulted to low yields that could not sustain people for the whole year.

5.2.2 Changes in Weather Patterns and Adoption of Emergent Livelihood Strategies

The second objective of the study was to assess how the change in weather patterns has brought about adoption of emergent livelihood strategies. The study found that changes in weather patterns have created conditions in which emergent livelihood strategies are more profitable and guarantees survival.

The study found that in Sook, rains have continued to increase and become more reliable. Droughts have reduced in magnitude and frequency. Temperatures have however continued to

increase. There are various indicators of these improved weather conditions which include more rivers becoming permanent, availability of enough pasture for livestock and people no longer migrate in search of pasture for their livestock. Settlements and farming which are now possible in lowlands of Sook are also other indicators.

Memorable changes in weather patterns in Sook were the drought of 1984 and the 1998 El-Niño rains as the worst changes in weather patterns in Sook. Some severe droughts were experienced before 1965 and were given names. These include *Lokimurio* (1933), *Ptapayaw* (1943), *Katarng'any* (1953), *Lopiluk* (1954), and *Kura* (1965). Other droughts that were not very severe happened in 1991, 2002 and lastly 2009.

Increased rains has made it possible for improved agriculture to take place, thus increased production. The conducive conditions created by improved weather conditions have enabled people to diversify their farming activities. High yielding hybrid cattle are now reared in Sook due to increased availability of pasture. A wider range of crops are now grown. Modern beekeeping is now a reality because of increased flowering as well as availability of water for bees throughout the year. With many rivers flowing with water throughout the year, irrigated farming has emerged and horticultural products like tomatoes, vegetables, carrots and even fruits are being produced throughout the year. Furthermore, the positive change in weather patterns has improved the literacy levels in the area. Schools are now full of children because of ready food and parents can pay fees from farming proceeds.

Conducive weather condition have also enabled people to grow crops hitherto not grown in Sook division such as bananas, sugarcane and fruit trees. Funds generated from the sale of milk and livestock have enabled people to educate their children. Improved Changes in weather have also enhanced food security which has resulted to healthier population that has been able to engage in development activities.

These improved weather conditions have however been experienced in Sook from 2009. Before this, rains were unpredictable and unreliable and droughts were frequent and more severe. These experiences and the fear of recurrence have made people to become more innovative. They started keeping goats more than cows who are heavy feeders. The goats are mainly the white galla goats obtained from Nasukuta Livestock Improvement Center. Other livestock farmers have been forced by scarcity of pasture to keep smaller herds that are more productive. Another form of innovation is that there is reduced dependence on livestock alone. Residents of Sook have also embraced the idea of sending their children to school to gain salaried employment and also engage in trade and commerce. Education for instance, does not depend on weather. It is the only resource Sook pastoralists will have when weather fails.

When participants were asked to state whether the changes in weather patterns have led to modification of already existing livelihood strategies or emergence of totally new ones, most of them said that it has led to both but mostly modification. Similar responses from interviews were also realized. Totally new livelihoods that emerged include modern trade and commerce, salaried or waged employment, athletics, mining, fishing and irrigated farming. Mining was noted to have been adopted mainly by people who lost entire herd of cattle to droughts. Crop farming and

livestock keeping have been modified to suit to the prevailing weather conditions. In crop farming, people now apply soil conservation methods, modern fertilizers and seed technology in order to be assured of good harvest in any weather conditions. Livestock keeping has been modified, because farmers have learnt to keep smaller but high yielding herds. They have also learnt to manage their pasture resources.

The main livelihood strategies before the positive changes of weather in Sook was mainly livestock keeping which was done amidst frequent bouts of droughts and famine and nomadism was practiced. Livestock deaths were high due to inadequate pasture and water resources. Goats were favoured because of their high level of resistance to diseases and drought. Livestock were kept for domestic and cultural purposes. Some crop farming was practised in which mainly millet and sorghum were grown for domestic purposes. This was done mainly by women and children as men were engaged in looking after livestock and security matters. Hunting and gathering was also being done. Persistent droughts forced people to supplement by surviving on wild fruits and vegetables. Common ones were 'Akan' and 'Loma' which could be boiled for long hours to reduce poisoning effects. There was also traditional beekeeping because there are trees like cacti which could flower with little rains.

The contribution of changes in weather patterns towards the adoption of new livelihood strategies was found to be very significant because many of these livelihoods emerged as climate change adaptation strategies.

5.2.3 Role of Non-State Actors in the Adoption of Emergent Livelihood Strategies

The third objective of the study was to examine the role of non-state actors in the adoption of emergent livelihood strategies. The study found that the numerous non state actors in Sook have improved the socioeconomic infrastructure and built capacity among the people, hence enabling people to adopt emergent livelihood strategies.

It was established that there are numerous non state actors in Sook Division. These include: World Vision Kenya, United Nations Children's Fund (UNICEF), Agency for Technical Cooperation and Development (ACTED), Churches/Missionaries, Exodus Community Development Organization, Safaricom Kenya, Equity Bank, Tumaini CBO, charitable individuals, and the Daughters of charity. All these actors may be classified as Faith Based Organizations (FBOs), Nongovernmental Organizations (NGOs) and Community Based Organizations (CBOs).

The study found that these non-state actors have played a significant role both directly and indirectly in enabling pastoralist move from heavy reliance on livestock related economy to new alternative livelihoods strategies. Their focus revolves around education, capacity building, peace initiatives, environmental issues and direct involvement in construction of physical development infrastructure.

Improvement of education standards has made it possible for the people of Sook to adopt new methods and new techniques of production with ease. Good education has also created self discipline, power to think rationally and to probe into the future among the beneficiaries.

Through education engagement in salaried employment and service provision has been made possible. Emphasis on the education of women has led to emergence of some new livelihoods mainly performed by women such as poultry keeping and businesses in hospitality.

Capacity building by the non-state actors among the Sook pastoralists has enhanced their adoption of emergent livelihood strategies since it imparts them with modernization values and ideas which are important for any meaningful and rapid development. Capacity building has been done through teachings, seminars, workshops, and tours.

Through infrastructural development Sook pastoralists have been enabled to make a meaningful engagement on livelihood strategies. Businesses in internet service provision and money transfers via M-Pesa have been made possible courtesy of solar power infrastructure installed by the World Vision and Safaricom Kenya. Another good example is the education infrastructure which has enabled residents of Sook to acquire quality education that has enabled them secure white color jobs in both the public and private sector. Many have also been able to venture into modern agricultural activities.

Through their peace initiatives, the non-state actors have contributed immensely towards reducing conflicts and improving security, a role that the government alone could not play in the remote and vast division. It was found that the resultant peace and security have created favourable conditions for the adoption of many livelihood strategies. For example, many are not comfortable keeping high breed livestock because they are confident that they will not be stolen

by anybody. Again men who used to spent most of their time on security matters are now engaged in meaningful productive ventures such as modern farming.

The study also found that non-state actors have mainly helped modify or modernize already existing strategies in both livestock keeping and crop farming. Totally new strategies have however emerged. These include irrigated farming in kitchen gardens and along river banks using water harvesting technology donated by non-state actors. Through capacity building, new livelihood strategies such as tailoring, hospitality businesses, building and construction services and many forms of salaried employment have emerged in the division.

Before the intervention of non state actors, participants mentioned traditional way of keeping livestock and crop farming as the main livelihoods that were practiced. Many children who never attended schools, (because there were few or none in many areas) helped in tendering the livestock and crops. The study also found that during this period, projects such as schools and roads were built by the residents pulling together their resources through the spirit of Harambee.

The contribution of non state actors toward enhancing adoption of emergent livelihoods in Sook, was rated to be very significant and heavier than that of the government.

5.2.4 Role of State Actors in the Adoption of Emergent Livelihood Strategies

The fourth objective of the study was to examine the role of state actors in the adoption of emergent livelihood strategies. The study found that the state actors have improved security and socioeconomic infrastructure, therefore enabling people to adopt emergent livelihood strategies.

The state has been involved in the socioeconomic development of Sook Division through all ministries but the most active ones are the ministries of roads and public works, education, agriculture and health. The CDF, Older Persons Cash Transfer Fund, Home Grown School Feeding Programme, KAPP and LATF, are also state funds and programmes whose impacts have been felt in Sook. Other state actors, whose activities important in the division are the chiefs, Administration Police and the Kenya Police Reservists.

Foreign governments such as the United States of America, Norway, and Germany were also found to have either directly or indirectly participated in sponsoring and doing projects that have enhanced adoption of emergent livelihoods among Sook pastoralists. State funded bodies and organizations such as the United Nations, World Bank and the United States Agency for International Development (USAID) were also named to have contributed in the development of Sook.

The state actors were found to be contributing immensely to enabling Sook pastoralists access formal education and therefore enabled to adopt emergent livelihoods strategies. Education leads to new methods and new techniques of production and creates self discipline, power to think rationally and to probe into the future. Educated pastoralists were found to engage in white color jobs especially in urban areas.

State actors were also found to be involved in improvement of socioeconomic infrastructure that has led to improved provision of basic services like health care, education and transportation of

both goods and services. In Sook, many health facilities, schools and roads have been constructed by the government.

Insecurity mainly due to cattle rustling in some parts of Sook such as Kasitai and Endugh, was found to have been restored by the Kenya police Reservists, the chiefs and Administration Police. This has enabled people to freely move and continue with their socio-economic and cultural activities without fear.

Increased participation of state actors have led to modification of livelihoods that already existed such as livestock keeping, crop farming and beekeeping. New livelihood strategies such as fishing, salaried employment and trade and commerce have also emerged.

Participation by state actors has been there since independence but was mainly through the then powerful provincial administration, teachers and agricultural extension officers. However, the turning point of state's involvement in the development of Sook was the coming in of the Kibaki administration in 2003 and currently the county government. The Kibaki administration ushered in the CDF and Free Primary Education. Before this, livestock keeping was mainly for domestic and cultural purposes. Herbal medicine was used to treat sick animals because veterinary services were scarce or non-existent as it is currently. Livestock deaths were high. Residents were also engaged mainly in crop farming with recycled seeds and no application of fertilizers. Bee keeping was done using crude technology. In all these, low yields were realized.

It was also established that before the coming in of Kibaki Administration and the devolved governments, the state role was seen in a bad light. The powerful provincial administration mainly through the chiefs and administration police forcefully collected taxes in form of money and even livestock for ‘development projects’ probably in other parts of Kenya because nobody saw any project in Sook that was initiated by the government. Each chief would be allocated an amount which he must collect from the people in his location. He would then use force provided by the Administration Police.

The state’s contribution was found to be very significant and complementary to that of non-state actors. The state especially starting with the Kibaki regime has created an enabling environment through capacity building, development of socioeconomic infrastructure and providing security.

5.3 Conclusions

The study concludes that new technologies, changes in weather patterns and the activities of both state and non-state actors have contributed immensely towards adoption of emergent livelihood strategies among pastoralists in Sook Division of West County. The application of new technologies have increased efficiency and raised productivity hence making it profitable and attractive to practice emergent livelihood strategies. The changes in weather patterns have created conditions in which emergent livelihood strategies are more profitable and guarantees survival. The state and non state actors have improved the socioeconomic infrastructure, built capacity among the people and improved security, therefore enabling people to adopt emergent livelihood strategies. These emergent livelihood strategies are the socioeconomic activities in livestock keeping, crop farming, fishing, mining, beekeeping, trade, commerce and sports. Upon

successful adoption of these strategies and others that will emerge with time, socioeconomic status of the people will improve. Attempts should therefore be made to increase the use of new technologies, improve weather change survival and adaptation strategies and increase the complementary activities of both state and non-state actors.

5.4 Recommendations

This study makes the following recommendations:

Firstly, all stakeholders involved in the development initiatives must make concerted effort to increase and improve adoption of new technologies. To succeed in doing this, both state and non-state actors should carry out a baseline survey on the level of technology use among the people and thereafter allocate enough resources towards the implementation of the survey's findings. The county government should particularly take advantage of the national government's lap-top project and ensure its implementation. This will enable the youths to be firmly grounded on ICT a situation that will leverage the adoption of other new technologies.

Secondly, various measures need to put in place to mitigate the effects of climate change. These adaptation and mitigation measures include: agroforestry, reforestation, green energy development, proper management of agricultural waste, promoting planting of drought tolerant crops (such as cassava, sorghum, millet, green grams and cow peas), camel keeping, laws limiting charcoal burning, dams and water pan construction, construction of more health facilities, sensitization of the community through workshops and barazas to protect the environment and providing early warning information on floods, landslides and drought. Though

in Sook, droughts have reduced in magnitude and severity as found out in the study, likelihood of occurrence are still high and above measures should be put in place to mitigate their effects. Measures should also be put in place to take advantage of the continued increase in rains that has resulted to many rivers flowing with water throughout the year. Such measures could include setting up irrigation infrastructure. The county government and the NGOs such as the World vision could do this.

Thirdly, the national and county government should create a conducive environment for the non-state actors to work in their various capacities to complement the development initiatives of the government. This could be done by guaranteeing them security and reducing the needless time-consuming procedures during their registration. Another way is the creation of a competent liaison office that will devote time and other resources on the activities of the non-state actors. Again, there is need for these non-state actors to collaborate and review their policies for the benefit of the residents. Collaboration and competent liaison from the government will eliminate duplication of roles and instead widen their scope of focus.

Fourthly, the activities of the infrastructure ministries and dockets of the government such as the ministries of energy, roads and public works should be increased through improved budgetary allocation and appointment of competent staff. The research found that the roles of the government that are known by majority of the people of Sook are those that are performed by the chiefs, APs and the KPRs. All other government arms should play an active role to improve the living standards of the people.

5.5 Suggestions for Further Research

This study concentrated on four determinants of adoption of emergent livelihood strategies among pastoralists in Sook Division. In the course of conducting the study, the researcher discovered that culture could be another determinant. This should therefore be investigated in other studies.

It is also to be noted that this study did not deal with all pastoral communities, but limited itself to Pokot pastoralists in Sook Division. It is important that other researches be done in other pastoral communities.

This study found that many rivers in Sook that were once seasonal have turned to be permanent a phenomenon that aided adoption of irrigated agriculture and keeping high breed livestock. It is hereby suggested that environmental scientists do a research on the reasons behind increased number of rivers in Sook becoming permanent. Findings and recommendations of such study could offer solutions to water shortages in pastoralists dominated areas a scenario that has often resulted conflicts.

REFERENCES

- Ahuja, V (2001). Land degradation, agricultural productivity and common property: Evidence from Cote d'Ivoire. *Environment and Development Economies* 3, 7–34.
- Ali, M.H., (2010). *Fundamentals of Irrigation and On-farm Water Management 1*. New York: Springer Science and Business Media. Retrieved January 16, 2014 from www.springer.com.
- Alinovi, L., D'Errico, M., Mane, E., & Romano, D. (2010). "Livelihoods Strategies and Household Resilience to Food Insecurity: An empirical analysis to Kenya." Paper prepared for the Conference on "Promoting Resilience through Social Protection in Sub-Saharan Africa", organized by the *European Report of Development* in Dakar, Senegal. 28-30 June, 2010.
- Amisi, B., Krhoda, G., Kureiya, A. & Wandera, J. (2010). "Pacifying the Valley: An analysis on the Kerio Valley conflict". *A mission report prepared for the National Council of Churches of Kenya (NCCCK), SNV - Netherlands Development Organization and Semi Arid Rural Development Programme (SARDEP)*.
- Babbie, E. & Mouton, J. (2006). *The Practice of Social Research (South African ed.)*. Cape Town: Oxford University Press.
- Bayer, A. W., Bayer, W. & GebreMichael, Y. (2010). "Emerging responses to climate change in pastoral systems". *Rural Development News*. 2. Available on www.agridea-international.ch/RDN.
- BurnSilver, S.B. (2009). Pathways of Continuity and Change: Maasai Livelihoods in Amboseli, Kajiado District, Kenya. In Katherine, H. , Patti, K & Pippa, C. T (Eds.), *Staying Maasai? Livelihoods, Conservation and Development in East African Rangelands* (pp.161- 216). New York: Springer. Retrieved January 16, 2014 from www.springer.com
- Campbell, D.J.(2000). Responses to drought among farmers and herders in Southern Kajiado District Kenya. *Human Ecology* 12 (1), 35–63.
- Chambers, R. & Conway G.R. (1992). *Sustainable Rural Livelihoods: Practical Consequences for the 21st Century* . Discussion Paper 296. Brighton UK: Institute of Development Studies.
- County Government of West Pokot (2013). *West Pokot First County Integrated Development Plan 2013 – 2017*.
- Creswell, J. W. & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice* 39(3), 124-131.
- Curtis, A. (2014 January 3). Innovations make Pastoralism Cool. *Daily Nation* 2, 1-3.

- Dietz, T. (1987). *Pastoralists in dire straits; Survival strategies and external intervention in a semi-arid region at the Kenya/Uganda border; West Pokot, 1900-1986*. Amsterdam: Voor Sociale Geographic.
- Dong, S., Lu, W., Shiliang, L., Zhang, X., Lassoie, J. P., Shaoliang, Y., Xiaoyan, L., Jinpeng, L., & Yuanyuan, L. (2011). Vulnerability of worldwide pastoralism to global changes and interdisciplinary strategies for sustainable pastoralism. *Ecology and Society*, 16 (2):10.[online]URL: Accessed January 27, 2014 from <http://www.ecologyandsociety.org/vol16/iss2/art10/>
- Doss, C.R., McPeak, G. J. & Barrett, C.B. (2008). Interpersonal, intertemporal and spatial variation in risk perceptions: Evidence from East Africa. *World Development*, 36 (8): p.1453. Retrieved October 27, 2011 from <http://ssrn.com/abstract=946450>
- Dyer, K.W.(2012). Pastoralism in the Horn of Africa: Diverse livelihood pathways. *Future Agricultures Consortium*, 6. P.10. Available at www.future-agricultures.org.
- Einhorn, H.J. & Hogarth (1961). *Decision Making under ambiguity: a note*. Springer.
- Fischer, G., Shah, M., & Van Velthuis, H. (2002). "Climate Change and Agricultural Vulnerability". *International Institute for Applied Systems Analysis*. Report prepared under UN Institutional Contract Agreement 1113 for World Summit on Sustainable Development. Laxenburg: Australia. Accessed April 19, 2014 from <http://www.asiapacificadapt.net/Upload/eve...>
- Food and Agricultural Organization. (2004). *Livestock sector brief; Kenya*. [<http://www.fao.org/>] webcite Accessed 14 November 2010.
- Fratkin, E., Nathan, M. & Roth, E.A.(2011). "Seeking Alternative Livelihoods in Northern Kenya: Costs and Benefits in Health Nutrition". Paper presented at the International Conference on the Future of Pastoralism. *Future Agricultures*. 21-23 March 2011.
- Gerring, J. (2004). What is Case Study and what is it good for? *American Political Science Review*, 28; 2. (pp.341-354).
- Gitonga, A. (2013 October 1). Arid Areas may soon be Country's Breadbasket. *The Standard*, p. 10.
- Guliyev, A.Y., Noor, I.M., Bebe, B.O. & Kosgey, I.S.(2007). The role of camels (*Camelus dromedarius*) in the traditional lifestyle of the Somali pastoralists in the arid and semi-arid areas of northern Kenya. *Outlook on Agriculture*, 36 (1): 29–34. Authrs.
- Hogg, R. (2008). Water harvesting and agricultural production in semi-arid Kenya. *Development and Change*, 19 (1): 69–87.

- IRIN Africa (2012 March 26). Kenya: The changing face of pastoralism. Author: Kenya. Accessed on January 31 2014 at www.irinnews.org/report/95164/kenya.
- Jinghan, M. N. (2002). *The Economics of Development and Planning*. Dheli: Vrinda Publications Ltd.
- Johnson, D. L., Ambrose, S.H., Bassett, T.J., Bowen, M.L. Crummey, D.E., Isaacson, J.S., Lamb, P., Saul, M., & Winter-Nelson, A.E. (1997). Meanings of environmental terms. *Journal of Environmental Quality* 26, 581–589. Accessed on February 13, 2014 at <https://dl.sciencesocieties.org/publications/jeq/pdfs/26/.../JEQ0260030581>.
- Jwan, J. O. & Ong'ondo, C. O., (2011). *Qualitative Research: An Introduction to Principles and Techniques*. Eldoret: Moi University Press.
- Kabubo-Mariara, I. (2002). Rural poverty, property rights and environmental resource management in Kenya. *African Journal of Environmental Assessment and Management* 6, 1–15.
- Kahneman, D. & Tversky, A. (1979) "Prospect Theory: An Analysis of Decision under Risk", *Econometrica*, XLVII (1979), 263-291. Paper available at <http://www.princeton.edu>.
- Kenya Agricultural Productivity Project (2011). *Awareness Creation and Trust Building at MESO Levels (Division and County)*. KENFAP: Nairobi.
- Katherine, H., Patti, K & Pippa, C. T (2009). Changing Land Use, Livelihoods and Wildlife Conservation in Maasailand. In Katherine, H., Patti, K & Pippa, C. T (Eds.), *Staying Maasai? Livelihoods, Conservation and Development in East African Rangelands* 1-43. New York: Springer. Available at www.springer.com
- Karanja (2014, January 21). Foundation gives 2,000 students 'wings to fly'. *Daily Nation*, p10.
- Kenya Red Cross Society (2012). Livelihoods Changed through Food Security in Turkana – Thanks to Kenyans for Kenya. Author: Nairobi. Accessed on January 31, 2014 at <https://www.kenyaredcross.org/index.php?option=com>
- Kirkbride, M & Grahn, R. (2008). Survival of the fittest: Pastoralism and climate change in East Africa. Oxfarm Briefing Paper 116, August. Oxfarm International.
- Komong'iro, M. (2013). *A short History of the Exodus Community Development Organization*. Unpublished booklet.
- Kothari, C.R. (2004). *Research Methodology: Methods and Techniques*. (2nd ed.). New Age International Publishers: New Delhi.

- Mohamud, A. & Pkalya, R. (2005). *Closed to Progress: An Assessment of the socio-economic impact of conflict on Pastoral and Semi-pastoral economies in Kenya and Uganda*. Practical Action: Eastern Africa.
- Miles, M. B. & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*, (2nd ed.). Thousand Oaks, CA: Sage.
- Mugenda. M. O. and Mugenda. G. A. (2003). *Research Methods: Qualitative and Quantitative Approach*. Nairobi: Acts Press.
- Ng'ang'a, D. (2012). Culture as the Cause of Conflict. A Case study in west Pokot District, Kenya. *Journal of Peace Education and Social Justice*, 6, (pp. 51-69).
- Nkedianye, D., Radeny, M. , Kristjanson, P. , Herrero, M.). Assessing Returns to Land and Changing Livelihood Strategies in Kitengela. In Katherine, H. , Patti, K & Pippa, C. T (Eds.), *Staying Maasai? Livelihoods, Conservation and Development in East African Rangelands* (pp.115-160). New York: Springer. Available at www.springer.com
- Nsubuga, E.H.K., (2000). *Fundamentals of Educational Research*. Kampala: MK Publishers (U) Ltd.
- Okoti, M., N'gete, J.C., Ekaya, W.N. & Mbuvi. D.M. (2004). Land use, ecology and socio-economic changes in pastoral production system. *Journal of Human Ecology*, 16 (2): 83-89.
- Oso, W. Y.& Onen, D. (2009). *A General Guide to Writing Research Proposal and Report: A Handbook for beginning Researchers*. Nairobi: Jomo Kenyatta.
- Polit, D. F., & Beck, C. T. (2008). Integrating research evidence: Meta-analysis and metasynthesis. *Nursing research: Generating and assessing evidence for nursing practice*, 8 (pp. 665-690).
- Ritchie, J. & Lewis, J. (2003). *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. Sage Publications: California.
- Ronoh, F. (2013 July 9). Amiran Kenya and African Boreholes Initiative partner to change fortunes of West Pokot farmers. *Standard Newspaper*, P.10.
- Smith, K. (1998). Sedentarization and market integration: New opportunities for Rendille and Ariaal women of Northern Kenya. *Human Organization*, 57 (4): 459–468.
- Strauss, A.L. (1991). *Qualitative Analysis for Social Scientists*. Cambridge University Press: Cmbridge.
- Todaro, M.P.& Smith,S.C.(2009). *Economic Development*. (8th ed.). Pearson.

APPENDICES

APPENDIX A: INTERVIEW SCHEDULE

INTRODUCTION

Greetings and Welcome.

I am a student at Moi University undertaking a Masters of Science degree in Development Studies. I am conducting a study on the determinants of emergent livelihoods strategies among the Pokots in Kenya.

In order to carry out the study effectively, I am obliged to collect data on the subject matter. I therefore wish to kindly request you to answer the following questions as objectively and as accurately as possible. The study is conducted purely for academic purposes and is not meant to evaluate your opinion or demean you or your institution in any way whatsoever. Please note that, your identity and responses will be treated with uttermost confidentiality.

Thank you.

SECTION 1: How New Technologies are contributing to adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. What were your livelihood strategies before adoption of the new technologies? How was each one of them practiced?
2. What new technologies are currently being applied in your area to enhance success of livelihood strategies?
3. How has the application of each technology named above contributed to adoption of emergent livelihood strategies in your area?

4. Has the application led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.
5. How do you rate the contribution of new technology in enhancing adoption of emergent livelihood strategies? Explain your answer.

SECTION 2: How Change in Weather Patterns has brought about adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. Before the changes in weather patterns, what were the main livelihood strategies in your community? Describe how the weather conditions were favourable for each of the livelihood strategies.
2. What changes in weather patterns have been experienced in your area?
3. Any notable and memorable change in weather patterns and their effects?
4. How have the changes in weather patterns contributed to adoption of emergent livelihood strategies in your community?
5. Have the changes in weather patterns led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.
6. How do you rate the contribution of weather changes towards the adoption of emergent livelihood strategies? Explain your answer.

SECTION 3: The role of Non State Actors in the adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division, West Pokot County, Kenya.

1. Before the intervention of non-state actors what livelihood strategies were being practiced?

2. Name all non-state actors that operate in Sook Division (where possible, give the year they started operations).
3. What role has each non-state actor you have named above played in enhancing adoption of emergent livelihood strategies in your area?
4. Has their intervention led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.
5. How do you rate the contribution of non-state actors towards the adoption of emergent livelihood strategies? Explain your answer

SECTION 4: The role of State Actors in the adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. Before the intervention of state actors what livelihood strategies were being practiced?
2. Name all state actors that operate in Sook Division (where possible, give the year they started operations).
3. What role has each state actor you have named above played in enhancing adoption of emergent livelihood strategies in your area?
4. Has their intervention led to modification of already existing strategies or emergence of totally new ones or both?
5. How do you rate the contribution of state actors towards the adoption of emergent livelihood strategies? Explain your answer

APPENDIX B: FOCUS GROUP DISCUSSION GUIDE

INTRODUCTION

Greetings to all of you and Welcome.

I am a student at Moi University undertaking a Masters of Science degree in Development Studies. I am conducting a study on the determinants of emergent livelihoods strategies among the Pokots in Kenya.

In order to carry out the study effectively, I am obliged to collect data on the subject matter. I therefore wish to kindly request you to fully participate in this discussion and answer the following questions as objectively and as accurately as possible. The study is conducted purely for academic purposes and is not meant to evaluate your opinion or demean you or your institution in any way whatsoever. Please note that, your identity and responses will be treated with uttermost confidentiality.

Before we start I would like to remind you that there is no right or wrong answer in this discussion. We are interested in knowing what each of you think, so please feel free to be frank and to share your point of view, regardless of whether you agree or disagree with what you hear. It is very important that we hear all your opinions.

You probably prefer that your comments should not be revealed to people outside this group.

Please treat others in the group as you want to be treated by not telling anyone about what you hear in this discussion today.

Let's start by going around the circle and having each person introduce himself.

SECTION 1: General Information

Name of Researcher-----

Venue of discussion-----

Date of Discussion -----

SECTION 2: How New Technologies are contributing to adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. What were your livelihood strategies before adoption of the new technologies? How was each one of them practiced?
2. What new technologies are currently being applied in your area to enhance success of livelihood strategies?
3. How has the application of each technology named above contributed to adoption of emergent livelihood strategies in your area?
4. Has the application led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.
5. How do you rate the contribution of new technology in enhancing adoption of emergent livelihood strategies? Explain your answer.

SECTION 3: How Change in Weather Patterns has brought about adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. Before the changes in weather patterns, what were the main livelihood strategies in your community? Describe how the weather conditions were favourable for each of the livelihood strategies.
2. What changes in weather patterns have been experienced in your area?
3. Any notable and memorable change in weather patterns and their effects?
4. How have the changes in weather patterns contributed to adoption of emergent livelihood strategies in your community?
5. Have the changes in weather patterns led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.
6. How do you rate the contribution of weather changes towards the adoption of emergent livelihood strategies? Explain your answer.

SECTION 4: The role of Non State Actors in the adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division, West Pokot County, Kenya.

1. Before the intervention of non-state actors what livelihood strategies were being practiced?
2. Name all non-state actors that operate in Sook Division (where possible, give the year they started operations).
3. What role has each non-state actor you have named above played in enhancing adoption of emergent livelihood strategies in your area?
4. Has their intervention led to modification of already existing strategies or emergence of totally new ones or both? Explain your answer.

5. How do you rate the contribution of non-state actors towards the adoption of emergent livelihood strategies? Explain your answer

SECTION 5: The role of State Actors in the adoption of Emergent Livelihood Strategies among Pastoralists in Sook Division.

1. Before the intervention of state actors what livelihood strategies were being practiced?
2. Name all state actors that operate in Sook Division (where possible, give the year they started operations).
3. What role has each state actor you have named above played in enhancing adoption of emergent livelihood strategies in your area?
4. Has their intervention led to modification of already existing strategies or emergence of totally new ones or both?
5. How do you rate the contribution of state actors towards the adoption of emergent livelihood strategies? Explain your answer

SECTION SIX: Summary

1. Let's summarize some of the key points from our discussion. Is there anything else?
2. Do you have any questions?

Thank you for taking the time to participate in this group discussion.

APPENDIX C: LETTER OF INTRODUCTION FROM MOI UNIVERSITY



MOI UNIVERSITY
ISO 9001:2008 Certified Institution
OFFICE OF THE DEAN
SCHOOL OF HUMAN RESOURCE DEVELOPMENT

P.O. Box 3900
 ELDORET, KENYA.

254-053-43153/43620 Ext.2448

REF: MU/SHRD/PG/77

14th February 2014

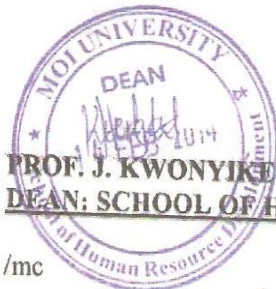
TO WHOM IT MAY CONCERN

RE: EMMANUEL PSONGOL KONDOLITIONY – SHRD/PGD/07/12

The above named is a Master of Science Student at Moi University, School of Human Resource Development, Department of Development Studies.

It is a requirement of his Master of Science Studies that he conducts a research and produces a Thesis. The topic of his Thesis is *“Determinants of Adoption of Emergent Livelihood Strategies Among Pastoralists in Sook Division, West Pokot County, Kenya.”*

Any assistance accorded to him will be highly appreciated.



PROF. J. KWONYIKI

DEAN: SCHOOL OF HUMAN RESOURCE DEVELOPMENT

/mc

APPENDIX D: LETTER OF AUTHORIZATION BY COUNTY COMMISSIONER

OFFICE OF THE PRESIDENT



MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telegrams: "DISTRICTER"
West Pokot
Telephone
Email: westpokotland@rocketmail.com

The Deputy County Commissioner,
West Pokot Sub-County
P.O BOX 1
KAPENGURIA.

Ref: OOP.ADM.15/21 VOL.V/227

5TH MARCH, 2014

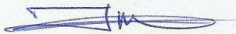
The Assistant County Commissioner,
CHEPARERIA/SOOK DIVISION

RE: RESEARCH AUTHORIZATION
EMMANUEL PSONGOL KONDOLTIONY- SHRD/PGD/07/12

The above mentioned is a master of Science Student at Moi University, School of Human Resource Development, Department of Development Studies.

As a requirement he has to conduct a research and produce Thesis on (*Determinants of Adoption of Emergent Livelihood Strategies Among Pastoralists*) in Sook Division.

This is therefore to request you to inform all the Chiefs asking them to accord him the necessary assistance he may require while undertaking this exercise.


JOSEPH R. LONETE
For: DEPUTY COUNTY COMMISSIONER
WEST POKOT SUB-COUNTY

Cc. Dean, School of Human Resource Development,
MOI UNIVERSITY.

 Emmanuel Psongol Kondoltiony

APPENDIX E: LETTER OF AUTHORITY FOR RESEARCH FROM NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

7th March, 2014

NACOSTI/P/14/2976/847

Emmanuel Psongol Kondoliony
Moi University
P.O.Box 3900-30100
ELDORET.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Determinants of adoption of emergent livelihood strategies among pastoralist in Sook Division, West Pokot County, Kenya,"* I am pleased to inform you that you have been authorized to undertake research in **West Pokot County** for a period ending **31st May, 2014.**

You are advised to report to **the County Commissioner and the County Director of Education, West Pokot County** before embarking on the research project.

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

DR. M. K. RUGUTT, PhD, HSC.
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
West Pokot County.



APPENDIX F: RESEARCH PERMIT FROM NACOSTI

1. **You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**

2. **Government Officers will not be interviewed without prior appointment.**

3. **No questionnaire will be used unless it has been approved.**

4. **Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**

5. **You are required to submit at least two(2) hard topics and one(1) soft copy of your final report.**

6. **The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 1170

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:

MR. EMMANUEL PSONGOL KONDOLTONY

of MOI UNIVERSITY, 0-30100 Eldoret, has been permitted to conduct research in Westpokot County on the topic, DETERMINANTS OF ADOPTION OF EMERGENT LIVELIHOOD STRATEGIES AMONG PASTORALIST IN SOOK DIVISION, WEST POKOT COUNTY, KENYA.

for the period ending: 31st May 2014

Applicant's Signature

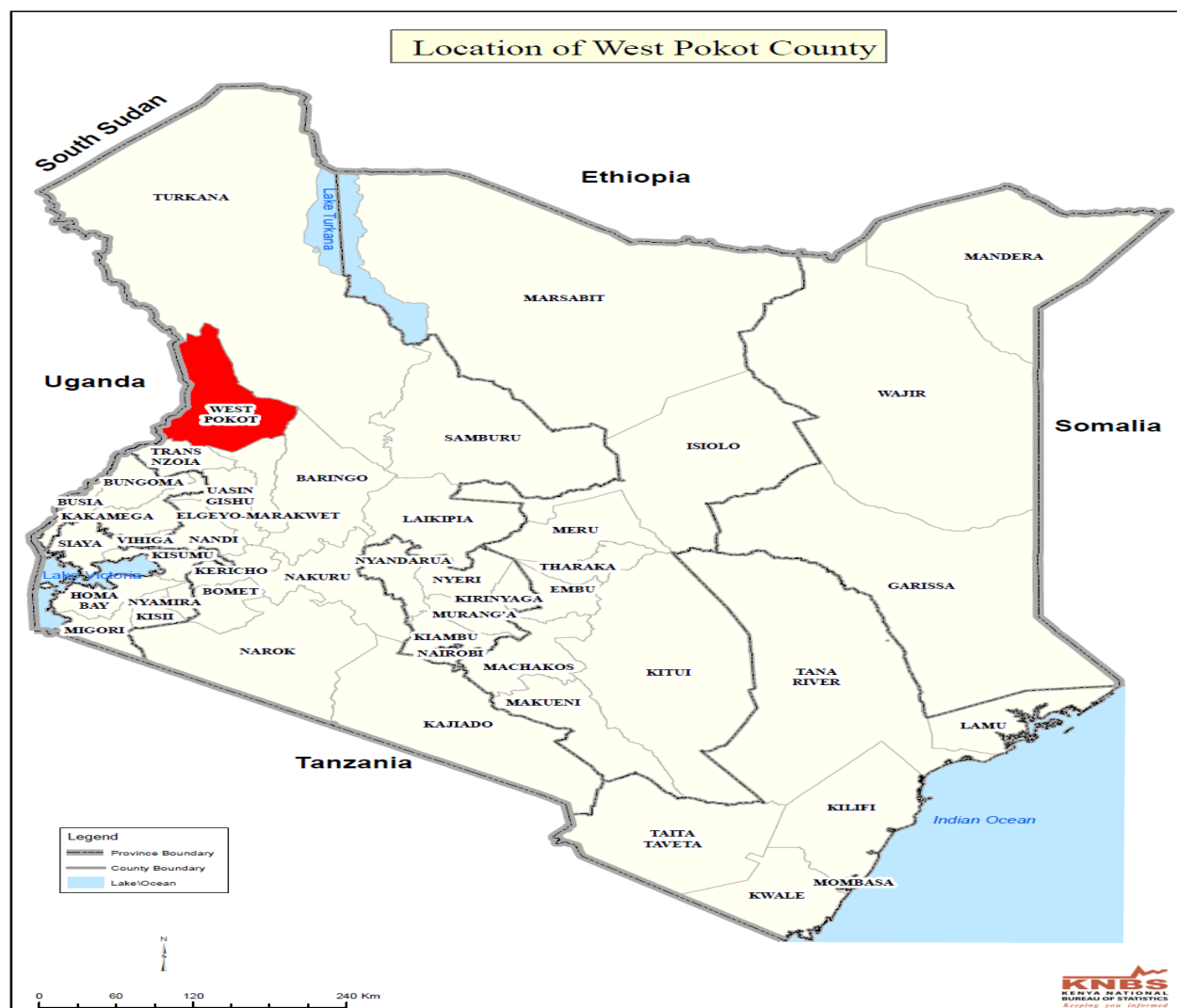
Secretary

National Commission for Science, Technology & Innovation

APPENDIX G: PHOTOS OF RESEARCHER IN ONE OF THE FGDs

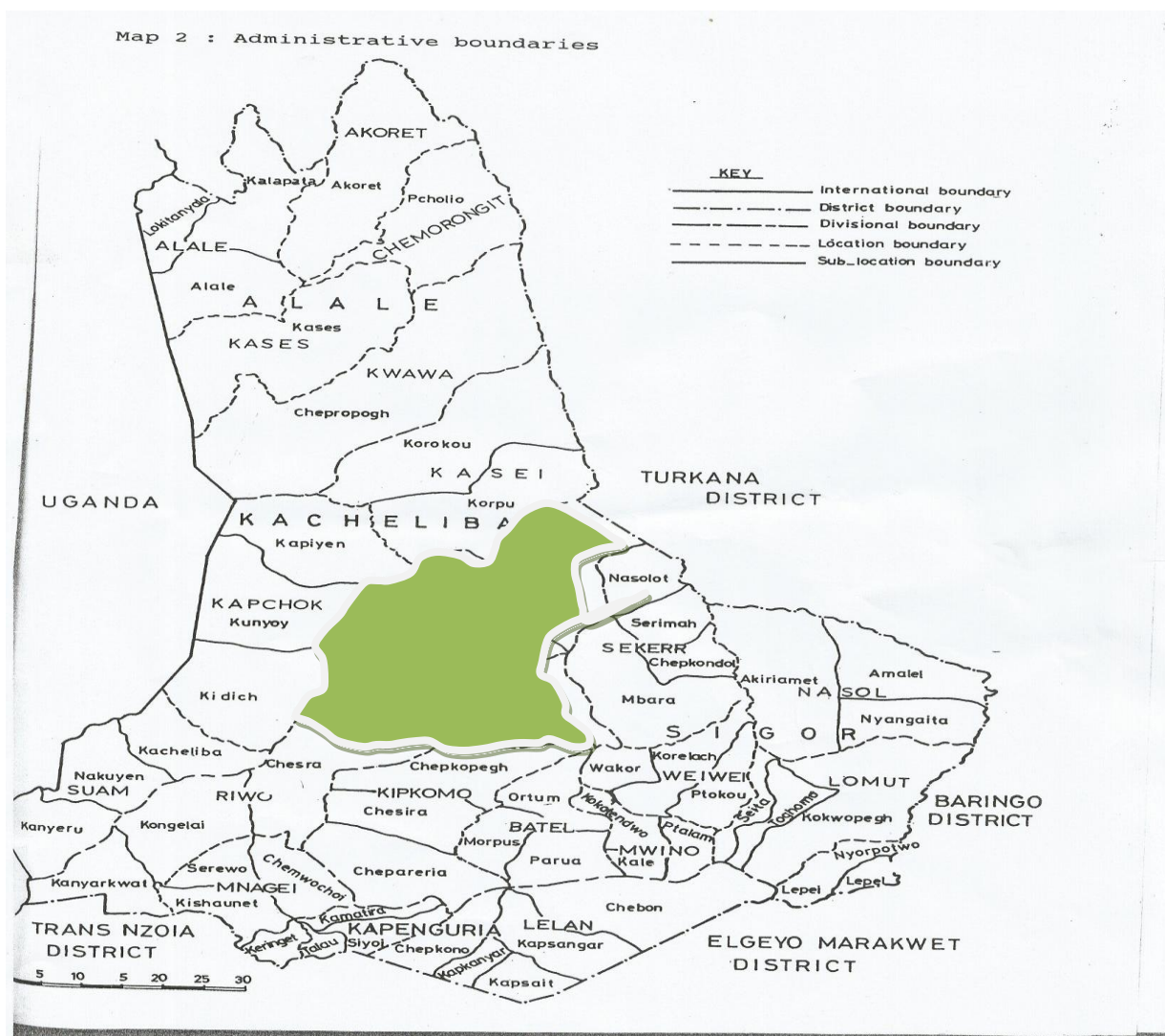
Source: Researcher, 2014

APPENDIX H: MAP OF KENYA SHOWING THE LOCATION OF WEST POKOT COUNTY



Source: West Pokot County Integrated Plan, 2013

APPENDIX I: MAP OF WEST POKOT COUNTY SHOWING THE LOCATION OF SOOK DIVISION



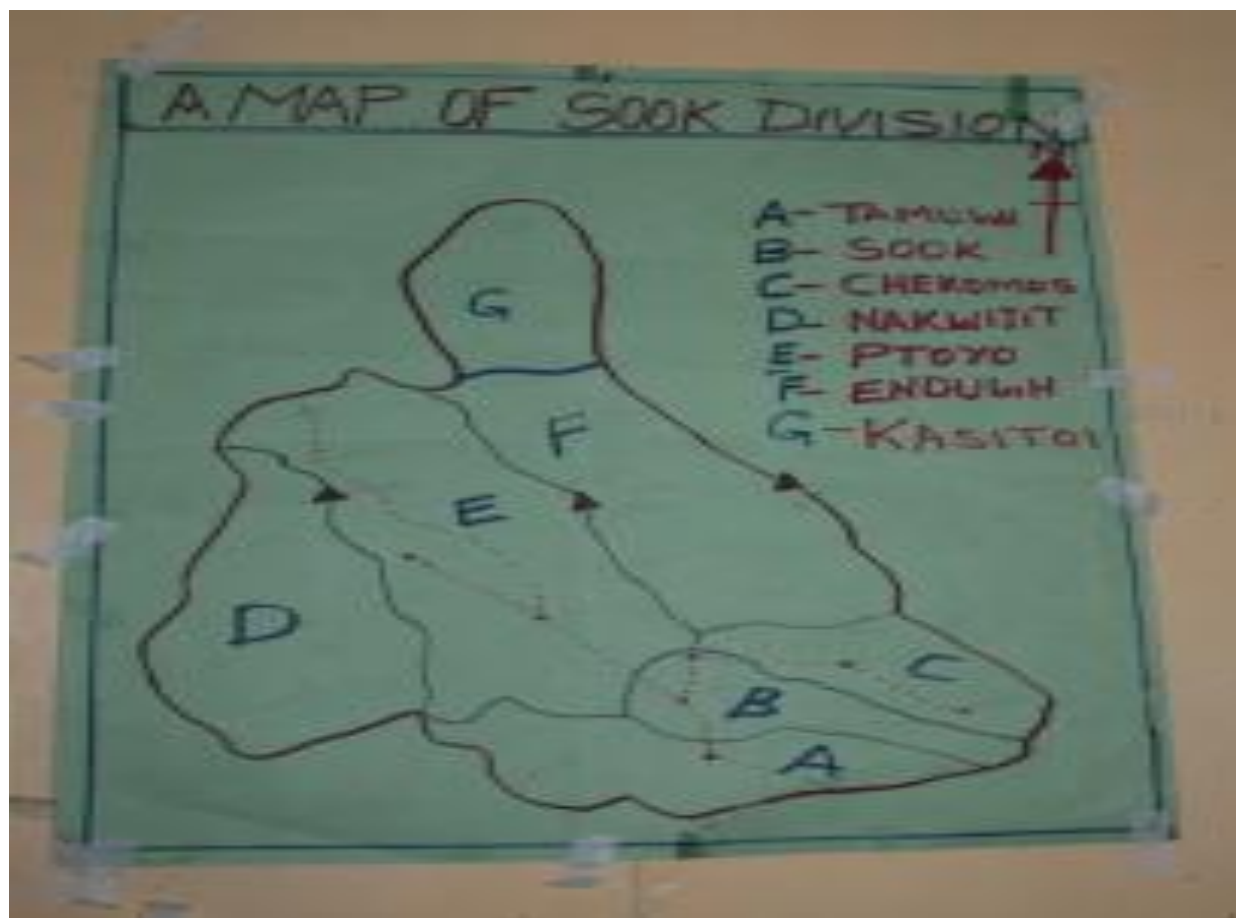
Source: West Pokot County Integrated Plan, 2013

KEY

Area of Study (Sook Division)



APPENDIX J: MAP OF SOOK DIVISION



Source: Researcher, 2014

APPENDIX K: BUDGET

Particulars	Items	Total cost (Kshs)
Stationery	Foolscaps, rulers, pens, files, exercise books, notebooks, document holders etc.	5,800
Feasibility study of the area	i. Transport for the researcher and assistants. ii. Allowance for the researcher and assistants.	30,000
Field data collection	i. Photocopying of questionnaires ii. Transport for the researcher and assistants. iii. Allowance for the researcher and assistants.	65,500
Proposal and Report Writing	i. Typing and printing the proposal ii. Binding of proposal iii. Typesetting and printing of the report plus binding the report	9,000
Sub-total		110,300
Miscellaneous	1% of the budget	11,030
TOTAL		121,330

APPENDIX L: WORKPLAN

Activity	Month/ Duration
Select Research Topic	June 2013
Develop 1 st Draft proposal	July 2013
Review and correct proposal	August 2013
Mock Proposal Defence	September 2013
Correct Proposal assisted by supervisor	October-November 2013
Final Proposal Defence	December 2013
Submit Proposal in hard Copy	February 2014
Data Collection	March- May 2014
Data Analysis/ Report Writing	June 2014
Submission of Report and Examination	July-September 2014
Defence and Corrections	October 2014
Final submission	November 2014