

**APPLICATION OF FOREST LEGISLATION ON SUSTAINABLE  
RESOURCE UTILIZATION: A CASE OF MT ELGON REGION,  
KENYA**

**BY**

**BARASA ODULA ELIAS**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN  
DEVELOPMENT STUDIES, DEPARTMENT OF DEVELOPMENT STUDIES,  
MOI UNIVERSITY**

**2016**

**DECLARATION**

Declaration by Candidate

This Thesis is my original work and has not been submitted for any academic purposes to any other University.

.....

BARASA ODULA ELIAS

SHRD/PGD/030/2012

.....

Date

Declaration by Supervisors

This Research Thesis has been submitted for examination with our approval as University Supervisors.

.....

Prof. Leonard. S. Mulongo

Department of Development Studies

School of Human Resource Development

Moi University.

.....

Date

.....

Prof. Peter .I. Omboto

Department of Quantitative Entrepreneurship

School of Human Resource Development

Moi University.

.....

Date

## **DEDICATION**

This Thesis is dedicated to my beloved late brother Expeditus; Mother Angeline, Norine and Violet. Their love, patience, support and understanding have lightened up my spirit to finish this study and the Thesis.

## ACKNOWLEDGEMENTS

All praises belong to GOD Almighty, by His Grace, I got a lot of help; support and encouragement from individuals as well as colleagues from Randy Institute for Policy and Education which enabled me finish my course work study in the Department of Development Studies; School of Human Resource Development, Moi University.

My sincere gratitude goes to my supervisors for their encouragement to take the working on this topic and for assistance and guidance. I am also greatly indebted to their valuable patience and time spent in discussing and generating valuable topic for this Thesis.

Lastly but not least, special thanks to all my friends and classmates for making My Masters of Science Development Studies, students Representative of 2012-2015, a more challenging, educative and gratifying experience.

Finally yet most important my beloved mother Angeline, Sisters Norine and Dorothy and Father Chami dedicated prayers all through. And finally in remembrance of my late beloved brother Expeditus, through him in my entire childhood days of primary school taught me how to read and write. May his soul rest in peace (RIP).

**TABLE OF CONTENT**

Declaration	ii
Dedication	iii
Acknowledgements	iv
Abstract	xii
List of Abbreviation and Acronyms	xiii
Operationalization of Terms	xiv
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.1 Overview	1
1.2 Background of the Study	1
1.3 Statement of the Problem	3
1.4 Research Objectives	4
1.4.1 Specific Objectives	4
1.5 Research Questions	4
1.6 Justification of the Study	5
1.7 Significance of the Study	6
1.8 The Scope of the Study	6
1.9 Limitation of the Study	7
1.10. Conceptual Framework	8
<b>CHAPTER TWO: LITERATURE REVIEW</b>	<b>9</b>
2.1 Overview	9
2.2 The Global Perspective on Legal Framework and Institutional Process on Forest Resource Sustainable Utilization	14
2.3 Kenya's Policies and Institutional Process on Forest Resource Sustainable Utilization	28

2.4 Forest Act and Other Related Laws on Forest Resources Use in Kenya	39
2.5 Theories on Forest Resource Sustainable Utilization	48
2.6 The Conceptual Framework	55
2.8 Emerging Legal Issues on Legislation and Institutional Process on Application of Law on Sustainable Resource Use	57

### **CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY 66**

3.1 Introduction	66
3.2 Study Area	66
3.4 Research Design	68
3.6 The Target Population	69
3.9 Validity And Reliability	74
3.10 Data Collection Methodology	75
3.11 Data Processing and Analysis.	76
3.12 Ethical Consideration	78

### **CHAPTER FOUR: DATA PRESENTATION, INTERPRETATION AND ANALYSIS 79**

4.1 Introduction	79
4.2 Response Rate	79
4.3 The Research Objectives	83
4.4 Strategies Livelihoods and Policies Strategies for Forest Resource Sustainable Utilization	126

### **CHAPTER FIVE: CONCLUSION AND RECOMMENDATION 161**

5.1 Introduction	161
5.2 Research Objectives	161

5.3 Obstacles in Application of Legislation on Forest Resources Sustainable Utilization	167
5.4 Strategies for Livelihoods and Forest Law Strategies for Resource Sustainable Utilization	171
Conclusion	173
Recommendations	174
<b>REFERENCES</b>	175
<b>APPENDICES</b>	178
APPENDIX I. LETTER TO RESPONDENT (INTRODUCTION LETTER)	178
APPENDIX II. HOUSE HOLD QUESTIONNAIRE FOR HOUSEHOLD SURVEY	179
APPENDIX III: FOCUS GROUP DISCUSSIONS GUIDE	184
APPENDIX IV: SAMPLE INTERVIEW GUIDE	189
APPENDIX V: STUDY AREA	191
APPENDIX 6. INTRODUCTORY STUDENT BONA FIDE LETTER FROM MOI ....	192
APPENDIX VII. RESEARCH PERMIT FROM NACOSTI TO CARRY RESEARCH...	193
APPENDIX VIII: RESEARCH PERMIT CARD FROM NACOSTI FOR RESEARCH...	194
APPENDIX IX: LETTER FROM COUNTY DIRECTOR OF EDUCATION BUNGOMA COUNTY TO ALL SUB-COUNTY EDUCATION OFFICERS FOR RESEARCH....	196
APPENDIX X: BUDGET	197
APPENDIX XI: TIME FRAME OF THE STUDY	198

## LIST OF TABLES

- Table 4.2.1:** Demographic data [80](#)
- Table 4.4.1.2** locals awareness on Provisions of forest law on land/capital acquisition in the forest [90](#)
- Table 4.4.1.4** The role of forest law [92](#)
- Table 4.4.3.1. (a)** Effectiveness of provision of forest law on sustainable utilization of forest resources [107](#)
- Table 4.4.3.1.6(b)** Livelihoods: Hunting [112](#)
- Table 4.4.3.1.7** Reported wildlife species hunted by the local people in the study area [112](#)
- Table 4.4.3.1.8 (a)** Local people's hunting methods use in the study area [117](#)
- Table 4.4.4.1.9 (a).** Obstacles to application of forest law on the sustainable forest utilization of forest resource utilization. [124](#)
- Table 4.5.1:** Strategies on the provisions of forest law in relationship to the role and effects of law on sustainable utilization of forest resources [133](#)
- Table 4.5.2** Local peoples' management strategy of their community forests [135](#)
- Table 4.5.3.3.** .application of law on indicators of law on sustainable resource utilization analysis using the conceived conceptual framework [145](#)
- Table 4.5.3.2:** Cross tabulation of the reactions towards the role and effects of forest law on sustainable utilization of forest resources [145](#)



## LIST OF FIGURES

<b>Figure 1.10.</b> Conceptual Framework.....	8
<b>Figure 2.6.1:</b> Livelihood Framework Adapted from Scoones (2011).....	49
<b>Figure 2.7.1.</b> Conceptual framework.....	55
<b>Figure 3.2.1</b> study area map.....	66
<b>Figure 4.4.1:</b> The Distribution of land holdings between the ethnic groups in the study Area .....	84
<b>Figure 4.4.1.3.</b> Awareness of provision of the forest law on acquisition of forest Resources and sustainable utilization .....	85
<b>Figure 4.4.2.1.1.</b> Population representation in terms of the objectives of forest management National objectives for forest management and conservation on sustainability.....	87
<b>Figure 4.4.2.1:</b> The Distribution of land holdings between the ethnic groups in the study area .....	90
<b>Figure 4.4.3.1</b> Indicators of application of forest law in relationship with sustainable resource use.....	92
<b>Figure 4.4.3.1.5 (b)</b> Effects of application of law on indicators of forest law on sustainable resource use.....	102
<b>Figure 4.4.3.1.6.:</b> Distribution of Wildlife species hunted between the ethnic groups in the study area in percentages.....	107
<b>Figure 4.4.3.1.7:</b> Variation in hunting methods between the ethnic groups of the study area.....	112
<b>Figure 4.4.3.7.8(a):</b> Indicators of the law for the measure of sustainability.....	112

<b>Figure 4.4.3.7.8(b)</b> negative measure of sustainability by indicators of law.....	116
<b>Figure 4.4.4.1.9.</b> Obstacles to application of forest law on the sustainable forest utilization of forest resource utilization.....	117
<b>Figure 4.5.2.1:</b> Resource use between the ethnic groups in the study Area.....	119
<b>Figure 4.6.1:</b> Ethnic groups' responses of the types of benefits received from the forestry law in the study area .....	106
<b>Figure 4.6.1.2:</b> Local people's perception towards the benefits received from the forestry law in the study area.....	140
<b>Figure 4.6.3:</b> The perception of the ethnic groups of the benefits received from the forestry law in the study area.....	140
<b>Figure 4.6.5:</b> Ethnic groups' reasons for the negative perception towards the forestry law in the study area.....	141
<b>Figure 4.6.6:</b> Ethnic groups' opinion about the benefits provided by the protected area in the study area.....	144
<b>Figure 4.6.7:</b> Ethnic groups' responses about the benefit received from the protected area.....	146
<b>Figure 4.6.8:</b> Ethnic groups' responses on the types of benefit received from the logging companies in the study area .....	147
<b>Figure 4.6.9:</b> Ethnic groups' willingness to participate in forest exploitation and management in the study area.....	150

<b>Figure 4.6.10:</b> Ethnic groups' perception toward the benefits received from the logging companies .....	151
<b>Figure 4.6.11:</b> Ethnic groups' views about how they will like to participate in forest exploitation and management in the study area .....	152
<b>Figure 4.6.12:</b> Ethnic groups' perception toward the forestry law on their participation in forest exploitation and management in the study area .....	153
<b>Figure 4.6.13:</b> Ethnic groups' reasons for their negative perception toward the forestry law on their participation in forest exploitation and management in the study area .....	154

## ABSTRACT

Globally, sustainable resource use requires that appropriate laws and legislations be put in place so that maximum exploitation of the same is done systematically within the confines of the law. However, in Kenya, this is contrary. While official policies, institutional and legal issues confronting the forest sector exists, there is little information on the application of forest law on resource use and sustainability. In most instances, the application of the laws and legislations has always generated mixed reactions from the affected population despite the intention of the law being to strengthen the effective utilization of these resources. Occasionally it has always generated great resistance from the people who perceive the forest laws and policies as a hindrance to their access and use of resources as a livelihood. The main objective of the study therefore, was to look into the application of forest Legislation on Sustainable Resource Utilization in Kenya with Mt Elgon region. The specific objectives of the study were: Assess the relationship between the role of policies and institutions processes in application of law and sustainable resource utilization; To examine the indicators of application of law on Forest monitoring and Forest management practices for sustainable resource utilization; Examine the obstacles in application of law for sustainable resource use .And to explore what livelihoods strategies and policy strategies in the application of law for sustainable resource utilization. The study was guided by Sen's Endowment, Entitlement Approach and Livelihoods. Theory by Chamber and Conway that certain indicators on the application of law are determinants of sustainable resource use with sustainability measured in terms of depletion, reforestation, and degradation. The target population was 1800 residents of three villages of; Chepkitale, Laboot and Taboo of Mount Elgon. The sample size of 84 respondents using Cronbach's formula of Robert Crey, Daryle and Morgan. The household survey was used to collect data.FGDs, Interviews, and participant observations was part of data collection methods. Secondary data was collected from archives reports ,legal policies and legislations ,research projects carried out by NGOs in the study area and policy documents from MINEF and general literature.Data was analyzed using descriptive statistics of mean, variances, percentages and presented in form of tables and charts .The findings evidenced that 65.5% of the respondents mentioned that sustainability was determined by the application of forest law which had a great influence on sustainable resource use in the area. Finally, the study informed that if resources are not exploited wisely, they would soon be depleted leading to degradation of resource and thus affecting development.

## **LIST OF ABBREVIATION AND ACRONYMS**

- CDM- Clean Development Mechanism
- CFAs-Community Forest Associations
- CFRs-Control Forests Reserves
- FAO- Food and Agriculture Organization
- FLEG-Forest Law Enforcement and Governance
- FLEGT- Forest Law Enforcement, Governance, and Trade
- FRP-Forestry Research Programme
- FSD -Forestry Services Department
- JFM-Joint Forest Management
- NTFPs-Non –Timber Forest Products
- PFM- Participatory Forest Management (PFM)
- PPP-Public-Private Partnership
- SFM-Sustainable Forest Management
- SSC-Statistical Service Centre
- UN-United Nations
- UNDP-United Nations Development Programme
- UNDRIP- United Nations Declaration on the Rights of Indigenous Peoples
- UNEP- United Nations Environment Programme
- WB-World Bank
- WCFSD-World Commission on Forest and Sustainable Development

WRf – World forest foundation

WRfF-World Forest foundation Movement.

## OPERATIONALIZATION OF TERMS

**Agenda 21** - Control of all Lands use and not leave any of the decision making in the hands of private property owners.

**Blacklist**-Cartels and powerful personality involved in illegal forest resources unsustainable utilization

**Challenges** - problems /hurdles encountered while carrying certain activity or issues

**Concept of community** - it means locality where people live and meet their daily needs

**Consistency**- This refers to agreement, harmony, or compatibility, especially correspondence or uniformity among the parts of a complex thing.

**Conservation** – This refers to exploitation, [improvement](#), and [protection](#) of human and [natural resources](#) ensuring derivation of their highest economic and [social benefits](#) on a [continuing](#) or [long-term](#) basis.

**Coordination** –This refers to the organization of the different elements of a complex body or activity so as to enable them to work together effectively.

**Depletion**-to decrease seriously or exhaust the abundance or supply of

**Dynamics** - it means determinants/drivers of changes or forces

**Economic Development**- This refers to as the quantitative and qualitative changes in the economy.

**Elgon** - is a Maasai word Ol Doinyo lagoon meaning mountain shaped like human breast

**Forest** - means natural trees or resources renewable/ a large dense growth of trees cover

**Forest law** - policies/regulation on use, access, utilization and management of forests

**Livelihood** – gaining a living, capabilities, tangible and intangible assets such as claims

**Red Army**-Middlemen used by the blacklist to encourage unsustainable forest resource use

**Resources Dependence** - overreliance on economic, technological and socio-cultural metrics of rural community

**Resource** - source of help or somebody or something that is a source of help or information

**Respect Of Human Rights** - [Moral](#) principles or [norms](#) that describe certain standards of human behavior.

**Strategies** - methods put in place to help in protection or implementation of policy or issue

**Sustainable utilization** - capable of being sustained and a method of harvesting or using resource without depletion.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 OVERVIEW**

This chapter presents key issues that laid the foundation to the study. The context of the research problem, problem statement, research objectives, justification of the study and the limitation of the study.

### **1.2 Background of the Study**

Worldwide, Forest Sustainable resource utilization demands that appropriate laws and legislations be put in place, yet in most instances the application of the law has mixed reactions. The application of law both on International and national levels on sustainable resource has grown markedly, that whenever application of law on sustainable resource utilization is applied, has always generated a mixed outcome .While the intention of the law has been to strengthen effective utilization of available resources, the scenarios seems different on the ground, occasionally, it has always generated great resistance from the people who conceive law as a hindrance to their access, use of resources as a livelihood.

The concept of ‘sustainability’ has become the current world debate on environmental and economic crises in the 21st century. Since its conceptualization (sustainability) concept, on The Agenda 21, in a nutshell, the plan has calls for governments to take control of all land use and not leave any decision making in the hands of private property owners. These all seems to be concerned on the role of law on sustainable resource utilization for sustainable development and for future generation.



In Kenya the legislation on sustainable forest resource utilization could be traced in early 1960s, mostly due to an increased in human population and forest resource dependency linkages. Data shows that a third (1/3) of indigenous forest resources is heavily demanded by both locals and international communities. In early 1960s, there was little demand for forests resources, agricultural land in unsecured areas compared to an area of 9587ha (now under cultivation) that had been hived off illegally from previously forested areas.

Nonetheless, Kenya wildlife management Act, prohibits bush meat and NTFP sales as way to preserve and conserve wildlife for eco-tourism, that application of the law became unrealistic because bush meat hunting it is an age-old and customary practice for rural people who are dependents of forests resources and to the locals, that the government has no means of controlling these commercial networks. Furthermore, prohibiting the use of steel-wire traps and firearms is pointless as they are used throughout the country. Most of these poachers practiced illegal commercial hunting with impunity since they had the support of powerful political economic players.

In realm of increased forest resources people dependence, the legal rules gives rise to or emphasize-peoples forest resources rights and impacts .Legal systems also becomes an obstacle in access, use, utilization and sustainable management of forest resources, when change is required in legal rules, procedure, and institutions to remove the dependants of forests resources in the forests by the policy authority was much the mixed out-comes of (FAO, 2010, 2011 and 2016, Moyini and Muramira 2009, Bush 2007).

### **1.3 Statement of the Problem**

Globally, sustainable resource utilization requires that appropriate laws and legislations be put in place so that maximum exploitation of the same is done systematically within the confines of the law. However, in Kenya, this cannot be said to be the case. While official policies, institutional and legal issues confronting the forest sector exists, there is little information on the application of forest law on resource use and sustainability. In most instances, the application of the laws and legislations has always generated mixed reactions from the affected population despite the intention of the law being to strengthen the effective utilization of these resources. Occasionally it has always generated great resistance from the people who perceive the forest laws and policies as a hindrance to their access and use of resources as a livelihood.

Sustainable resource utilization is enhanced under the protection of national and international laws which recognized that natural resources are vital for the present and future generation for sustainable development. The Kenya Mau forest conversation and management ,Mt Elgon forest, Embubut forests gives ideal of the current situation whereby the law and legislation has been put place to enhance sustainable utilization giving the importance of natural resource (forests, water, minerals, flora and fauna) for sustainable development. Thus the quest to conserve, manage and sustainable resource use, studies indicates that whenever application of law in sustainable resource utilization is applied, it has always generated a mixed reactions.

Kenya's forest sector is a relatively understudied area, and while literature exists on official policies and institutional and legal issues confronting the sector, there is little

information on the on the application forest law on resource use and sustainability which remain central to the debate on forest resource sustainable use .The research outlined in this study aimed to fill this void. Therefore, it was in this quest that the study sought to examine the application of law on sustainable resource utilization in particular forest law in Kenya within Mt Elgon region.

## **1.4 RESEARCH OBJECTIVES**

The main objective of the study therefore, was to look into the application of Legislation on Sustainable Resource Utilization in Kenya with the application of forest law in Mt Elgon region as the point of focus.

### **1.4.1 Specific Objectives**

- i. Assess the relationship between the role of policies and institutions processes in application of law and sustainable resource utilization;
- ii. To examine the indicators of application of law on Forest monitoring and Forest management practices for sustainable resource utilization
- iii. Establish the obstacles in application of law on sustainable resource utilization.
- iv. To explore what livelihoods strategies and policy strategies in the application of law for sustainable resource utilization.

## **1.5 Research Questions**

- i. What are the policies and institutional process in application of law and sustainable utilization of forest resources?
- ii. Does the policies and institutional process in application of law for sustainable forest resource utilization require any changes?

- iii. Why is policy and institutional process significant in resource sustainable utilization?
- iv. What are the indicators in application of law on forest monitoring and forest management practices enhanced sustainable resource utilization?
- v. How does the application of law on indicators enhance sustainable resource utilization?
- vi. What are the obstacles to the application of forest law on sustainable utilization of forest resources?
- vii. What are the policy strategies and livelihoods strategies for improving sustainable resource utilization?

### **1.6 Justification of the Study**

Focusing on the overdependence on forests resources by the local people and the extent to which their use, access, sustainable utilization and management was important for understanding the application of forest law in Kenya on the sustainable utilization of forest resources with Mt Elgon exemplifying the experience and case of the local people in that area.

By studying how the forest law was functioning and being implemented in Kenya and indicators of application of forest law and legislations, the thesis offered new insight on the relationship between the dependants of forests resources on sustainable utilization and the application of forest law. Understanding the complexity surrounding the sustainable utilization of forests resources on the application of the forest law on such forest resources, dependants of forest resources rights was critical to ensuring that those rights

of dependants of forest resources are protected and improved in cognizant to sustainable utilization of such resources. Because laws, customs, and norms could change from country to country, and even vary between regions and ethnic groups within countries, secured dependants of forests resources rights, dependants of forest resources were meaningfully included in the design and implementation of forest law.

### **1.7 Significance of the Study**

The study was important in gaining understanding of the application of the forest law in Kenya relation to sustainable utilization of forest resources persistent among the Mt Elgon people who heavily dependent on forest resources. And how those dependence and sustainable utilization was affected by the application of the forest law violated the principles of sustainable utilization and exploitation of forest.

To make the locals always understand that law is not always intended to curtail their livelihoods but to bring effective utilization and sustainable utilization of resources for future generation without depletion.

### **1.8 The Scope of the Study**

The study sought to establish how application of forest legislation on forest resources affects the measure of sustainability. Sustainable use on forest resources can be measured in terms of depletion, reforestation, and deforestation. The law also affects the local rights on use, access and intended intention may be lost when law is applied to what the people perceive to be their genuine right as opposed to the objective of the law. The study sought also to be informed by the legislations on Forest Act, Kenya Wildlife and Management Act Kenya's Constitution of 2010 and the Agenda 21. And the study findings has been

only used to represent how the application of forest law would affect the sustainable utilization of forest resources by dependants of forest resources practices on the customary rights of access, use and utilization amongst the three villages of Chepkitale, Laboot and Taboo of Mt Elgon region between period of August 2014- September 2014 but not the case of other communities across the country.

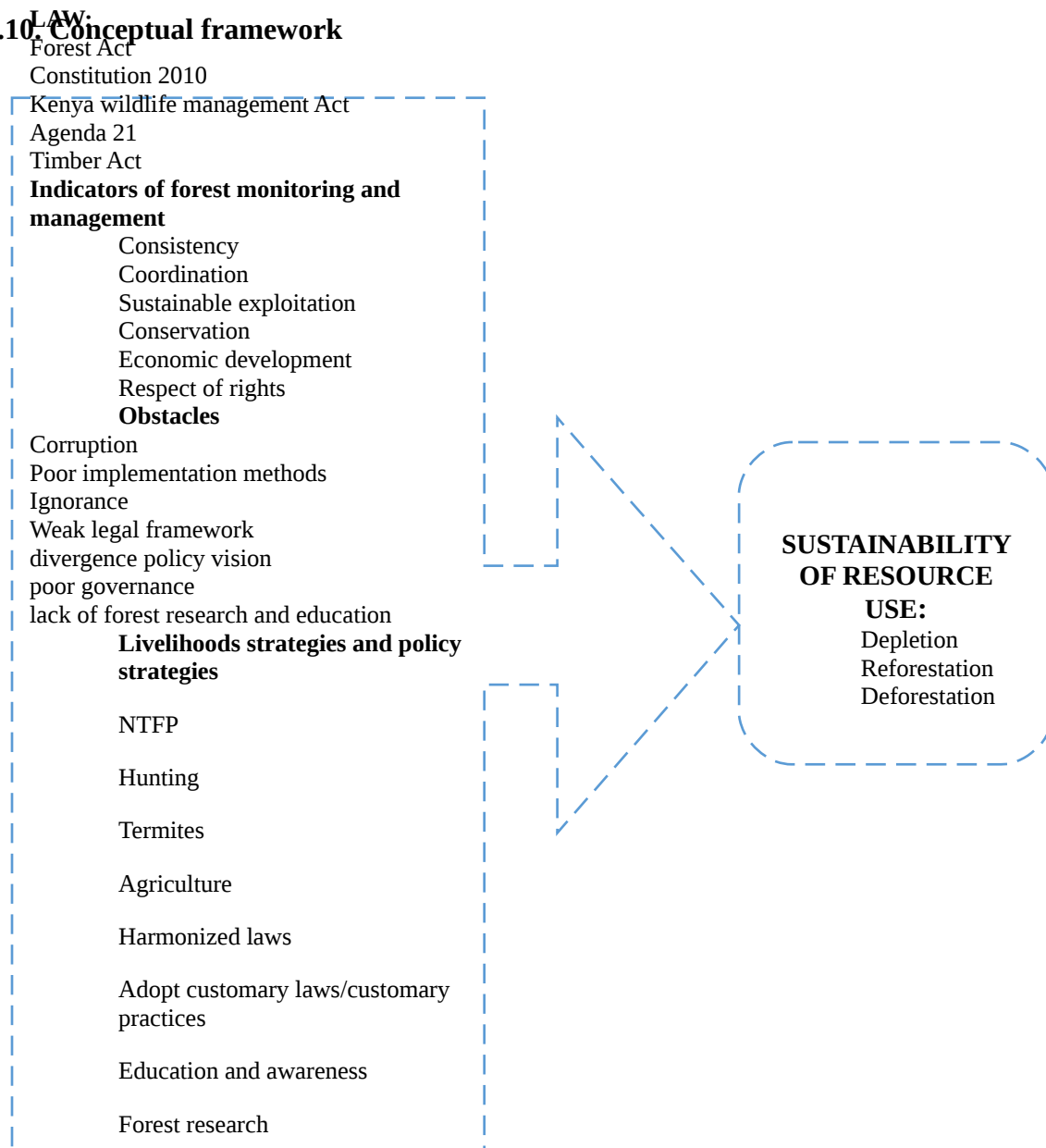
### **1.9 Limitation of the Study**

The study being household survey involved both qualitative and quantitative method of data collection of primary data and secondary data, data on some indicators in application of the law on forest monitoring and management on resource sustainable use, how application of law can led to measure of sustainability resource use. However, data collected was triangulated to ensure that adequate information was gathered to answer to the study questions. The study coverage, was limited to few physical and torrential constraints of the geographical location and accessibility of study area due to poor infrastructure coupled with bad weather conditions, cold temperatures and unpredictable rainfalls within odd hours of the day, making planning and logistical a constant night mere to the researcher.

However, such challenges in future would be overcome if development of infrastructure and metrological department can give accurate reporting on weather patterns, rainfall on the study area would make logistical planning and data collection more accessible. Finally, although study had few constraints and challenges, but data collection was more successful and the hospitality of local communities was much encouraging for future study in same study area financial resources available to the researcher for the study.

Geographical location and distance between study areas was, though challenges served to constrain the scope of the study Mt Elgon area which was only restricted to three villages of Taboo, Laboot and Chepkitale that was easily accessible to the researcher

### 1.10. Conceptual framework



Source Study 2014

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. OVERVIEW**

The chapter presented key issues that illustrated the process involved in literature review based on the global legal framework application and sustainable resource utilization, Kenya's policy and institutional process on sustainable resource utilization propagated theories, conceptual framework and emerging legal issues from the policy and institutional process in application of law on sustainable resource utilization.

Forest Management and sustainable resource use, the Indicators of Forest management consists of the operational aspects of planning, monitoring, and enforcing various forest uses, including conservation and ecological uses, community uses, and commercial and extractive uses. The forest management and sustainable resource use indicators are divided into five subthemes:

#### **2.1.1 Forest Legal and Policy Framework**

This refers to the policies, laws, and regulations that set the overarching social, environmental, and economic objectives for forest management. They also establish the legal parameters that guide forest management practices.

#### **2.1.2 Forest Strategies and Plans**

Defines concrete steps and actions that will be taken to achieve stated forest policy goals. For example, there may be strategies to reduce deforestation, protect biodiversity, or achieve economic growth targets.



### **2.1.3 Forest Monitoring**

This includes all efforts to track forest conditions over time, including changes in forest cover and other social, environmental, and economic dimensions of forests.

### **2.1.4 Forest Management Practices**

This refers to the actions of forest managers – whether they are government agencies, private companies, local communities, or individuals – to plan and execute activities to manage, exploit, and conserve forests.

### **2.1.5 Forest Law Enforcement**

This refers to efforts to enforce and promote compliance with forest laws and regulations, including through detection of illegal activities, prosecution of offenders, and application of sanctions.

## **2.2.1. The Forest Legal and Policy Framework**

The Forest legal and policy framework refers to the policies, laws, and regulations that set the overarching social, environmental, and economic objectives for forest management. They also establish the legal parameters that guide forest management practices. On the application of legislation on sustainable forest resource use which the major indicator of Forest legal and policy framework.

National objectives for forest management and conservation to what extent are there clear national objectives for sustainable management and conservation of forests? Indicator Guidance: This indicator assesses whether the laws and policies that govern forests include

clear objectives for how forest resources will be managed. Forest sector objectives are often included in national forest policies, action plans, or forest laws and regulations themselves. To apply this indicator, researcher reviewed all relevant law and policy documents for priorities and objectives. Element of Quality Guidance.

#### ***2.2.1.1 Consistency***

Major forest policies and laws are consistent with broader national development goals. National priorities may be set out in national development plans, strategic plans for other land use sectors (e.g., mining, infrastructure), or plans to reduce poverty or increase food security. Researchers should review whether objectives in forest policy and law are consistent with national development goals. For example, they may assess whether economic development strategies are likely to impact forest sector objectives (e.g., by requiring forest clearing), or whether poverty reduction strategies include forest-dependent groups.

#### ***2.2.1.2. Coordination***

Major forest policies and laws consider linkages with other economic sectors that impact forests. Researchers should review whether forest policies and laws reference or link to other economic sectors that impact forests, such as agriculture, mining, energy, infrastructure, or ranching. For example, policies and laws may discuss information sharing, coordination bodies, or general goals of collaboration.

### ***2.2.1.3. Sustainable Exploitation***

Major forest policies and laws set clear objectives for the sustainable management and exploitation of forest resources. Researchers should review whether policies and laws include objectives of sustainable management and exploitation of forest resources. For example, forest laws may state that forests are to be maintained for use by future generations. Researchers should also note whether goals of sustainability are clearly defined within the legal framework.

### ***2.2.1.4. Conservation***

Major forest policies and laws set clear objectives for forest protection and conservation. Researchers should review whether policies and laws include conservation objectives. For example, by setting a target area for forest land that should be conserved, putting in place a system of protected areas, or setting objectives to reduce deforestation.

### ***2.2.1.5. Economic Development***

Major forest policies and laws set clear objectives for economic development of the forest sector. Researchers should review whether policies and laws include development objectives. For example, they may aim to promote extraction of forest products, create forest sector jobs, support small and medium forest enterprises, or facilitate development of the forestry industry (e.g., processing facilities, value added products).

### ***2.2.1.6. Respect of Human Rights***

The major forest policies and laws set clear objectives for recognizing the rights of local communities and indigenous peoples. Researchers should review whether policies and laws include clear objectives related to recognizing the rights of forest communities and, where

relevant, indigenous peoples. For example, they may recognize customary claims of these groups to forest resources, or grant certain types of property rights (e.g., access, use, management, ownership).

Applied in the study, was the conceptual Framework conceived from the review of literature, the conceptual framework was useful because it helped highlight the specific variables that have influence on the resultant sustainability of forest resource utilization .How such specific variables in application of law could have direct or indirect influence on sustainable utilization of forest resources forest by the dependants that reinforced or negated or affected the principle value in application of law that brought changes and impacts on sustainable utilization of forest resources. The framework was used to analyze each of the two dimensional variables: independent variables and dependent variable (sustainability) in resources use; in forest law and polices to understand the legal provisions of forest law systems as a six dimensional arena with interplay with customary law of formal and informal rules, supportive forest resources and sustainability as ultimate goal.

Limitations of the conceptual Framework lied in its neutrality with regard to sustainable utilization of forest resources by the dependents in relation to application of law. The study addressed that limitation by explicitly drawing the specific sustainable utilization dependants- in law application variables with regard to depletion, forestation and deforestation as measure of sustainability.

*Forest Law:* How legal and policy framework application affected the basis of sustainable forest resource use.

*Forest Monitoring and Management Practice*-indicators of forest law and policy on monitoring and management affect the basis of forest resources sustainability

*Obstacles*-How the impediments influences application of law on sustainability forest resource utilization

*Livelihood Strategies*-what livelihood strategies or activities have influence on sustainability of forest resources

*Sustainability*: How to measure indicators of sustainability of resource in terms of depletion, reforestation when law is applied on its access or use.

## **2.2 THE GLOBAL PERSPECTIVE ON LEGAL FRAMEWORK AND INSTITUTIONAL PROCESS ON FOREST RESOURCE SUSTAINABLE UTILIZATION**

Global legal and institutional process framework and forest resources sustainable use, points to two systems for management of forest resources: (i) a command and control approach, and (ii) an incentive-based framework. Traditionally, the bulk of environmental regulations in developing countries have maintained a focus on command and control structures and relied on robust enforcement mechanisms for their success. Yet these mechanisms have proved extremely difficult to implement in many cases because of the conflicting interests of various stakeholders vying for influence over the formulation of policies that impact on environmental concerns. The long history of governmental failures to implement command and control mechanisms has led to a gradual move towards market-based forces to ensure environmental protection. As Oates and Portney(2008) highlight, economists are increasingly inclined to use incentive-based

instruments, flowing out of a cost-benefit analysis of adopting regulations to protect the environment. Meaningful incentives to promote sustainable forest management (“SFM”) are now thought to be products of mechanisms that either directly empower local communities to take responsibility, or ones that restructure the system by replacing traditional top-down approaches with enforcement mechanisms which empower local actors (Meijerink & Hoe, 2009,2010).

The presence of robust institutions was key to the success of incentive-based forest management. In his seminal work on economic institutions, North defines them as a set of rules that dictate human behavior with the aim of making it more predictable (North, 2012). North recognizes the presence of both formal and informal institutions and lends weight not only to the presence of regulations (formal) and norms (informal), but also to the means to properly enforce them. Institutions unable to enforce regulations are rendered futile. That said, lack of enforcement remains commonplace, especially in circumstances where a subset of stakeholders perceives a loss from robust functioning of the prevailing institutions. (Luna Hasan, 2012). As North puts it, imperfect enforcement can be caused by “the fact that enforcement is undertaken by the agents whose own utility functions influence outcomes.” (North, 2012). In essence, to be effective, an incentive regime must ensure a net benefit for the enforcers.

Application of law both on International and national levels on sustainable resource has grown markedly, that whenever application of law on sustainable resource utilization is applied, has always generated a mixed outcome .While the intention of the law has been to strengthen effective utilization of available resources, the scenarios seems different on

the ground, occasionally, it has always generated great resistance from the people who conceive law as a hindrance to their access, use of resources as a livelihood. The concept of 'sustainability' has become the current world debate on environmental and economic crises in the 21st century. Since its conceptualization (sustainability), there has been a barrage of investigations and literature on the vagueness and ambiguity of its definition and applicability. There are two main opposing schools of thought – the pessimists, usually ecologists and other scientists, who are convinced the earth cannot forever support the world's demand of renewable and non-renewable resources. On the other side are the optimists, the economists, who are equally convinced that the earth, with market incentives, appropriate public policies, material substitution, recycling, and new technology can satisfy the needs and improve the quality of human welfare, of this and following generations, indefinitely.

Agenda 21 on sustainable Development, The Agenda 21, in a nutshell, the plan has calls for governments to take control of all land use and not leave any decision making in the hands of private property owners. These all seems to be concerned on the role of law on sustainable resource utilization for sustainable development and for future generation.

This is evidenced that when the law was applied on sustainable resource use, it affects much of the cultural practices and 'Livelihoods', thus the locals reacted by becoming agitators of the environmentalists' and green lobbies' world over and local revolts (Guha, 2009).

In realm of increased forest resources people dependence, the legal rules gave rise to or emphasized-peoples forest resources rights and impacts .this is evidenced that the Legal

systems also becomes an obstacle in access, use, utilization and sustainable management of forest resources, when change was required in legal rules, procedure, and institutions to remove the dependants of forests resources in the forests by the policy authority was much the mixed out-comes of (FAO 2010, 2012, 2016, Moyini and Muramira 2008, Bush 2009). This resulted into various effects namely;

Increased scarcity of forest land as a result of competition with other users and inappropriate land use strategies, Wildlife damage which affected production and consumption, Market imperfections and infrastructures: inadequate transport facility, no credits, markets were not accessible. Such imperfections constrain dependents of forest resources decision making process and the possibilities to over depend on livelihood developments and Forest policy limited people's access and uses of forest and forest resources.

### **2.2.1. The Global outcome of Application of Legislation and Institutional process on Sustainable Resource Use**

#### ***2.2.1.1. Consistency***

This is evidenced that application of law both on International and national levels on sustainable resource has grown markedly, but it's application, has always generated a mixed outcome .While its main objective has been to strengthen effective utilization of available resources, the scenarios seems different on the ground, occasionally, it has always generated great resistance from the people who conceive law as a hindrance to their access, use of resources as a livelihood.



This is evidenced that, the concept of 'SUSTAINABILITY', has become the current world debate on environmental and economic crises in the 21st century. This is evidenced that, Agenda 21 on Sustainable Development, in a nutshell, the plan has calls for governments to take control of all land use and not leave any decision making in the hands of private property owners. These all seems to be concerned on the role of law on sustainable resource utilization for sustainable development and for future generation.

#### ***2.2.1.2 Coordination***

The people had an agreement in 1959 with the then Dutch Forest Department that the latter would manage the trees for copal collection on behalf of the community and paid them a specific compensation per tree. The people did not like to have the agreement renewed on termination but wanted the land use revoked to them. The Indonesian government who took over from the Dutch did not agree to. Instead the area was included into a large forest concession and the people were paid a minor compensation for each tree. This resulted in a conflict generating tension between the people and the department.

This was evidenced too when the conflict flared up when the DinasKehutanan decided in 1980 that the area of 2,200 be redeveloped as a part of 13,000 ha of plantations of Agathis for industrial use. The people objected to it and appealed to the district administration. Their case was taken up by the local press supported by a local NGO and the Ford Foundation. The proposal was then dropped, two pilot sites for social forestry were selected in the area and the governments are encouraging the community to plant trees in the area under social forestry.

### ***2.2.1.3. Sustainable Utilization***

The approach of Conway and Chambers (2010). They defined Livelihood as “a means of gaining a living, including livelihood capabilities, tangible assets, such as stores and resources and intangible assets such as claims and access”. Livelihood is essentially the activities that people do to “get by” to survive and to meet their everyday needs as well as those more entrepreneurial and profit-focused activities that are best summarized as “getting on” striving towards better conditions of material well-being.

According to Scoones (,2009 and 2015), this is evidenced when “a livelihood is sustainable when it could cope with and recover from stresses and shocks maintain or enhance its capabilities and assets, while not undermining the natural resource base”. The above definitions are expressed in the livelihood framework, which considered the diverse and complex nature of social change and the different processes and factors affecting rural livelihoods. The framework takes into account the main resources available to rural men and women (natural resource was forests) and the various formal and informal institutions (law) involved in the use and management, issues of access and control over these resources. The framework also focused on the application of law on forest resource sustainable utilization by dependents which were their livelihood.

The most evidenced derived assumption of the framework was that people highly depended on forest resources as means of livelihoods development. The most important aspect of this framework was the policies, institutions and processes such as the role of the government and the private sectors, cultural factors that mediate the ability to carry out such strategies and achieve such outcomes. The framework identified natural assets:

This included the natural resource stocks. In the study it includes the forests resources and land where agriculture was done and the forest products.

Though the livelihood framework above assumed that a household accesses a set of assets where access was controlled and modified by the in application of forestry law. The application of Forest policies centralization in different countries of the region had a number of impacts that had cascading effects on the forests of the countries concerned. Some of the impacts such as forest land alienation from the forest users, commercial over-exploitation, over dependency on technocracy and policing, and adverse reaction of forest dependent people had caused and were still causing tremendous forest damages such as reduction of the extent of the forests, the deterioration of their quality and loss of biodiversity.

One impact of role of the law on forest resource sustainable utilization that proved to be the most destructive of forest, was the alienation of the people from the forest land. As briefly described earlier, most countries of the Asia-Pacific had from the seventeenth century till date had consistently brought the forest land under central control.

Alienation of forest land from the people created a large number of unwholesome situations disastrous to the forest area and its quality. As stated earlier, large areas of the forest land were used by the local people for shifting cultivation with a fallow period of 15-30 years. As more and more land was usurped by the central government, less and less of forest were available for the people for cultivation. In the meantime, some population increased had taken place so that there would be no chance for the shifting cultivator

families to reduce the extent of annual cultivation. The only course open for the people was to gradually reduce the fallow period which affected the forest land quality. A reasonable good land husbandry of shifting cultivation thus became, due to land alienation, centers of erosion and deforestation.

There is also evidenced another effect of alienation was the loss of indigenous forestry knowledge. Only recently it had been realized how extensive was that knowledge gathered through thousands of years of empirical evidence by various tribal people. Unfortunately, a lot of that knowledge disappeared for ever along with the disappearance of some of the tribal groups. Yet another problem due directly to the land alienation was not so obvious but nevertheless a major phenomenon, namely the loss of the way of life of a large section of the local and indigenous people. The culture of those people was inexorably linked with the forests. As the forest areas became closed to their use, the tribes were uprooted from their habitual ground. Some of the tribes felt culturally lost and disappeared by waste, some tried to get mixed up with the local rural milieu only to be annihilated by disease and a very large section became marginal farmers some of whom became urban slum dwellers, took to begging and became a permanent liability and a focus of crime in many developing countries. These alienated people would visit the forests again that time either to fight retrieving their rights to forest land or to annihilate it.

There is evidenced that in 1970, when an unprecedented flood devastated many areas in the mountainous Chamoli and other districts of Uttar Pradesh of India, the local villagers of Chamoli connected it to the forest cutting by the contractors. The department was

allowing the forests to be cut as a part of their forest working plan by selling the trees to the contractors. In 1973 when the contractors came, the village women with the support of a local cooperative group hugged the trees (Chipko means to hug) to deny the contractors to cut the trees on which the contractors had legitimate rights of, having bought them from the forest department. That hugging movement then spread around other villages in the area and then to other parts of India as well (Guha, 2009). The one most important demand was that the contract system be abolished and the forest products be allocated to the local people. Chipko and other such environmental movements had influenced the government in arriving at the policy of stopping cutting of green trees in the hills and to make appropriate changes in forest policy.

There is evidenced that The Penans (a Dayak tribe) of the Sarawak (Malaysia), a hunter gatherer people objected to their forests being decimated by the concessionaires. As the government did not respond to their vocal protests, they started cutting trenches across the transport roads thus stopping movement of the trucks of the concessionaires. There is also further evidenced that in 1989, 71 Penan people were arrested because of law breaking. While no relief was in sight, the Penans have continued to fight their cause (Miller and Tangle, 2008 and 2009).

There is evidenced the people had an agreement in 1959 with the then Dutch Forest Department that the latter would manage the trees for copal collection on behalf of the community and paid them a specific compensation per tree. The people did not like to have the agreement renewed on termination but wanted the land use revoked to them. The Indonesian government who took over from the Dutch did not agree to. This was

evidenced instead the area was included into a large forest concession and the people were paid a minor compensation for each tree. This resulted in a conflict generating tension between the people and the department.

There was evidenced the next conflict that flared up when the DinasKehutanan decided in 1980 that the area of 2,200 be redeveloped as a part of 13,000 ha of plantations of Agathis for industrial use. The people objected to it and appealed to the district administration. Their case was taken up by the local press supported by a local NGO and the Ford Foundation. Then it was evidenced the proposal was then dropped, two pilot sites for social forestry were selected in the area and the governments are encouraging the community to plant trees in the area under social forestry.

The subterfuge of annihilation of forests by the alienated people was recorded in most of the forested regions of the developing countries of the Asia Pacific region. It generally worked in two ways. The first way was by occupation of the forest land. The people, alienated from their forest home in the past, usually ended up as landless labourers or inefficient marginal farmers in nearby villages. When a forest was selectively cut, roads opened, timber transported and then their establishment removed elsewhere by the concessionaires, the alienated landless and the marginal farmers made a bee line for those areas. They first cut whatever trees were standing and then started their new life by occupying that land usually for cultivation by different methods.

#### ***2.2.1.4. Conservation***

The idea of co-management between public departments and resource-dependent communities seeks a role for the latter as active members in the policy formulation and

implementation process. While this was now considered common wisdom, empirical evidence suggested a need to pay careful attention to context-specific nuances. In his study focused on Eastern and Southern Africa, Mogaka (2007) cautioned that for local communities to play a successful role in SFM, “they must receive greater economic benefits from conserving forests than from degrading them” (Mogaka 2007). In a study based in India, Yadama suggested that in order for a joint forest management program (“JFM”) to produce a favourable outcome, the program must devolve authority to forest dwellers in a sincere manner and empower all members of the community (Yadama, 2009). Similarly, for programs such as JFM to work in the long run, Gutman emphasized the need to make significant income transfers from the rich urban population to the rural poor as compensation for their contribution to the system (Pablo Gutman, 2010).

While traditionally a PPP involved the transfer of a public service to a private sector entity, Khan highlights the much broader nature of PPPs and their ability to take various forms (Khan 2008). Within the forest sector, countries have successfully experimented with transferring ownership, striking lease and concession agreements, or merely allowing the private sector a role in forest management practices (Mills & Ford, at 7-31). In some cases, the private sector and communities are in direct partnerships, with the role of the public sector delegated to that of a silent monitor. Private sector organizations have entered into direct agreements with local landowners (Indonesia, Ghana, Canada, Papua New Guinea, and India) for the supply of forest products (Mayers & Vermuelen 2008, 2010). Arrangements have been diverse, and have entailed out grower schemes, joint ventures and service payment arrangements (North, 2009).

The presence of robust institutions was key to the success of incentive-based forest management. In his seminal work on economic institutions, North defines them as a set of rules that dictate human behavior with the aim of making it more predictable (North, 2009). North recognizes the presence of both formal and informal institutions and lends weight not only to the presence of regulations (formal) and norms (informal), but also to the means to properly enforce them. Institutions unable to enforce regulations are rendered futile. That said, lack of enforcement remains commonplace, especially in circumstances where a subset of stakeholders perceives a loss from robust functioning of the prevailing institutions (Hasan, 2008). As North puts it, imperfect enforcement can be caused by “the fact that enforcement is undertaken by the agents whose own utility functions influence outcomes” (North, 2009). In essence, to be effective, an incentive regime must ensure a net benefit for the enforcers.

#### ***2.2.1.5 Economic Development.***

For example, by 1991 the number of concessionaires in Indonesia was 580 covering 60 million ha or about 31% of the country's land. In Philippines, it was 4.67 million ha in 1989 (Gasgonia, 2007). The area of broad-leaved forest harvested annually in 1986-90 in the Asia- Pacific forests was 2,314,000 ha compared to 588,000 ha in 1961-65 i.e. about 4 times as much or an annual increase of 15.7% over 25 years. The timber production increased from about 24 million m<sup>3</sup> to 76 million m<sup>3</sup> (FAO, 2016).

In realm of increased forest resources people dependence, the legal rules gave rise to or emphasized-peoples forest resources rights and impacts .Legal systems also becomes an obstacle in access, use, utilization and sustainable management of forest resources, when



change was required in legal rules, procedure, and institutions to remove the dependants of forests resources in the forests by the policy authority was much the mixed out-comes of (FAO 2011, Moyini and Muramira 2007, Bush 2007). This resulted into various effects namely;

Increased scarcity of forest land as a result of competition with other users and inappropriate land use strategies, Wildlife damage which affected production and consumption, Market imperfections and infrastructures: inadequate transport facility, no credits, markets were not accessible. Such imperfections constrain dependents of forest resources decision making process and the possibilities to over depend on livelihood developments and Forest policy limited people's access and uses of forest and forest resources.

Forest degradation was directly relevant to the poverty level of resource-dependant communities. While many claimed poverty was a major cause of forest degradation, Gutman suggests that the poverty-environment linkage was extremely complex (Gutman, 2008, 2009 and 2011). While the rural poor may be the immediate cause of forest degradation, this was often driven by other "intermediate and root causes" such as an economic crisis (Islamabad 2009). He highlights forest services as an important source of livelihood for the rural poor and suggests that it was in the interest of the poor to protect forests and the services they provide. Based on data from Pakistan, Tanvir indicated that in addition to subsistence use by poor resource-dependent communities, forest degradation was caused by the inefficient management of public departments mandated to a certain sector (Tanvir, Shahbaz & Suleri, 2008). The study advocated a revised

approach favourable to poor communities that identified constraints for the poor and assists in an equitable distribution of resources. Gutman goes further by singling out specific factors that need to be addressed if poverty alleviation and conservation were to complement each other (Mills & Ford, 2009).

#### **2.2.1.6. *Respect of Human Rights***

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), UNDRIP 2007 adopted by the UN General Assembly in September 2007, articulates the rights of indigenous peoples, including their right to the ownership of the lands, territories and natural resources that they traditionally own or otherwise occupy or use.

Leach (2010) argues that “Endowments refers to the rights and resources that social actors have; ‘Environmental Entitlements’” refers to the alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving well-being”. In other words, Endowment was closely related to capital and Entitlement to accessing them. The concept of “mapping” to demonstrate the environmental entitlement approach. According to them, “mapping refers to how people gained endowments and entitlements and a process by which endowment and entitlements were shaped”. Thus endowment was the right in principle and entitlement was what one actually gets.

However, this was contrary because the subterfuge, resistance or fight by the local people to retrieve their rights on lost land happened in many countries. The resistance or fights were attempts to force the government to yield ground. The study mentioned a few: Chipko movement of India, the resistance of the Penan people of Borneo and Parier land

dispute case of Indonesia. On the other hand, what we refer as 'subterfuge' was a means adopted by the people to annihilate the forests by slow attrition and finally to encroach it.

## **2.3 KENYA'S POLICIES AND INSTITUTIONAL PROCESS ON FOREST RESOURCE SUSTAINABLE UTILIZATION**

In Kenya the legislation on sustainable forest resource utilization could be traced in early 1960s, mostly due to an increased in human population and forest resource dependency linkages. Data shows that a third (1/3) of indigenous forest resources is heavily demanded by both locals and international communities. In early 1960s, there was little demand for forests resources, agricultural land in unsecured areas compared to an area of 9587ha (now under cultivation) that had been hived off illegally from previously forested areas.

Is Kenya's failure to arrest degradation and quest for sustainable resource use through participatory forest management attributable to context-specific factors? Or had Kenya simply failed to apply global models efficiently?

### **2.3.1. The Pre-Colonial Period (Pre-1895) Legislation In Kenya**

Prior to 1895 when Kenya was declared a protectorate of the British Empire, the use of forest resources, like other resources, was controlled through a system of traditional rules and rights. For most communities, the rules were enforced by a council of elders, who through sanctions and fines, ensured the sustainable use of communal tree and forest resources.

There was evidenced of the Characteristic of traditional systems of management were those pertaining to religious and cultural systems, for example amongst the Kikuyu

(Castro, 2007), Masai (Ongugo and Mwangi, 2009, 2010), the Digo (Luke and Robertson, 2007) and the Luhya (Ongugo and Mwangi, 2009, 2010). Sacred groves represented an excluded forest area in which traditional religious ceremonies were conducted by elders. Such ceremonies included sacrifices for bountiful harvests, for rain, thanksgiving, and rites of passage e.g. circumcision, burial sites for elders.

There was evidenced of Land management in forest areas was closely regulated. Around Mt. Kenya forests for, the Kikuyu and Embu, both agricultural communities, had evolved a system of land management in which forest land was owned by clans, but only up to a maximum of two miles into the forest (Castro, 2007). Land above this cultivation line belonged to the community. The forest was inviolable, and bringing new land into cultivation was the result of community consultation and consensus. These examples indicate the existence of organized, well-defined forest management systems amongst indigenous communities prior to the onset of colonialism. Such systems comprised scattered core areas (sacred groves) protected by religious sanction, from which human interference was excluded. These were surrounded by utilization zones, the use of which was determined and regulated by specific rules. Forest management fell under a clearly defined structure of authority (elders, clans, family heads). These systems combined to promote sustained production of the forest's goods and services.

Increasing population, resettlement patterns associated with urbanization, introduction of modern economies, changes in local government and a shift to western cultural practices had some impact on Kaya conservation (Kangethe et al, undated). Castro (2007) indicates challenges to sacred groves as land appropriation by colonial administration and white

settlers; the formation of a formal political hierarchy by the colonial government which eroded traditional authority of clan leadership, religious conversion to Christianity, mass education, land privatization, all of which diminished the status of sacred groves and traditional systems of management. The survival of some traditional strategies and their effectiveness in forest conservation serve to indicate the potential role they could play today.

### **2.3.2. The Colonial Forestry (1895-1962) Legislation in Kenya.**

#### *2.3.2.1. Forestry Legislation (Forest Act)*

There is evidenced of The Ukamba Woods and Forest Regulation of 1897 represents the first forestry legislation in Kenya (Logie and Dyson, 2011). This regulation aimed at ensuring fuel supplies for railway locomotives, after the construction of the Uganda railway. The regulation placed forests within one mile of the railway line under the control of the railway administration. Forests beyond this were placed under the local government administration i.e. under the District Officer's management.

The progress of colonial forestry legislation reveals an interesting pattern. First, a move by the forest department to define or carve out an area of jurisdiction via the reservation process, as an attempt to justify and legitimize its existence. This contrasts with the Ukamba Woods and Forest Regulations of 1897 which conferred management responsibility of forests to the railway administration, and those not under railway administration, to local government administration. Secondly, a deliberate attempt to consolidate and concentrate control of forest resources to the forest department by restricting entry, defining offenses, imposing fines and penalties for offences. Thirdly,

defining an administrative structure for enforcement through forest guards, and a forestry advisory committee. Finally, by placing forestry under the direct responsibility of a cabinet minister, the legislation entrenches forestry as a national imperative.

This is evidenced with protracted history of forest legislation resulted in the emergence of a legal framework for the sector, which provided the fundamentals for forest protection measures, and in particular for the creation of forest reserves. The laws reflected the concepts and forest policy objectives mainly as they were understood and pursued by the administrators at the time. Instead of being oriented towards a balanced socio-economic development, they were to a large extent regulatory in character and were promulgated with little reference to local conditions. Never the less, they offered a first start for planned use of forest resources and the institutional basis for the activity of a national forestry administration.

#### ***2.3.2.2. Forest Policy and Practice (1895-1962) in Kenya***

White Paper number 85 of 1957 is Kenya's first forest policy. Prior to this, forest management was based on specific guidelines and recommendations by visiting experts. Hutchings (2006,2010) proposed boundary demarcation; policing of reserved forest to protect them from destruction; the establishment of tree nurseries; enrichment planting to assist natural regeneration; selective cutting to replace indiscriminate felling; the use of the *Kumri* or collective cultivation system of the Kikuyu to establish forest plantations. Hutchinson's plan contributed to the low cost establishment of fast-growing exotic plantations through the shamba system (a modified Taungya, using the Kikuyu *Kumri* system of cultivation).

### **2.3.3. The outcomes of Colonial Forestry Legislation in Kenya.**

#### ***2.3.3.1 The Forest Estate***

There is evidenced that reservation process increased forest areas under government control. In 1902 the reservation process began; by 1908, 1378 square miles, about 2.6% of the fertile part of the country reserved. By 1930, 4812 square miles had been reserved (Logie and Dyson, 2011). By 1932, 43 forests re-defined as government forests, covering an area of 830 000 hectares, and by 1940, the gross total of gazetted forest land had increased to 1 050 000 hectares (Wass, 2009). The colonial contribution to forestry was to slow down the forces of destruction, both real and perceived, and to develop additional forest plantations to cater for the country's increasing timber requirements.

#### ***2.3.3.2. Alienation to Settlers***

By 1908, 264410 acres of prime forest land had been alienated to settlers, and much forest was in private ownership (Uhler, 1982, 2006). By 1930s over 10 000 square miles of agricultural land had been handed over to a few thousand settlers. Passing of the Land Grants to Settlers regulations in 1902 was supposed to reduce forest destruction by settlers. Under this regulation, after conversion to agriculture, 10% of farms had to be kept under perpetual forest, and to be made up to 10% where necessary, except on treeless farms where only planting of up to 2% could be enforced. The Conservator of forests had discretion to reduce these requirements, but did not seem to have been enforced it for long.

### ***2.3.3.3. Displacement of Indigenous Populations And Forest Squatters***

Forests alienated by Forest Department either provided a home for forest-dwelling people (the Dorobo), or had been utilized by non-forest dwellers for fuel, water, grazing, honey, saltlicks, refuge or territory for expansion and protection. This evidenced that the forest department claimed land without considering the rights of local inhabitants and imposed strict regulations on the use of forest products by forest-adjacent communities. Native rights to the forests were not recognized, instead they were termed as either illegal squatters or tenants-at-will of the Crown.

### ***2.3.3.4. Tensions between forest Department and Local Administration***

Forest department's disregard for indigenous population rights; their reluctance to compensate natives their loss of access to forest goods and services met with strong disfavor and opposition from local government officials and administrators.

Government officials felt that the forest department should clarify its boundaries, and also insisted that the department give up some grazing areas, salt licks, watering holes and provide land for cultivation by dispossessed right holders. Without such concessions the intensification of political discontent was inevitable. Nowhere was this most evident than in the Lembus forest, where traditional use of forest was restricted due to a 99-year lease to concessionaires (Anderson, 2010).

The Coryndon definition over-rode the forest department's legislation, and stoked the tensions between forest department and the local administration. Political expediency, rather than forest department's preservation policies, was the ultimate deciding factor.



### **2.3.4. The Post Colonial (1963 To Present) Legislation In Kenya**

#### ***2.3.4.1. Legislation***

The legal framework for forest management in Kenya is provided by the Forest Act, Chapter 385 of the Laws of Kenya .The Act was enacted by Parliament to provide for "the establishment, control and regulation of central forests, and forest areas in the Nairobi area and any unalienated government land." Section 4 of the Act provides for the declaration of unalienated government land as forest; alteration of forest boundaries and the de-gazettement of forest areas by the Minister.

The Forest Act, enacted more than fifty –five years ago is a legacy from the colonial administration. This is evidenced that its purpose of reservation, protection, centralization and control of forestry within government echoes that of colonial forestry objectives in Kenya in the late 19th to mid 20t h Century. The Forest Act, passed in 1942, predates the 1968 policy and could not have been framed to meet the goals of the 1968 forest policy. The Forest Act is purely procedural, it does not provide any standards or principles along which forest management can be modeled, but rather provides a procedure consistent with its reservation and protection goal.

Furthermore, it is evidenced that the legislation does not recognize traditional systems, local knowledge and traditional rights (KENGO, 2007). But rather has been used under Section 8 to expel forest squatters without regard for how they came to be in the forest. The Act also limits the creation of nature reserves to areas within previously gazette forests; this excludes areas or potential areas which may not be currently gazetted forest areas.Subsidiary legislation passed under the Forest Act allows some communities, by

virtue of customary practice and law, are right holders and have the right to use forest without license or fees. The Act however, does not provide for the settlement and inquiry into such claims.

#### **2.3.4.2. Forest Policy**

Kenya's first official forest policy was formulated in 1957, through White Paper number 85. This was subsequently restated by the government of Kenya in 1968 as sessional paper number 1 of 1968. It sets out the basic principles under which forests will be managed for the greatest common good.

The 1968 forest policy aims to reserve forest areas for catchment protection; to provide timber and other forest products; to protect forests from fire and grazing and eliminate private rights in gazetted forests; to promote sustained yield management; to develop industrial forestry; to provide funds for policy implementation; to provide employment, in particular under the Shamba system for reforestation and forest maintenance; to designate county council forests; of private forests for protection and production, recreation, conservation, research and education. The policy says little about afforestation efforts outside government forest reserves, and did not visualize extension services as doing anything other than issuing tree seedlings on national tree planting days.

An important policy directive is that concerning the resident cultivation system of plantation development-the Shamba system. The Shamba system had been an economical and technically successful method of plantation establishment, but was based on squatter labor. Between 1985 and 1989 it was wound down and officially terminated after a Presidential directive. The squatter status of the laborers became a source of strong

political pressure to excise land for permanent settlement. Despite problems inherent in the Shamba system, its abandonment reduced plantation establishment rates, and a new system based on non-resident labor was established to replace the original system.

The establishment of the Nyayo Tea Zone Development Corporation (NTZDC), first by Presidential order in 1986, and later by an Act of Parliament in 1989 also affected forestry in Kenya. Under this program, plantations were established adjacent to indigenous forests to act as buffers against agricultural encroachment on forests designated for catchment protection. The plantations were also expected to generate income and employment. This program obtained land from the government forests. It initially targeted 20 000 hectares for tea production. By 1990, 6000 hectares had been cleared (Wass, 2009). Tea zones were established in the high potential forest areas of Aberdare, Kakamega, Kikuyu escarpment, Cherangani, Mt. Elgon, Mt. Kenya, North and south Nandi, South West Mau, Tinderet and Trans Mara.

### **2.3.5. Outcomes of post colonial forestry Legislation in Kenya**

#### **2.3.5.1. Forest Loss**

This is evidenced that the forest estate has shown a steady decline over the years. Since the 1970s a 10-year running average has been computed at 5000 hectares per year (Hodgson, 1992, 2011). Earlier estimates between 1972-1980 indicate an average loss of 2% per year (Ochanda, 2009). For 1980-1992, a ten year running average was 3700 ha per annum, ranging from 2000 hectares per year, increasing to 5000 ha per year at the end of the 1970s and early 1980s (Wass, 2009). In addition to diminishing forest cover, biodiversity and socio-economic surveys show declining forest quality (Wass, 2009).

There is evidenced the Loss of forest estate is through a legal process of excisions. Majority of excisions occurred between independence and 1972, amounting to 67000 hectares. Losses to gazette forests are 290 000 hectares, with 3500 hectares proposed for future excisions (Wass, 2009). Out of the 290 000 hectares, 210 000 hectares have been excised, while 115 000 hectares have been transferred to national parks or reserves. The transfer of forest estate to non-protected status amounts to 13% of Kenya's total gazetted forest reserves. Most excisions have been undertaken for agricultural purposes, but have been recorded as de-gazetted for "settlement". Forest department does not indicate the amount of private forests lost to agriculture.

This is evidenced that the jurisdictional limitations of the Forest Act to gazetted forests may have accelerated forest decline in other areas for example, private forest. By 2004 the extent of private forests was 141 000 hectares. The 1989-93 development plan indicates that these forests have been reduced to 124 square kilometers. It is likely that much of this has succumbed to pressures to convert to agriculture, as well as charcoal production. Policy and legislative silence on private forests, and the government's passive attitude may have motivated the decline. However, the sensitivity of land issues stemming from colonial expropriation, and the subsequent primacy attached to individual landownership by the constitution may serve to limit the government's involvement in developing policy and legislation that may affect private land forestry.

#### ***2.3.5.2. Conflicts***

This is evidenced that the presence of traditional hunter-gatherer communities dwelling within forest areas has been a major dilemma ever since the creation of forest reserves. In

the South-West Mau forest there exists the largest population of forest-dwellers, Okiek Dorobo, of up to 15000 people, scattered deep within the forest. Their presence was originally ignored by forest authorities, but was later deemed incompatible with forest conservation. Attempts by the government to evict the Dorobos have met with resistance; while attempts at resettling them has also been unsuccessful since the Dorobo have been unable to adjust to a sedentary, agricultural lifestyle. Politicians have cruelly manipulated the plight of the Okiek to gain political capital, and have offered no substantive solutions for the placement of the Dorobos.

Ultimately, continued forest department restrictions on forest use by forest-adjacent communities reduced access to forest resources has fostered a deep resentment by communities to forest department and government, and resulted in heightened confrontation between the forest department and local communities over the use of resources. The conflict is exacerbated by a mix of issues such as, declining land availability, increasing population, and declining economic conditions. This mix of factors makes forest resources all the more crucial for the survival of rural populations.

The most evidenced and obvious conflict is between agriculture/settlement and forestry. Increasing populations and subsequent land pressures, as well as the need for agricultural production, exert considerable pressure on forest resources. Most of the forests are located in the more productive zones of the country where up to 80% of the nation's population reside. Conflicts between forestry and agriculture are indicative of a wider and more generalized problem, that of conflicting land use. Diverse land use interests for industrial development, human settlement, wildlife conservation are in competition for

forest resources. Forest land in Kenya is viewed as idle land, waiting to be exploited in other more beneficial ways, and is accorded lower priority in the face of competing uses. The national policy environment exacerbates the problem. Most articulate the importance of preserving forest, but emphasize agricultural production. These policies, though they acknowledge the deterioration of forestry resources, and the need for environmental protection, remain a vague proclamation of goals. None provides explicit means of achieving its goals, nor guidelines for achieving the desired results. As government agencies set out to implement these policies, serious conflicts can develop, creating institutional bottle necks or political obstacles. The conflicts are intensified by the sectoral stratified mandates of government agencies.

## **2.4 FOREST ACT AND OTHER RELATED LAWS ON FOREST RESOURCES**

### **USE IN KENYA**

#### **2.4.1. Kenya Wildlife Management Act**

However, Kenya wildlife management Act, prohibits bush meat and NTFP sales as way to preserve and conserve wildlife for eco-tourism, that application of the law became unrealistic because bush meat hunting it is an age-old and customary practice for rural people who are dependents of forests resources and to the locals, that the government has no means of controlling these commercial networks. Furthermore, prohibiting the use of steel-wire traps and firearms is pointless as they are used throughout the country. Most of these poachers practiced illegal commercial hunting with impunity since they had the support of powerful political economic players.

These all evidenced that all policies placed forest as great natural resources for great concern for any sustainable development. However, it is evidenced that when constitution gives express provision on exploitation of natural resources, for parliament to enact legislation on its exploitation, subsequent legislations has in recent enactment led to conflicts on the utilization of such resources by dependents of such. That is; the application of law creates conflicts and challenges to its utilization thus affects sustainable utilization of such resources for livelihoods development.

#### **2.4.2 Forest Act CAP 385**

The Forest Act bestows the management of the service to a board whose composition is tilted in favor of civil servants who are appointed and can be dropped by the minister at any time. A Forest Conservation Committee (FCC) will undertake the oversight responsibility in a conservancy. It's evidenced from these and other duties that a committee will not equitably cater for the interest and desires of all the people in its area.

#### **2.4.3 The Kenya Constitution (2010)**

The current constitution Articles 69, 70, 71 and 72 has necessitated formulation a new Forest Policy, which is cognizant of the new dispensation. There is evidenced that the Constitution is based upon a set of national values, such as integrity, good governance, sustainable development, and social justice, and the bill of the rights of all citizens. This is evidenced that the Constitution also introduces a two-tier system of government and the decentralization of services. For instance, the sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement. The Forests Act as evident is a milestone in forest governance and brought about considerable change.

Further the promulgation of the Constitution, it is evidenced that this has brought new requirements for natural resource management such as public participation, community and gender rights, and equity in benefit sharing, devolution and the need to achieve 10% forest cover among others. These are evidenced challenges are compounded by dwindling public land meaning that forestry development has to expand into private and community land, which need incentives and clear methods of engagement to encourage investments in commercial forestry on private land.

This is evidenced in Kenya the Ogieki communities and the people living around the Embubut forests witnessed the conflicts where the forest officials and government initiated ways of removing people in the forests resulted to great conflicts and loss of lives and property which affected the livelihoods development.

Further as evidenced in Kenya the Green Belt Movement (Green Belt Foundation) championed by late Prof Maathai. Social views over the forest resources sustainable utilization-dependent people's linkages and use of public forest lands in Kenya had undergone tremendous change over the last 40 years (Kruger, & Mazza, 2009). During that transition, public land and forest resource sustainable utilization -dependent peoples had evolved from providing a link of such relations, to the promotion of access and utilization of forest resources under the paradigm of ecosystem management (Kennedy, & Koch, 2008). The change was manifested through a host of laws, including the National Environmental Management Act, the Endangered Species Act, the Forestry and wildlife service Act, and others. These laws had profoundly altered the understanding of forest resource sustainable utilization -dependent people's linkages.



As evidenced amid changing public views over forest resource sustainable utilization-dependent people's linkages, the government of Kenya, in particular Mt Elgon forest State presented an interesting paradox. There, growing demands for forest resources, forest land, recreational uses and environmental protection increasingly conflicted with long-standing demands for extractive uses.

This is evidenced that nearly 40% of Ogiek, Saboat lived in the forest with fewer than 10,000 residents. Moreover, nearly 17% of Mt Elgon residents were dependents on forest resources and forest land, combined with the State's dominance of public lands, made local access and sustainable utilization to public resources a critical issue. Yet that historic connection between communities, land and forest resources sustainable utilization-dependent people linkages was a challenge to the forest law application.

Evidenced also that the Ogiek of Chepkitale which forms about 85% of the Ogiek in Mount Elgon is in the second category of vulnerability. The land that they claimed is a legally gazetted Game Reserve and fall within the Mt Elgon forest ecosystem. They could not undertake unrestricted livelihood activities in the forest and have no basic social amenities (schools and health facilities within the recommended distances – 1 and 5 km radius respectively (place and Otsuka, 2009, KFS, 2007).

#### **2.4.4 The agenda 21 on Sustainable Development**

Resources are the backbone of every economy and provide two basic functions – raw materials for production of goods and services, and environmental services. A common

classification of natural resources is as follows (de Zeeuw, 2006, *in* EC-DG Environment, 2010).

**2.4.4.1. Examples of natural resources as envisaged by agenda 21**

- a. Non-renewable and non-recyclable resources such as fossil fuels
- b. Non-renewable but recyclable resources, such as minerals
- c. Quickly renewable resources such as fish
- d. Slowly renewable resources such as forests
- e. Environmental resources, such as air, water and soil
- f. Flow resources, such as solar and wind energy

This is evidenced that the issue of depletion plays an important role in the use of non-renewable and renewable natural resources. In the renewable resources depletion occurs when extraction exceeds renewal rate. Environmental services include the sink function which assimilates and recycles waste products from production and consumption. Flow and environmental resources are not depleted and always exist. However, environmental resources can be degraded by pollution, and rendered useless. The evidence of The Agenda 21 on Sustainable Development, The Agenda 21, in a nutshell, the plan has calls for 'governments to take control of all land use and not leave any decision making in the hands of private property owners.

As evidenced also the subterfuge, resistance or fight by the local people to retrieve their rights on lost land happened in many countries. The resistance or fights were attempts to force the government to yield ground. The study mentioned a few: Chipko movement of India, the Ogiek of Mt Elgon, Embutut, Mau evictees in Kenya , the resistance of the Penan people of Borneo and Parier land dispute case of Indonesia. On the other hand, what we refer as 'subterfuge' was a means adopted by the people to annihilate the forests by slow attrition and finally to encroach it.

### **2.4.5 The 1911 Forest Ordinance**

The 1911 Forest Ordinance shifted the locus of power to Forest Department. The Ordinance was passed at a time when there was urgent demand for timber to supply the world war; strengthening the forest department served to ensure the protection of timber supplies. International politics, and the subsequent need to ensure timber supplies to the military resulted in forestry gaining importance over the settlement of the white community. From this time, the forest department zealously undertook a two-pronged objective of saving remaining forests from settlers and from destructive indigenous practices.

Hostilities engendered between the forest department and local communities were used as part of the local community's reasons for agitating for independence from British rule. The local government administration's attempts at pacifying the locals did not succeed because the forest department's reservation exercise continued to ignore the land needs and rights of local communities. Attempts at getting the forest department to re-define its reservation process resulted in further tensions between the forest department and the local government. The formulation of the Coryndon definition by the Governor, which restored local community rights to forest product in certain forests, epitomized the tensions between the local administration and the forest department. Once again forest department policies were subordinated in favor of defusing political situations which would threaten/undermine political administration by the local government.

Although forestry development during the colonial period was often influenced and constrained by developments in the socio-political arenas, forest department efforts did result in putting in place a legal and policy framework, and an administrative structure for forest preservation and management in Kenya.

At independence, the legal arrangements which had been codified in the run-up to independence, as well as the complementary institutional norms, were preserved by the independent state. The forest governance systems, in particular, bore the imprint of centralized power evident in the colonial government. A possible explanation for the maintenance of the status quo by a new government may lie in the political environment at the time of independence.

Hayden (2010) observes that at independence, the political instability of the political alliances formed immediately before independence led to the unwillingness of the first national government to reduce the central government's powers. There was a strong likelihood of these alliances splintering into its constituent groupings based on ethnic or similar ties. In order to offset the disintegrating tendencies of such a system, the Kenya government opted to retain the well-established central administration inherited from the colonial authorities. Attempts to introduce any structural changes in government organization were blocked. This decision permeated every sector of government.

Despite an increase in population and related land pressures over the past fifty-two years, most forests are still in existence, and are performing some of their functions, such as catchment protection. However, the decline of the estate must be noted; but this is not

because nothing is being done. To the contrary, a department exists, plans have been implemented, but the actions have not produced the desired outcomes. Instead the same constraints that dogged colonial forestry are at work in the post-colonial times. These include a sectoral approach to forestry, lack of integrated land use planning, inadequate provision (finance, personnel, equipment) for the fundamental safeguarding of the forest resource, and a low economic valuation of the forest resource. The forest department continues to discharge its duties as a minor department within the Ministry of Environment and Natural resources, and is often dwarfed, starved of resources and disenchanted. Forestry is denied recognition for all its contributions and its budgetary allocations are a mere fraction of its requirements and of its contribution to the national economy. Yet, forest services are increasingly called upon to provide additional goods and services to the fast-growing rural and urban populations.

A fundamental problem to forest management and conservation is the existence of conflicting and competing policy objectives adopted by different government institutions. For instance, although development planning recognizes forest degradation as an important issue, it prioritizes agricultural expansion for export crop production, or carves out forest land for resettlement schemes. This inconsistency in national planning may be the result of several factors. First, to maintain its credibility with national and international constituents, as well as to maintain funding eligibility at the international level, the government must be seen to identify with environmental concerns. In addition, to justify the presence of a forest department, the government must also be seen to support forestry initiatives. Thus policies will be structured to communicate these

'concerns'. However, political pressures to resettle the landless, improve agricultural/economic growth, forces the government to reduce forest land in order to meet these needs. After all, forestry as a land use is perceived as having lower economic value than agriculture.

More importantly, a lack of political will to alter the *status quo* is evident in the negative political responses to proposed forestry legislation brought before the parliament in 1997 up -to date. Proposals for legislative reform aimed at strengthening the forest department were introduced to Parliament and defeated. Members of Parliament representing rural constituents challenged the legislation, claiming that their constituents' livelihoods depended on the activities regulated by the proposed legislation. More recently still, attempts at introducing the revised forest policy for Parliamentary debate have been unsuccessful. The reviewed policy seeks to increase community participation and recommends partial devolution of decision-making powers to forest-adjacent communities. In addition, the policy's recommendation that industrial plantation development be contracted out to private parties may not gain favor with government officials who have benefitted from these plantations. Such proposals are perceived to alter the status quo, potentially eroding the powers of individuals and institutions.

Given that almost one century of state forest ownership and centralization of power in the forest department has not been successful in promoting sustainable, long term, productive use of forest resources, the validity of such an arrangement comes to question. The Kenyan forestry experience shows that it is not the existence of formal structures which matters. What is important is the performance of the system, whether it works, whether

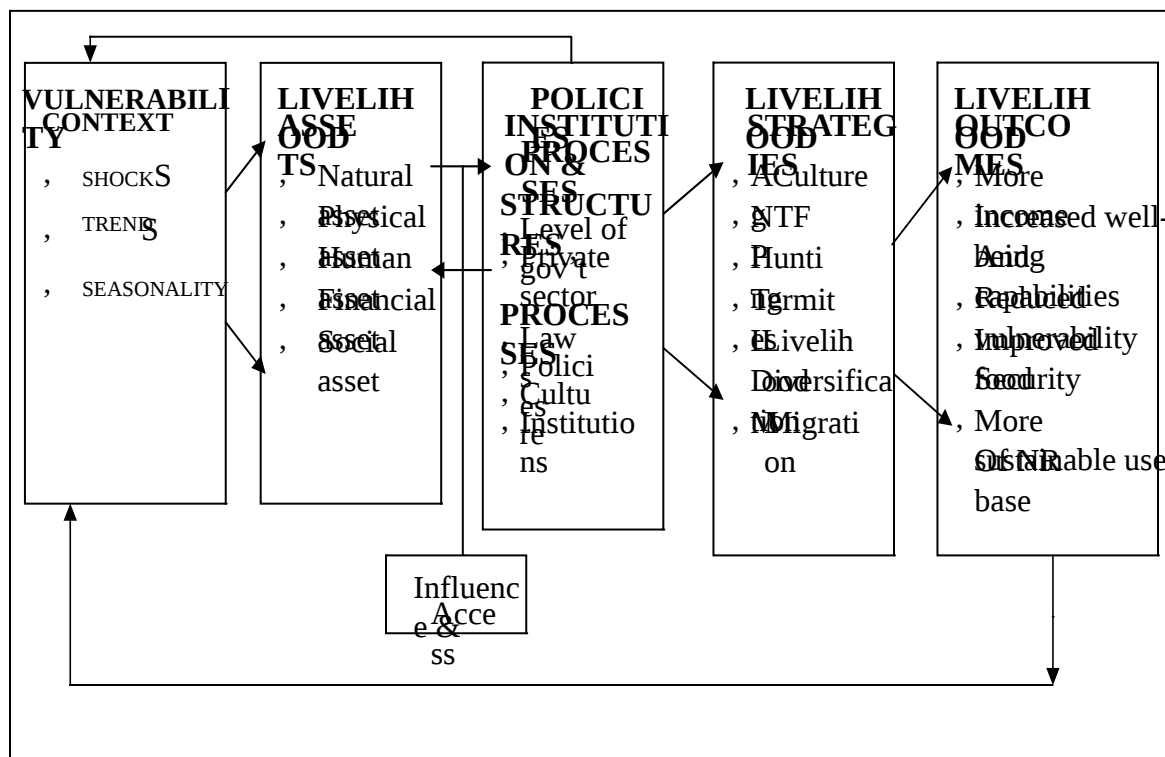
the citizens have confidence in it, and whether they have the ability to maintain its functions.

## **2.5 THEORIES ON FOREST RESOURCE SUSTAINABLE UTILIZATION**

### **2.5.1 Theory of Livelihoods Development**

This approach by Conway and Chambers (2010). They defined Livelihood as “a means of gaining a living, including livelihood capabilities, tangible assets, such as stores and resources and intangible assets such as claims and access”. While (Chamber and Conway, 2010). Livelihood is essentially the activities that people do to “get by” to survive and to meet their everyday needs as well as those more entrepreneurial and profit-focused activities that are best summarized as “getting on” striving towards better conditions of material well-being (Davies 2009).

**Figure 2.6.1: Livelihood Framework Adapted from Scoones (2011)**



According to Scoones (2011), “a livelihood is sustainable when it could cope with and recover from stresses and shocks maintain or enhance its capabilities and assets, while not undermining the natural resource base”. The above definitions are expressed in the livelihood framework, which considered the diverse and complex nature of social change and the different processes and factors affecting rural livelihoods. The framework takes into account the main resources available to rural men and women (natural resource was forests) and the various formal and informal institutions (law) involved in the use and management, issues of access and control over these resources. The framework also focused on the application of law on forest resource sustainable utilization by dependents which were their livelihood.



The main assumption of the framework is that people pursue a range of livelihood outcomes such as health, income, reduce vulnerability, improved food security etc. by drawing on a range of assets to pursue a variety of activities. Their activities and their investment in assets building are influenced by their own preference and priorities. These activities are the livelihood strategies, which include agriculture, collection of NTFP, hunting, fishing, livelihood diversification and migration. The most important aspect of this framework is the policies, institutions and processes such as the role of the government and the private sectors, cultural factors that mediate the ability to carry out such strategies and achieve such outcomes.

The evidenced from the framework identifies five forms capital assets, which include human, natural, social, physical and financial on which rural people can draw upon. These five assets constitute the livelihood building block and could be substituted for each other.

**Natural assets:** This includes the natural resource stocks. In my study it includes the forest land where agriculture is done and the forest products.

**Physical assets:** This comprise of the basic infrastructure needed to support livelihoods. In my study it includes household ownership of basic shelter and buildings, agricultural inputs, forest management and infrastructure that help people to meet their basic needs and to be more productive.

**Human assets:** This includes the skill, ability, knowledge and good health that enable people to pursue different livelihood strategies to achieve their livelihood outcomes.

**Financial assets:** It represent the financial resources that people draw upon to help meets their livelihood outcomes. In my study it includes savings in various forms, income and earnings, remittances.

**Social assets:** this comprises of the social resources that people draw upon to help meets their livelihood outcomes. In my study it includes social networks and movement, institutions (rules, norms and sanctions), relationship of trust and exchanges that facilitate co-operation reduce transaction cost and provide informal safety nets amongst the poor.

The most evidenced derived assumption of the framework is that people highly depended on forest resources as means of livelihoods development. The most important aspect of this framework is the policies, institutions and processes such as the role of the government and the private sectors, cultural factors that mediate the ability to carry out such strategies and achieve such outcomes. The framework identified natural assets: This included the natural resource stocks. In the study it includes the forests resources and land where agriculture was done and the forest products.

The research examined livelihood framework as benchmark to give understanding view of rural livelihoods in the Mt Elgon forest with respect to the current forest legislation, researcher considered the complexity recommended in the livelihood framework. In this view, the framework was used as a general focal point when designing the household survey, interviews and focus group discussions. The different livelihood indicators of the assets group in the study was identified and used to examine the livelihood strategies and outcomes at both the household level and the community level in the study area.

### **2.5.2 The Sen's Entitlement and Endowment Framework.**

The Sen's 'Entitlement and Endowment' approach was used in this research to complement the livelihood framework and to understand clearly the socioeconomic conditions of the studies of communities in the study area (Leach, 2008, 2010).

Leach (2008,2010) argues that "endowments refers to the rights and resources that social actors have; environmental entitlements refers to the alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving well-being". In other words, endowment was closely related to capital and entitlement to accessing them. Leach (2008), also use the concept of "mapping" to demonstrate the environmental entitlement approach. According to them, "mapping refers to how people gained endowments and entitlements and a process by which endowment and entitlements were shaped". Thus endowment was the right in principle and entitlement was what one actually gets. This resulted to such effects ;Increased scarcity of forest land as a result of competition with other users and inappropriate land use strategies, Wildlife damage which affected production and consumption, Market imperfections and infrastructures: inadequate transport facility, no credits, markets were not accessible. Such imperfections constrain dependents of forest resources decision making process and the possibilities to over depend on livelihood developments and Forest policy limited people's access and uses of forest and forest resources.

According to Sen (2009, 2011), through various activities known as entitlements mapping (how endowments were transformed into entitlements) such as land clearing, collection of NTFP, hunting, fishing, the household was able to produce various products (entitlements) which in this study included crops, forest products, bush meat, etc. these products resulting from various production processes are used for household subsistence while part was kept for sale, for saving and investment.

This approach also identifies some endogenous factors affecting the way each household choose to carry out the entitlement mapping process. This was the education level, the household composition, the land/labor ratio, the producer/consumer ratio and household diversification. Sen (2009,2011), mention different failures in provision of entitlements such were endowment's failure (forest degradation and deforestation, livestock death), production failure (poor soil, diseases, etc.) and lack of labor force, lack of cash to acquire some crops etc.). There might be imperfect market conditions in the area that constituted a problem of over dependence on forest resources. The endowment and entitlement approach failure was useful because it allowed for a broader understanding of why some households became destitute and others were not (Leach 2008; Vedeld and Runyoro, 2007).

In order to assess the application of forest law on sustainable utilization of forest resources by the dependents of forest resources on rural livelihoods development on forest users' livelihoods, the study used a livelihood systems model. Carney (2008) presents a definition of livelihoods based on the work of Robert Chambers and Gordon

Conway: “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base” (Carney 2008). In contrast, when the law was applied on sustainable resource use, the locals reacted by becoming agitators of the Environmentalists’ and Green Lobbies’ world over and local revolts. These latter impacts were beneficial as these had forced some governments to take initiatives that had finally reversed the process of damage and brought into focus the need of changes in policy and implementation to bring forth devolution in forest management and forest resource sustainable utilization of forest resources by the people – dependent relations. Therefore basing both on the theories of livelihoods ,endowments and entailment; Studies showed that application of law on sustainable utilization of forests resources results to many castigating effects to the locals revealed by even global perspective of legal framework on sustainable forest resource utilization.

## 2.6 THE CONCEPTUAL FRAMEWORK

The study was guided by a conceived conceptual framework that emerged from the literature review, theories that looked at application of forest law, forest resource and sustainability being the ultimate measure of the application of law.

**LAW:**  
**Figure 2.7.1A Conceptual framework**



## 2.7 SUMMARY

Though the livelihood framework above assumed that a household accesses a set of assets where access was controlled and modified by the in application of forestry law. The application of Forest policies centralization in different countries of the region had a number of impacts that had cascading effects on the forests of the countries concerned. Some of the impacts such as forest land alienation from the forest users, commercial over-exploitation, over dependency on technocracy and policing, and adverse reaction of forest dependent people had caused and were still causing tremendous forest damages such as reduction of the extent of the forests, the deterioration of their quality and loss of biodiversity. With regard to forestry in Kenya, both currently and under colonial government, the answers to these questions are negative. Ongugo and Mwangi (2007) indicate that forest depletion on state-owned forests in Kenya is the result of ineffective management systems, rules and sanctions, and advocate for the re-establishment of strong local governance and legitimacy as the best option for sustainable forest management.

While the study acknowledge that traditional forms of forest governance should be re-examined, think that in themselves they do not provide an answer. They generally illustrate systems which have worked in the past, usually under different socio-ecological conditions from today's. It may be more appropriate to evolve new institutional structures by merging traditional and statutory systems. The long history of community organization in many areas in Kenya provides some explanations.

## **2.8 EMERGING LEGAL ISSUES ON LEGISLATION AND INSTITUTIONAL PROCESS ON APPLICATION OF LAW ON SUSTAINABLE RESOURCE USE**

This is evidenced that, greater enforcement of forestry and conservation laws on sustainable forest resource utilization also has the potential to negatively affect rural livelihoods. Among the emerging legal issues in application of law discussed that warrant the study included:

### **2.8.1. In-Consistencies and Poor Conservation**

***2.8.1.1. existing legislation often prohibited forestry activities such as small-scale timber production, fuel wood collection, and hunting that millions of poor rural households depend on does legal mean sustainable utilization?***

Discussions about forest law enforcement sometimes practically equated sustainable forest management with complied with forestry laws, but the two differ markedly (Boyer 2009, FAO 2010). A large portion of forestry legislation focused on administrative requirements, fees, taxes, and property rights, rather than on how forests are really managed. Some regulations actually encouraged unsustainable management and some people that violated forestry laws managed forests sustainably. Successfully evidenced is that the enforcing laws has prohibited forest clearing, logging, hunting, and collecting vegetable products usually, although not always, directly helped to protect the forest resources involved, at least in the short run. The situation is less straightforward when it comes to laws and regulations that specified annual allowable cuts, harvesting rotations, and minimum harvesting diameters. Enforcing those regulations usually was not suffice



to sustain commercial timber production and environmental services over the long-term, and have even made things worse.

In summary, there is evidenced that no little doubt that enforcing some forest laws encouraged sustainable forest management. Nevertheless, the relation is less clear and direct than most people think. While effectively enforcing some forestry laws and regulations have a positive effect, enforcing others has made things worse. In many instances enforcing the laws was unlikely to affect how forests are managed at all. A great deal of forestry laws and regulations that discriminated against small-scale farmers and foresters and local communities have no scientific basis for doing so. Nonetheless, proponents of such regulations typically justified such inequitable rules on environmental grounds.

Kenya Forest Service (KFS), was the institution mandated under Act to implement the Forest Policy objectives. At the community level, the Act provides for the establishment of CFAs to work with KFS in the management forest resources while at the conservancy and national levels, FCCs and the Board support KFS in its work.

## **2.8.2. Non-Coordination**

***2.8.2.1. Most small farmers, indigenous people and local communities are ill equipped to do the paperwork required to engage in forestry activities legally or to obtain the technical assistance needed to prepare management plans.***

There is evidenced in Thailand Land Code of 1954 had the most important bearing on the question of land ownership and by implication on the process of centralization. Pahsanguan or the public forest land had many users or squatters for a long time. The

Government by promulgation of 1954 land code provided the option that anyone occupying any forest land as of November 30, 1954 can receive a land using claim certificate provided he can prove his claim within 180 days. Few provincial farmers had been aware of this time stipulation, failed to take advantage of it and thus became encroachers. In 1961, the Thai government decided that 50% of the country should be forest land and as such started evicting encroachers to reach the target. In 1985, the National Forest policy reduced the target of forest land to 40% to release some land for other purposes but the objective is not realized. In fact, the Forest department undertook a programme of planting up the degraded forest which resulted in more evictions resulting in a political crisis (Lynch and Talbott, 2012). The net result of all this is that the centralization process for forest management continued in Thailand.

Section 34 (1) of Kenya forest Act; ‘on the presidential protection of tree that. This discretionary power by use of (MAY) results in some tree products that are highly depended by local community to be hurdle for them to harvest or access, thus giving law application not in compatible with needs of the locals ,as consequences results to illegal harvest of such species on illegal commercial large scale by cartels of corruption. Furthermore section 23 of Forest Act which give discretionary power to minister’s stands chances for abuse where conflict of interests may arose.

Although the Kenya’s new constitution (2010) in part 2-environmental and natural resources: obligations in respect of the environment, Article 69,70,71 and 72 (1) Emphasizes the mandatory obligation of the state in ensuring sustainable exploitation, utilization, management and conservation of the environment and natural

resources(which forests includes)and ensure the equitable sharing of the accrued benefits”. There is evidenced that the Forest goods and services are largely public in nature and therefore depend to a large extent on public funding. However, there is evidenced that the prioritization of public investment and incentives to the private sector for forestry development has been low partly as a result of low valuation of forestry goods and services leading to very slow growth of the sector. Since forests ecosystems play a key role in supporting various productive sectors of the economy, their contribution to the GDP needs to be revaluated. To leverage resources for forestry development, there is need for greater integration of forestry issues into other sectoral development programmes.

### **2.8.3. Unsustainable Exploitation**

***2.8.3.1. Millions of rural households lived on lands that governments had classified as state-owned forestland or protected areas, and existing laws often considered them encroachers even though their families had lived there for generations.***

There is evidenced in almost every country except in the Pacific island states, there was a lot of confusion about the customary rights of the people and that of the state on the forest land. For example, in Indonesia, the basic Agrarian Law of 1960 recognized customary law as the basis of national land law, but at the same time basic Forestry law of 1967 had been invoked to disenfranchise the local people of their rights. This had been done for commercial timber operations or conservation (Lynch and Talbott, 2012). In India, the customary rights of the people for various forest products were being abolished as and when any national park, sanctuary, biosphere reserve or national heritage parks are established. Even in PNG, the recent law established that the owners could dispose of

their products only through the parastatals. In Nepal, the tenure was clear but there was a provision that the tenure could be revoked if the people do not follow the guidelines. The decentralization of forest management had been revoked or drastically modified twice in the last 50 years and even then the villagers in Nepal during field interviews expressed apprehension that the present rules are also not going to stay permanently.

Kenya Forest Service (KFS), established in February 2007 as a state corporation under the Ministry of Forestry and Wildlife, was the institution mandated under Act to implement the Forest Policy objectives. At the community level, the Act provides for the establishment of CFAs to work with KFS in the management forest resources while at the conservancy and national levels, FCCs and the Board support KFS in its work. However, there is evidenced the Ogiek of Chepkitale which forms about 85% of the Ogiek in Mount Elgon is in the second category of vulnerability. The land that they claimed was a legally gazetted Game Reserve and fall within the Mt Elgon forest ecosystem. They could not undertake unrestricted livelihood activities in the forest and have no basic social amenities (schools and health facilities within the recommended distances – 1 and 5 km radius respectively). This too warranted researcher reasons to undertake the study

#### **2.8.4. Lack rest of Human Rights**

##### ***2.8.4.1. Forestry and wildlife departments generally enforce forestry and protected area legislation more vigorously and with less respect for due process and human rights when poor people were involved***

There is evidenced according to (ROS 2010), in some countries forestry officials and police inappropriately arrested low-income people for violating forestry and protected area legislation, forcibly expelled them from their houses and fields, hit them, raped them

or even killed them. Unless governments take measures to prevent this, attempts to encourage forest law enforcement could easily worsen this problem.

There is evidenced also that Alienation of forest land from the people created a large number of unwholesome situations disastrous to the forest area and its quality (Gasgonia, 2007). As stated earlier, large areas of the forest land are used by the local people for shifting cultivation with a fallow period of 15-30 years. As more and more land is usurped by the central government, less and less of forest are available for the people for cultivation. In the meantime, some population increases have taken place so that there would be no chance for the shifting cultivator families to reduce the extent of annual cultivation (FAO, 2010, 2011). The only course open for the people was to gradually reduce the fallow period which affected the forest land quality. A reasonable good land husbandry of shifting cultivation thus became, due to land alienation, centers of erosion and deforestation. Another effect of alienation is the loss of indigenous forestry knowledge. Only recently it had been realized how extensive was that knowledge gathered through thousands of years of empirical evidence by various tribal people. Unfortunately, a lot of that knowledge disappeared for ever along with the disappearance of some of the tribal groups. Yet another problem due directly to the land alienation is not so obvious but nevertheless a major phenomenon, namely the loss of the way of life of a large section of the local and indigenous people.

According to (Gillis quoted in page 31 by Miller and Tangle, 2009), the culture of those people was inexorably linked with the forests. As the forest areas became closed to their use, the tribes were uprooted from their habitual ground. Some of the tribes felt culturally

lost and disappeared by waste, some tried to get mixed up with the local rural milieu only to be annihilated by disease and a very large section became marginal farmers some of whom became urban slum dwellers, took to begging and became a permanent liability and a focus of crime in many developing countries. These alienated people visited the forests again then either to fight retrieving their rights to forest land or to annihilate it (Miller and Tangle, 2009). This could be attributed by the discretionary use or exercise of the powers or forest policies by those who are entrusted by the law. Thus was a warranting the necessity of carrying out the study

***2.8.5.1. In some countries, forestry and wildlife officials engaged in illegal activities that harmed the poor. Measures that empowered those officials and gave them more resources that made it easier for them to act with impunity***

There is evidenced that Situations of widespread corruption and disrespect for the rule of law typically favoured groups that had sufficient resources to pay bribes, developed informal links with government officials, and hired armed guards (World Bank 2009, 2011, 2012). This put households that engaged in small-scale forestry activities at a clear disadvantage. Often they could only operate if they agreed to sell their products to wealthier 'patrons' who protected them from forestry officials and provided credit. Those patrons' assistance comes at a high price. They paid producers much less than they would receive if they could borrow from formal lending agencies and sold their products legally to whomever they wanted to (Obidzinski (2007,2008).

Similarly, there is evidenced that the people have used a forest area for grazing when it has been required to be protected from all uses being a catchment of a dam reservoir. Thirdly, the colonials and later the national government wanted the forest areas to be a

source of revenue. For example, teak was extensively exploited by the British colonial government for ship construction, sal and pine in India for railway sleepers and so on. The revenue earned by the Indonesian government annually is second to the money earned by the country from petroleum, which is the largest money earner. In parts of India, the forest contracts, such as that of biripata (leaves of *Diospyros melanoxylon*), earns so much revenue that it is often used by the people involved in those business as a leverage for political power.

Fourthly, there is evidenced that some forests earmarked by the government or the rulers with the sole purpose used them for hunting and rest for the royalty and the colonial officials. Fifthly, there is evidenced the control of such large forest areas provided political power to the Centre. And last but not the least, there is evidenced the government thought wrongly, an idea still held by many, that the local people are ignorant of forests, their indigenous forest management unsustainable and unscientific. Thus the forest management would continue to pursue a policy of centralization. These reports put it that skewed in in the application of forestry law remained entrenched obstacle to forest dependants as obstacle to their free use, access and sustainable utilization of forests resources since the law brought into it several changes that impacted dependants of forests resources. Moreover, the recent development discourse in renewed forestry legislation enactments has increasingly focused on keeping away people from traditional use, access of forests resources to aspect of the modern conservation and sustainable utilization. The provisions of Section 2 of the Kenya Timber Act. Interpretation, defines timber as.... "Timber" means the wood of any tree grown in Kenya, Tanzania or Uganda, whether such wood is unsawn, hewn, sawn or machined, and includes lumber, shooks,

slabs, blocks, box boards, flooring strips, shingles and sleepers, but does not include any other article manufactured from such wood.

Section 3 of the Kenya Timber Act. Exclusion of timber, the Minister may, by notice in the Gazette, exclude from all or any of the provisions of this Act any timber specified in such notice. Situations of widespread corruption and disrespect for the rule of law typically favored groups that had sufficient resources to pay bribes, developed informal links with government officials, and hired armed guards (World Bank 2009). This put households that engaged in small-scale forestry activities at a clear disadvantage. Often they could only operate if they agreed to sell their products to wealthier 'patrons' who protected them from forestry officials and provided credit. Those patrons' assistance comes at a high price. They paid producers much less than they would receive if they could borrow from formal lending agencies and sold their products legally to whomever they wanted to (Obidzinski (2007,2008)). The control of such large forest products, by use of discretionary powers provided political power to the centre. And last but not the least, the government thought wrongly, an idea still held by many, that the local people are ignorant of forests, their indigenous forest management unsustainable and unscientific. Thus the forest management would continue to pursue a policy of centralization. These reports put it that skewed in dynamics in the application of forestry law remained entrenched obstacle to forest dependents as obstacle to their free use, access and sustainable utilization of forests resources since the law brought into it several changes that impacted dependents of forests resources. These and above all state issues necessitated the quest for carrying out the study.



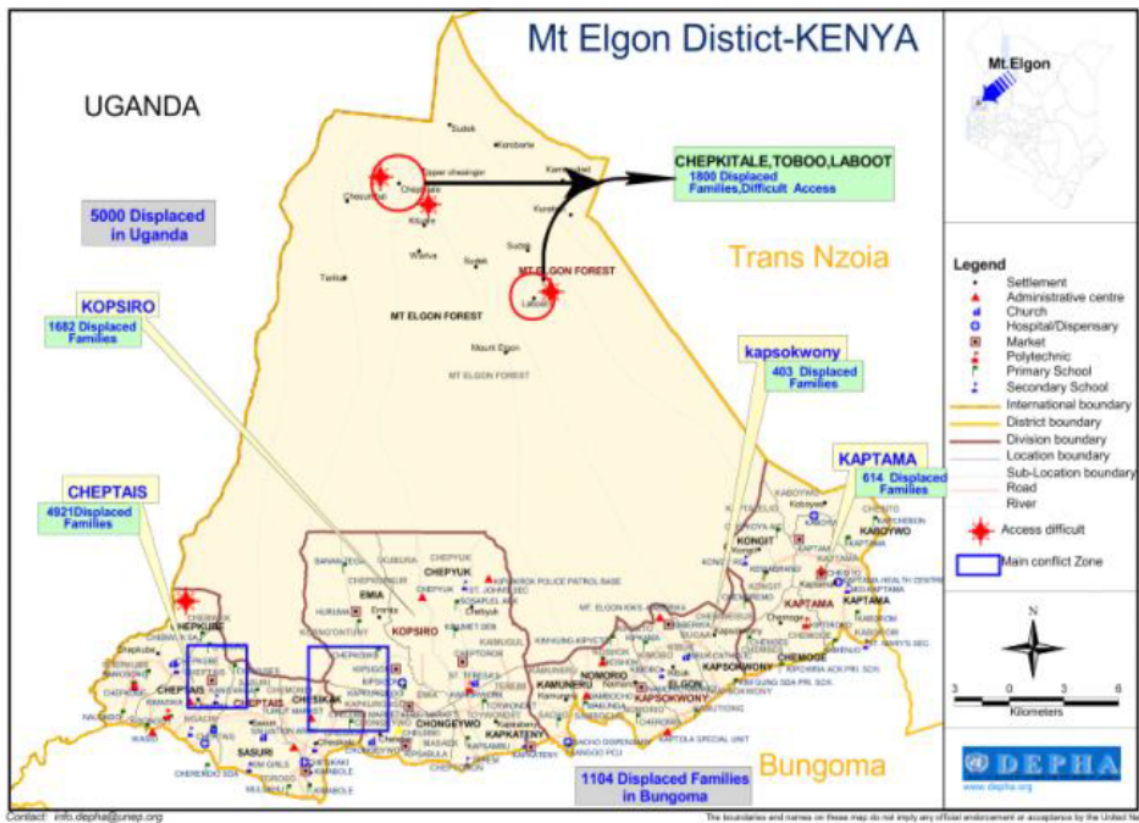
SUSTAINABILITY: How to measure sustainability of resource in terms of depletion, deforestation and reforestation when law is applied.

### CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

#### 3.1 INTRODUCTION

The chapter focuses on the study area, research design and methodology; process for data collection, analysis and presentation based on the set objective.

#### 3.2 STUDY AREA



### **Figure 3.2.1 study area map**

Mt. Elgon sub-county was one of the eight sub-counties in Bungoma County. The Sub-County borders Uganda in the North, and West, Trans -Nzoia to the East and Bungoma County to the South. It lies between Latitude 0° 48', and 1° 30' North and Longitudes 34° 22' and 35° 10' East. The Sub-County occupies a total area of 936.75km<sup>2</sup> with Mt. Elgon forest covering 609.6km<sup>2</sup>. The Sub-County has four sub-county wards namely, Kapsokwony, Kaptama, Kopsiro and Cheptais, which are further, divided into sixteen sub-administrative locations and forty sub-wards. Table 1 below showed the area of county by sub-wards and their respective population parameters.

Mt. Elgon Sub-County has one constituency namely Mt. Elgon Constituency whose boundaries are similar to those of the County's. Mt. Elgon County Council was the only local authority in the County. The Population of Mt. Elgon in 1999 was estimated to be 144,679. Of these 73,125 were females and 71,554 males. The population was projected to increase to 166,088 by year 2008 and the average growth rate works out at 2.3%. Mt. Elgon Sub-County economy is wholly depended on agriculture, with 80 percent of the Sub-County population employed in the sector.

The study was carried out in three village communities: Chepkitale, Laboot and Taboo of Mt Elgon.

### **3.3 DATA COLLECTION PROCEDURE**

Prior to the research, a reconnaissance survey was conducted at the Mt Elgon forest Conservancy together with three research assistants hired and my local supervisor. The purpose was to get acquainted with the study area and to obtain the list of all the villages in Mt Elgon Sub-County and to select the research villages from the list. The criteria used in selecting these villages were based on accessibility, hospitality at the village level, the size of the village and the villages that has a village elder/chief. Following these criteria, these three villages were chosen (Chepkitale, Laboot and Taboo) for the research. From the reconnaissance survey, a total of 90 questionnaires were expected to be administered.

### **3.4 RESEARCH DESIGN**

A study was house hold survey. This involved descriptive survey on the natural phenomenon of the study area with mixed research approach of both qualitative and quantitative tools was adopted to structure the research, to show how all of the parts of the research project –the samples or groups, measures, treatments or programs, and methods of assignment-work together to try to address the central research questions (Trichim, 2009).

This Household survey which gave descriptive of the natural phenomenon of the study area was guided by a mixed method of qualitative and quantitative aided with the simple purposive sampling method. The purposive sampling was ideal because it provided information about the local community knowledge about the forest resources and naturally occurring behavior, attitudes and characteristics of a particular group. This is because the data to be collected was used to describe persons or phenomena. The

significant element of the research process where the whole research was designed, options considered, decisions made and details of the research laid down for execution.

The descriptive survey with a mixed research approach was set to establish clear and objective orientation, vigorous, disciplined and systematic procedure, and reality bound a mixed methodology, which allowed arriving at conclusions free from vague and sloppy approaches, speculative thoughts about reality, and theory that was distinguished from a social philosophy, abstract speculation and everyday assumptions.

### **3.5. RESEARCH METHODOLOGY**

The study being a quantitative and qualitative a mixed method in nature explored mixed tools of data collection, presentation and analysis. The purposive sampling as a method of data collection from the respondents who had good knowledge of forests resources with descriptive tools of mean, median, variance and percentages for data analysis.

### **3.6 THE TARGET POPULATION**

The study targeted all residents of Mt Elgon sub-county. According to the national population census exercise of that was carried out in 2009 the total number of people living in Mt Elgon sub-county was estimated to be approximately 166,088 making it highly growth rate of 2% (NKBS, 2009). However the study was conducted in 3 villages of; Chepkitale, Laboot and Taboo of Mt Elgon with a population of 1800 residents.

### **3.7 SAMPLE SIZE AND SAMPLE SIZE PROCEDURE**

According to Krejcie and Daryle, Morgan (1970) from Texas & University it recommended that the total sample size of 84 households as guided by the worked out formulae below.

$$s = \frac{X^2 NP(1-P)}{d^2(N-1)} + \frac{X^2 P(1-P)}{d^2}$$

s=required sample size

X<sup>2</sup>=the total value of chi-square for 1degree of freedom at the desired confidence level (3.841); N=the population size, P=the population proportion (assumed to be .50 since this would provide the maximum sample size),d=degree of accuracy expressed as a proportion of (.05)

Worked out formula

$$84 = \frac{3.841 * 2 * 1800(1-1800)}{0.05^2(1800-1)} + \frac{3.841 * 2 * 1800(1-0.50)}{0.05^2}$$

$$84 = \frac{7.682 * 1800(1-1800)}{0.1^2(1800(1-1800) + 7.682 * 1800(0.5))}$$

$$84 = \frac{7.682 * 1800(1-800)}{0.1^2(1800-1) + 7.682 * 1800(0.5)}$$

$$84 = \frac{1275,888.016 * (1-1800)}{16688.7 + 7.682 * 83,044} * 1800(0.5)$$

$$84 = \frac{1,1090001.016}{635,632.708}$$

$$84 = 1.7447.$$

### **3.8. RESEARCH INSTRUMENTS FOR DATA COLLECTION**

#### **3.8.1. Household Questionnaire Survey**

Questionnaires were used to collect data from households (**See Appendix 1**). The questionnaire addressed to the household was structured into four sections with each of them designed for measuring the following points (See appendix).

- a) Livelihood activities, local people's access and use of forest resources
- b) Local people relationship, attitudes, perception and views toward forest law on forest resources in regard to access and sustainable use of forest resources
- c) Local people benefits, utilization, rights and participation toward forest exploitation and sustainable use
- d) Local people ways of claiming and securing their user property rights over forest resources and sustainable use.

The questionnaires were in English, a total of 84 questionnaires were administered with the help of two research assistance. In each village an interpreter was hired that speak both the Kiswahili, English and Local dialect languages that assisted to translate some of the question to their languages where necessary for better understanding although English was often used throughout the household survey. The research team was properly trained and tested on the objectives and methods of the survey before it started. On arrival on each village, a meeting was held with the village chief to explain the nature and purpose of our stay in their community. A tentative list of all the households in each village was collected from the village chief and the household were selected from this list through a simple random sampling technique of Robert Crey and Daryle and Morgan (1970) which same as (Brymman, 2010) and the total sample size was 84 households. The

questionnaires were addressed to the head of the household, but some of the adult household members were involved.

### **3.8.2. Focus Group Discussion (“FGD”)**

This was conducted in each in three villages of Laboot, Taboo and Chepkitale, with community members purposively picked on the basis of their knowledge about local forest resources. In the FGDs, the consultation focused primarily on issues concerning resource rights, royalties, the relationship between state departments and local communities, and the reasons for application of law and sustainable use. In addition to the FGDs, forest sector experts were also consulted. A total of eighty four respondents were sampled.

The focus group discussion was another method used to collect primary data. On arrival in each village, a focus group discussion was organized with the members of the community (**see appendix3**). The focus group discussion was a sort of participatory rural appraisal in order to grasp information on their community about history, community profile, livelihoods activities, resources accessibility, constraints and problems, local institutions, relation with other forest users and existing conflicts. The focus group discussion was organized in a form of a deliberative forum where the research team asked the questions to the villagers and several answered were given which was then deliberated upon to have the most reliable answers. The focus group discussion took

place in the evening period so that large number of the villagers could attend after returning from their daily activity and it lasted for about four hours in each village. The deliberation was in Kiswahili since everybody in the study area understood and speaks Kiswahili except some of the Taboo who understood very little English.

### **3.8.3. The Interviews Schedules**

This sought to solicit views on the key reactions or mixed out comes in the forest policies or law application system on sustainable resource use and the kind of measures required to remedy the situation. Due to the fact that the household survey and focus group discussions are only as good as the quality of the information which is collected and depend totally on the presumed responses, key informal interviews and discussions with the village chief and elders, the members of the community forest management committee, some government officers, some researchers and other resource persons in the area (**see Appendix 4**).

### **3.8.4. Field Observation and Participation**

This method was additionally used and concerned information gathered during the stay in the study areas. Observations such as availability and quality of infrastructure such as roads, schools, health care and community project, traditional use of resources, status of forests as results of local communities activities for livelihoods activities, hunting and damages were taken into consideration (**see Appendix 10**). The already logged portions of the concession and operation sites of the quarry companies were visited, and



observations on damage on NTFPs were noted. The researcher also visited the area of conflict within the boundary between the community forest and the Cherenganyi.

### **3.8.5. Secondary Data**

Secondary data were obtained from the existing reports and records. These data were based on text study and case study done in the study area. General data on the study area and results from other related studies were also included:

- i. This method provided researcher with information about the law(s) and policy documents of forest exploitation and use in Kenya.
- ii. Files, records and reports on Forest Management Service Offices at Mt Elgon in the study areas were assessed
- iii. Relevant data in relation to the research were also gathered from other Local Public Library at the Sub-County Offices in Mt Elgon working in the studies areas.

### **3.9 VALIDITY AND RELIABILITY**

Pak (2008) and Joppe (2000) defined reliability as: the extent to which results were consistent over time and an accurate representation of the total population under the study was referred to as reliability and the results of a study were reproduced under similar methodology, thus the reliability referred to in qualitative research, that related to; the degree of consistency of the results, stability over time and similarity within a given period of time.

### **3.9.1. Pilot Study**

To test reliability of the instruments, the researcher used the alternative –form reliability test by administering two similar instruments to a different group of people outside the study area that is in Cherangany people as opposed to the same study area. The degree of correlation between score of the two instruments was assessed. Reliability was also established using SPSS Reliability Analysis Scale (Cronbach Alpha co-efficient). The coefficient of 0.8 deemed the questionnaire reliable since it was more than 0.7 (Kothari, 2009). The results from the pilot study were never used in final data analysis since they were just used as basis to test the reliability of the instruments.

McMillan and Schumacher (2012) stated that validity refers to the degree of congruence between the explanations of phenomena and the realities of the world. Validity is the extent to which the instruments give the correct answer. The questionnaires were tested for validity of all the possible dimensions of the research topic. Validity was established through close consultation and expert judgment of the supervisors; they verified the validity of the research instruments used in the study. The researcher revised the instruments according to the advice given.

### **3.10 DATA COLLECTION METHODOLOGY**

The first step was to get an introductory letter from Moi University (Appendix6). The researcher got a permit from the National Council for Sciences and Technology and Innovation (NACOSTI, Appendix 7). The researcher got permission from the County director of education (Appendix 8) through the Sub-County Education Officer to undertake research in Mt. Elgon Sub-County then request permission from the

respondents (consent letter) so as to undertake the study. After getting the permission the researcher distributed the questionnaire to the respondents.

The study was a mixed approach of data analysis with descriptive tools of household survey that was carried out and a total of 84 questionnaires administered had also formed part of the data collection instruments, FGDs and Interviews. Unopened –ended structured questionnaires for household survey was carried out on 84 respondents with segmented respondents equally distributed across the three locations of Chepkitale, Laboot, Taboo and on their views on access, use, and utilization of forests resources in relation to application of forest law on sustainable utilization of forest resources. See Appendixes.

### 3.11 DATA PROCESSING AND ANALYSIS

The responses given in the questionnaires were analyzed using appropriate data analysis Computer packages (SPSS) and MS Excel. The following statistical tools were used.

- i. **Descriptive statistical tools** such as means and standard deviation were used.
- ii. **Frequency distribution tables** and computation of proportions in percentage to investigate the most dominant responses amongst several choices given by respondents or getting from them
- iii. **Chi-square:** some frequency distribution data were cross tabulated into contingency tables and subjected to chi-square analysis to control the degree of dependence between independent variables and the selected dependent variables, question which have alternative answers on a continuum scale were tested using

Chi-square tests to evaluate opinions of the users. The chi-square tests were also used to determine significant relationships between some of the variables.

- iv. **Regression analysis:** the source of variation of the GOV was estimated by the use of multiple regression analysis with resource endowments with law as independent variable and sustainability as dependent variable in measure of depletion, forestation and reforestation.

The questionnaires, focus group discussions and interview schedules were checked for completeness and consistency of information at the end of every field data collection day and before storage. Data capturing was done using Excel software. The data from the completed questionnaires, focused group discussions and interview schedules were cleaned, coded and entered into the computer using the Statistical Package for Social Sciences (SPSS) for Windows for analysis.

The data collected was analyzed using a mixed method of tools which majorly involving six major activities namely, data preparation, counting, grouping, and relating, predicting and statistical testing. Data collected was organized, conducted a data graphing, visual inspection, statistical analysis. Then study took note of some significant or interesting results and lastly interpreted results.

Data preparation involved all forms of manipulations necessary for preparing data for further processing for example Coding, categorizing answers to open-ended questions, editing and checking as well as preparing of frequency tables, counting included the mechanical task of registering the occurrence and frequency of the occurrence of certain answers or research items; grouping and presentation was involved ordering of similar items into groups to allow distribution of data and presentation in form of frequency

tables, and chart, relating involved cross-tabulation and statistical tests to explain the occurrence and strength of relationships, predicting was a process of extrapolating trends identified in the study into the future and thus statistical method was helpful to the researcher to complete this task and finally statistical testing; this referred to the stage where test of significance, inference, and correlation were employed during the process of analysis. Data was packaged for analyzing survey data. Descriptive statistical (mean, mode, standard deviation and variance) was computed to determine the correlation between the study variables.

### **3.12 ETHICAL CONSIDERATION**

The researcher sought the required approvals from the relevant bodies before the field work begun. An introductory student bonafide letter from University (Appendix 6 ) seeking a research permit was sought from the National Commission for Science, Technology and Innovation (NACOSTI) (Appendix 7) and an introductory letter from Director of Education in Bungoma County (Appendix 9).

During field work, informants were duly briefed on the purpose, duration and potential use of the research results beyond academic purposes; and some other research related information that were of interest to the informants was clarified before any data was collected. Recruitments were based on informed consent and respondents were informed of their right to disqualify themselves or withdraw at any stage of the study (Appendix). During the household survey, the informants consent was sought to allow collection of

the data needed. The study respondents' were assured of their anonymity during the publication of the research findings through the use of pseudonyms.

## **CHAPTER FOUR: DATA PRESENTATION, INTERPRETATION AND ANALYSIS**

### **4.1 INTRODUCTION**

The chapter presented key issues that illustrated the process involved in research methodology; data presentation analysis and the interpretation of findings.

### **4.2 RESPONSE RATE**

Out of all the 84 households' respondents that included residents in the three locations; 31 Chepkitale, 23 Laboo and 15 Taboo forest officials 10 and 5 of court officials in Mt. Elgon region respondents to the study except 10 respondents who did not respond to the questionnaires. This represented a 90% response rate, which is considered satisfactory to make conclusions for the study. This can be related to Mugenda & Mugenda (1999) who said a 50% response rate is adequate, 60% good and above 70% rated very good. This implies that basing on this assertion; the response rate in this case of 90% is very good.

#### **4.2.1. The General Background Information**

The researcher started by analyzing the demographic information of the respondents. The study involved the gender of respondent, status of the respondents, age, education, ethnicity, religion, occupation and originality of the respondents.

**TABLE 4.2.1: DEMOGRAPHIC DATA  
GENERAL INFORMATION HOUSEHOLD CHARACTERISTICS AND  
COMPOSITION**

<b>Gender</b>	Frequency	Percentages %
Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2

Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
Farmer/Local Community/Forest user	65	72.2



Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
<del>Court Officials/Judge/Magistrates</del>	<del>9</del>	<del>10.0</del>

Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
<del>Total</del>	<del>84</del>	<del>100.0</del>

Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
<b>Originality</b>		

Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
Inhabitant	71	78.9

Female	19	21.1
Male	65	72.2
Total	84	93.3
<b>Marital status</b>		
Single	3	3.3
Divorced	1	1.1
Married	71	78.9
Widowed	2	2.2
Separated	2	2.2
Engaged	5	5.6
Total	84	100.0
<b>Age</b>		
18 years and below	1	1.1
19-35 years	29	32.2
36-45 years	23	25.6
46-65 years	25	27.8
66-87 years	5	5.6
88-90 years	1	1.1
Total	84	100.0
<b>Education levels</b>		
None	17	18.9
Primary	37	41.1
Secondary	17	18.9
Tertiary/technical	3	3.3
University Diploma/Degree/Masters/PhD	10	11.1
Total	90	100.0
<b>Ethnicity</b>		
Bantus	7	7.8
Cushite's	3	3.3
Nilotes	74	82.2
Total	84	100.0
<b>Religion</b>		
Christian	78	86.7
Muslim	4	4.4
Traditional religious practices	2	2.2
Total	84	100.0
<b>Total</b>	<b>84</b>	<b>100.0</b>

---

Source study 2014

Table 4.2.1 indicates the gender of the respondents. There is evidenced that 72.2% of the respondents were male while 21.1% were female. This implies that the study sample both gender and so the results is a view of both sexes. The finding also indicated that the region might be having more male than female population. As evidenced from the study above, 78.9% of the respondents were married, were engaged. 3% were single, 1.1%divorced, 2.2%widowed or 2.2%separated. This implies that the study sampled mature respondents to respond to the application of legislation on sustainable resource utilization in Kenya in the region.

The table above from the study indicates, evidenced that 32.2% of the respondents were between 19-35 years while the other was between 46-65 years of the respondents were of between 36 – 45 years. This implies that the response covered various ages and therefore the views in the application of legislation on sustainable resource utilization in Kenya were exhaustively researched in terms of respondents' ages.

There is evidenced that Majority of the respondents had primary as their highest level of education while others had either secondary level of education or none. A few had university/diploma/masters/PhD while had tertiary/technical as highest level of education. This implies that the study sampled respondent's level to understand the application of legislation on sustainable resource utilization in Kenya. It was also noted that a considerable number were not educated. This was to get clear picture and understanding of application of the law on sustainable forest resource utilization as

education level to has direct influence on people's reactions at to the effectiveness and objectives of the law.

Majority of the respondents evidenced were Nilotes while the other were Bantus as well as Cushites. This implies that the study sampled various ethnic groups irrespective of the number and therefore the views on the application of legislation on sustainable resource utilization in Kenya covered various ethnic groups in Mt. Elgon region.

Majority of the respondents evidenced from the study were Christians and the rest were Muslims and traditional religious practices. This implies that the study sampled both religion and the findings in the application of legislation on sustainable resource utilization in Kenya are from various religions.

Majority of the respondents evidenced from the study were farmers in the local community or forest user while the rests were forest officials in the authority with a few court officials, judges and magistrates. This implies that the study sampled various categories of respondents in relation to occupation and therefore the view is diverse.

Majority of the respondents evidenced from the study were inhabitants of Mt Elgon are while few were immigrants. This implies that the study sample both origins of people in the region. This is therefore a view of both groups in relation to the application of legislation on sustainable resource utilization in Kenya.

#### **4.4 THE RESEARCH OBJECTIVES**

##### **4.4.1 Assessing the relationship between the role of policies and institutions processes in application of law and sustainable resource utilization**

The study assessed the relationship between the role of policies and legal institutional process in application of forest law play in forest resource sustainable utilization by studying the awareness of provision of the forest law on sustainable utilization of forest law, awareness of provision of the forest law on acquisition of forest resources and sustainable utilization of forest law and roles of the forest law application on sustainable utilization of forest resources.

The evidenced basic household production factors and endowments in the study area comprises of land, labour, and the forest. In the livelihood framework model, these are called assets. Household's access to these livelihood assets leads to achievement of livelihood outcomes as presented by Scoones, (2011). Livelihood security is an ongoing process that is shaped by household's access to assets. Economic decisions of households are made based on their access to resources or endowments, which again are influenced by external factors.

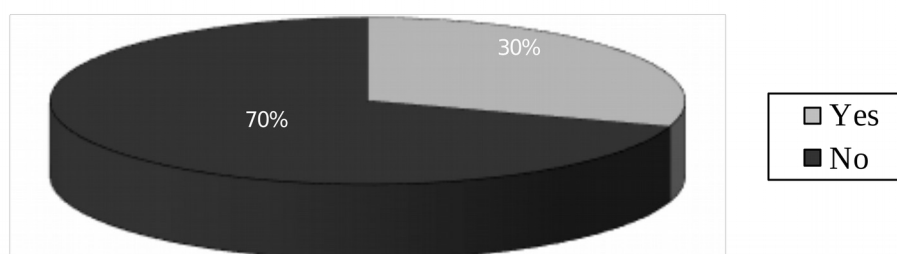


**Table 4.4.1.2 locals awareness on Provisions of forest law on land/capital acquisition in the forest**

Provisions of forest law on land/capital acquisition in the forest		
	Frequency	Percentage
Don't know	59	70.2
Forest Act 2013	25	29.8
<b>Total</b>	<b>84</b>	<b>100</b>

Source study 2014

**Figure 4.4.1.3. Awareness of provision of the forest law on acquisition of forest resources and sustainable utilization**



Key

■ Not aware

□ A ware

Source study 2014

As study indicates, 70% indicated that they were not aware of provision of the forest law on sustainable utilization of forest law while 30% were aware. The shows that majority of the citizen are ignorant of the provision of the forest law and therefore might be influencing sustainable utilization of forest law.

According to (ROSS 2001), in some countries forestry officials and police inappropriately arrested low-income people for violating forestry and protected area legislation, forcibly expelled them from their houses and fields, hit them, raped them or even killed them. Unless governments take measures to prevent this, attempts to encourage forest law enforcement could easily worsen this problem.

70% of the respondents indicated that they did not know the influence of provision of forest law on cultural beliefs, norms and rights. A few indicated that forest law reduces pressure to clear forests for agriculture while others indicated that it is used in promoting the sustainable utilization of forest and improving governance in the forest. This might mean that provision of forest law does not influence cultural beliefs, norms, and rights on sustainable utilization of forest resources. As much the law did not have influence on the cultural beliefs and practices on sustainable resources use of the Mt Elgon region.

There were contrary findings from past studies in other countries. For example in India and Indonesia, according to (Gillis quoted in page 31 by Miller and Tangley, 1991), the culture of those people is inexorably linked with the forests. As the forest areas became closed to their use, the tribes were uprooted from their habitual ground. Some of the tribes felt culturally lost and disappeared by waste, some tried to get mixed up with the local rural milieu only to be annihilated by disease and a very large section became marginal farmers some of whom became urban slum dwellers, took to begging and became a permanent liability and a focus of crime in many developing countries. These alienated people visited the forests again then either to fight retrieving their rights to forest land or to annihilate it (Miller and Tangley, 1991). This could be attributed by the

discretionary use or exercise of the powers or forest policies by those who are entrusted by the law.

**Table 4.4.1.4 The role of forest law**

<b>Role of forest law</b>	<b>frequencies</b>	<b>%</b>	
		<b>Manage the forest</b>	
	<b>Increase the forest</b>	<b>resource assigned</b>	
<b>Manage all types of forests</b>	<b>and tree cover</b>	<b>for production</b>	<b>Total</b>
4	3	10	17
8	1	28	37
4	3	10	17
1	0	2	3
2	5	3	10
<b>Total</b>	<b>19</b>	<b>53</b>	<b>84</b>

Source study 2014

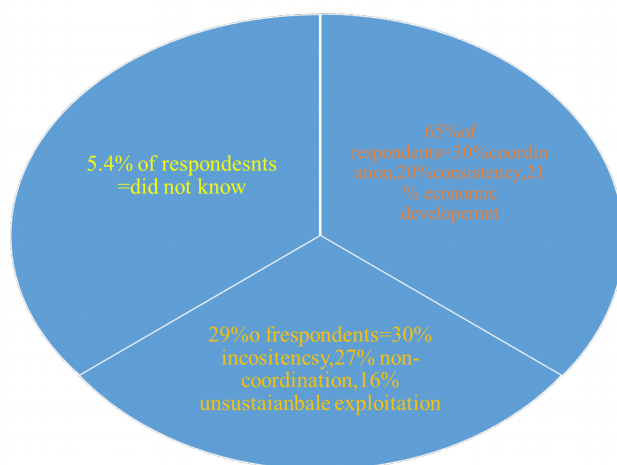
Majority of respondents evidenced from the study indicated that the forest law role was to manage the forest resource assigned for production. Few indicated that the forest law was to Increase the forest and tree cover while rest of respondents indicated that the forest law was to manage the forest resource assigned for production. This therefore shows that the forest law has a major role in sustainable utilization of forest resources.

However, this is contrary to studies In Thailand Land Code of 1954 had the most important bearing on the question of land ownership and by implication on the process of centralization. Pahsa-nguan or the public forest land had many users or squatters for a long time. The Government by promulgation of 1954 land code provided the option that anyone occupying any forest land as of November 30, 1954 can receive a land using claim certificate provided he can prove his claim within 180 days. Few provincial farmers had been aware of this time stipulation, failed to take advantage of it and thus became

encroachers. In 1961, the Thai government decided that 50% of the country should be forest land and as such started evicting encroachers to reach the target. In 1985, the National Forest policy reduced the target of forest land to 40% to release some land for other purposes but the objective was not realized. In fact, the Forest department undertook a programme of planting up the degraded forest which resulted in more evictions resulting in a political crisis (Lynch and Talbott, 1995). The net result of all this was that the centralization process for forest management continued in Thailand.

#### 4.4.2 To determine forest monitoring and forest management practices for sustainable resource utilization

**Figure 4.4.2.1** Population representation in terms of the objectives of forest management National objectives for forest management and conservation on sustainability.



There is evidenced that Majority did not know the provisions of forest law on land/capital acquisition in the forest. A few indicated were aware of the role of the forest Act 2013 on

the land/capital acquisition in the forest. This indicates that a majority of the people need to be sensitized about the Forest Act to enhance its implementation.

Majority of respondents evidenced from the study indicated that the forest law role was to manage the forest resource assigned for production. This therefore shows that the forest law has a major role in sustainable utilization of forest resources.

#### ***4.4.2.1. Access to Land***

A hundred percent of the sample population had access to land for agriculture. Comparable accessibility to land has also been documented in the moist and humid zones Mt Elgon (study 2014). Land acquisition for cultivation was not different amongst the households in the study area (Table 4.4.1.3). Although the state is the sole owner and guardian of land as stipulated in the new forestry law (forest Act 2013), land acquisition for cultivation and construction within the study communities is controlled by the customary law. From the household survey, all the household in the study area acquired land for cultivation and construction by clearing the forest which then became their private land. Land was not bought or rented. This could be due to the low population density in the study area. Only 47.6% of the household acquired land by inheritance. Land holdings were larger in Chepkitale which is more populated compared to Laboot and Taboo.

**Table 4.4.2.2: Land acquisition for cultivation and construction and mean land holding (mean±SD) in the study area**

Villages	Inherit	Clear forest	Rent	Buy	Mean land Holding (Ha)
Laboot (N=26)	13	26	0	0	2.3±1.9
Taboo(N=28)	11	28	0	0	1.6±1.4
Chepkitale(N=29)	15	29	0	0	3.4±3.9
All (%)	47.6	100	0	0	2.4±2.7

These methods of land acquisition observed are different from those of other parts of Mt Elgon. Land ownership in the Western highlands is determined by traditional institution, buying, renting and inheritance (forest Act 2013). This could be as due to high population density in this region.

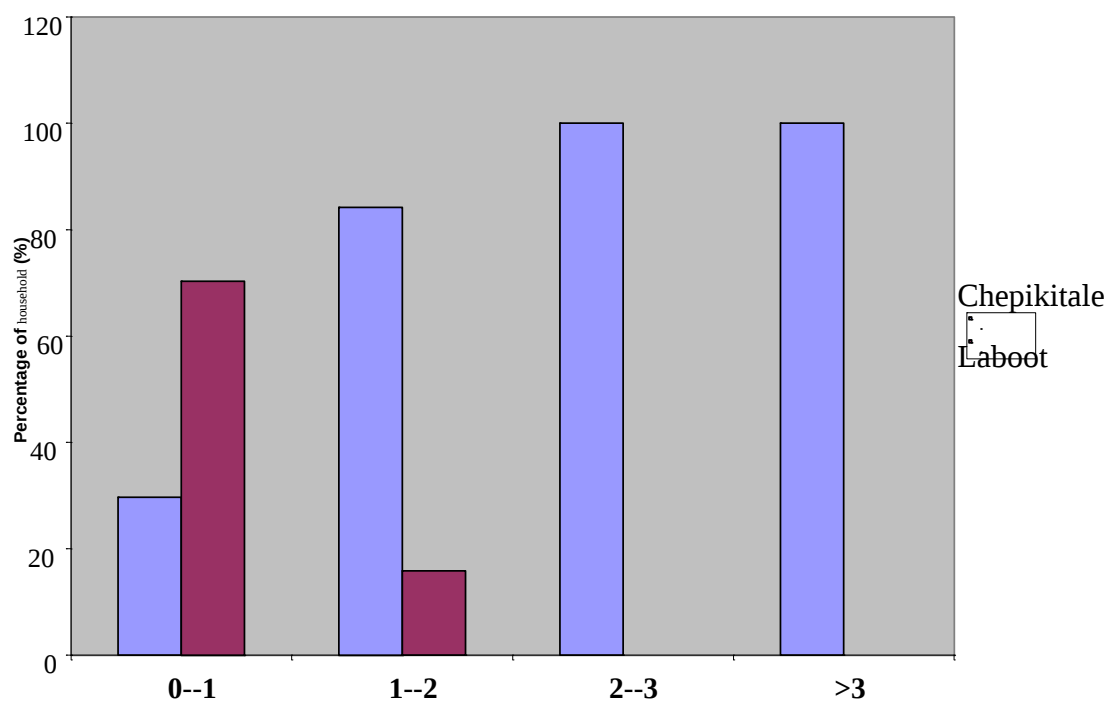
The distribution of land holdings amongst households was uneven (Table **4.4.2.2 Within the study area with some communities having larger land holdings than others.**

Table 4.4.2.3: Distribution of land holdings within the study communities in the study area

Class of Land holding (ha)	Laboot (%)	Chepkitale (%)	Taboo (%)	Total (%)
0-1	46.2	57.1	32.1	45.1
1-2	19.2	25.0	25.0	23.2
2-3	15.4	10.7	7.1	11.0
3 and above	19.2	7.1	35.7	20.7

Most of the households in the study area occupied land size between 0-1ha (45.1%) while few households land holding sizes are above 3.5ha (20.7%).

There was variation of land holdings between the ethnic groups in the study area (Figure 4.4.2.1). Seventy percent of land holdings smaller than 2 ha was occupied by the taboo while land holding larger than 2 ha were all occupied by the Chepkitale.



**Figure 4.4.2.1:** The Distribution of land holdings between the ethnic groups in the study area

Hence there is a significant different between ethnicity and land holding ( $\chi^2 = 37.13$ ,  $P = 0.00$ ,  $df = 3$ ) in the study area. This greatly revealed that the Chepkitale are more involved in agriculture than the Laboot.

#### **4.4.2.2. Access to forest products (NTFP)**

All households surveyed were dependent on forest products although the degree of dependency varied amongst ethnic groups. The local people collect fuel

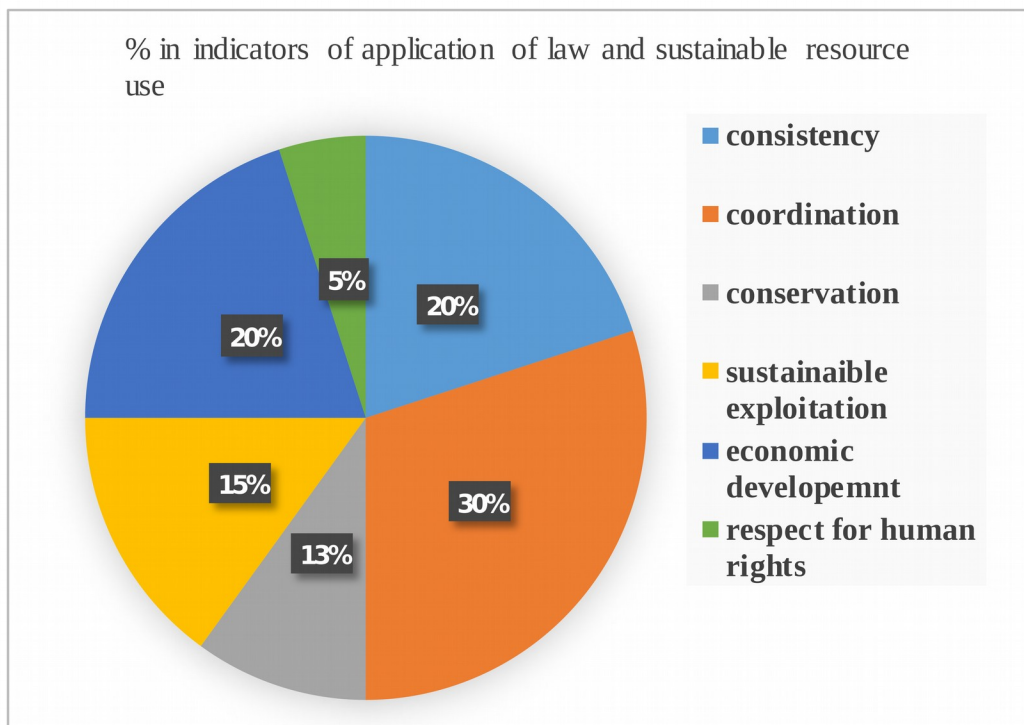
wood, thatch grass, stakes and other products from the forests. Access to forest resources is the main source of conflict in the study area. This will be discussed in details later under resource use in the study communities.

### **SUMMARY**

The main resource endowments in the study area are land, labor and forest. Land and labor are used for agriculture. Access to land is free; labor is provided by household as well as hired from Taboo. Access to capital vary amongst household and is not always accessible to the local people.

#### **4.4.3. Indicators of application of forest law on sustainable resource use**





**Figure 4.4.3.1 Indicators of application of forest law in relationship with sustainable resource use**

#### **4.4.1.3.1 Consistencies**

The findings indicated that there was the neglect of indigenous technology and local needs, the local people use the forests to satisfy their family needs of the forest products. These included fuel wood, small timber, constructional timber, herbal medicine, food, fibre, and cattle feed including grazing. Besides, they used the forest land for shifting cultivation to grow subsistence food. And when there was demand in the forest vicinity for these products, they also collect for local sale. The Forest Department on the other hand had been and still was focused on production of the demands of the urban and industrial sector.

In Mt Elgon forests, since technology applied was dependent on the application of law. The Forests Act makes legal provisions for the establishment, development and sustainable management of forests, including conservation and rational utilization of forest resources for the socio-economic development of the country. It makes provision for Participatory Forest Management (PFM) and how forest communities may be involved in the co-management of forests and benefit sharing.

The reservation process increased forest areas under government control. In 1902 the reservation process began; by 1908, 1378 square miles, about 2.6% of the fertile part of the country reserved. By 1930, 4812 square miles had been reserved. By 1932, 43 forests re-defined as government forests, covering an area of 830 000 hectares, and by 1940, the gross total of gazetted forest land had increased to 1 050 000 hectares.

The colonial contribution to forestry was to slow down the forces of destruction, both real and perceived, and to develop additional forest plantations to cater for the country's increasing timber requirements. In spite of this progress, the war years left large areas of montane forest denuded of all accessible timber. Areas subjected to degradation, and whose natural potential for regeneration was impeded were converted to exotic softwood plantations. Unfortunately, there are no exact records of the areas destroyed, nor the degree of exploitation.

Further, the national forest policy has been strengthened or constrained by policy pronouncements in other sectors of the economy. The national food policy (sessional paper no. 4 of 1981) for example, promotes food self-sufficiency, and emphasizes the

production of export crops to earn foreign exchange. This policy fueled strong pressures to convert gazetted forest reserves to crop land, particularly those adjacent to places with high population densities. The fifth development plan (1984-1988) proposed further forest reservation, protection, conservation and management; agroforestry development and tree planting on private and trust lands. It noted constraints facing forestry as competition with agriculture and grazing, wood fuel shortage, inadequate financing, and lack of long term master planning for integrated forestry development.

It outlines strategies such as tree planting on private land, intensification of plantation production, it gives credibility to rural afforestation and extension schemes. Similar sentiments are echoed in the 6th development plan of 1989-1993. From both plans it is clear that the strategy of forest reservation is intractable and increasingly challenged by land unavailability and other pressures. As a result, both communicate a change in government strategy, to increase the areas under forestry by focusing on private and communal lands. A task unsupported both by policy and legislation. It is not until the economic reform paper for 1996-1998 (GK/IMF/World Bank, 1996) that the government came to terms with the real solution to forestry problems. The study key findings of forestry concerns as decline of indigenous forests and unproductive plantation forests, and mandated the re-formulation of existing policy to reflect the current socio-economic and political situation in the country. It mandated the development of supportive amendments to the Forest Act. The economic reform paper came five years after the institution of the Kenya.

Forestry Master Planning process which began in 1991. The Kenya Forestry Master Plan projects the forestry sector in the country to beyond 2008, and has a broad objective of enhancing the role of forestry sector in socio-economic development and to contribute to environmental conservation (KFMP, 1994). The Master plan comprised both a macro-level and micro-level planning component. The former considers future scenarios under varied policies and socioeconomic conditions. The micro-level component is concerned with operational strategies at the local or district level. The most important outcome of the master plan process was a review of the current forest policy, done in consultation with government agencies, NGOs, education and research institutions, concerned individuals and international donors. The reviewed policy looked beyond government forests, and included private forest and cross-sectoral issues affecting forestry. An important policy directive was that concerning the resident cultivation system of plantation development-the Shamba system. The Shamba system had been an economical and technically successful method of plantation establishment, but was based on squatter labor. Between 1985 and 1989 to date it was wound down and officially terminated after a Presidential directive. The squatter status of the laborers became a source of strong political pressure to excise land for permanent settlement. Despite problems inherent in the Shamba system, its abandonment reduced plantation establishment rates, and a new system based on non-resident labor was established to replace the original system.

The establishment of the Nyayo Tea Zone Development Corporation (NTZDC), first by Presidential order in 1986, and later by an Act of Parliament in 1989 also affected forestry in Kenya. Under this program, plantations were established adjacent to indigenous forests to act as buffers against agricultural encroachment on forests

designated for catchment protection. The plantations were also expected to generate income and employment. This program obtained land from the government forests. It initially targeted 20 000 hectares for tea production. By 1990, 6000 hectares had been cleared. Tea zones were established in the high potential forest areas of Aberdare, Kakamega, Kikuyu escarpment, Cherangani, Mt. Elgon, Mt. Kenya, North and south Nandi, South West Mau, Tinderet and Trans Mara.

#### ***4.4.1.3.3 Coordination***

Majority of respondents indicated that the forest law role was to manage the forest resource assigned for production. This therefore shows that the forest law has a major role in sustainable utilization of forest resources. An important policy directive that concerned the resident cultivation system of plantation development-the Shamba system. The Shamba system had been an economical and technically successful method of plantation establishment, but was based on squatter labor. Between 1985 and 1989 it was wound down and officially terminated after a Presidential directive. The squatter status of the laborers became a source of strong political pressure to excise land for permanent settlement. Despite problems inherent in the Shamba system, its abandonment reduced plantation establishment rates, and a new system based on non-resident labor was established to replace the original system.

In Kenya the Green Belt Movement (Green Belt Foundation) championed by late Prof Maathai. Social views over the forest resources sustainable utilization-dependent people's linkages and use of public forest lands in Kenya had undergone tremendous change over the last 40 years. During that transition, public land and forest resource sustainable utilization -dependent peoples had evolved from providing a link of such relations, to the

promotion of access and utilization of forest resources under the paradigm of ecosystem management. The change was manifested through a host of laws, including the National Environmental Management Act, the Endangered Species Act, the Forestry and wildlife service Act, and others. These laws had profoundly altered the understanding of forest resource sustainable utilization -dependent people's linkages.

#### ***4.4.1.3.4. Sustainable exploitation***

There is evidenced the introduction of Participatory Forestry Management (PFM) in Kenya under the Act had led to the formation of 325 Community Forest Associations (CFAs) at the community level countrywide, including in Cherangany Hills and Mount Elgon. These CFAs were formed by forest (adjacent) communities and were working with KFS to sustainably manage forest resources. Most of the CFAs were currently preparing to enter into forest management agreements with KFS based on agreed forest management plans. Kenya wildlife management Act, prohibits bush meat poaching and NTFP sales as way to preserve and conserve wildlife for eco-tourism.

Similarly, the Forest Act stipulates the Policy, legal and institutional framework sets objective to provide continuous guidance on the sustainable utilization and management of forests by providing the establishment, development and sustainable management of forests, conservation and rational utilization of forest resources for the socio-economic development of the country. These all policies place forest as great natural resources for great concern for any sustainable development.

For instance, The Forest Act, section (8, 18, and 23)... bestows the management of the service to a board. A Forest Conservation Committee (FCC) will undertake the oversight

responsibility in a conservancy. The committee may in turn, recommend the establishment of divisional forest conservation committees. The conservancy committees have been given responsibilities such as informing the board of desires of people within the forest conservancy on matters of forest conservation and utilization; monitoring, implementation of the Act and other forest regulation; approve alteration of boundaries, and to allocate forest management and development funds.

The current Kenyan constitution (2010) has necessitated formulation a new Forest Policy, which is cognizant of the new dispensation. The Constitution is based upon a set of national values, such as integrity, good governance, sustainable development, and social justice, and the bill of the rights of all citizens. The Constitution also introduces a two-tier system of government and the decentralization of services. For instance, the sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement. The Forests Act, now revised 2013 was a milestone in forest governance and brought about considerable change. Further the promulgation of the Constitution brought new requirements for natural resource management such as public participation, community and gender rights, and equity in benefit sharing, devolution and the need to achieve 10% forest cover among others.

In 1975, the Thai Cabinet approved granting amnesty to the residents of the public forests so that they in their turn improved the degraded forests. The villagers were assisted with forest village development (FVP) funds as well. Another similar programme called Sit ThiThamkin (Right to Harvest: STK) was introduced in 1979. The difference of this programme with the earlier one was that no funds for village development were made

available (Chamruspanth, 1993). As of 1990, under FVP, 119 villages covering 55,344 ha have been involved. The STK programme of 1979 has benefited 709,395 families on 1.15 million ha of land (Attanotho, 1993).

#### ***4.4.1.3.5. Conservation and economic development***

Beyond the highly fragmented sacred groves, there was evidenced large areas of forest were utilized under specific rules. For example among the Chepkitale, a system of elders imposed sanctions on people who destroyed live trees, or cut protected species. Certain of the forests were reserved for dry season grazing, and certain species used specifically for fencing, construction or roofing. Amongst the Laboot in Mt Elgon forest, although forests were communally owned, they were evidenced from the study, forests managed by clans living in proximity to the forest. Management within each clan was divided according to specialization and function. For instance, a group of families of medicine men ensured sustainable exploitation of medicinal species, and deliberately planted trees to replace or check against losses. Many communities collected deadwood for firewood, and practiced selective maintenance of valued species for medicinal purposes, as fodder and as timber reserves. Land management in forest areas was evidenced from the study was closely regulated. Around Mt.Elgon forests for, the Taboo and Ogiek, both agricultural communities, had evolved a system of land management in which forest land was owned by clans, but only up to a maximum of two miles into the forest. Land above this cultivation line belonged to the community.

The forest was inviolable, and bringing new land into cultivation was the result of community consultation and consensus. These examples indicate the existence of



organized, well-defined forest management systems amongst indigenous communities prior to the onset of colonialism. Such systems comprised scattered core areas (sacred groves) protected by religious sanction, from which human interference was excluded. These were surrounded by utilization zones, the use of which was determined and regulated by specific rules. Forest management fell under a clearly defined structure of authority (elders, clans, family heads). These systems combined to promote sustained production of the forest's goods and services.

#### ***4.4.1.3.6. Respect of human rights***

In Mt Elgon it is evidenced from the study that, the forestry officials and police inappropriately arrested low-income people for violating forestry and protected area legislation, forcibly expelled them from their houses and fields, hit them, raped them or even killed them. Unless governments take measures to prevent this, attempts to encourage forest law enforcement could easily worsen this problem. The subterfuge, resistance or fight by the local people to retrieve their rights on lost land happened in many countries. There is evidenced the resistance or fights were attempts to force the government to yield ground. The study mentioned a few: Chipko movement of India, the Ogiek of Mt Elgon, Embutut, Mau evictees in Kenya , the resistance of the Penan people of Borneo and Parier land dispute case of Indonesia. On the other hand, what we refer as 'subterfuge' was a means adopted by the people to annihilate the forests by slow attrition and finally to encroach it.

#### **4.4.3 Examining the application of legislation on forest monitoring and forest management on sustainable resource utilization**

#### 4.4.3.1 Consistency

Table 4.4.3.1. (a) Effectiveness of provision of forest law on sustainable utilization of forest resources

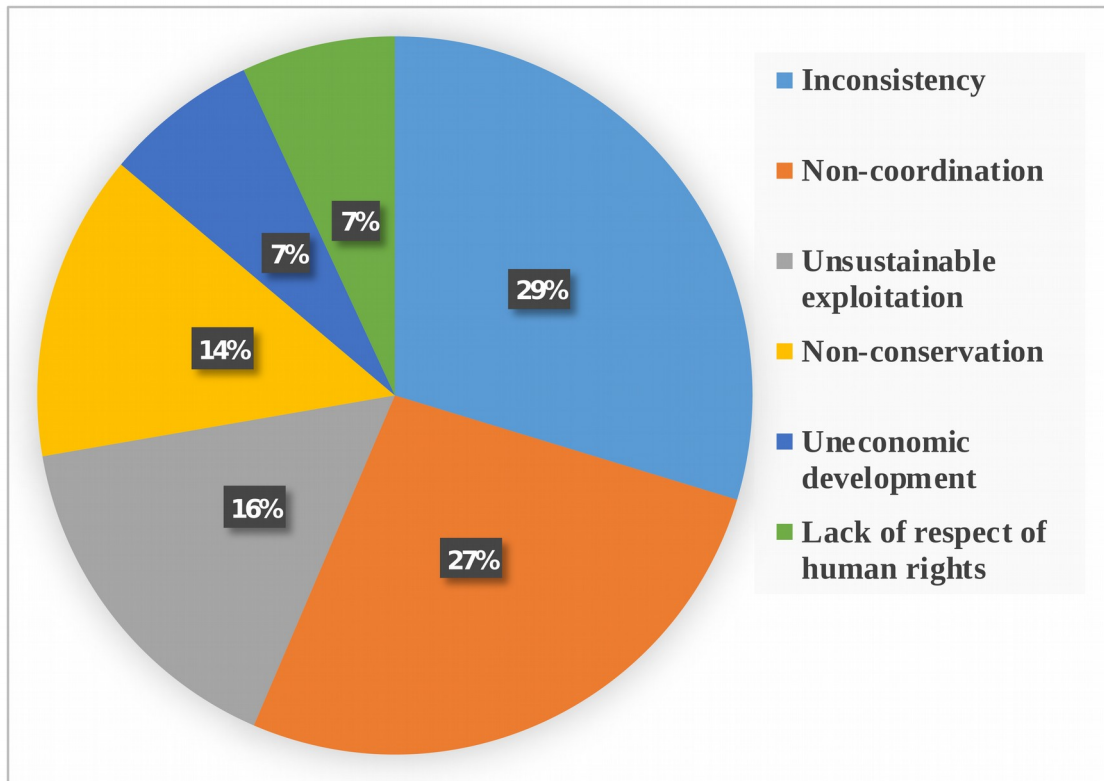
<b>Effectiveness of forest law</b>	<b>Frequency</b>	<b>Valid Percent</b>
Don't know	3	3.6
Monitoring and enforcement of forest practices	42	50.0
Improving forest management plans	39	46.4
<b>Total</b>	<b>84</b>	<b>100</b>

Source study 2014

Majority of the respondents evidenced from the study indicated that provision of forest law was effective in monitoring and enforcement of forest practices while others indicated it was effective in approving forest management plans. A few did not know its effectiveness. This implies that the citizens find the law appropriate in monitoring and enforcement of forest practices and therefore if enforced it can aid in enhancing sustainable utilization of forest resources.

Majority of respondents as evidenced from the study indicated that the forest law had shaped socio – economic change limiting people's access to forest resources. Others indicated that forest law had led to market imperfections and poor infrastructures while rest indicated that it had led to alienation of forest land. A few did not understand the how forest law had shaped socio-economic change. It can be concluded that forest law has shaped socio-economic change and therefore it helps in enhancing sustainability of utilization of forest resources.

#### 4.4.3.2 Inconsistency



**Figure 4.4.3.1.5 (b)** Effects of application of law on indicators of forest law on sustainable resource use

From the focus group discussion it was observed and evidenced that the respondents have had a series of aggressive confrontations and harassment with the forest officials which could be the reason of the findings on the effects of forest law on sustainable resource use (Table 4.4.3.1.6) on the negative indicators of application of forest law.

Similar evidence has also been reported (Samndong, 2007; Lescuyer, 2009). The findings also indicate that Kenya Forest Service (KFS), established in February 2007 as a state corporation under the Ministry of Forestry and Wildlife, was the institution mandated

under Act to implement the Forest Policy objectives. At the community level, the Act provides for the establishment of CFAs to work with KFS in the management forest resources while at the conservancy and national levels, FCCs and the Board support KFS in its work.

Furthermore, it is evidenced that The Ogiek of Chepkitale which forms about 85% of the Ogiek in Mount Elgon is in the second category of vulnerability. The land that they claimed is a legally Gazetted Game Reserve and fall within the Mt Elgon forest ecosystem. They could not undertake unrestricted livelihood activities in the forest and have no basic social amenities (schools and health facilities within the recommended distances – 1 and 5 km radius respectively.

Every year it is evidenced that developing country Kenya in particular, governments lost billions of dollars in revenues due to illegal tax evasion in the forestry sector and unauthorized timber harvesting in publicly owned forests. That left governments less money to spend on services such as health, education, roads, electricity, and agricultural extension. Lack of transparency in government budgets in countries with widespread corruption made it less likely that whatever funds governments received would go to services for the poor. Weak rule of law and conflicting laws and corruption also limited long-term economic growth, which further reduced tax revenues.

Situations of evidenced corruption and disrespect for the rule of law typically favoured groups that had sufficient resources to pay bribes, developed informal links with government officials, and hired armed guards. This put households that engaged in small-

scale forestry activities at a clear disadvantage. Often they could only operate if they agreed to sell their products to wealthier ‘patrons’ who protected them from forestry officials and provided credit. Those patrons’ assistance comes at a high price. They paid producers much less than they would receive if they could borrow from formal lending agencies and sold their products legally to whomever they wanted to.

There, growing demands for forest resources, forest land, recreational uses and environmental protection increasingly conflicted with long-standing demands for extractive uses. Those traditional uses – including firewood cutting, and hunting – supported many rural Ogiek and Saboat communities, especially Native communities. The potential for conflict was particularly high in Mt Elgon forest, where nearly 89% of the land base was publicly owned, 10% is under community corporate control, and just 1% is privately held. For public lands, 27% were managed by the State, with the balance under the forest and wildlife service authority.

Nearly 40% of Ogiek, Saboat is evidenced from the study lived in the forest with fewer than 10,000 residents. Moreover, nearly 89% of Mt Elgon residents were dependents on forest resources and forest land, combined with the State’s dominance of public lands, made local access and sustainable utilization to public resources a critical issue. Yet that historic connection between communities, land and forest resources sustainable utilization-dependent people linkages was a challenge to the forest law application.

There was evidenced of lack of clear tenure statements in almost every country except in the Pacific island states, there was a lot of confusion about the customary rights of the

people and that of the state on the forest land. For example, in Indonesia, the basic Agrarian Law of 1960 recognizes customary law as the basis of national land law, but at the same time basic Forestry law of 1967 had been invoked to disenfranchise the local people of their rights. This had been done for commercial timber operations or conservation (Lynch and Talbott, 1995). In India, the customary rights of the people for various forest products were being abolished as and when any national park, sanctuary, biosphere reserve or national heritage parks were established. Even in PNG, the recent law establishes that the owners could dispose of their products only through the parastatals. In Nepal, the tenure was clear but there was a provision that the tenure could be revoked if the people do not follow the guidelines. The decentralization of forest management had been revoked or drastically modified twice in the last 50 years and even now the villagers in Nepal during field interviews express apprehension that the present rules were also not going to stay permanently.

However, there was contrary findings evidenced on other countries to the nature of use to which the forest land was put varied from place to place, depending on the characteristics of the people who inhabit the local areas. Some used it as the hunting and gathering ground for subsistence. The gathering included fruits, vegetables, cereals for food, fibre for clothing, timber, fibre and grasses for homes and materials for daily use and medicine. Some other groups who have already been initiated into agriculture practiced shifting cultivation, which developed different forms in different areas (Banerjee, 1995).

Table 4.4.3.1.6(b) Livelihoods: Hunting

<b>Activities</b>	<b>Frequency</b>	<b>Percentage</b>
Fetching firewood	27	32.1
Hunting	38	45.2
Not applicable	19	22.6
<b>Total</b>	<b>84</b>	<b>100</b>

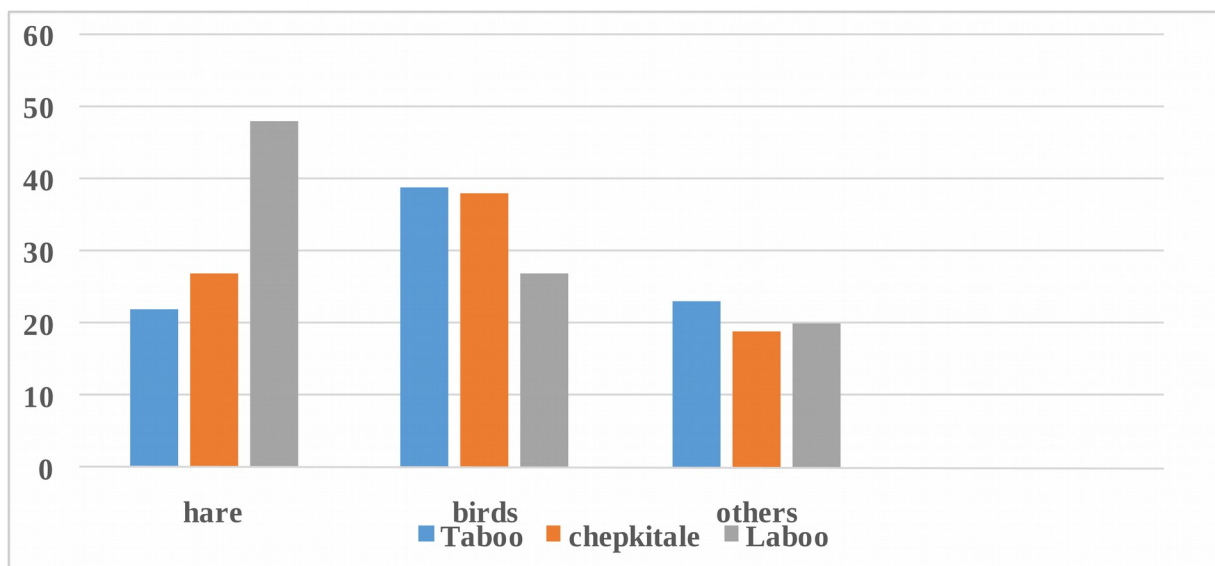
Source study 2014

Table 4.4.3.1.7 Reported wildlife species hunted by the local people in the study area

<b>Wild life species</b>	<b>Frequency</b>	<b>Percentage</b>
Hare	22	22.7
Birds	39	48.2
Others	23	29.2
<b>Total</b>	<b>84</b>	<b>100</b>

Source study 2014

Majority of the respondents indicated that hunting was affected by application of forest law on the sustainable forest utilization of forest resource utilization. While others indicated that fetching firewood was not much affected by the law while a few did not find law affecting any of the livelihoods. From the household observation and participation on the kinds of hunting instruments respondents used and focus group discussion it was observed and evidenced that the respondents on the hunting the wildlife species hunted varied much between the ethnic groups (Table 4.4.3.1.8 on the techniques, figure 4.4.3.1.7.) and depended on the proximity of the village to the forest and protected area. This also explains the fact that hunting is the main livelihood activity of the Laboo. Hunting frequency per week also varied between the ethnic groups. The average hunting frequency per week was 2 times although the Laboo hunted more than 3 times a week.



Source study 2014

**Figure 4.4.3.1.6.:** Distribution of Wildlife species hunted between the ethnic groups in the study area in percentages

Hunting is another main human activity in the region and is principally practiced by the Chepkitale and Laboo people. Hunting is done by the men with traditional implements such as bow and arrows, spears, blowguns, traps, hunting dogs and machetes. Firearms are becoming more common today in this region. Most of these guns are owned by the taboo and are given to the Laboo to hunt. Hunting is particularly carried out during the rainy season when the forest is in its abundance. During this period, the Laboo men and women leave their permanent villages for the deep forest usually about 5 to 30 km from their village for several days. The men perform the hunting by setting traps along animals' footpaths, while the women gather wild fruits, bush yams, invertebrates such as termites and caterpillars (Study 2014).



Hunting is one of the most evidenced important activities of the Laboo culture, not only for providing meat but above all for the symbolic meaning and the prestige traditionally attached to it. Most of the skilled hunters are respected and taken into great consideration. The most common animals killed by their traps, poisoned arrows and guns lent from the taboo people are various species of primates, artiodactyls, rodent etc. Another common hunted animal is the pangolin, the blue and black-backed duikers and the brush-tailed porcupines. Most of the game is sold in front their homes along existing roads while little consumed locally. Some Laboo smoke their game for preservation especially those that have been killed in their traps for days (study 2014).

However in India and Indonesia, there is evidenced that according to (Gillis quoted in page 31 by Miller and Tangley, 2009), the livelihood of those people was inexorably linked with the forests. As the forest areas became closed to their use, the livelihoods were affected. Some of the tribes felt livelihoods was affected and by a very large section became marginal farmers some of whom became urban slum dwellers, took to begging and became a permanent liability and a focus of crime in many developing countries. These alienated people visited the forests again then either to fight retrieving their rights to forest land or to annihilate it (Miller and Tangley, 2009).

#### ***4.4.3.3 Non-coordination***

However, this contrary to studies in Thailand Land Code of 1954 had the most important bearing on the question of land ownership and by implication on the process of centralization. Pahsa-nguan or the public forest land had many users or squatters for a long time. The Government by promulgation of 1954 land code provided the option that

anyone occupying any forest land as of November 30, 1954 can receive a land using claim certificate provided he can prove his claim within 180 days. Few provincial farmers had been aware of this time stipulation, failed to take advantage of it and thus became encroachers. In 1961, the Thai government decided that 50% of the country should be forest land and as such started evicting encroachers to reach the target. In 1985, the National Forest policy reduced the target of forest land to 40% to release some land for other purposes but the objective was not realized. In fact, the Forest department undertook a programme of planting up the degraded forest which resulted in more evictions resulting in a political crisis (Lynch and Talbott, 2012). The net result of all this is that the centralization process for forest management continued in Thailand.

#### ***4.4.3.4. Poor conservation***

Successfully enforcing laws (against Chepkitale, Laboot, Taboo locals) that prohibited forest clearing, hunting, and collecting vegetable products usually, although not always, directly helped to protect the forest resources involved, at least in the short run. The situation was less straightforward when it comes to laws and regulations that specified annual allowable cuts, harvesting rotations, and minimum harvesting diameters.

Enforcing those regulations usually was not suffice to sustain illegal commercial timber production and environmental services over the long-term, and have even made things worse. Many existing prescriptions for Mt Elgon forest management have a surprisingly weak scientific basis. Frequently they failed to take into account the regeneration requirements of commercial timber species and the role of animals in seed dispersal,

pollination, and pest and disease control. Allowable cuts usually reflected political, economic, and administrative concerns as much as the biological capacity of a forest to sustain timber production. Most legally sanctioned approaches to designing forest management plans assumed forest ecosystems are in a steady state, rather than being path dependent outcomes of episodic disturbances. In principle, foresters are supposed to adapt management plans to the dynamic of each forest, but most foresters in Kenya lack the training and information required to do that, and forestry officials often did not accept the plans when they do.

#### ***4.4.3.5. Unsustainable exploitation***

Mt Elgon forest, where nearly 89% of the land base was publicly owned, 10% is under community corporate control, and just 1% is privately held. For public lands, 27% were managed by the State, with the balance under the forest and wildlife service authority.

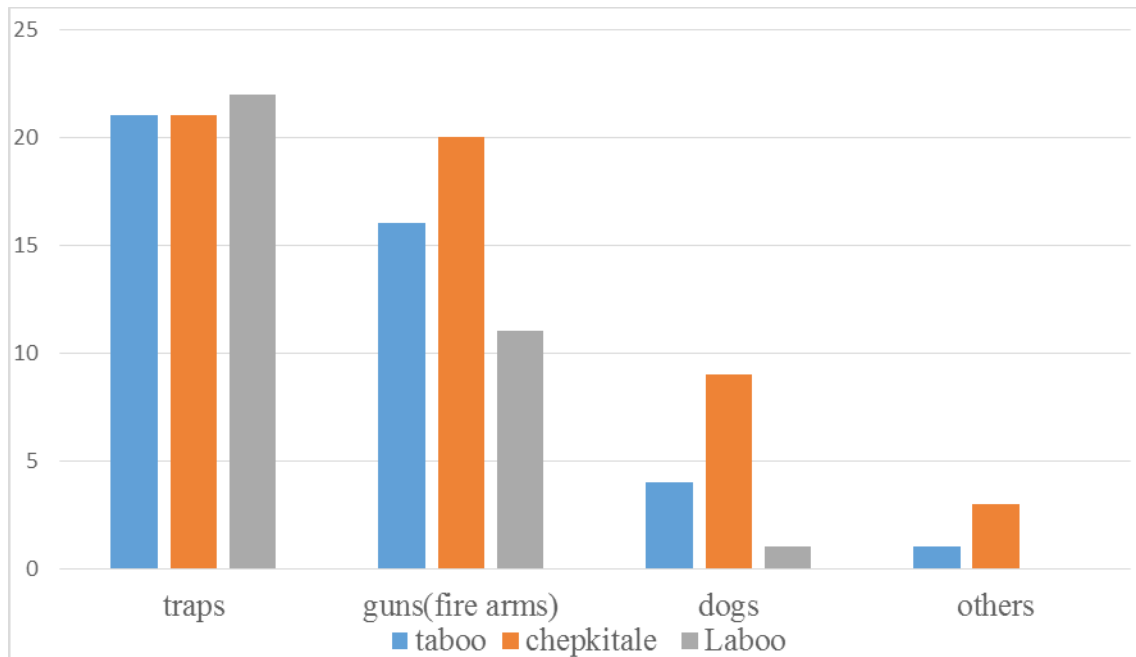
There is evidenced that the Ogiek of Chepkitale which forms about 85% of the Ogiek in Mount Elgon is in the second category of vulnerability. The land that they claimed is a legally gazetted Game Reserve and fall within the Mt Elgon forest ecosystem. They could not undertake unrestricted livelihood activities in the forest and have no basic social amenities (schools and health facilities within the recommended distances – 1 and 5 km radius respectively).

**Table 4.4.3.1.8 (a) Local people's hunting methods use in the study area**

Hunting Techniques	(Taboo (N=15)	Chepkitale (N=31)	Laboo (N=23)	Total (%)
Traps	21	21	22	77.1
Gun (firearm)	6	20	11	44.6
Dogs	4	9	1	16.9
Others	1	3	0	4.8

Source study 2014

The households surveyed also show a great variation in the hunting methods between the three villages (**Figure 4.4.3.1.7**). The Chepkitale and Laboo use guns and traps for hunting but the Taboo also uses dogs and other methods. All the guns used by the Taboo are being supplied by the Laboo since they are more exposed to the external society compared to the Taboo. A chi-square test of dog and ethnicity show a significant difference between the two ethnic groups ( $\chi^2 = 9.55$ ,  $p = 0.002$ ,  $df = 1$ ).



Source study 2014

**Figure 4.4.3.1.7:** Variation in hunting methods between the ethnic groups of the study area

The hunting methods used in the study area varied among the study communities with traps and guns being the most common (Table 4.4.3.1.8). These traps were made of cable snares and the guns; locally made fire arms. Guns were usually used to kill tree dwelling animals (primate) and other large animals. The Cameroon forestry law prohibits the use of these fire arms and cable snares (Egbe, 2007; Samndong, 2009). Evidence from field observation shows that although the majority of the Laboo do not hunt deep into the forest, they often hired the Chepkitale and Taboo furnished them with gun and cartridges, and sends them to hunt large primates like antelopes (others) and hare. This evidence also confirms the servant-master relationship that exists between the Chepkitale and the Laboo as presented from other studies (Colchester, 2006).

#### ***4.4.3.6. Poor economic development***

This is evidenced that Situations of widespread corruption and disrespect for the rule of law typically favoured groups that had sufficient resources to pay bribes, developed informal links with government officials, and hired armed guards. This put households that engaged in small-scale forestry activities at a clear disadvantage. Often they could only operate if they agreed to sell their products to wealthier ‘patrons’ who protected them from forestry officials and provided credit. Those patrons’ assistance comes at a high price. They paid producers much less than they would receive if they could borrow from formal lending agencies and sold their products legally to whomever they wanted to.

This is evidenced that every year Kenya government lost billions of dollars in revenues due to illegal tax evasion in the forestry sector and unauthorized timber harvesting in publicly owned forests. That left government less money to spend on services such as health, education, roads, electricity, and agricultural extension. Lack of transparency in government budgets with widespread corruption made it less likely that whatever funds government received would go to services for the poor .Weak rule of law and corruption also limited long-term economic growth, which further reduced tax revenues.

First, in India Forest Act of 1927, the forest is a national resource which is therefore utilized for the nation or state. The analogy presented is that of mining. Coal, gold, petroleum etc. belonged to the state that exploited it, no matter where they are found. Forests could not be an exception. Secondly, forests have effects that transcended the local environs. The local people would manage a resource keeping in mind its own local

interests which has disastrous effects on the outside areas. For example, the local interests likely used it for fuel wood production while the particular forest has a storehouse of biodiversity.

Similarly, the people have used a forest area for grazing when it has been required to be protected from all uses being a catchment of a dam reservoir. Thirdly, the colonials and later the national government wanted the forest areas to be a source of revenue. For example, teak was extensively exploited by the British colonial government for ship construction, sal and pine in India for railway sleepers and so on. The revenue earned by the Indonesian government annually is second to the money earned by the country from petroleum, which is the largest money earner. In parts of India, the forest contracts, such as that of biripata (leaves of *Diospyros melanoxylon*), earns so much revenue that it is often used by the people involved in those business as a leverage for political power.

Fourthly, some forests earmarked by the government or the rulers with the sole purpose used them for hunting and rest for the royalty and the colonial officials. Fifthly, the control of such large forest areas provided political power to the centre. And last but not the least, the government thought wrongly, an idea still held by many, that the local people are ignorant of forests, their indigenous forest management unsustainable and unscientific. Thus the forest management would continue to pursue a policy of centralization. These reports put it that skewed in dynamics in the application of forestry law remained entrenched obstacle to forest dependants as obstacle to their free use, access and sustainable utilization of forests resources since the law brought into it several changes that impacted dependants of forests resources.

Moreover, the recent development discourse in renewed forestry legislation enactments has increasingly focused on keeping away people (Mau forest evictees, Embubutut, Ogiek evictees) from traditional use, access of forests resources to aspect of the modern conservation and sustainable utilization.

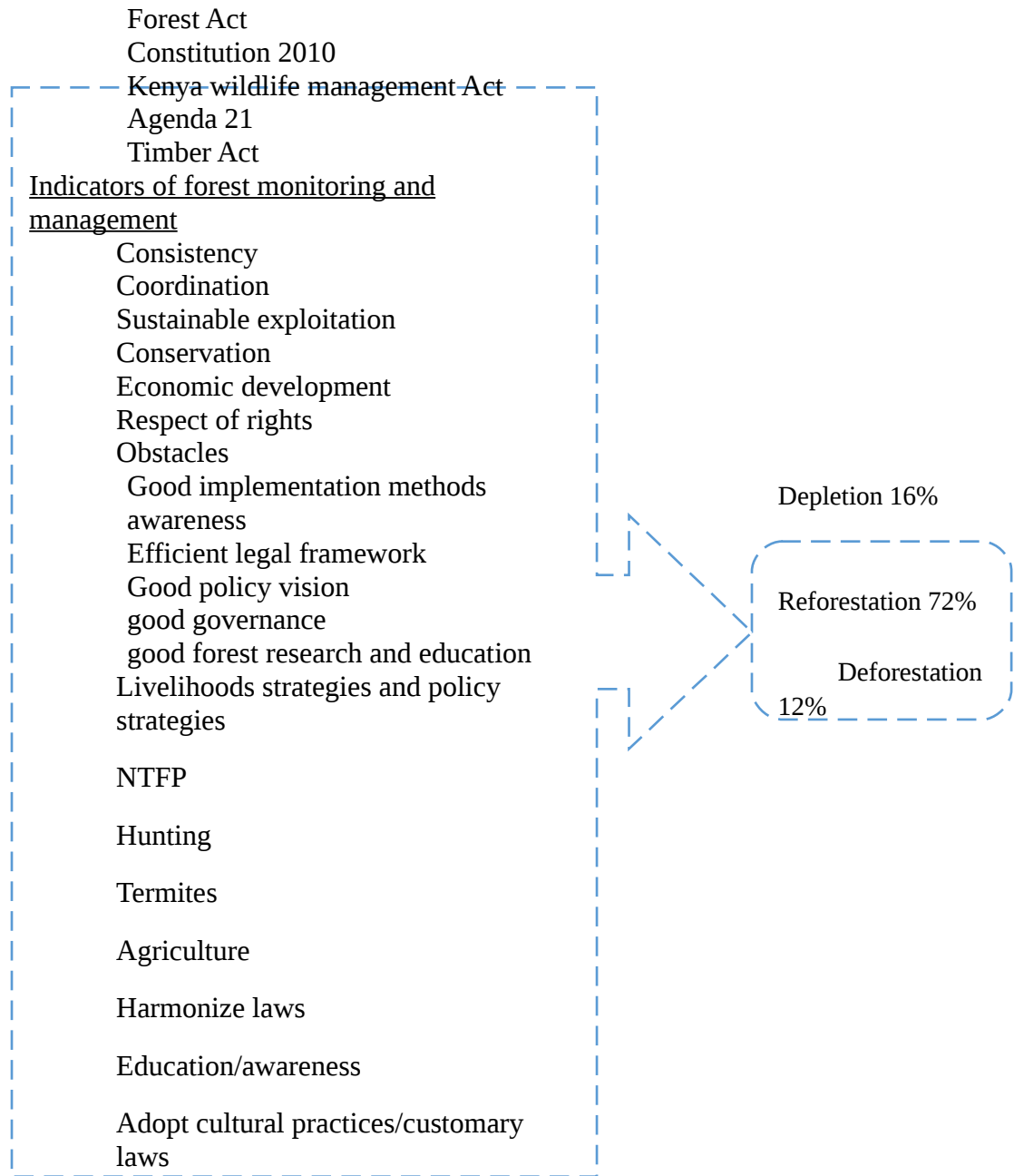
#### ***4.4.3.7 lack of respect of human rights***

Further it is evidenced that the culture of those people (Chepkitale, Laboot, and Taboo) was inexorably linked with the forests. As the forest areas became closed to their use, the tribes were uprooted from their habitual ground. Some of the locals felt culturally lost and disappeared by waste, some tried to get mixed up with the local rural milieu only to be annihilated by disease and a very large section became marginal farmers some of whom became urban slum dwellers, took to begging and became a permanent liability and a focus of crime in Kenya. These alienated people visited the forests again then either to fight retrieving their rights to forest land or to annihilate it (cases Ogieki evictees, Embutut forest evictees) .This could be attributed by the discretionary use or exercise of the powers or forest policies by those who are entrusted by the law.

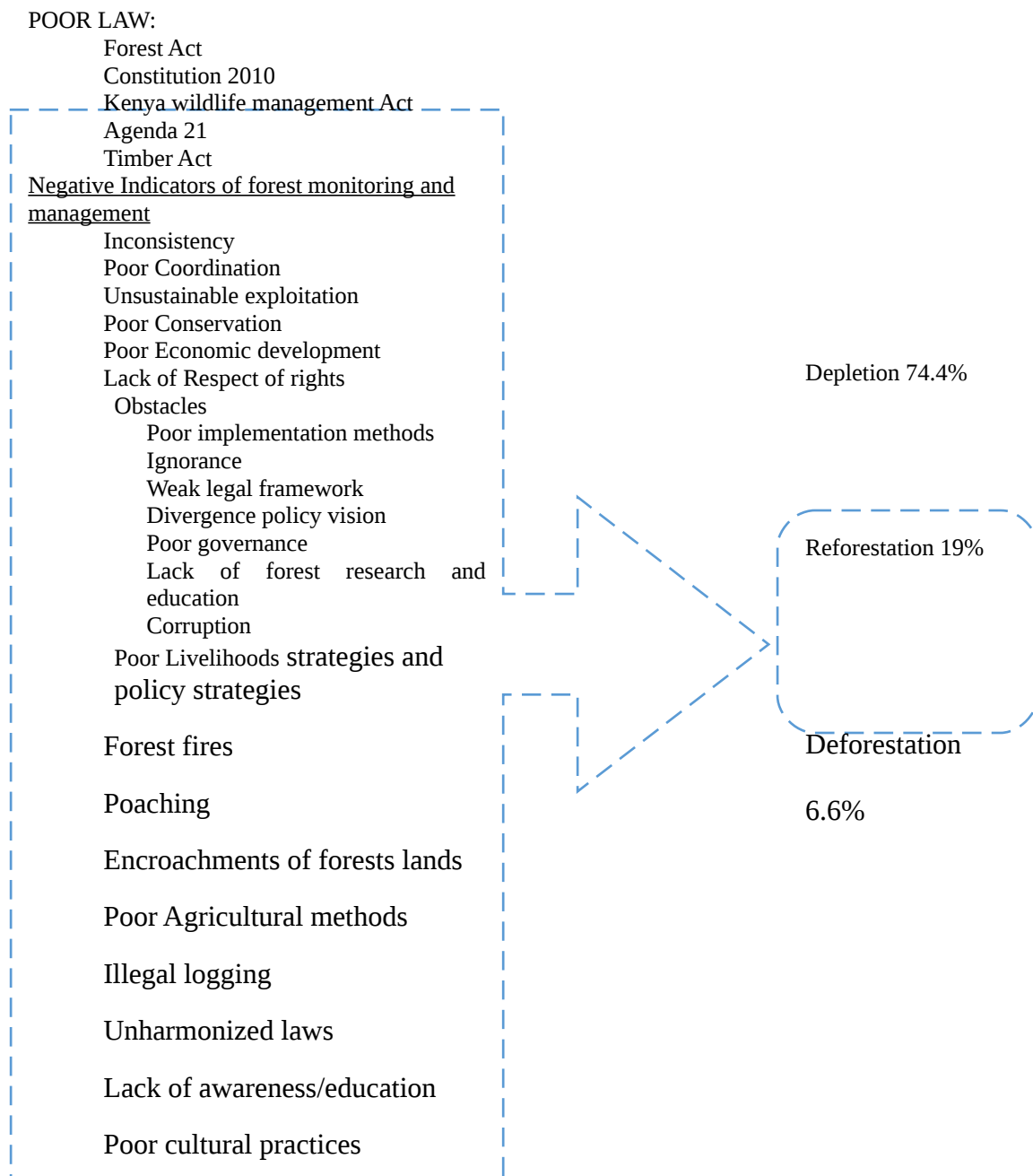
#### ***4.4.3.8 The measure of sustainability***



LAW:



**Figure 4.4.3.8(a): Indicators of the law** for the measure of sustainability.



Source (2014)

**Figure 4.4.3.8(b);** negative indicators of measure of sustainability of forest resources

**4.4.4. The obstacles to application of forest law on sustaianble forest resource**

**utilization.**

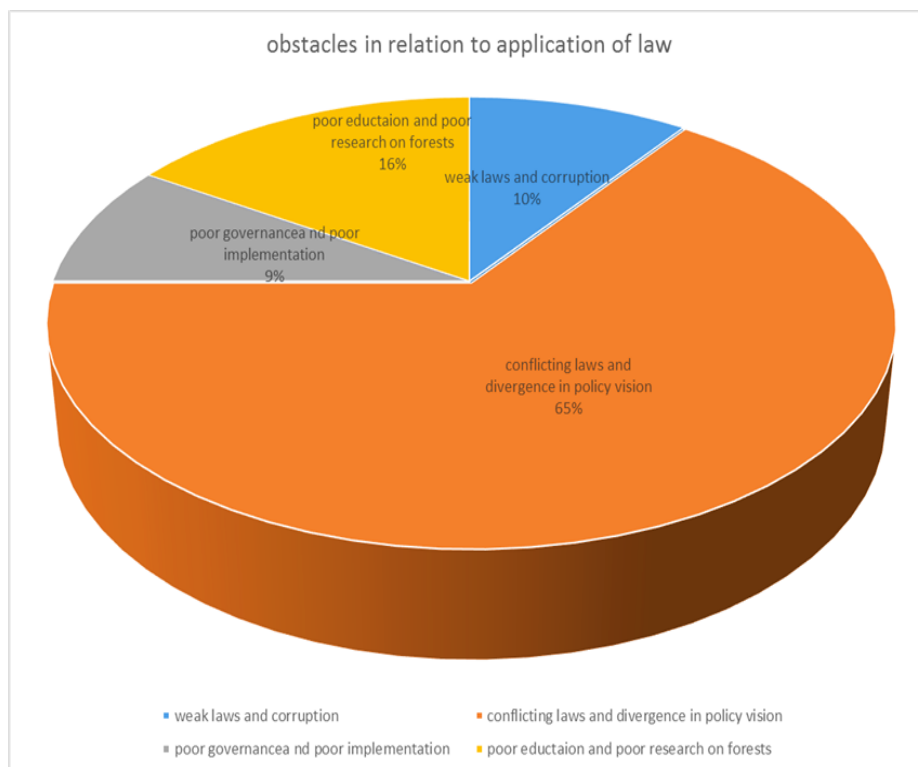
Table 4.4.4.1.9 (a). Obstacles to application of forest law on the sustainable forest utilization of forest resource utilization.

	Obstacles				Total
	Corruption	Poor implementation methods	Ignorance of the local communication	Weak legal framework	
	2	4	2	2	10
	5	30	30	0	65
	0	2	1	6	9
<b>Total</b>	<b>7</b>	<b>36</b>	<b>33</b>	<b>8</b>	<b>84</b>

Source study 2014

This evidenced that Majority of the respondents indicated that poor implementation methods were an obstacle to application of forest law on the sustainable forest utilization of forest resource utilization. Few indicated that poor implementation methods and ignorance of the local communication were the obstacles to application of the forest law. The rest indicated weak legal framework to be the obstacles. It can be concluded that the major obstacle to application of forest law on the sustainable forest utilization of forest resource utilization is the poor implementation methods.

As much law is for effective management of forest resources, it is evidenced that there has been Weak rule of law and corruption also limited long-term economic growth, which further reduced tax revenues .The control of such large forest products, by use of discretionary powers provided political power to the centre. And last but not the least, the government thought wrongly, an idea still held by many, that the local people are ignorant of forests, their indigenous forest management unsustainable and unscientific.



**Figure 4.4.4.1.9.** Obstacles to application of forest law on the sustainable forest utilization of forest resource utilization

Given that almost one century of state forest ownership and centralization of power in the forest department has not been successful in promoting sustainable, long term, productive use of forest resources, the validity of such an arrangement comes to question. This is evidenced that the Kenyan forestry experience shows that it is not the existence of formal structures which matters. What is important is the performance of the system, whether it works, whether the citizens have confidence in it, and whether they have the ability to maintain its functions. With regard to forestry in Kenya, both currently and under colonial government, the answers to these questions are negative. The findings indicate

that forest depletion on state-owned forests in Kenya was as the result of ineffective management systems, rules and sanctions, and advocate for the re-establishment of strong local governance and legitimacy as the best option for sustainable forest management.

A further evidenced fundamental obstacle to forest management, conservation and sustainable resource use was the existence of conflicting and competing policy objectives adopted by different government institutions. For instance, although development planning recognizes forest degradation as an important issue, it prioritizes agricultural expansion for export crop production, or carves out forest land for resettlement schemes. This inconsistency in national planning may be the result of several factors. First, to maintain its credibility with national and international constituents, as well as to maintain funding eligibility at the international level, the government must be seen to identify with environmental concerns. In addition, to justify the presence of a forest department, the government must also be seen to support forestry initiatives. Thus policies will be structured to communicate these 'concerns'. However, political pressures to resettle the landless, improve agricultural/economic growth, forces the government to reduce forest land in order to meet these needs. After all, forestry as a land use is perceived as having lower economic value than agriculture.

#### ***4.4.4.1. What are other obstacles to all these legislations?***

Similarly it is further evidenced the study finds confirms that in their formulation, the policy promulgations were truly exemplary. They encourage policymakers to move away from purely command and control structures to enhance the effectiveness of forest management and sustainable use. This evidenced that the existence of such regulations thus made NWFP's failure to stop degradation all the more intriguing. The present study findings sought to explain the anomaly. The analysis suggests that the problem can generally be summed up by highlighting two key constraints: (i) a major disconnect between the policies and their implementation; and (ii) serious institutional bottlenecks that have prevented transformation and forced perverse implementation practices to linger. Study findings confirms the major obstacles to application of forest law on sustainable forest utilization are namely: see Table 4.4.4.9(a). Obstacles to application of forest law on the sustainable forest utilization of forest resource utilization).

#### ***4.4.4.2 Divergence between the policy vision and the implementation framework***

This is evidenced in the first anomaly in the post legal system in sustainable resource use was a discrepancy between the policy vision at the macro level and the details of its implementation at a micro level. Rather interestingly, while the essence of the colonial forest laws had been eliminated, much of its thrust had deliberately been retained at the implementation level. The argument of officialdom was that all stakeholders were familiar with the traditional system, and therefore it would be unwise to completely overhaul it and expect an entirely new framework to be understood and adopted. The very rationale of the process – to dispense with the colonial mindsets – was thus undermined. Maintaining the traditional perspective implied the presence of sufficient loopholes for

vested interests to force the management process to resemble the historical command and control structure. In essence, what the legal process has done was provide well-meaning designs on the macro level without synchronizing the implementation tools for their achievement.

As evidenced in line with legal objectives and priorities, a number of community initiatives had indeed been undertaken to endow resource-dependent communities with a voice in forest management and sustainable use. Examples of these measures included the formation of forestry commissions and forestry round- tables, and the institution of a number of joint forest management committees (“JFMCs”). This is evidenced in reality, however, influential and wealthy members of the villages who had much to gain from resisting genuine systemic transformation have dominated these community organizations .Moreover, the viability of concepts such as “social forestry” or “public-private partnerships” requires a set of pre-conditions. If these are not provided, mere priority listing does not make a difference. Unfortunately, there have been virtually no efforts to lay the groundwork for such policy visions.

This is evidenced the prevalence of the policy/implementation disconnect was obvious from discussions researcher undertook with forest sector officials. The interaction revealed a lack of understanding and direction on how to discharge duties (which are clearly defined on paper) under the reformed system. This could also be concluded from the studies of past in terms of the achievement of the reform process as mere “deconcentration” as opposed to the envisioned decentralization.

This is evidenced from the findings indicate that while forest management tasks have been delegated to lower level staff within the FD, officers lack information about the reforms and superiors continue to dictate terms along traditional hierarchical lines. Consequently, department officers have varying levels of understanding, and as a result they apply measures they deem most appropriate for the on-ground situation they confront. There was no acknowledgment of the need, let alone an effort to homogenize enforcement mechanisms across the board.

Furthermore, while the co-management approach had been adopted, much of the perverse incentive structure present in the traditional management system still remains. This is evidenced the perverseness was a function of the fact that the legal application had been unable to address rising timber prices, low salary structures of public officials, and the dated penalties, fines, and incentive payment levels. A combination of these forces has produced an incentive regime where gains from timber felling outweigh the costs in terms of rents as well as the risks involved in the activity. Consider, for example, that a ban on commercial timber harvesting from the 1990s (In 1993 floods and 1998) has resulted in skyrocketing timber prices, and increased profit margins from illegal harvesting. In a survey of timber retailers and transporters, (Researcher, 'Blacklist' forthcoming release) have found that rent payments to log and transport timber illegally account for a surprisingly low 5 per cent of the total consignment value. While profit margins for the "Blacklist" were not recorded, an indication of the lucrative nature of the activity is provided by the profit margins for the end retailers, greater than 25 per cent in some cases. Given the low rent payments, one can reasonably assume a much higher margin for the mafia. Moreover, the rents for all those parts of the system along the



supply chain have a positive relationship to the number of consignments shipped. (Research forthcoming release). The higher the volume logged, then, the greater the number of consignments, and the higher the payoffs for the 'Black list'.

The study evidenced that, given that the owners were forced to sell timber in the black market, they did not manage to capture market prices. This evidenced that the Black list maintains tremendous clout over forest sector policy-making and is actively involved in timber smuggling. (Researcher Forthcoming release). The Blacklist operates under an institutionalized mechanism. Timber logging is undertaken with the knowledge of the FD officials assigned to an area. A key element of the activity is the co-option of the community elders, who convince the owners to allow logging in return for monetary payments. The Blacklist is greatly aided by the 'Red Army' NWFP, whereby the decision of community leaders is sacrosanct and any objection other than by a collective Red Army is essentially taboo. As a result, owners are inclined to go along with the decision due to the continuing refusal of the state to acknowledge community ownership of forests. Lack of clearly defined property rights, then, encourages such predatory behaviour on the part of the communities (Researcher forthcoming release).

Another evidenced from the study major contradiction under the legal application of the law is apparent from the fact that despite emphasizing stakeholder participation, a number of initiatives under the legal process were formulated following an extremely opaque, closed-door approach. (Research forthcoming release) argues that while the policy-making activity was relaxed to broaden the number of those providing input, the

group still restricted to hand-picked professionals, leaving the real stakeholders – essentially the communities – completely out of the framework.

The 2002 and 2008 Forest Policy was just one example. (NWFP Forest Policy 2002 and 2008, the positive aspects of the Policy *have* been highlighted above. Interestingly, the very same document provides additional discretionary powers to FD officials for policing, and enforcement and revocation powers to some major community-based initiatives envisioned under the reform process. A manifestation of the discomfort of objective observers with such undemocratic stipulations was that the civil society stakeholders, who had initially supported the Ordinance, ultimately distanced themselves from it.

#### ***4.4.4.3 Governance and poor implementation of the law***

The sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement. The Forests Act 2005 that became effective in 2007 now revised 2013 was a milestone in forest governance and brought about considerable change on sustainable forest resource use. Further the promulgation of the new Constitution (2010) brought new requirements for natural resource management such as public participation, community and gender rights, and equity in benefit sharing, devolution and the need to achieve 10% forest cover among others. These challenges are compounded by dwindling public land meaning that forestry development has to expand into private and community land, which need incentives and clear methods of engagement to encourage investments in commercial forestry on private land.

#### ***4.4.4.4. Forest research and education***

The study finds confirm that, the forest sector has to contend with low productivity of tree crops, low conversion efficiency and weak value addition schemes and lack of awareness. This has evidenced these arise from climate change, small genetic base of crops, emerging pests and diseases, low investments in technology development, and poor investment in forest based industry. There is need therefore for research and development to refocus on basic forestry disciplines such as productivity, health, crop diversification, processing, value addition, intellectual property rights and indigenous knowledge. Further, global needs for certification require research in suitable criteria and indicators.

In addition to, this is evidenced the sector also faces challenges in building capacity for sustainable utilization and management. Forestry curricula have not adequately responded to emerging issues and technologies in the sector while practitioners require continuous professional development to take advantage of these technologies to further forestry development. The role of professional bodies in advancing professionalism in forestry practice and standards cannot be gainsaid.

#### **4.5. STRATEGIES LIVELIHOODS AND POLICIES STRATEGIES FOR FOREST RESOURCE SUSTAINABLE UTILIZATION**

The researcher studied the strategies for forest resource sustainable utilization in relation to forest law by investigating the Proposals on the provisions of forest law in relationship to the effects of law on sustainable utilization of forest resources, cross tabulation.

Table 4.5.1: Strategies on the provisions of forest law in relationship to the role and effects of law on sustainable utilization of forest resources

<b>Proposals on the provision of forest law</b>	<b>Frequency</b>	<b>Percent</b>
Harmonizing the laws	30	33.3
Educate and train the locals	34	37.8
Adopt some of the customary laws	20	22.2
<b>Total</b>	<b>84</b>	<b>100.0</b>

Source: 2014 study

The findings on the provisions of forest law in relationship to the effects of law to the cultural, rights and belief on sustainable utilization of forest resources indicated that majority of the respondents advocated for educating and training the locals. Others indicated that there should be harmonization of the laws while a few indicated that there should be adoption of the customary laws. This therefore indicates that it's necessary to educate the locals on the roles of the forest law application on sustainable utilization of forest resources.

In almost every country except in the Pacific island states, there is a lot of confusion about the customary rights of the people and that of the state on the forest land. For example, in Indonesia, the basic Agrarian Law of 1960 recognized customary law as the basis of national land law, but at the same time basic Forestry law of 1967 had been invoked to disenfranchise the local people of their rights. This has been done for commercial timber operations or conservation (Lynch and Talbott, 2010).

#### **4.5.1. Collection of non-timber forest products (NTFP)**

There is evidenced Collection of non-timber forest products is another very important human activity of the Chepkitale and the taboo in the study area. Mostly the women usually carry out the activity. They usually walk between 5 to 30km to search for forest products. Collection of forest products is very common in the rainy season when the forest is in its abundance. The most common forest products collected include; the fruit of moabi (*Baillonema toxisperma*), eru leave (*Gnetum africanum*), kola nuts (*Garcinia cola*), bush mangoes (*Irvingia gabonensis*) The method of collection includes; picking, gathering, extraction, felling and the parts collected includes fruits, barks, leaves, sap, buds and roots serving as food, medicine, objects for rituals and objects for commercial transaction. The Taboo women also gather wild yams, mushroom, termites and caterpillars. The hunters due to their prolonged stay in the forest usually identify the forest products ready for collection; they easily locate plant species, which will be the object of collection by their wives and children.

The study evidenced The *moabi* is a very important timber species for both the taboo and Laboot in the area. This species has strong economic and cultural values to these people. The fruits of the moabi are used to produce local cooking oil for their household and the bark is used to treat different illness. The Laboo hold great cultural important to this timber species, which is further strengthened by their mode of dissemination.

In recent years, the exploitation of this timber (sandal woods)species with its strong economic value in timber trade has created conflict between the forest officials and the local people since the species is gradually going into extinction due to logging. Other factors that hinder the collection of forest products are the presence of wild animals,

which also need these fruits and nuts for their own survival, government policy and the limits of the hunting poaching law (study 2014).

**Table 4.5.2 Local peoples' management strategy of their community forests**

	Taboo (N=15)	Laboot (N=23)	Chepkitale (N=31)	Total (%)
Planning and management By elected village committee	18	18	23	70.2
Leased to a management team	10	11	7	33.3
Planning and management By appointed local committee	1	2	0	3.6
Planning and management Responsibility to village chiefs	0	0	2	2.4
Planning and management with Assistance from the forestry administration	1	1	0	2.4

Only 2.4% of the respondents prefer the management of the community forest with in collaboration with forestry administration. This confirmed the idea that local people are well prepared to manage a community forest. In reality, it is an expensive business that needs good infrastructures and qualified personnel which are not always available in these communities. The difficulty for them to management the community forest as revealed by the local people in the focus group discussions was the lack of capital and good infrastructures. It should be noted that most planning and management of community forests in Kenya has been done with the assistance for NGOs though the local people need to organize a management committee acting as a legal entity as prescribed in

the forest legislation. Usually these committees are elected or appointed by the villagers but the democratic aspect of this process is usually not transparent and is most often influenced by prominent elites to protect their interests (Mbile 2007; Brown 2007; Oyono 2009, Assembe, 2009, Bigombe, 2007; Oyono 2009; WWF, 2012).

Since it difficult for the local people to manage the community forest due to lack of capital and infrastructures, most often the elected management committee sell exploitation rights to local and national timber operators and sometimes to the logging companies. This was evident in the focus group discussions, where the respondents alluded that the forests officials would sometimes or usually sell exploitation rights to some logging operators who then exploit the forest with their infrastructures (mill). The volume and types of timber species to be exploited is specified in the exploitation rights. This situation has also been recorded in Chepkitale where some members of the management committee illegally sold exploitation rights to one prominent business magnet (Abong Mbang Express) who exploited the forest illegally without any management plan (Lewis, 2007).

#### **4.5.2. Other livelihood strategies and for sustainable resource use in the study communities**

This sub section presents and discusses the different types of activities carried out by the local people within the study communities to achieve their livelihoods outcomes. According to the Scoones (2011), livelihood is the term used to categorize the range and combination of activities and choices that people make in order to achieve their livelihood goals.

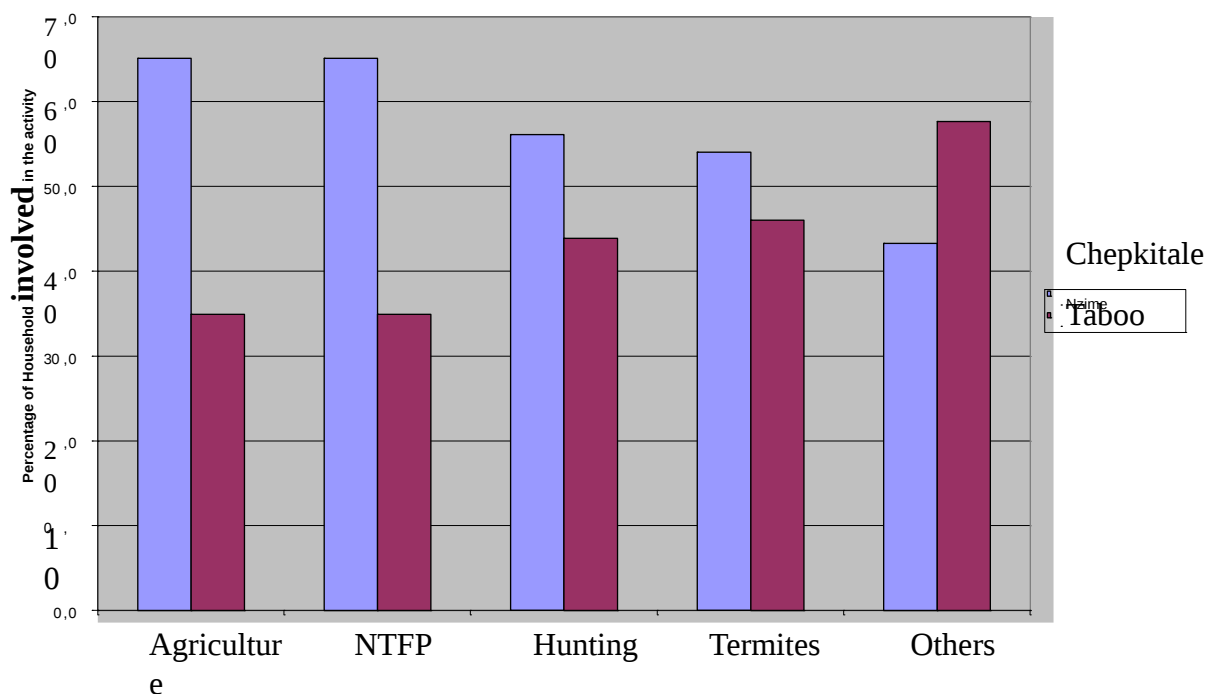
Activities were ranked by respondents in relation to the importance of the use of resource endowments. All households used the forest for agriculture, hunting, and the collection of NTFP as shown in (Table 4.5.2.1).

**Table 4.5.2.1:** Number of household using resources in the study area

Resource use by households	Laboot (N=26)	Taboo (N=28)	Chepkitale(N=30)	Total (%)
Land for agriculture	26	28	29	98.8
Collection of NTFPs	26	28	29	98.8
Hunting	22	23	21	78.8
Collecting termites	22	22	19	75.0
Others	9	11	6	31.0

Livelihood activities varied between the ethnic groups in the study area (Figure 4.5.2.1).

Whereas the Chepkitale are more involved in agriculture and collection of NTFPs, the taboo are more involved in hunting, termites collection and other uses.



**Figure 4.5.2.1:** Resource use between the ethnic groups in the study area



However, almost all the households were involved in more than one activity. Some household uses the forest for others activities (31%) such as spiritual and cultural purposes. The study also revealed that the taboo and laboot are strongly attached to the forest for other uses rather than just hunting, and collection of NTFPs.

#### ***4.5.2.1. Agriculture***

Crop production is central to improving livelihood and remains an important sector for income generation and rural growth in Mt Elgon region (study 2014). Results from this study show that agriculture is not only the main activity but also the main source of cash income for most of the households. All the surveyed households are involved in agriculture and all the household members agreed that they have access to land for agriculture. The main crops produced include cassava, groundnuts, cucumber, maize, plantain and vegetables.(See appendix 10)

## Appendix 10.livelihood activities



(Table 4.13). A few households (14.5% and 2.4%) were involved in cash crop production such as small coffee trees and small farm of tobacco respectively.

**Table 4.5.2.3:** Principal agricultural crops produced in the study area

Principal Crops	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=29)	Total (%)
Cassava	25	28	29	98.8
Groundnut	15	14	25	65.1
Cucumber	16	18	20	65.1
Maize	20	14	18	62.7
Plantain	10	11	12	39.8
Small coffee trees	2	3	7	14.5
Others	5	5	11	25.3
Vegetables	1	0	2	3.6
Small farm of Tobacco	0	1	1	2.4

Crop production did not vary much between the study communities. All the surveyed households cultivated the above mentioned crops. Cassava, cucumber, maize and groundnut represent the most important food crops in the study area.

The study revealed that 45% of all the surveyed households cultivated farms land ranges between 0-1 hectares. The smallest farm sizes belonged to the Chepkitale while the biggest farm sizes belonged to the Laboot and Taboo. All the surveyed households used hoes and cutlasses to prepare their land (Table 4.5.2.4). Other implements such as hatchets were also used by some. Very few households owned engine saws while the rest of the villagers rented from them to prepare new agricultural lands.

**Table 4.5.2.4:** Farm implements used in the study area

Farm Implements	Laboot(N=26	Taboo (N=28)	Chepkitale (N=29)	Total (%)
Cutlass	26	28	29	100.0
Hoe	25	28	29	98.8
Hatche	18	23	21	74.0
Engine saw	0	1	0	1.2

A significant number of respondents (76%) complained of reduced access to agricultural implements over the last five years (Table 4.5.2.5). Reasons given for this decrease were high market prices of farm implements; fall in market prices of agricultural products and poor state of farm to market roads, especially in the rainy season when roads are inaccessible. Similar studies in other sub-Saharan African countries have also revealed similar results (Ellis, 2010).

**Table 4.5.2.5:** Local people’s view on access to farm implements in the last five years in the study area

Access to farm implements	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=29)	Total (%)
Have access	5	6	9	24
Limited access	21	22	20	76

#### **4.5.2.3. Collection of non timber forest products (ntfp)**

Forest is an important natural capital and a main source of livelihood (study 2014). The forest reduces vulnerability (safety net) of most natural population in Kenya, increase income and improved food security (study 2014).

Findings from this study show that the extraction of forest products is an important livelihood strategy for the local people. All the sampled households had access to forest products. The most important forest products were fuel wood for cooking and poles to build houses. There is no alternative source of fuel in this area. Other products were also extracted from the forest to improve household cash income and food security.

Some of these products include Eru (*Gnetum africanum*), Njansang (*Ricinodendron heudelotti*), Bush mangoes (*Irvingia gabonensis*), bush spices and medicinal plants (Table 4.5.16). The extraction of these products varied within the study communities.

**Table 4.5.3.1: Non timber forest products (NTFPs) collected from the forest by the local people in the study area.**

NTFPs	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=29)	Total (%)
Fuel wood	26	27	28	97.6
Poles	26	27	28	97.6
Moabi ( <i>Baillonella toxisperma</i> )	25	27	27	96.4
Bush mango ( <i>Irvingia gabonensis</i> )	25	27	27	95.2
Leaves	17	20	17	65.1
Bush spices	20	12	16	57.8
Others (mushroom, termites, etc)	5	21	19	54.2
Medicinal plants	12	12	8	38.6
Njangsang ( <i>Ricinodendron heudelotti</i> )	9	5	17	37.3
Eru ( <i>Gnetum africanum</i> )	3	0	11	16.9

No household in taboo collected Eru (*Gnetum africanum*) while only 11.5% in laboot collect Eru (*Gnetum africanum*) compare to 37.8% in Chepkitale.

However, Moabi fruits (*Baillonella toxisperma*) 96.4% and Bush Mango (*Irvingia gabonensis*) 95.2% were the most important products collected by respondents in the study area. It should be noted that the Moabi tree is a timber species with important economic and cultural value to the local people. Cooking oil is extracted from its fruit and this oil has very high economical and nutritional values thus is a source of income and food security. This timber species has been a centre of conflict between the local people and forest officials (study 2014). Details of this will be discussed in the later part of the thesis. Other products collected from the forest of economic importance (54%) are

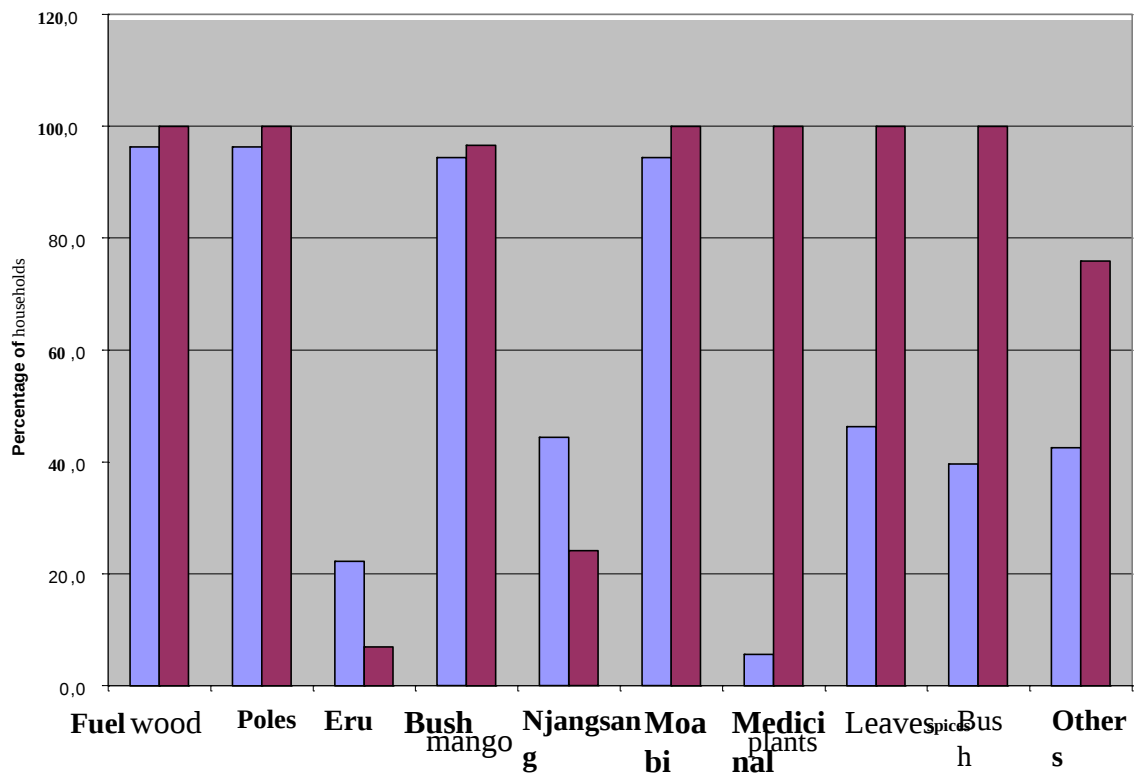
fruits canes and ropes for art works and to produced traps for hunting and fishing, mushroom, caterpillars and termites.

Collection of NTFP also varied between the ethnic groups (Figure 4.5.3.1). The Taboo were more involved in this activity than the Chepkitale; most especially in the collection of medicinal plants, Leaves and Bush spices. The Leaves are used by the taboo to construct their houses. This can be attributed to the fact that the taboo being more involved in hunting, spent more time in the forest (see Appendix 11).

#### Appendix 11 Collection of NTFPs



Taboo



**Table 4.5.3.2: Cross tabulation of the reactions** towards the role and effects of forest law on sustainable utilization of forest resources

	Suggestions			Total
	Review forest Act	Incorporate customary laws with the forest laws	Create awareness about the regulatory framework	
		4	6	
	35	30	0	65
	1	1	7	9
<b>Total</b>	<b>40</b>	<b>37</b>	<b>7</b>	<b>84</b>

Source: 2014 study

Majority of the respondents suggested a review of the forest Act while a few suggested incorporation of customary laws with the forest laws. And the rest suggested creation of awareness about the regulatory framework. This finding indicates that the forest Act needs review and might be influencing sustainable utilization of forest resources.

Table 4.5.3.3. .application of law on indicators of law on sustainable resource utilization analysis using the conceived conceptual framework

Statements	Mean	Std deviation
The forest law provisions has affected sustainable forest resource utilization	4.62	0.638
Has law affected livelihoods	4.49	0.736
Has indicators in application of law enhanced sustainable utilization of forest resources	4.87	0.339
Has the indicators in application of law achieved its main objective on sustainable utilization of forest resources	4.77	0.421



What are the strategies	4.79	0.413
What is the conclusion	4.88	0.326
Has the negative indicators application of law effected of forest resource sustainable use	4.06	0.827
Measure of forests in terms of forestation/reforestation	4.79	0.413
Measure of depletion of forests	3.87	1.495
The obstacles in application on sustainable utilization of forest resources	3.74	1.345

---

Source study 2014.

#### **4.6. FINDINGS FROM FOCUS GROUP DISCUSSIONS (FGD), FIELD OBSERVATIONS AND KEY INTERVIEWS**

Figure 4.6.1: Ethnic groups' responses of the types of benefits received from the forestry law in the study area

The perception of the local people towards these benefits revealed that 75% of the local people had a negative perception towards the benefits (Figure 4.6.12) while 25% had a positive perception.

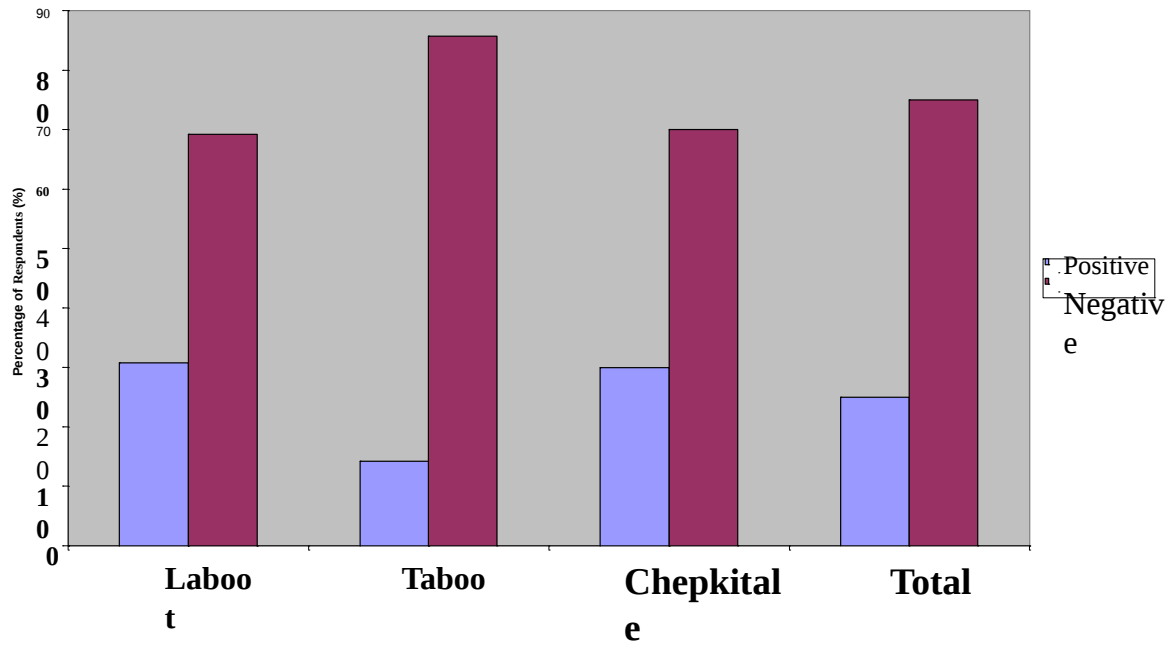
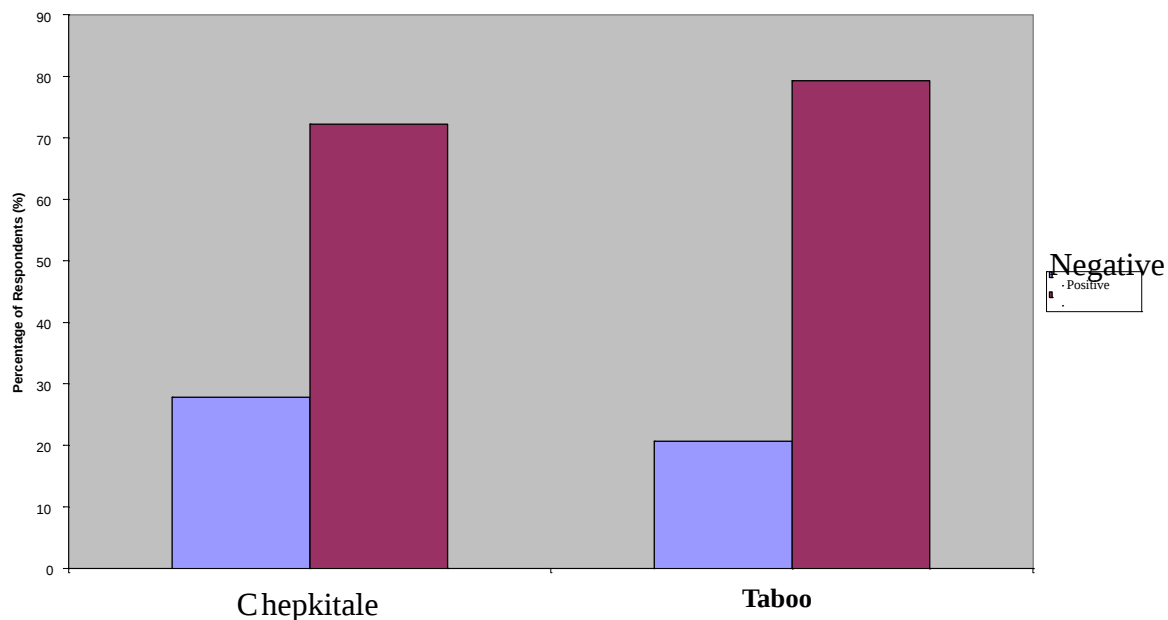


Figure 4.6.1.2: Local people's perception towards the benefits received from the forestry law in the study area

From field observation, those that had positive perception were those that had direct benefit or a member of their household. Such direct benefits included employment in the logging companies or involved in some rural development project. There was no significant difference ( $X^2 = 0.843$ ,  $df = 2$ ,  $p = 0.67$ ) of perception of the benefit from the law between the Chepkitale and Taboo (Figure 4.6.2).



**Figure 4.6.3:** The perception of the ethnic groups of the benefits received from the forestry law in the study area

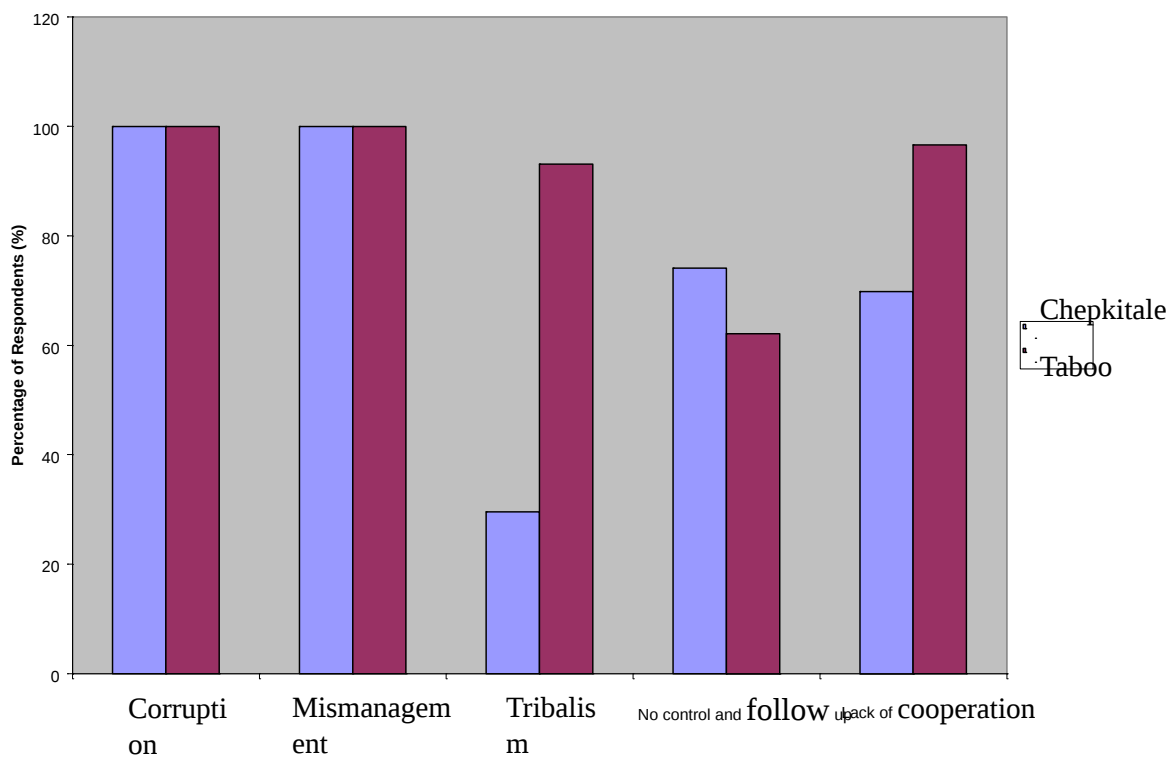
Corruption, mismanagement and embezzlement, lack of cooperation with the state were the most significant reasons of the negative perception as indicated by the local people (Table 4.6.1).

**Table 4.6.1: Local people's reasons for negative perception toward the benefits received from the forestry law in the study area**

Reasons for negative perception	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
---------------------------------	------------------	-----------------	----------------------	-----------

Corruption	26	28	30	100
Mismanagement	26	28	30	100
Lack of cooperation with the state	19	22	25	79.5
No control and follow up	11	20	28	70.2
Tribalism	19	11	13	51.2

This evidence is supported by the focus group discussions which it was alleged that most of the forest revenue paid to the local councils is being embezzled by the municipal council authorities and influential village elites. This situation was highly observed in laboot and has created tension and division in the village. Tribalism as a reason for negative perception was not very significant (51.2%) in the study area but was very significant when compares the Chepkitale and taboo (Figure 4.6.5).



**Figure 4.6.5:** Ethnic groups' reasons for the negative perception towards the forestry law in the study area.

From the focus group discussion and field observation, the distribution of forest benefits to the local people in the study area has created much tension. Similar findings has also been documented by some researchers in Mau forests, Embubut forests (Oyono, 2013; 2014, Assembe, 2009; 2010)

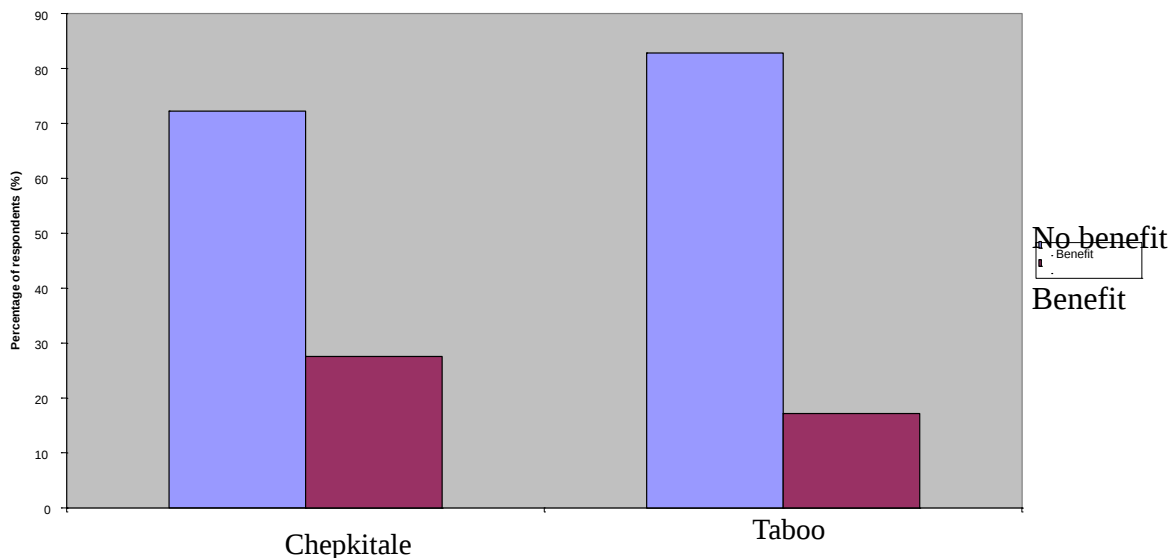
(Table 4.6.2). Local peoples' benefits from protected area

A significant number of the respondents (76.2%) indicated that they benefit from the protected area (Table 4.6.2).

**Table 4.6.3:** Local peoples' opinions about the benefits provided by the protected area in the study area

	Laboot (N=26)	Taboo (N=27)	Chepkitale (N=30)	Total (%)
Benefit	22 (84.6%)	19 (67%)	23 (76.7%)	76.2
No benefit	4 (15.4%)	9 (32.1%)	7 (23.3%)	23.8

There was no significant difference ( $X^2=1.47$ ,  $df= 2$ ,  $p=0.48$ ) in views of the benefits from the protected area between the Chepkitale and Taboo (Figure 4.6.6).



**Figure 4.6.6:** Ethnic groups' opinion about the benefits provided by the protected area in the study area

Conservation (76.2%) and income from tourists (28.6%) were the benefits local people perceived the most from protected area (Table 4.6.4) from my observation could be seen as indirect benefits since conservation by the local people means protecting some important wildlife species with cultural significant from extinction. Only 22.6% of the respondents indicated benefits in the form of access to resources and 6% indicated employment benefit from protected area. Employment benefit was relatively high in taboo (10.7%) and very low in laboot (3.8%) and Chepkitale (3.3%).

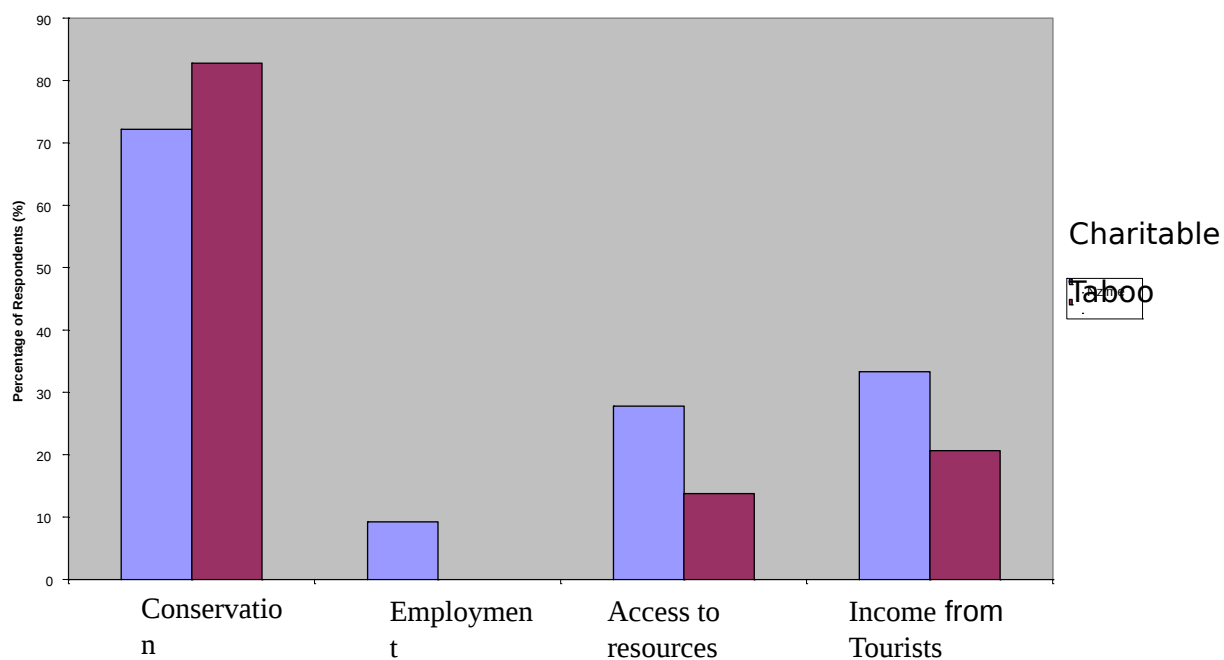
**Table 4.6.4:** Local peoples' responses on the types of benefit receive from the logging companies in the study area

Types of Benefit	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
------------------	------------------	-----------------	----------------------	-----------

Employment	5	11	10	31
Others(Gifts)	7	10	7	28.6
Forest revenue	4	7	6	20.2
Access to resources	2	4	6	14.1
Rural development	3	1	0	4.8

Access to resources in the protected area as perceived benefits was high in taboo (26.9%) and laboot (25%) than in Chepkitale (16.7%). This is because these two villages are very close to the protected area (about 35-50km) than Chepkitale (35- 49km). Income and gifts from tourists were considered as direct benefits and more appreciable since they go directly to the concerned household member.

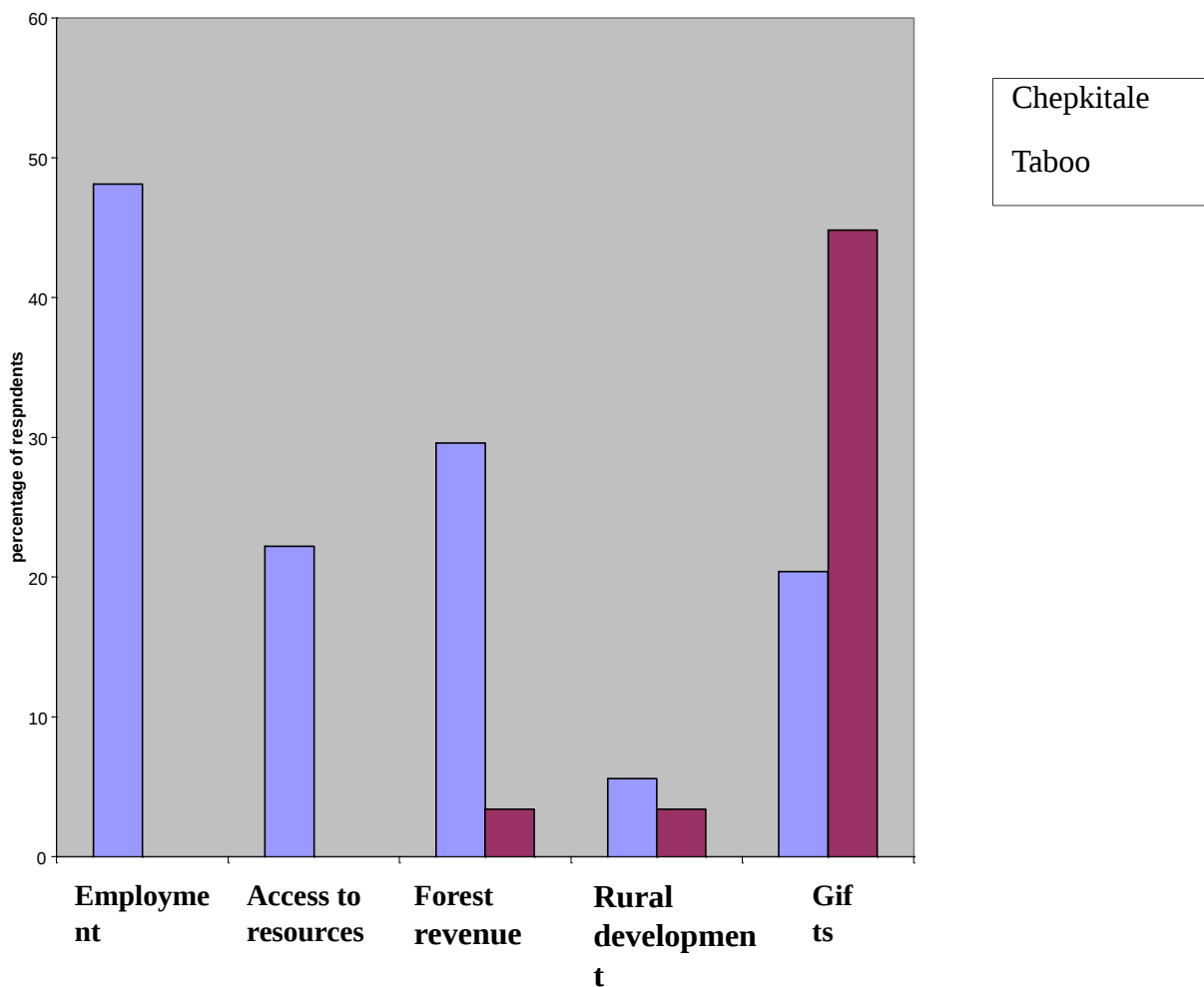
There was no significant difference of the perceived benefits from the protected area between the Chepkitale and Taboo (Figure 4.6.7).



**Figure 4.6.7:** Ethnic groups' responses about the benefit received from the protected area

The local people awareness and interest on conservation was very remarkable in the study area. From the focus group discussions we were told that this notion of conservation was brought to them by IUCN wildlife project in the Mt Elgon forests reserve in the late 80s. Today the community project has greatly intensify control in the Mt Elgon forest reserve especially concerning hunting although collection of non-timber forest products are sometime restricted by the forests guards. In my observation from the field, this intense control is to reduce the opportunity for the local people to use the protected area as an alternate source of livelihood since their livelihood is been threatening by the presence of the quarry and logging concessions. In the 80s the local people could conserve biodiversity since there were no logging concessions that restrict their access to forest resources (open access situation). Today, with increase in population, the presence of logging concessions and increased control and monitoring in the protected area, the local people especially the taboo are caught in a dilemma and find it difficult to improve their livelihoods.





**Figure 4.6.8:** Ethnic groups' responses on the types of benefit received from the logging companies in the study area

For those who mentioned that they benefits from the logging companies, 26.2% had negative perception about the benefits while 21.4% had positive perception (Table 4.6.5).

**Table 4.6.5:** Local peoples' perception toward the benefits received from the quarry companies in the study area

perception	Laboot	Taboo	Chepkitale	Total (%)
Positive	3 (11.5%)	7 (25%)	8 (26.7%)	21.4
Negative	7 (26.9%)	9 (32.1%)	6 (20%)	26.2

The positive perception comes from those households whose members are employed in the quarry companies. From the focus group discussion most of the local people were not happy or felt dissatisfied with the benefits they receive from the quarrying companies. They believe that the quarry companies could contribute more in many rural development projects (construction of schools, health care centers, water supply) and not only construct roads that are useful to them. Other benefit which the local people mentioned as important to their livelihoods is their access to forest resources within the logging concessions. Today this access is restricted in most areas in the concession especially for hunting.

There was a significant difference ( $X^2=10.46$ ,  $df=2$ ,  $p=0.03$ ) in the perception of the benefits between the Chepkitale and taboo. Whereas most of the Chepkitale had a positive perception (31.5%) most of the taboo had a negative perception (37.9%) (Figure 4.6.9). Figure 4.6.9: Ethnic groups' perception toward the benefits received from the logging companies.

**Table 4.6.6:** Local people's views about their involvement in forest exploitation and management in the study area

	Laboot (N=26)	Taboo (N=27)	Chepkitale(N=30)	Total (%)
Involvement	26	27	30	98.8
Not involvement	0	1	0	1.2

This situation is similar to other research carried out in this same study area (Oyono, 2005, 2004; Assembe, 2005; Mbile et al, 2007). Among those who agreed that they were involved, 79.8% were involved in illegal exploitation by implementing their user rights over restricted areas. All the villages in the study area have community forest and 75% of the respondents were involved in forest exploitation and management through the community forest (Table 4.6.7).

**Table 4.6.7:** Local people's views about their types of involvement in forest exploitation and management in the study area

Types of involvement	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
User rights (illegal)	19	20	28	79.8
Community forest	25	14	24	75
Employment	9	8	9	31.3
Involvement in current activities	0	0	4	4.8
Others	0	0	0	0

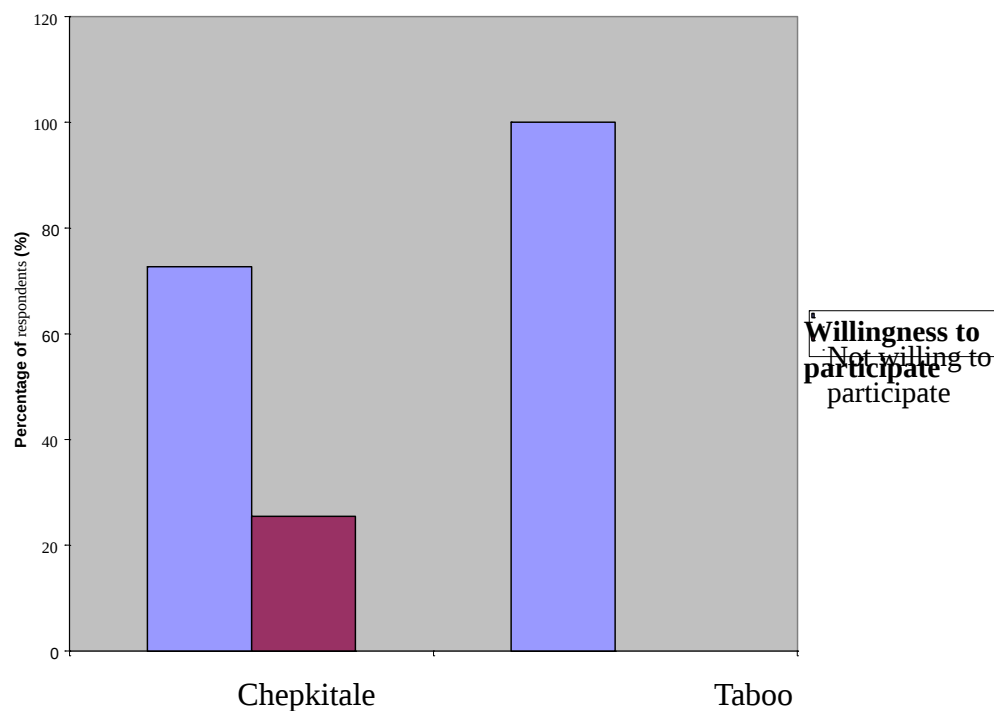
Employment (31.3%) was also mentioned by the respondents as another type of involvement in forest exploitation. This type of involvement was not significantly different between the taboo and the Chepkitale. The willingness of the local people to participate in forest exploitation and management was significantly high (82.1%) in the study area (Table 4.6.8).

**Table 4.6.8:** Local people willingness to participate in forest exploitation and management in the study area

	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
--	------------------	-----------------	----------------------	-----------

Willingness to participate	23	20	26	82.1
Not willing to participate	3	7	4	16.7

The only reasons given by those who could not participate (16.7%) were the fact that they were old and some women stressed that it was a male gender specific activity. There was a significant difference ( $X^2 = 9.63$ ,  $df = 2$ ,  $p = 0.008$ ) in the willingness to participate between the Chepkitale and the taboo (Figure 4.6.10).



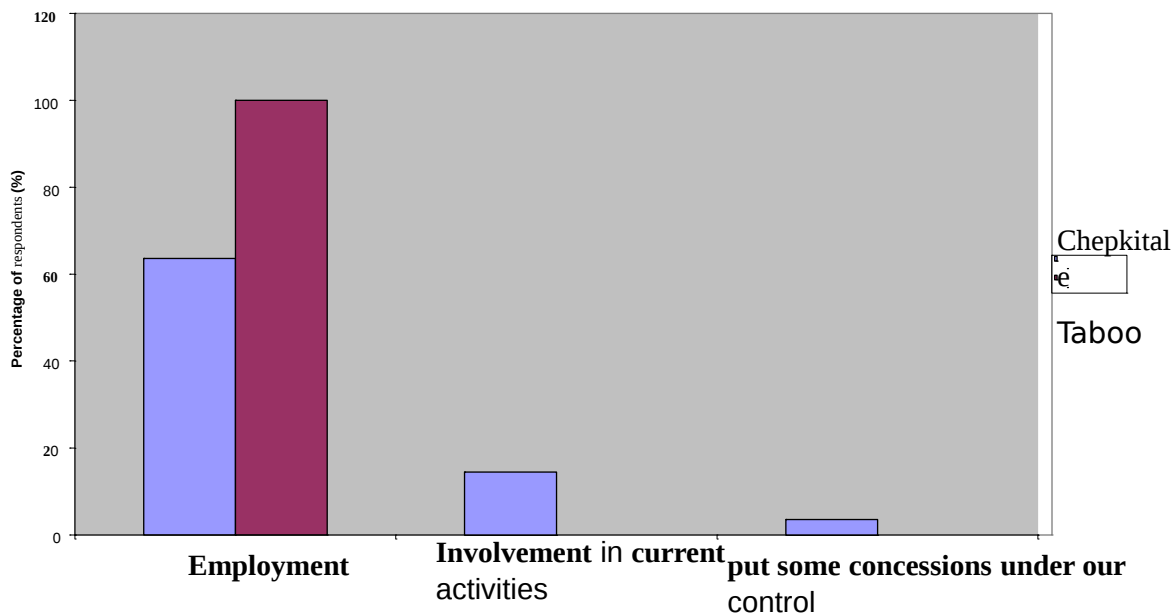
**Figure 4.6.9:** Ethnic groups' willingness to participate in forest exploitation and management in the study area.

The willingness to participate in forest exploitation and management in the study area has also been reported by CIFOR researchers in Cameroon (Oyono 2004, 2006; Assembe 2006 and Oyono and Assembe 2004). These major ways of participation were stressed by those who were favorable to it (Table 4.6.9).

**Table 4.6.9: Local peoples' views about how they will like to participate in forest exploitation and management in the study area**

	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
Employment	22	20	22	76.2
Involvement in current activities	1	0	7	9.5
Put some concession under our control	0	0	2	2.4

Most local people would like to participate as employee (76.2%) while (9.5%) would like to be involved in current activities such as control, monitoring, mapping and inventory. All of the taboo (100%) indicated that they would like to participate as employee (Figure 4.6.11).

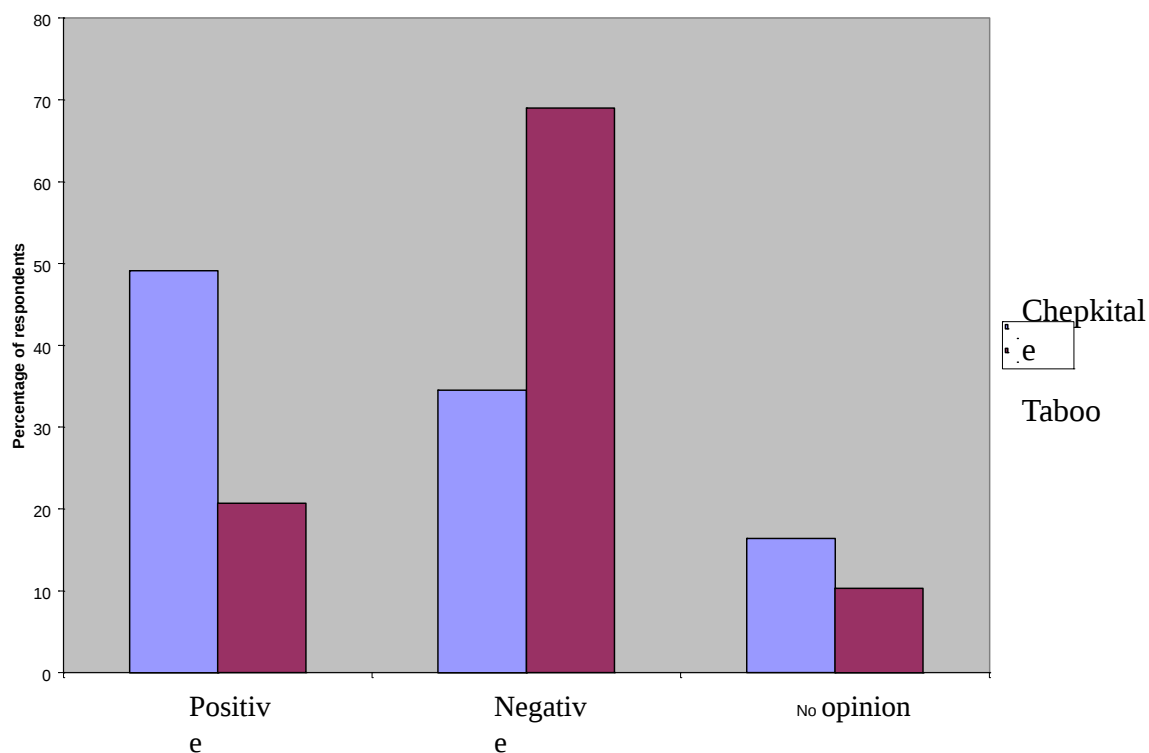


**Figure 4.6.11: Ethnic groups' views about how they will like to participate in forest exploitation and management in the study area.** Amongst those who are willing to participate in forest exploitation and management, (46.4%) of the respondents had a negative perception towards the forestry law with regards to forest exploitation and management while 39.3% had a positive perception (Table 4.6.10).

**Table 4.6.10:** Local peoples' perception toward the forestry law on their participation in forest exploitation and management in the study area

Perception	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
Positive	14	7	12	39.3
Negative	9	17	13	46.4
No opinion	3	4	5	14.3

However, 14.3% of the respondents had no opinion as regards the perception towards the law on participation. There was a significant difference ( $X^2 = 9.23$ ,  $df = 2$ ,  $p = 0.01$ ) in perception towards the law on participation between the taboo and Chepkitale. From the survey, 69% of the taboo had negative perception while 49.1% of the Chepkitale had positive perception (Figure 4.6.12).



**Figure 4.6.21: Ethnic groups' perception toward the forestry law on their participation in forest exploitation and management in the study area**

Three main reasons were stressed by the respondents for their negative perception towards the law on participation (Table 4.6.11). These included corruption (32.1%), restricted user rights (25%) and lack of cooperation with the state (23.8%).

**Table 4.6.11: Local peoples' reasons for their negative perception toward the forestry law on their participation in forest exploitation and management in the study area**

	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
Corruption	8	14	5	32.1
Restricted user rights	5	9	7	25
No cooperation with the state	2	9	9	23.8
Tribalism	3	6	2	13.1
Inadequate law enforcement	1	2	6	10.7

Corruption and lack of transparency have been mentioned as the major setbacks in The Mt Elgon community forest management, a village situated 30km away from Chepkitale (study 2014). The negative perception was quite evident within the taboo community as opposed to the Chepkitale within the study area (Figure 4.6.27).

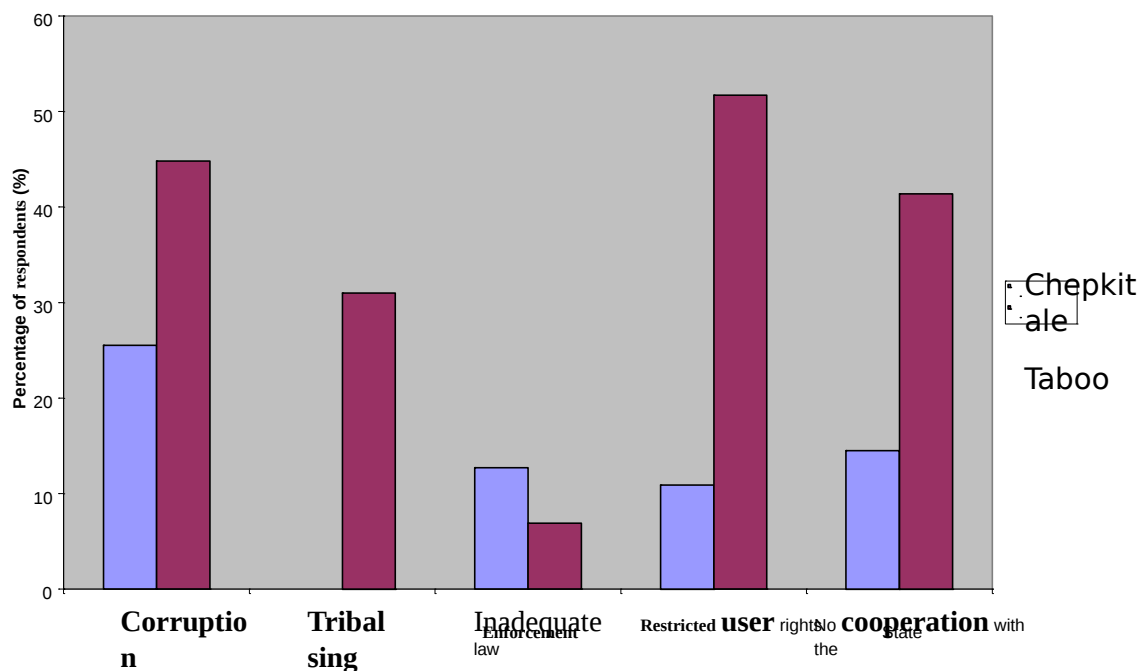


Figure 4.6.13: Ethnic groups' reasons for their negative perception toward the forestry law on their participation in forest exploitation and management in the study area

Fifty seven percent of the taboo mentioned the restricted user right as the major reason for the negative perception towards the law on participation. Some of the taboo also mentioned corruption (44.8%) and lack of cooperation with the state (41.4%). Most



important was the fact that 31% of the Taboo mentioned tribalism as a reason for their negative perception towards the law on participation. This finding was supported by the focus group discussions in which the Taboo noted that they are being marginalized and highly undermined in participating in the community forest activities and other forest exploitation activities in the area. They are never given the same opportunity like the Chepkitale. This discriminatory attitude has also been recorded in this study area at an earlier stage (Nguiffor 1998, CED et al, 2003; Forest monitor et al, 2001; Oyono, 2004).

Despite the fact that all the studied communities in the study area have community forest, a significant number of the respondents (47.6%) accepted that it was not difficult for them to manage the community forest while 45.2% of the respondents acknowledged that it was difficult for them to manage the community forest (Table 4.6.12).

Table 4.6.12: Local peoples' views to whether it is difficult for them to manage a community forest in the study area

	Laboot	Taboo	Chepkitale	Total (%)
	(N=26)	(N=28)	(N=30)	
Agree	13	14	13	47.6
Disagree	13	12	13	45.2
No opinion	0	2	4	7.1

From the focus group discussion and field observation, the majority of the local people mentioned that it was difficult for them to manage the community forest. This is why taboo and laboot have not yet effectively commenced any viable management plan and exploitation of their community forests.

Nevertheless, the local people will preferably manage their community forest with the help of elected village committee (70.2%) while 33.3% prefer to lease the community

forest to a well qualified management team usually a logging company or NGO (Table 4.6.13).

Table 4.6.13: Local peoples' management strategy of their community forests

	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
Planning and management by elected village committee	18	18	23	70.2
Leased to a management team (NGO)	10	11	7	33.3
Planning and management by appointed local committee	1	2	0	3.6
Planning and management responsibility to village chiefs	0	0	2	2.4
Planning and management with assistance from the forestry administration	1	1	0	2.4

Only 2.4% of the respondents prefer the management of the community forest with in collaboration with forestry administration. This confirmed the idea that local people are well prepared to manage a community forest. In reality, it is an expensive business that needs good infrastructures and qualified personnel which are not always available in these communities. The difficulty for them to management the community forest as revealed by the local people in the focus group discussions was the lack of capital and good infrastructures. It should be noted that most planning and management of community forests in the rainforest of Mt Elgon has been done with the assistance for NGOs though the local people need to organize a management committee acting as a legal entity as prescribed in the forest legislation. Usually these committees are elected or appointed by the villagers but the democratic aspect of this process is usually not

transparent and is most often influenced by prominent elites to protect their interests .Since it difficult for the local people to manage the community forest due to lack of capital and infrastructures, most often the elected management committee sell exploitation rights to local and national timber operators and sometimes to the logging companies. This was evident in the Chepkitale, where the president of the management committee told us that they usually sell exploitation rights to some quarry operators who then exploit the forest with their infrastructures (Lucas mill). The volume and quantities of stones and timber species to be exploited is specified in the exploitation rights. This situation has also been recorded in Laboot where some members of the management committee illegally sold exploitation rights to one prominent business magnet (Abong Mbang Express) who exploited the forest illegally without any management plan (Lewis, 2007).

When it comes to what the generated income will be used for, the following answers were given (Table 4.6.14). Ninety four percent of the respondents wanted the generated benefits to be invested in rural development while only 29.8% wanted it to be shared among the households. Sharing of the generated income among households was common in Chepkitale (46.7%).

**Table 4.6.14:** Local people’s strategy for the management of the generated income of the community forest in the study area

	Laboot (N=26)	Taboo (N=28)	Chepkitale (N=30)	Total (%)
Invest in rural development	24	27	28	94
Save money to solve upcoming problems	14	14	19	58.2
Share benefits among household	5	6	14	29.8

Others	0	0	2	2.4
--------	---	---	---	-----

The Taboo community in Chepkitale testified to us that they do not receive any income from the community forest. This implies that this income is shared among the Chepkitale households. The reaction to invest the generated benefits in rural development is not surprising since none of these communities in the study are has adequate social infrastructures such as health centers, proper schools, water supply and electricity. These services were supposed to be the responsibility of the state, but most of these communities through their development committees, are trying to claim or to initiate some development investments by themselves. There is a need of capital if the local communities rather than the state should do such investments. That is why they will like to have such income and invest in their communities. On the other hand, the state should try to provide communities with these services. Such action might ameliorate the attitude and perception of local people toward the forestry law and logging companies. From the focus group discussions and field observation, it was alleged that most of the income generated from the community forest were misappropriated by some influential elites in the management communities. This situation was quite evident in the management of generated income from Cheranganyi Embubutut forests and even Mau community forest beside the study area (study 2014).

## **SUMMARY**

The local people are strongly aware on their user rights over forest resources but in practice they do implement these rights illegally from the face of the forest law. They exercise their user rights based of their customary law creating a dual legal system over

forest resources. Their main reason for implementing these rights illegal is the presence of the logging concessions. The new forestry law also has a fundamental setback for the local people to exercise their customary rights over forest resources. Corruption was mentioned as the main fundamental factor affecting the appropriateness of the law. Community forest was the most important benefits the local people confirmed from the forestry law. The most important benefit, the local people confirmed received from the protected area was conservation. The local people testified that they don't benefit much from the logging companies. The most important benefit from the logging companies were, employment and gifts. None of the Taboo was employed in the quarry stone building company but they usually received gifts from the quarry companies during the end of the year. The local people who accepted that they benefits from the quarry companies had a negative perception toward these benefits. The local people are illegally involved in forest exploitation and management. They are willing to exploit and manage their community forest but lack capital and good infrastructures. Their management strategy of the community forest is impacted by corruption and highly influential elites who usually seek to protect their individual's interests. The local people had a negative perception of the forestry law toward their participation in forest exploitation and management.

## **CHAPTER FIVE: CONCLUSION AND RECOMMENDATION**

### **5.1. INTRODUCTION**

The chapter presented key issues that illustrated the process involved in research methodology; summary of the findings, conclusions, explored recommendations based on the findings of the study and suggested further research study in future.

## **5.2. RESEARCH OBJECTIVES**

### **5.2.1. Assessing the relationship between the role policies and institutional processes in application of law and sustainable resource utilization**

The findings indicated that majority of the respondents indicated that they did not know the provisions of forest law on sustainable utilization of forest resources. This finding indicates the ignorance of the people as regards to the forest law. This might be influencing sustainability utilization of forest resources in the area.

Majority indicated that they were not aware of provision of the forest law on sustainable utilization of forest law while a few were aware. This therefore means there is need for sensitization of citizens on provision of the forest law on acquisition of forest resources and sustainable utilization of forest law. Majority of respondents indicated that the forest law was to Increase the forest and tree cover while rest of respondents indicated that the forest law was to manage the forest resource assigned for production. This therefore shows that the forest law has a major role in sustainable utilization of forest resources.

#### ***5.2.1.1. Examining the application of forest legislation on forest monitoring and forest management practices and the impacts of application of law on sustainable resource utilization***

##### ***5.2.2.1. Consistencies***

Application of forest law on sustainable resource use that sustainability was determined by the application of forest law that had great influence on sustainable resources use in the area that where there was 30% in well-coordinated laws, 20% consistency and 21% in

economic development had a direct result to 72% on reforestation with less depletion of 16% which showed that sustainable use was directly from the result of good application of forest law.

In Kenyan forests since technology applied was dependent on the application of law. The Forests Act makes legal provisions for the establishment, development and sustainable management of forests, including conservation and rational utilization of forest resources for the socio-economic development of the country. It makes provision for Participatory Forest Management (PFM) and how forest communities may be involved in the co-management of forests and benefit sharing.

The national forest policy has been strengthened or constrained by policy pronouncements in other sectors of the economy. The national food policy (sessional paper no. 4 of 1981) for example, promotes food self-sufficiency, and emphasizes the production of export crops to earn foreign exchange. This policy fueled strong pressures to convert gazetted forest reserves to crop land, particularly those adjacent to places with high population densities. The fifth development plan (1984-1988) proposed further forest reservation, protection, conservation and management; agroforestry development and tree planting on private and trust lands. It noted constraints facing forestry as competition with agriculture and grazing, wood fuel shortage, inadequate financing, and lack of long term master planning for integrated forestry development.

Forestry Master Planning process which began in 1991. The Kenya Forestry Master Plan projects the forestry sector in the country to beyond 2008, and has a broad objective of enhancing the role of forestry sector in socio-economic development and to contribute to



environmental conservation (KFMP, 1994). The Master plan comprised both a macro-level and micro-level planning component. The former considers future scenarios under varied policies and socioeconomic conditions. The micro-level component is concerned with operational strategies at the local or district level. The most important outcome of the master plan process was a review of the current forest policy, done in consultation with government agencies, NGOs, education and research institutions, concerned individuals and international donors. The reviewed policy looked beyond government forests, and included private forest and cross-sectoral issues affecting forestry. An important policy directive was that concerning the resident cultivation system of plantation development-the Shamba system. The Shamba system had been an economical and technically successful method of plantation establishment, but was based on squatter labor. Between 1985 and 1989 to date it was wound down and officially terminated after a Presidential directive. The squatter status of the laborers became a source of strong political pressure to excise land for permanent settlement. Despite problems inherent in the Shamba system, its abandonment reduced plantation establishment rates, and a new system based on non-resident labor was established to replace the original system.

The establishment of the Nyayo Tea Zone Development Corporation (NTZDC), first by Presidential order in 1986, and later by an Act of Parliament in 1989 also affected forestry in Kenya. Under this program, plantations were established adjacent to indigenous forests to act as buffers against agricultural encroachment on forests designated for catchment protection. The plantations were also expected to generate income and employment. This program obtained land from the government forests. It initially targeted 20 000 hectares for tea production. By 1990, 6000 hectares had been

cleared. Tea zones were established in the high potential forest areas of Aberdare, Kakamega, Kikuyu escarpment, Cherangani, Mt. Elgon, Mt. Kenya, North and south Nandi, South West Mau, Tinderet and Trans Mara.

#### **5.2.2.3. Coordination**

Majority of respondents indicated that the forest law role was to manage the forest resource assigned for production. This therefore shows that the forest law has a major role in sustainable utilization of forest resources.

In Kenya the Green Belt Movement (Green Belt Foundation) championed by late Prof Maathai. Social views over the forest resources sustainable utilization-dependent people's linkages and use of public forest lands in Kenya had undergone tremendous change over the last 40 years. During that transition, public land and forest resource sustainable utilization -dependent peoples had evolved from providing a link of such relations, to the promotion of access and utilization of forest resources under the paradigm of ecosystem management. The change was manifested through a host of laws, including the National Environmental Management Act, the Endangered Species Act, the Forestry and wildlife service Act, and others. These laws had profoundly altered the understanding of forest resource sustainable utilization -dependent people's linkages.

#### **5.2.2.4. Sustainable exploitation**

The introduction of Participatory Forestry Management (PFM) in Kenya under the Act had led to the formation of 325 Community Forest Associations (CFAs) at the community level countrywide, including in Cherangany Hills and Mount Elgon. These CFAs were

formed by forest (adjacent) communities and were working with KFS to sustainably manage forest resources. Most of the CFAs were currently preparing to enter into forest management agreements with KFS based on agreed forest management plans. Kenya wildlife management Act, prohibits bush meat poaching and NTFP sales as way to preserve and conserve wildlife for eco-tourism.

Similarly, the Forest Act now revised 2013, stipulates the Policy, legal and institutional framework sets objective to provide continuous guidance on the sustainable utilization and management of forests by providing the establishment, development and sustainable management of forests, conservation and rational utilization of forest resources for the socio-economic development of the country. These all policies place forest as great natural resources for great concern for any sustainable development. The current Kenyan constitution (2010) has necessitated formulation a new Forest Policy, which is cognizant of the new dispensation. The Constitution is based upon a set of national values, such as integrity, good governance, sustainable development, and social justice, and the bill of the rights of all citizens. The Constitution also introduces a two-tier system of government and the decentralization of services. For instance, the sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement.

The Forests Act now revised 2013 was a milestone in forest governance and brought about considerable change. Further the promulgation of the Constitution brought new requirements for natural resource management such as public participation, community and gender rights, and equity in benefit sharing, devolution and the need to achieve 10% forest cover among others.

#### ***5.2.2.5. Economic development***

Beyond the highly fragmented sacred groves, large areas of forest were utilized under specific rules. For example among the Chepkitale, a system of elders imposed sanctions on people who destroyed live trees, or cut protected species. Certain of the forests were reserved for dry season grazing, and certain species used specifically for fencing, construction or roofing. Amongst the Laboot in Mt Elgon forest, although forests were communally owned, they were managed by clans living in proximity to the forest. Management within each clan was divided according to specialization and function. For instance, a group of families of medicine men ensured sustainable exploitation of medicinal species, and deliberately planted trees to replace or check against losses. Many communities collected deadwood for firewood, and practiced selective maintenance of valued species for medicinal purposes, as fodder and as timber reserves.

Land management in forest areas was closely regulated. Around Mt.Elgon forests for, the Taboo and Ogiek, both agricultural communities, had evolved a system of land management in which forest land was owned by clans, but only up to a maximum of two miles into the forest. Land above this cultivation line belonged to the community.

#### ***5.2.2.6. Respect of human rights***

In Kenya forestry officials and police inappropriately arrested low-income people for violating forestry and protected area legislation, forcibly expelled them from their houses and fields, hit them, raped them or even killed them. Unless governments take measures to prevent this, attempts to encourage forest law enforcement could easily worsen this problem.

The subterfuge, resistance or fight by the local people to retrieve their rights on lost land happened. The resistance or fights were attempts to force the government to yield ground. The study mentioned a few: the Ogiek of Mt Elgon, Embutut, Mau evictees in Kenya. On the other hand, what we refer as 'subterfuge' was a means adopted by the people to annihilate the forests by slow attrition and finally to encroach it.

### **5.3. OBSTACLES IN APPLICATION OF LEGISLATION ON FOREST RESOURCES SUSTAINABLE UTILIZATION**

Majority of the respondents indicated that they did not know the influence of provision of forest law on cultural beliefs, norms and rights. Majority of the respondents indicated that poor implementation methods were an obstacle to application of forest law on the sustainable forest utilization of forest resource utilization. The sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement.

Another major contradiction under the application of law is apparent from the fact that despite emphasizing stakeholder participation, a number of initiatives under the reform process were formulated following an extremely opaque, closed-door approach. Researcher findings with discussions during field interviews confirms that while the policy-making activity was relaxed to broaden the number of those providing input, the group still restricted to hand-picked professionals, leaving the real stakeholders – essentially the communities – completely out of the framework.

The sector has been characterized by ineffective regulatory mechanisms and inadequate law enforcement. The Forests Act 2005 that became effective in 2007 now revised 2013

was a milestone in forest governance and brought about considerable change on sustainable forest resource use. Further the promulgation of the new Constitution (2010) brought new requirements for natural resource management such as public participation, community and gender rights, and equity in benefit sharing, devolution and the need to achieve 10% forest cover among others. These challenges are compounded by dwindling public land meaning that forestry development has to expand into private and community land, which need incentives and clear methods of engagement to encourage investments in commercial forestry on private land. The effects of national-level apathy are evident in the forest sector management in the country. One major hurdle in overcoming the institutional dilemma is the intractable stance of the FD, unwilling to delegate authority and involve communities as ‘full participants’ in the management process and sustainable utilization of resources. The FD has maintained its heavy-handed approach, granting only token status to the principle of community participation. What is actually needed is a shift in the mindset of public departments responsible for forest management, paired with political will at the highest level to push through these legal application. However, the forestry legal application seems to have fallen victim to the vicious “political influence/timber Blacklist and Red-Army -community exclusion” nexus. Focuses on the FD’s apathy as a root problem. He stresses the lack of resources, the poor remuneration and the traditionally- structured hierarchy as reasons for the lack of motivation amongst officials to change their attitude toward inclusive management and sustainable use.

The problem of unclear property rights has also remained unaddressed. As previously discussed, a major cause of excessive forest degradation in the country is the lack of clearly defined property and resource rights, and the consequent tensions between

communities and the government regarding ownership of forest resources. Improvement on this front requires an overhaul of the current institutional framework governing rights issues. Despite the fact that the legal process documents lay immense importance on this aspect, such a change has not been forthcoming. Consequently, communities, especially those who feel aggrieved at government claims of ownership, have found no real incentive to utilize forest resources in a sustainable manner. The Government of NWFPP itself has acknowledged that disputed rights affect management severely. In light of the voluminous literature that points to the need for clearly defined rights as the quintessential prerequisite for community-public sector partnerships in SFM, the current situation in Kenya all but eliminates any possibility of synergies developing on this front. The lack of coordination among various relevant agencies is perhaps more worrisome. FD officials remain bitter toward the revenue, land, and law enforcement agencies. The Revenue Department is primarily interested in ensuring land settlements and collecting taxes in the forest area. It has faced tremendous resistance from communities in the NWFPP, which in parts of the province have blatantly rejected land settlement and any possibility of taxation. Consequently, the revenue department has been unable to demarcate parts of the reserved forests and has thus had to leave these lands outside this category. Given the lack of coordination with the forest officials, the FD and Revenue Departments have been sending contradictory signals, further alienating the communities and eroding any remaining confidence in the intentions of the public sector.

Finally, to compound the problems for the FD, and again reflective of the national governance context, forest management and sustainable use is suffering due to the lack of inter-tier and inter-agency coordination. Both reflect a lack of political will to rectify the

prevailing institutional apathy. The lack of inter-tier coordination is evident from the fact that the precise role of the National Forest Policy as formulated by the national government has yet to be agreed upon by the county governments. The NWFP continues to resist any intrusion from the national government and is pushing for all national policies to be brought in line with NWFP's interests, given that it is home to most of the country's productive forests. Notwithstanding, this goes against the grain of an exceptionally strong "Centre" that dominates all spheres of public decision-making. Consequently, the national government stance has not yielded any results. In the final outcome, forest policies have frequently received resistance from county governments on sustainable resource use – itself an indication of lack of political will to implement application of the law – and the national officers entrusted to enforce forest laws are acting in parallel with the county governments, leading to much antagonism and inefficiency.

#### **5.4 STRATEGIES FOR LIVELIHOODS AND FOREST LAW STRATEGIES FOR RESOURCE SUSTAINABLE UTILIZATION**

The findings on the provisions of forest law in relationship to the effects of law to the cultural, rights and belief on sustainable utilization of forest resources indicated that majority of the respondents advocated for educating and training the locals. This therefore indicates that it's necessary to educate the locals on the roles of the forest law application on sustainable utilization of forest resources.

Majority of respondents suggested creation of awareness about the regulatory framework. This finding indicates that the forest Act needs review and might be influencing



sustainable utilization of forest resources. Majority of the respondents suggested that the impact of education level towards the role of forest law application on sustainable utilization of forest resources can be improved through cooperation from the local. The same number indicated that it can be done through raising awareness on forest law. Suggested that the locals should be educated about the law while few suggested that the locals should be employed as implementors of the law. Other respondents suggested that sustainable utilization of forest resources can be realized through establishment of a clear forest policy framework.

The findings on the relationship between the role of forest law in relationship and sustainability indicated that majority of the respondents advocated for consistency, coordination and sustainable exploitation would result to great influence on forest restoration. Educating and training the locals. This therefore indicates that it's necessary to have consistency in law of the forest law application on sustainable utilization of forest resources.

### **Harvest NTFPs sustainably**

Although NTFPs are important forest products, especially in the dry woodland areas where they provide alternative sources of livelihoods and contribute to poverty alleviation through generation of income, and provide food and improved nutrition, they are threatened by over-exploitation and degradation of the forest resources. Over-exploitation not only threatens species of high-demand, but could also alter forest structure and composition. Indiscriminate harvesting of trees for charcoal and fuelwood, as well as the clearing of forests for farming and bushfires discussed earlier, create

obstacles for sustainable management of these forest products. Management practices that encourage the monitoring of sustainable harvesting levels of species and promote alternative plants for the same uses should be considered as part of conservation strategies.

### **Harmonise and implement policies at the national and county level**

The Kenya government both at national and county level should have put in place good programs and policies, both in the forest sector and outside it, to reduce deforestation and degradation. Many of these policies are not implemented and the rules not enforced. What is now needed is harmonization of policies within and outside the forest sector and within the national and county level, and active implementation of the policies and enforcement of rules within the natural resources sector.

### **CONCLUSION**

Application of forest law on sustainable resource use that sustainability was determined by the dynamics in application of forest law that had great influence on sustainable resources use in the area that where there was 30% in well-coordinated laws, 20% consistency and 21% in economic development had a direct result to 72% on reforestation with less depletion of 16% which showed that sustainable use was directly from the result of good application of forest law.

Application of forest laws on sustainable resource use indicated that the negative indicators of application of forest law had great negative influence on sustainable resource use, that where there was 30% of inconsistency in laws, 27% of non-coordinated

laws and 16% of unsustainable exploitation of forest resource had worst negative impact of Depletion of 74.4% ,19% of reforestation and with 16% of deforestation which showed that measure of sustainability is as a direct results of worst application of forest laws hence sustainability and economic development is much affected.

Findings concludes that the major obstacles to sustainability is as a result where there is 63% of conflicting laws and divergence in policy vision, with 16% poor education and forest research, with 10% weak laws and corruption would lead to depletion of 74.4% and 19% of reforestation thus sustainable development is affected. It can be concluded from the findings on the application of legislation on sustainable resource utilization in Kenya that weak forest policies, weak legal framework and results to local revolts. This paradigm on resources sustainable utilization by local will need political will, policy change, legislation and sincere implementation. Given the earnestness, the international organization, the local activists, and the government can, by acting in unison, bring about the Reform. Finally, that application of forest law on sustainable utilization of forest resources, that if resources are not exploited wisely, abundant though it might appear to be, it will soon be depleted thus leading to degradation of resource and affecting development.

## **RECOMMENDATIONS**

The following are the recommendation:

- i. The government should enhance awareness of the role played by the forest law on sustainable utilization of forest resources.

- ii. There should be establishment of a clear forest policy framework. This can be done through harmonization of the forest laws. It should also involve adoption of the customary laws.
- iii. Application of forest laws on sustainable resource use indicated that the certain (negative) indicators of application of forest law had great negative influence on sustainable resource use, that where there was uncertainty in indicators (inconsistency in laws, on-coordinated laws and unsustainable exploitation of forest resource) had worst negative impact of Depletion of forest resources, little impact on reforestation and deforestation which showed that measure of sustainability is as a direct results of worst application of forest laws hence sustainability and economic development is much affected. Thus, there is need for much clear national objective policy regulation to adhere to the standards of sustainability.

## REFERENCES

- Anderson, D. (2010). Managing the forest: The conservation history of the Lembus, Kenya, 1904-1963. In: Anderson, D. and Grove, R. (Eds). Conservation in Africa: People, Policies and practice. Cambridge university press.
- Attanatho, W. (2009). 'Drafting a new Community Forestry Act in Thailand' in 'Legal Frameworks for Forest Management in Asia' edited by Fox Jefferson. Occasional Paper No 16, East-west Centre, Honolulu, Hawaii
- Banerjee, A.K. (2008). Rehabilitation of Degraded Forests in Asia. World Bank Technical Paper No. 270. Washington D.C.
- Chambers, R., and Conway, G. (2011). Sustainable rural livelihoods: practical concepts For 21<sup>st</sup> century, Ids DISCUSSION PAPER 296 .Brinh=ghton: institute for Development studies.
- Carney, D. (2008). Implementing the sustainable livelihoods approach. In D, Carney,

Ed. sustainable rural livelihoods: what contribution can we make? London, UK  
Department for international development

- Castro, A.P. (2007). Southern Mount Kenya and colonial forest conflicts. In: Richards, J.F. And Tucker, R.P. *World deforestation in the twentieth century*. Duke university press.
- Castro, A.P. (2006). The southern Mount Kenya forest since independence: A social Analysis to resource competition. *World development*, Vol. 19, No. 12.
- Davis, S. P., Bhargava, B., Jena, K., Mathur, and Mukerjee, M. (2009). Making livelihoods Work: women, men and children in Rajasthan. Final report to ESCOR, London/Brighton department for international development/institute of development studies.
- DFID, (2007). Sustainable guidance sheets: framework. London, UK, department for International studies.
- Ellis, F. (2010). Rural livelihoods and diversity in development countries. Oxford University press.
- FAO (2010): Forest Resources Assessment 2008: Tropical Countries. Forestry Paper No. 112. Rome.
- FAO (2010). Forest Resources Assessment 2008: Global Synthesis. Forestry Paper No. 124. Rome.
- FAO (2011). Forestry Outlook Studies in Africa. Rome, Italy.
- FAO (2007). State of the World's Forests. Rome, Italy.
- FAO (2010). [Internet site] Global Forest Resources Assessment. Available at <http://www.fao.org/fra/en> [Cited 16 Mar 2010].
- Forest Act Cap 385 of Laws of Kenya
- Gasgonia, Donna Z (2007): 'Development Assistance and Property Rights in the Philippines Uplands' in Legal Frameworks in Forest Management in Asia' Ed Jefferson Fox. Occasional Paper no. 16 of East-West Centre, Honolulu, Hawaii
- Graham, R.M. 2008. Forestry in Kenya. *Empire forestry journal*, Vol. 24, No. 2.
- Kangethe, L., Omenge, T. and Awimbo, J. Undated. Coastal Kaya forests indigenous knowledge and management. The role of culture in environmental conservation. Forest, Trees and People working paper. FAO/Forest Action Network.

- KENGO. (2009). The management of land and land based resources in Kenya: National proposals for a policy and legal framework. Summary report of the environmental law review project: Kenya energy and environment organizations.
- Kenya (2010). Constitution, Nairobi: Government Printer, Government of Kenya .2010
- Kothari, C.R. (2004). Research Methodology: Method and Techniques. 2nd Edition. New Age International (P) Ltd., New Delhi.
- Logie, J.P., and Dyson, W.G. 2011. Forestry in Kenya: A historical account of the development of forest management in the Colony. Government printer, Nairobi.
- Lynch, O.J., and Talbott, K. (2012). Balancing Acts: Community-Based Forest Management and National Law in Asia and Pacific. World Resources Institute, Washington D.C.
- Markakis J. (2009). Pastoralists and Politicians in Kenya. Review of African Political Economy 26 (80): 293–296.
- Miller, K., and Tangley, L. (2009). Trees of Life: Saving Tropical Forests and Their Biological Wealth. Boston.
- Mohamed, S.M., Neukermans, G., Gitundu, J.K., Dahdouh-Guebas, F., Koedam, N. (2009). Mangrove forests in a peri-urban setting: the case of Mombasa (Kenya). Wetlands Ecology and Management 17(3): 243–255
- Mutimba, S., & Senelwa, K. (2007). Biomass energy development in East Africa: Kenya. ESDA Technical report, UK  
NGARA. KEFRI (Kenya Forestry Research Institute), Nairobi, Kenya.
- Nyamweru, C., Kibet, S., Pakia, M., & Cooke, J.A. (2008). The Kaya forests of Coastal Kenya: 'Remnant Patches' or Dynamic entities? In: Sheridan, M.J. & Nyamweru, and C. (Eds.). African Sacred groves: Ecological dynamics or social change? Ohio University Press, Athens, Ohio.
- Republic of Kenya (2007). Kenya Forestry Master Plan, 1995–2020, Nairobi, Kenya.
- Republic of Kenya (2007). The Kenya Forests Bill. Forestry Act of 2012.
- Schuler, M. (1987). Chikamai, B., Mbinu, S. & Casadei, E. 2000. Report of the meeting of The Network of Natural Gums and Resins in Africa.
- Scoones, I. (2011). Sustainable rural livelihoods: A framework for analysis. IDS working Paper, Brighton Institute for Development Studies.

World Bank (2010). Indonesia, Environment and Development, Challenges for the Future. Washington D.C.

## **APPENDICES**

### **APPENDIX I. LETTER TO RESPONDENT (INTRODUCTION LETTER)**

**BARASA ODUAL ELIAS  
P.O.BOX 3900-00100  
0717 278 718  
ELDORET  
DEAR RESPONDENT**

**RE: RESEARCH QUESTION**

I am a student at Moi University Nairobi Campus undertaking Master of Science in Development Studies. As part of course requirement, am required to undertake research

on a topical relevant issue. To this effect am researching on: ‘**Application of Legislation on Sustainable Resource Utilization in Kenya: A case of Forest Law within Mt Elgon Region**’. You have been selected as one of the respondent. Attached household unstructured –open ended questionnaire seeks your opinion on various issues, would be of great full if you could complete the form as best and honestly as possible. The information provided will be treated with utmost confidentiality and no single response will be reported on its own, but as assumptions of all responses.

If you wish to receive the outcome of the research please email:[bodula609@gmail.com](mailto:bodula609@gmail.com).

Yours truly

Barasa Odula Elias

#### **APPENDIX II: HOUSE HOLD QUESTIONNAIRE FOR HOUSEHOLD SURVEY**

<b>Village...</b>
<b>County...</b>
<b>Sub-county/district...</b>
<b>Division...</b>
<b>Name of interviewer...</b>
<b>Date...</b>
<b>Starting time...</b>
<b>Name of respondents...</b>
<b>Questionnaire...</b>
<b>Day...</b>
<b>Finishing time...</b>





Q12 (A).How do you use, forest products/ resources?
i.
ii.
iii.
iv.
Q13 (B) How do you access forest resources/products?
I
Ii
Iii
Q14 (A).How did you acquire land and capital ownership in the forest?
i.
ii.
iii.
iv.
V
Q15. (B) (i) Are you aware of the provisions of the forest law on sustainable utilization of forest resources? YES/NO
I
Ii
Iii
Iv
Q16. (C)What are the provisions of the forest law on land /capital acquisition in the forest?
I
Ii
Iii
Q17.Do you have access to forest land for Agriculture? YES/NO
i.....
ii.....
iii.....

**SECTION C: THE APPLICATION OF FOREST LAW ON SUSTAINABLE FOREST RESOURCE UTILIZATION WITHIN MT ELGON REGION**

Q18 (A).What are the provisions of the forest law on sustainable utilization of forest resources in Mt Elgon region?
i.
ii.
iii.
Q18 (B) How has the provisions of the forest law / implementation of forest law affected your relationship with sustainable utilization of forest resource within Mt Elgon region?
i.
ii.
iii.

Q19. (A) What are the cultural beliefs, Norms, Rights of people who rely on forest resources for sustainable development with Mt Elgon region?
--

i.
ii.
iii.
iv.
Q19. (B)How has the provisions of the forest law/ application of forest law affected your cultural beliefs, Norms, Rights on sustainable utilization of forest resources within Mt Elgon region?
I
Ii
iii.
Iv

Q20.what are your suggests/ proposals on the provisions of forest law/ application of forest law in relationship to the effects or impacts of law to the cultural, rights and belief on sustainable utilization of forest resource with Mt Elgon region?
i.
ii.
iii.
iv.
Q21 (.A.).What the roles of the forest law application on sustainable utilization of forest resources within Mt Elgon region?
I
Ii
Iii

Q21.(B)How effective are provisions of forest law/ application of policies and strategies put in place to respond to the challenges on sustainable utilization of forest resource within Mt Elgon region?
i.
ii.
iii.
Q22 (.A) What are the obstacles to the application/implementation of forest law on the sustainable forest resource utilization within Mt Elgon region?
I
Ii
Iii
Iv

Q22( B).what are the suggested solutions to improve on the obstacles that hinder the application forest law on sustainable utilization of forest resource within Mt Elgon region?
i.
ii.
iii.
Q22© What ways /And how will the provisions in forest law improve sustainable utilization of forest resources and performance of various forest ecosystems within Mt Elgon and Kenya?
I
Ii
Iii

Q23.How has the provisions in forest law shaped socio-economic and political the drivers of change of forest resources sustainable utilization by the defendants of the landscapes in Kenya?
i.
ii.
iii.
Q24.What are the recommendations for improving the performance of the various forests laws applicable eon sustainable utilization of forest resources?
I
Ii
Iii

**SECTION D THE INDICATORS OF APPLICATION OF FOREST RESOURCE SUSTAINABLE RESOURCE AND THE RELATIONSHIP OF FOREST LAW AND SUSTAINABILITY OF RESOURCE USE.**

i)What are the indicators of application of forest law on sustainable resource use?
ii.
iii.
What is the relationship of indicators of application of forest law and sustainable resource use?
I
Ii
Iii
Iv

**SECTION E: CONCEPTUAL FRAMEWORK: USING THE TRIANGLE ANALYSIS FRAMEWORK**

**Q25.Indicate your level of agreement with the following statements by ticking at the appropriate box.Use the ratings criteria below. (✓)**

**1.Strongly Disagree (SD), 2. Disagree (D), 3.Uncertain(U),4.Agree(A),5.Strongly Agree(SA)**

Questions	Q1..SD	Q2..D	Q3.U	Q4.A	Q5.SA
i) Has the legislation itself/forest law provisions affected/impacted on sustainable forest resource utilization within Mt .Elgon region?					
ii) Has the law affected livelihoods in the forests within Mt .Elgon region?					
iii) Has forest law application enhanced livelihoods on sustainable utilization of forest resources within Mt. Elgon region?					
iv) Has law affected the attitude/behavior/culture of the local communities on sustainable utilization of forest resources within Mt. Elgon region?					

Questions	Q1.SD	Q2.D	Q3.U	Q4.A	Q5.SA
V) Would you see sustainability being achieved on sustainable utilization of forest resources within Mt. Elgon region?					
vi) Has the attitudes/culture/behavior of the local communities impacted the on the role of the forest law application on sustainable utilization of forest resources within Mt. Elgon region?					
vii) Has the forest law application on sustainable utilization of forest resources within Mt. Elgon region brought any change or impacts ?					
viii) Has the attitude/culture/behavior of the local changed on the application provisions of the forest law on sustainable utilization of forest resources within Mt. Elgon region?					
ix) Has the law improved sustainability of forest resources within Mt. Elgon region?					
xi) Has the legislation been obstacles to its own application on sustainable utilization of forest resources within Mt. Elgon region?					

### APPENDIX III: FOCUS GROUP DISCUSSIONS GUIDE

#### FOCUS GROUP DISCUSSION

Village...
County...
Sub-county/district...
Division...
Name of interviewer...
Date...
Starting time...
Name of respondents...
Questionnaire...
Day...
Finishing time...

**A. Village livelihood, past and present**

Q.1.What are the main sources of income in the village now?
Is this the same as five years ago? Yes /No
If no, what is the main reason behind it?
Q2.Are those sources of income as important now as they were five years ago?
Yes / No
If no, what is the main reason behind it?
Q3.What new activities are common in place now that were rare or did not exist before? Activities that have started in the last five years?
Q4.How important are these new activities now for the incomes of people in the village?
What activities have stopped?
Q5.What do villagers consider to have got worse in the last five years?
For those whose standard of living has deteriorated, what are the main things that have caused their livelihoods to go down in the last five years?
Q6.What do villagers consider to have improved in the last five years?
For those whose standard of living has increased, what are the main things that have got better in the last five years?
Q7.What have been the main agricultural problems in the village over the past five years?
What has been happening with food crop (both production and marketing can be discussed here)?
Q8.What has happened to people access to forest and forest products, access to land for cultivation, access to hunting?
How has the status of women changed in this village over the past five years?
Yes / No
If yes, in what ways?
If no, why has it being liked this?
Q9.Are there more women that are heads of households than before?
Are there activities that women do now that they did not usually do before?
Yes / No
If yes, what are those activities?
Q10.What livelihood activities are women still not permitted to do in this community?

**B. EFFECT OF LEGAL INSTITUTIONS ON SUSTAINABLE UTILIZATION OF FOREST RESOURCES ON LIVELIHOODS**

Q11.Are there particular activities in the village that require special permission or a
---

license in order to be allowed to do that thing?
(make list of such activities)
For these activities, what person, or organization or institution grants permission or issues licenses? (Link this to the relevant activity).
Q12.What is the cost of getting permission, or obtaining a license to startup this activity? Probe here both for official and unofficial cost e.g. gift payment to traditional authorities or to local officials
Q13.Are there particular activities that individuals in the group would like to do, but are unable to do because of the costs or legal requirements that are imposed on starting up the activity?
Q14.Are there any legal restrictions on moving produce (crops, forest products, bush meat) from the village to the town for sale?
Yes / No
If yes, what are these restrictions? Are payments required to any person or institution in order to move goods from one place to another?
Q14.Are there some activities in the village that require collective action? Yes / No
If yes, what are these activities?
- When do they collaborate?
- Who do they collaborate with
- How big is the group
- What are the incentives for collaboration?
How does the customary law regulate your access and use of resources?

#### **D.HOW HAS LEGISLATION AFFECTED SUSTAINABLE AGRICULTURE OR FARMING IN THE FOREST**

Q15.what have been the main changes affecting crop yield in the past five years?
Overall has crop farming become more risky, stayed the same, or become less risky over the past five years?
Q16. has happened to prices of farm inputs (land rental, labour, Ploughing services, seed, fertilizers, pesticides, etc.) over the past five years?
For which inputs have purchase prices risen the most over the past five years?
For which inputs have farmers reduced or stopped buying them due to price rises in recent years? (Make a list of current prices for farm inputs).
Q17...What has happened to the sale prices of crop grown in this village over the past five years? For which crops have sale prices risen the most over the past five years?
Which crops are most profitable for farmers to grow now (in rank order) how does this compare with five years ago? (Make a list of the current sales prices of crops).
What has happened to marketing institutions over the past five years?
- are new varieties introduced?
- Access to market (distance)
- Access to farm input
Q18.What has happened to credit institutions and availability over the past five years?
Has the source of credit changed? Is it more difficult or less difficult to obtain credit than before? (Write down main current credit institutions).

Overall, would people say that farming had become more difficult, stayed the same, become less difficult over the past five years?
If more difficult, what are the main reasons this has been so (ranked list)?
If less difficult, what are the main reasons this has been so (ranked list)?
At what time in the year are you involved in farming? And at what time of the year do you make more income from the sale of crops?
Q19.What access do women have to land and fields?
How is this access obtained? (Inheritance, purchase, customary allocation, borrowed).
Under what circumstances do women control the income from sales of crops?
Is this specific to certain fields or to certain crops? Yes / No
if yes, which fields or list crops for which this is normally true

### **E. HOW HAS LEGISLATION AFFECTED SUSTAINABLE HUNTING IN THE FOREST?**

Q20.Overall importance of hunting for survival in this community?
Do most households have members that hunt, or are there some families that specialize while others do not hunt at all? Obtain count of households that hunt and households that do not hunt in this village
Q21.How big is the hunting area by people based in the village? Do village-based hunters move around and often hunt elsewhere?
(Include the distance)
Where are the main sites that village-based hunters go for hunting?
Q22.How has the importance of hunting changed compared to five years ago?
Is the legislation making it still possible in this village for people who were not hunting before to take up hunting sustainably?
Is hunting seen as a good way to strengthen livelihoods? Yes / No
If no, What are the barriers for people who want to take up hunting?
Q23.What are the seasonal characteristics of hunting as an occupation?
What are the peak months for catches, and the lowest months during the year?
What are the chief regulations about hunting and access that the villagers understand to apply to their hunting activities?
Q24.Do people comply with these regulations on sustainable utilization of forest resources that is hunting?
Yes / No
If no, How are the regulations policed? And what is the penalty for non-compliance

Q25..Does the village have its own (community management) system for sustainable utilization of forest resources for regulating seasonal access to game and permitted hunting methods?
Yes / No
If yes, how does this work?
Have either formal or village regulations changed over the past five years
Yes / No
If yes, how have they changed?



Q26.Are there conflicts between the way the village authorities would like to manage access to hunting, and the rules that are imposed from outside by the wildlife department for sustainable utilization of forest resources?
Do the rules (whether village-based or imposed from outside) mean that some individuals have Q27.permanent rights to sustainable utilization of hunting while others are always excluded from hunting?
Do outsiders come and hunt in your village Yes / No
If yes, what effect have they had on the sustainable utilization of hunting activity?

#### HOW HAS LEGISLATION AFFECTED SUSTAINABLE UTILIZATION OF THE FOREST PRODUCTS

Q28.Overall importance of forest products for survival in this community?
What kinds of forest products to members of the household collect and use (rank them)
Q29.What each product is used for and why?
Use Reasons

Q30.How and when each product is obtained?

1
2

Q31.What changes have there been in your use of each forest products over the last five years?

1
2

Q32.How has this affected your household?
What are the seasonal characteristics of forest products
1
2
Q33.What are the chief regulations restricting on sustainable utilization and access to products within your community?
Do people comply with these regulations Yes / No
If no, How are the regulations policed? And what is the penalty for non-compliance?
Does the village have its own (community management) system for regulating seasonal sustainable utilization and access to forest products
Yes / No
If yes, how does this work?
Have either formal or village regulations changed over the past five years
Yes / No
If yes, how have they changed?

Q34.Are there conflicts between the way the village authorities would like to manage sustainably and access to forest products, and the rules that are imposed from outside by
--

the forestry department?
Do the rules (whether village-based or imposed from outside) mean that some individuals have permanent rights to forest product while others are always excluded from it?

-----END-----

**THANKYOU FOR TAKING YOUR TIME TO COMPLETE THIS QUESTIONNAIRE, I APPRECIATE YOUR FEED BACK.**

**APPENDIX IV: SAMPLE INTERVIEW GUIDE**

Village...
County...
Sub-county/district...
Division...
Name of interviewer...
Date...
Starting time...
Name of respondents...
Questionnaire...
Day...
Finishing time...

**KEY:I=INTERVIEWER,R=RESPONDENT**

INTERVIEWER=Q1. What is your view on the role of forest law on resource sustainable use?

R=.....

INTERVIEWER=Q2. Describe the process the effects of application of forest law on sustainable resource use?

R=.....

INTERVIEWER=Q3.Describe any challenges that you or the forest officials face when implanting forest law on sustainable resource use?

R=.....

INTERVIEWER=Q4 How effective are forest laws on sustainable resource use?

R=.....

INTERVIEWER=Q5.What measures do you propose on application of forest law on sustainable resource use?

R=.....

INTERVIEWER=Q6.Do you think you actions on application of forest law on sustainable resource use are justified by the locals?

R=.....

INTEVIEWER=Q7.Do you consider the locals are justified in access, use of forest resource without your involvement through law?

R=.....

INTEVIEWER=Q8.There are some locals who view you forest official as the obstacles to sustainable resource use,Do you are?

R=.....

INTEVIEWER=Q9.Do you think indicators in application of forest law has caused a lot of unsustainable forest resource use?

R=.....

INTERVIEWRE=10.How do you measure sustainability of the forest resources?

R=.....

INTERVIEWER=11.Do you see any sustainability in forest resources from the application of the forest laws?

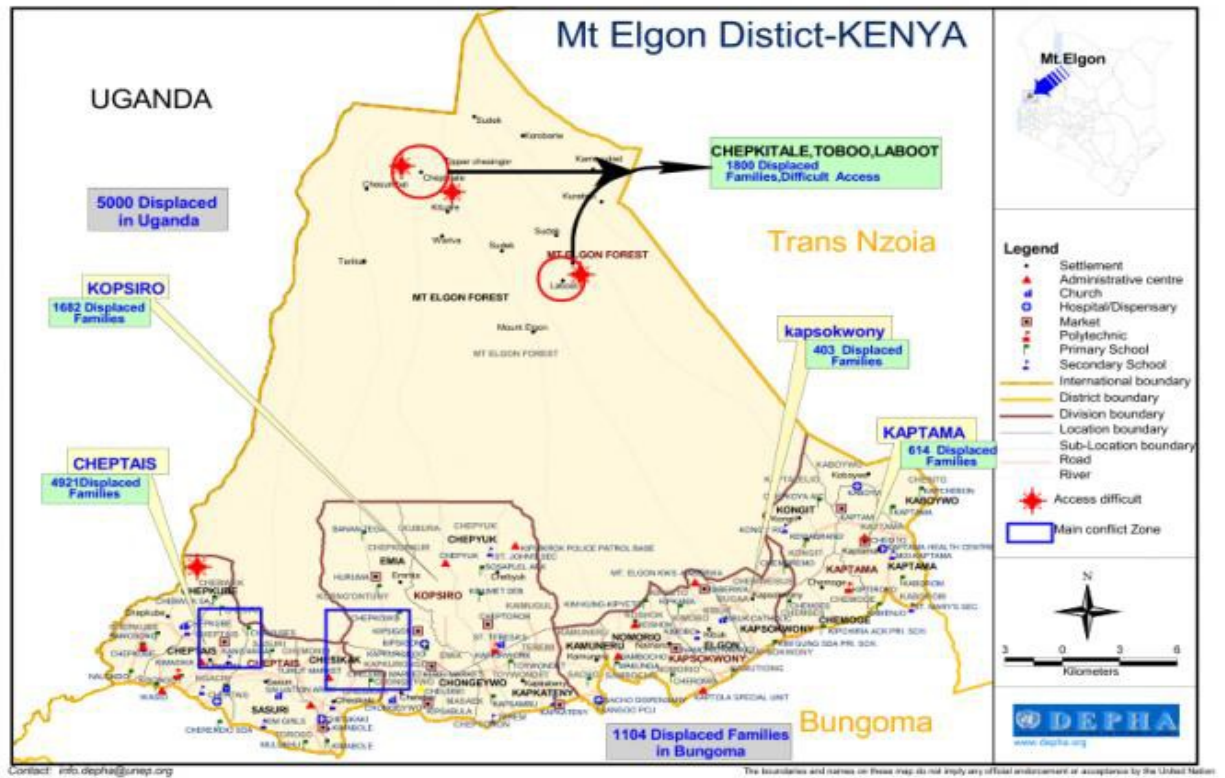
RE=.....

.....


END.....

APPENDIX V

Figure 3.2.1 Study Area



**APPENDIX VI.: INTRODUCTORY STUDENT BONA FIDE LETTER FROM  
MOI ...115**



**MOI UNIVERSITY**  
**SCHOOL OF HUMAN RESOURCE DEVELOPMENT**  
**DEPARTMENT OF DEVELOPMENT STUDIES**

Tel: (053) 43153  
 Fax: (053) 43153

P.O Box 63056-00200  
 NAIROBI  
 KENYA

---

MU/NRB/SHRD/SA/01 19<sup>th</sup> August 2014

National Council of Science, Technology and Innovation  
 Utalii House  
**NAIROBI**

Dear Sir/Madam,

**RE: REQUEST FOR RESEARCH PERMIT**  
**BARASA ODULA ELIAS – SHRD/PGD/030/12**

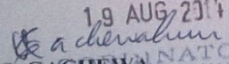
This is to confirm that the above named is a bonafide postgraduate student of Moi University, School of Human Resource Development, Department of Development Studies. Mr. Odula is pursuing a Master of Science in Development Studies at the Nairobi campus.

The student successfully defended his proposal and is due to proceed for his research data collection.

The research Title is - **“Dynamics in the Application of Legislation on Sustainable Resource Utilization in Kenya: A Case Study of Forest Law within Mt. Elgon Region”**.


The student is in the process of obtaining a research permit to enable him visit the identified research centers. The University shall highly appreciate any assistance accorded to him.

Yours faithfully,

  
**S. GACHEWA**  
 COORDINATOR, DEV. STUDIES  
 NAIROBI CAMPUS

MOI UNIVERSITY  
 NAIROBI SATELLITE CAMPUS  
 P.O. Box 63056 - 00200, NAIROBI.  
 19 AUG 2014

**APPENDIX VII. RESEARCH PERMIT FROM NACOSTI TO CARRY  
RESEARCH...136**



**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

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

Ref: No. \_\_\_\_\_ Date: \_\_\_\_\_

24<sup>th</sup> September, 2014

**NACOSTI/P/14/6155/3284**


Elias Odulla Barasa  
 Moi University  
 P.O. Box 3900-30100  
**ELDORET.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Dynamics in the application of legislation on sustainable resource utilization in Kenya: A case study of Forest Law Within Mt. Elgon Region,”* I am pleased to inform you that you have been authorized to undertake research in **Bungoma County** for a period ending **31<sup>st</sup> August, 2015**.

You are advised to report to **the County Commissioner and the County Director of Education, Bungoma 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.

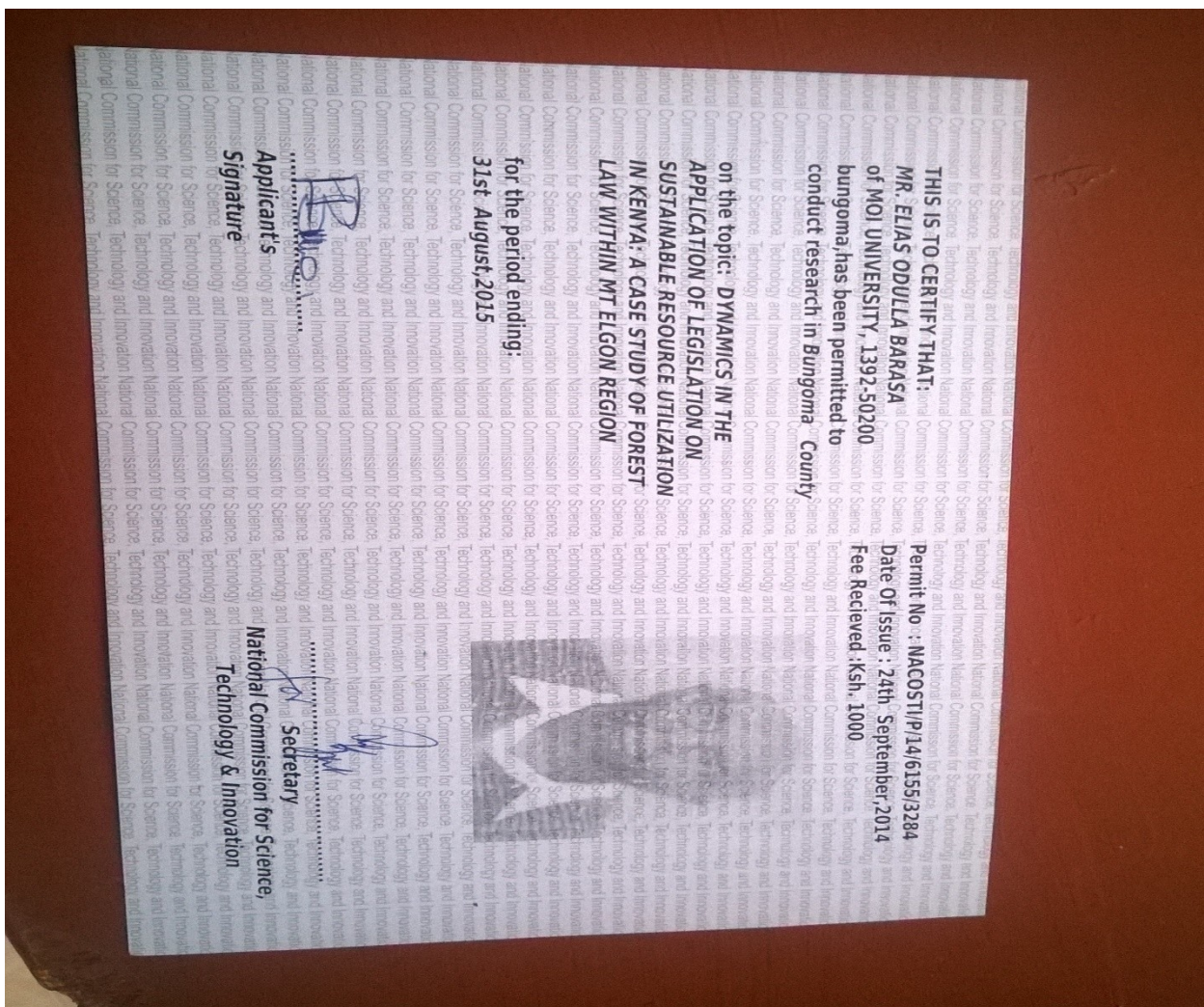
  
**DR. S. K LANGAT, OGW**  
**FOR: SECRETARY/CEO**

Copy to:

The County Commissioner  
 The County Director of Education  
 Bungoma County.

*National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified*

**APPENDIX VII. RESEARCH PERMIT CARD FROM NACOSTI FOR RESEARCH...138**



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 copies 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.

**National Commission for Science, Technology and Innovation**

**RESEARCH CLEARANCE PERMIT**

Serial No.: A  
**3283**

CONDITIONS: see back page





**APPENDIX IX. LETTER FROM COUNTY DIRECTOR OF EDUCATION  
BUNGOMA COUNTY TO ALL SUB-COUNTY EDUCATION OFFICERS  
FOR RESEARCH....140**



REPUBLIC OF KENYA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY  
State Department of Education – Bungoma County

e- mail: [bungomacde@gmail.com](mailto:bungomacde@gmail.com)  
when replying please quote:

County Director of Education  
P.O. Box 1620-50200  
**BUNGOMA**

Ref.No. BCE/DE/19 VOL.1/115

Date: 30<sup>th</sup> October, 2014

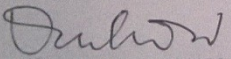
All Sub-County Directors of Education  
**BUNGOMA COUNTY**

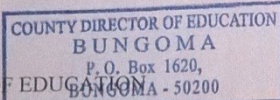
**RE: AUTHORITY TO CARRY OUT RESEARCH – ELIAS ODULLA BARASA  
ADMISSION NO. SHRD/PGD/030/12**

The bearer of this letter **Mr. Elias Odulla Barasa** is a Student of **Moi University, school of Human Resource Development, Department of Development Studies**. Mr.Odulla is pursuing a Master of Science in Development Studies at the Nairobi Campus.

He is given authority to carry out research on” *Dynamics in the application of legislation on sustainable resource, utilization in Kenya: A case study of Forest Law within Mt. Elgon Region,*” I am pleased to inform you that you have been authorized to undertake research in **Bungoma County** for a period ending **31<sup>st</sup> August, 2015**.

Kindly accord him the necessary assistance.

  
NICHOLAS O. OYUCHO  
FOR: COUNTY DIRECTOR OF EDUCATION  
**BUNGOMA COUNTY**



## APPENDIX X. BUDGET

Activity	Quantity	Unit price	Amount in kHz	
Proposal	Printing	2cpoies	190	190.00
	Photocopyin g	140pages	280	1000.00
		6copies	90	540.00
	Binding			15000.00
	Travelling expenses			5000.00
	Miscellaneou s	<b>Sub total</b>		<b>16730.00</b>
Piloting	Travelling to the three villages			25000.00
				3000.00
	Data processing	<b>Sub total</b>		6000.00
	Data analysis			<b>34,000.00</b>
Data collection	Travelling to Mt Elgon(3 villages)	<b>Sub total</b>		45000.00
				<b>45000.00</b>
Final document	Printing	140pages	10	1400.00
	Developing	7copies	100	700.00
	Binding	7copies	950	6650.00
		<b>Sub total</b>		<b>8750.00</b>
		<b>Total</b>		<b>155,550.00</b>
		10%		



Graduation								XXXX	