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2012
DECLARATION

This is my original work and has not been presented for any degree in any other University.

APIYO REGINA JUMA

DATE

DECLARATION BY SUPERVISOR

PROF. MAURI YAMBO

DATE

DEPARTMENT OF SOCIOLOGY
UNIVERSITY OF NAIROBI
DEDICATION

This research project is dedicated to my loving mother, who has constantly encouraged and prayed for me to go on even when I was at the verge of giving up. This gave me a reason to work hard and to face every challenge in my life with confidence.
ACKNOWLEDGEMENTS

All Glory and Honour be to the Almighty God, for the gift of life and all the blessings. Amen.

First, I wish to express my sincere gratitude and thank my supervisor, Prof. Yambo whose intellectual supervision, valuable guidance, support, critical evaluation, encouragement and patience has led to the successful completion of this project.

I also wish to acknowledge and thank my friend Monica Otieno who has voluntarily supported me through the entire process and contributed to the successful completion of this project.

I would also like to thank many of my friends who encouraged me to complete my work but whose names have not appeared on this page, always know that your comments were appreciated, although it may not be so apparent.

Lastly, I will always be indebted to my family for their support, love and care which saw me through difficult times during my study.
The aim of this research study was to analyze the socio-economic impact of deforestation and eviction amongst the Ogiek community members in the Mau Forest. The Mau Forest has in the recent past been on the limelight as a result deforestation that has been taking place in the forest. The impacts of deforestation in the Mau Forest has not only been felt in Kenya but within the region. The Mau Forest is also a home to a number of communities and as a result, eviction within the forest has jeopardized lifestyle and livelihood for a number of families. The Mau Forest has also been politicized by politicians who have used it to drive their own selfish agendas thus bringing the Forest as a centre of discussion and in the public limelight.

Specific objectives of this study were to document the patterns of Mau Forest deforestation specifically in relation to the Ogiek habitat, and to evaluate the rationale and implementation of the governments’ wholesale eviction programme, and their implications for the Ogiek way of life. This involved documenting the causes of deforestation in the Mau Forest, the challenges of Mau Forest Water Tower inhabitants, the governments’ conservation and resettlement programmes in the Mau Forest, the socio-economic impacts of eviction, the proposed humanitarian programmes, and compliance with Mau Forest Water Tower protection.

This study took a multiplicity of theories to provide the basic theoretical framework for analyzing the socio-economic impact of deforestation and eviction on the Ogiek community in the Mau forest, Kenya. The theories included; the theory of land use, Modernization theory, world system theory and Neo-Malthusian theory and the theories of eviction tend to emphasise one or more but limited aspects of deforestation and eviction. This theoretical framework used an integration of the deforestation and eviction theories approach. The theoretical framework indicate that increased deforestation and eviction is likely to result into the following socio-economic impacts: desertification; drought; climate change; loss of fuel, food and medicines; destruction of biodiversity and traditional cultures; increased runoff; impact on economy; loss of soil fertility; soil erosion; violation of human rights; homelessness; insecurity; lack of privacy and increased number of internally displaced persons. These conditions are already
A lot of literature was reviewed on deforestation and eviction, however the interpretation of the findings are limited to the Ogiek community in the Mau Forest. No attempt has been made to generalize beyond the selected forests or beyond the Mau Water tower. No attempt has been made to generalize beyond the selected forests or beyond the Mau Water tower.

The study employed descriptive study as research design; with the target population of 30 Ogiek community members, 6 KFS forest managers and 5 senior managers at the Ministry of Forestry department. All the 30 interviews with the Ogiek community, 6 KFS forest managers and 5 senior managers were successfully conducted. Data was obtained through interview guide, questionnaires and document analysis. The data was summarized into frequencies, percentages and chart. Data obtained through document analysis have been reported in narrative form.

The findings indicated that the main causes of deforestation in the Mau Forest are; logging activities, large scale farming and settlement. The study also established also established that least causes of deforestation are; small scale farming, grazing or cattle ranching and firewood collection. The challenges of Mau Forest Water Tower inhabitants include; loss of culture, climate, lack of human and civil rights, changing land use practices, insecurity of land tenure and convergence of food, fuel and fiber prices in the international market leading to exploitation of forest products. Proposed humanitarian programs for evictees from the Mau Forest include; provision of an alternative land to settle evictees, provision of money to evictees to purchase their own land to settle in and building houses for persons evicted to settle in. The governments has also put in place a number of conservation and resettlement programmes to protect the Mau Forest Water Tower from further destruction including; eviction of the illegal forest dwellers in the Mau Forest, re-afforestation, community involvement in forest conservation programmes, training staff on forest conservation and provision of security in forest areas.

The socio-economic impacts of eviction established in this study include; impact on culture, insecurity, homeless, lack of privacy, internally displaced persons, violation of human rights, impact on economy and climate change. It was also established that the main factors affecting forest dwellers compliance with Mau Forest Water Tower protection included; abuse of office and/or corruption – the political dimension associated
with breakdown of law and order leading to excisions and uncontrolled exploitation of forests, weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation, and governments' inability to monitor illegal logging activities within the forest areas.
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CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Forests play a very important role in the economic, social and environmental development of a country. They help to preserve agricultural land from the danger of erosion. Forests are the main source of timber for building and furniture, as well as firewood. Rivers and streams receive water that flows down from very steep mountain rocks; forests on these slopes restrict the speed which would otherwise produce more severe floods. Forests keep the environment pleasant, because they get moisture from the earth through their roots and spread it in the air through their leaves. Decomposed leaves form humus which is the biggest source of soil fertility. Forests cause rainfall through the process of transpiration, and are the biggest source of oxygen which is essential for animals and plant life on the globe. Forests are also homes to both humans and animals.

As a result of the growing tensions due to industrialization, urbanization, increasing distance between people and their family roots in the country, as well as shrinking of the remaining free spaces, the forest has become in effect an area for relaxation and recreating and the very symbol of nature in most of the industrialized countries. Despite these benefits danger lies ahead. The world population currently stands at 6.5 billion people and is projected to grow to 9 billion by 2042. The expansion of agricultural and industrial needs, population growth, poverty, landlessness and consumer demand are the major driving forces behind deforestation (UNEP, undated:2).

The removal or destruction of significant areas of forest cover has resulted in an altered environment with reduced biodiversity (Lindsey, 2007:2). Approximately 17 million hectares of tropical forests and woodlands are converted into agriculture; pasture lands or other uses every year (Lund and Iremonger, 2000:3-10). Although the amount of forest land coming under protection or conservation is growing, the future still poses problems due to rapidly increasing pressures of population, development and exploitation. Deforestation occurs at a rate of about 50,000 square miles (129,499 square kilometres) annually. This is an area roughly the size of England. Africa and South America suffer the largest loss of forest worldwide.
Deforestation is caused by a number of factors, including: farming, grazing, firewood collection and logging (Reed, 1997:102-3). But deforestation itself contributes to other disasters, such as: landslides (in areas where the soil is destabilized), drought (which often trigger famine), famine, desertification, fires (due to the dryness caused by the loss of moisture caused by deforestation), severity of flooding (can be exacerbated by deforestation of watersheds-partly by precipitating more sedimentation). Among all these consequences, "flooding is the most serious side effect of deforestation" (Reed, 1997:104). Continuous deforestation exposes the land to sun, wind and rain, and this may eventually cause desertification (Reed, 1997:115).

Immediate effects of deforestation include the washing away of soil in the monsoon season. This is because trees are no longer anchoring and binding the soil and so mud slides take place. The earth is leached of minerals by the large amounts of water. The lack of vegetation also means that there will be very few animals in the area. The lack of decomposing vegetation and animals means that the nutrients are not replaced and the area quickly becomes infertile.

Deforestation is a contributor to global warming and is often cited as one of the major causes of the enhanced greenhouse effect. The earth is made habitable by the process of greenhouse effect, without it, it could be too cold (Richards, 1952: 203). The effects of deforestation are long lasting and devastating. Entire species of insects and animals have disappeared because of the destruction of their habitats. And scientists see that deforestation has a significant effect on climate change, or global warming. Areas of rainforest, generally in developing countries, are cleared to create grazing lands. In certain situations, pastures of grass are then grown and used for grazing cattle.

Of great concern is the rate at which deforestation is occurring. Currently, 12 million hectares of forests are cleared annually - an area 1.3 times the size of KwaZulu/Natal! Almost all of this deforestation occurs in the moist forests and open woodlands of the tropics. At this rate all moist tropical forest could be lost by the year 2050, except for isolated areas in Amazonia, the Zaire basin, as well as a few protected areas within reserves and parks. Some countries such as Ivory Coast, Nigeria, Costa Rica, and Sri Lanka are likely to lose all their tropical forests by the year 2010 if no conservation steps are taken (Collins, 2001:1).
Tropical forests are home to millions of native (indigenous) people who make their livings through subsistence agriculture, hunting and gathering, or through low-impact harvesting of forest products like rubber or nuts. Deforestation in indigenous territories by loggers, colonizers, and refugees has sometimes triggered violent conflict (Lindsey, 2007:4).

Deforestation also affects indigenous people, both physically and culturally. Because many indigenous people actually have no legal rights to the land on which they live, governments that want to use the forest for profit can actually "evict" them. As these populations leave the rainforest, they also leave their culture behind (Butler, 2006:4).

The Ogiek community

The Ogiek (Ogiot - sing.) ethnic group consists of 20-30 groups of former hunters and honey gatherers, mostly living in forested highlands in western Kenya, particularly, the Mau and Nandi forests. Local groups have more specific names, for example, Kaplelach, Kipsang'any and Kapchepkendi. One group, the Akie, live much further south, around the Maasai Steppe in Tanzania. Okiek, a Kalenjin language of the Southern Nilotic group, is the mother tongue of most Ogiek people, but several groups now speak Maasai and Kalenjin as their first languages (Kratz, 1994: 5).

Okiek have often been called Torobbo, Dorobo, Ndorobo, or Wandorobo, all derogatory names deriving from "Il Torobbo," the Maasai term for hunters and poor people without cattle. Torobbo names have also been applied to other hunting peoples in eastern Africa and to Maasai who have lost their cattle, confusing efforts to determine relations among these peoples (Kratz, 1994: 5).

The Ogieks are hunters and gatherers. Demographic figures on the Ogiek community are not available. The African Commission on Human and Peoples’ Rights estimate the Ogiek population to be between 15,000 and 20,000 individuals (ACHPR 2005:15) which is in line with scientific data (Heine and Möhlig 1980:32), while the Ogiek themselves estimate their total number to be between 20,000 (Kobei, 2002:60) and 60,000 (Shimizu: 2004).
History

Knowledge of Ogiek history before 1900 is limited. Oral history traces their origin back to the Kiplombe hills near Siswek. It is said that all Ogiek have lived there before a famine forced some of them to migrate to the Mau and Tinderet forests. Before the advent of the colonialists, they were already involved in the local and regional trading networks, bartering honey and meat for agricultural products.

Colonial administration affected Ogiek groups in different ways. Between the 1920s and 1940s, many Ogieks were displaced from their lands by European farmers, while others, especially those who lived deeper in the forests, received at least full usufructuary rights for their lands, which were transformed into forest reserves. Initially they had limited direct government interaction, but felt colonial policies through the ever increasing encroachment of their neighbours, who were forced into the forests by the government to create space for the farms in the plains (Republic of Kenya – Indigenous Peoples Plan (Ilchamus, Ogiek and Sengwer, 2006:18)

Livelihood

Due to the reduction of land and increasing hunting pressure, the Ogiek gradually diversified their economy, adding agriculture and/or herding to the traditional hunter-gatherer lifestyle. Bee-hives and/or processing the honey for regional markets are continually becoming an important livelihood of the Ogieks and without honey and condition of getting it; their life would be entirely different. This explains why the Ogiek live in the forest. Traditionally, the Ogiek divided land into lineage-owned tracts stretching along the Mau escarpment. Tracts transected four or five ecological zones, giving families access to honey and game during each season of the year. Unlike many other hunter-gatherers, beside the honey, Ogiek collect hardly any plants, fruits or non-timber-forest-products from the forest. Honey is eaten, stored for future use, brewed into beer and traded. It is said to have been the main product for the barter with their agricultural and/or pastoralist neighbours. Traditionally the Ogiek hunt with dogs, bows and arrows, spears, clubs and poison and they used to go for buffalos, elephants, duikers, hyraxes, bongos, and giant forest hogs. Now that hunting is illegal, they only hunt with small traps around their garden farms resulting in some meat from monkeys and other smaller game. Starting in the 1920’s the Ogiek started to cultivate small millet and maize
gardens due to reduced production from the forest. This led to a more sedentary lifestyle in mid altitude forest and - in turn - a further increase of agriculture and/or pastoralism.

Ogiek access to land varies from village to village. Before independence most Ogiek lived on communal or trust land (i.e. in the forests) with all usufructuary rights, but supported by no letters of allotment. Following independence, land reform and general land demarcation in 1969 their usufructuary rights were ruled out and legal access to land is now channelled through individual land titles and in the Maasai dominated districts, through group ranches. Group ranch demarcation began in the 1970s, crossing lineage land boundaries, incorporating non-Ogiek into some groups, and registering significant parts of Ogiek land to non-Ogieks. During the same time, the Ogieks were evicted from the forest reserves without being giving alternative land to settle on. As they were not provided with any land or compensation most had to go back and live illegally in the forests until the next eviction-team would show up. In some cases as was noted in Tinderet forest, members of the Ogiek families were forced to seek for accommodation in the nearby tea estate or even to live with non relatives as a way of securing temporary shelter. Regular evictions, arrests and loss of property, crops and even lives further increased poverty among the Ogiek, underlined their social discrimination and cemented their marginalization.

Those Ogieks that managed to obtain group ranch titles started in the 1980s and 1990s to divide the land into individual plots following the example of their neighbours and supported by governmental services. Settlement patterns shifted again as people moved to live on their own land, but it also attracted many Ogieks to lease or sell their lands to other ethnic groups.

Many of these land sales were technically illegal as they were made before group ranches were legally divided and many sales were undertaken before Ogiek learned about the market value of their land and at ridiculously low prices (Kratz, 1994: 6). Today the majority of the Ogiek have still no legal access to land or any source of livelihood and live a life at the mercy of their non-Ogiek neighbours. The Tinderet Forest were in the early 1970s transformed by non-Ogiek into cultivated land, including tea estates, thus leaving little land and sources of income for the Ogiek who mostly settled at the forest fringes and established small gardens, living on honey gathering and subsistence agriculture. In the context of the ethnic clashes in the early 1990s, most non-Ogiek were
driven out and did not return as the \textit{Shamba} system, which regulated farming in forest areas, was banned during that period.

\textbf{Social organisation}

The Ogiek live in local groups dispersed throughout the highlands, typically near one or more other Ogiek groups and adjacent to more populous ethnic groups. A good number of Ogiek speak their neighbours' language better than their own. Ogiek groups thus have distinctive histories of interaction with one another, with their neighbours, and with local government administration. Modes of social organization vary among Ogiek groups, but in general patrilineages are central in land holding and residence, legal matters, inheritance, and marriage arrangement, while matrilineal and affine relations are important for ceremonial occasions, in some residential and work groups, and in emotional terms. Further units are the age-sets, which create relationships among members; crosscutting relations defined by lineage and clan. Women have no separate age-sets, but become associated with male age-sets through relatives. Political and legal matters are discussed in meetings of men (\textit{Republic of Kenya – Indigenous Peoples Plan} (Ilchamus, Ogiek and Sengwer, 2006:19)

\textbf{1.2 PROBLEM STATEMENT}

Over the last two decades, the Mau forest cover has witnessed progressive denudation due to human farming and logging activities. Beginning in early 1990's, the Government of Kenya degazetted some parts of the forest reserve and supported the re-settlement of poor and landless households from other parts of the county. This, combined with declining capacity of the forestry department to manage the exploitation of forest resources, opened Mau to intense human activity that has resulted in negative socio-economic and environmental consequences. Between 1986 and 2000, River Njoro watershed, which is part of the eastern Mau forest, alone lost 18 percent of its forest cover to small scale agriculture and unplanned settlements (\textit{Muchemi and Rimbaldi, 2002:7}).

The Mau forest complex is an important water catchment and its degradation affects a total of six countries, namely: Kenya, Tanzania, Uganda, Sudan, Ethiopia and Egypt. Its forests form the upper catchment of 12 main rivers - Nzoia, Yala, Nyando, Sondu, Mara, Kerio, Molo, Ewaso Ngiro, Njoro, Nderit, Makalia and Naishi, that drain into five major lakes; Baringo, Nakuru, Natron, Turkana and Victoria. The Mau complex is the source of
water supply to several urban centres such as Bomet, Egerton University, Elburgon, Eldama Ravine, Kericho, Molo, Nakuru, Narok, Njoro and Lake Victoria basin (Yambo, 2008:3) and supports the livelihoods of millions of people (The Standard, 9 October 2009). Deforestation of Mau forest has led to rivers drying up and lake levels going down. It is also the largest single block of closed canopy forest in East Africa. Almost the entire Maasai Mau forest forms the upper catchment for the Ewaso Ngiro River, while most of the western part of the forest is part of the upper catchment of the Mara River. The Ewaso Ngiro River flows into Lake Natron, the main breeding ground for flamingos in the Rift Valley.

The Mau forest is the ancestral home to the Ogiek community, which is the largest community of forest dwellers in Eastern Africa, with a population of approximately 20,000 people and a unique language and culture. They are a hunter-gatherer group, and solely depend on the forest for food, medicine, shelter and preservation of their culture, even though forest exploitation is illegal (Kobei, 2005:3). Traditional forest-related knowledge is used and continues to be passed down successive generations. The Ogiek are a conservative community that has sustained its traditions steadfastly, and any attempt at forest destruction is viewed as a threat to their culture. The Ogiek community has been subjected to several evictions, persecution, harassment, intimidation, death threats and even murder (Carrere, 2005:51) by the colonial and post-colonial governments of the day.

They have also witnessed settlement of non-members in their lands. This not only threatens their culture, food and shelter resources, it also poses the danger of environmental degradation, as a result of logging and the introduction of new farming methods. The water catchment areas have been destroyed due to reduced forest cover, causing poor sanitation, and increasing likelihood of spread of water borne diseases such as cholera and typhoid (Kobei, 2005:3).

Tinet Forest is part of Ogiek territory, and the Ogiek are its guardians. But since 1961, when the colonial government declared it a government forest, the Ogiek have lived there

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1 In late 1980s and early 1990s, the Government of Kenya demarcated Ogiek land to non-Ogiek communities (Kratz, 1953:79), creating more than 20 settlement schemes. This has not only aggravated a decrease in water flows in the surrounding rivers but has also led to additional deforestation and pressure on fragile ecosystems. The effects of human activities can also be felt in Makalia falls in Lake Nakuru, that has dried up.
as squatters subject to constant harassment in their own lands. In 1991 the Kenyan government legally allocated five acres of the forest per family to 5,000 members of the Ogiek community, who began farming and constructing schools, while still using the forest and gathering honey (*World Rain Forest Movement, 2006:1*).

More than 25,000 settlers, who are mainly farmers, have totally degraded and destroyed the environment to pave way for their settlement and farming. These combined activities have caused several rivers to dry up permanently. Lack of alternative livelihood opportunities in these areas has left land as the only resource to mine for people’s basic needs. Without a comprehensive approach to sustainable livelihoods, rural communities are degrading the very environment on which they depend on (*The Nairobi Chronicle, 2009:1*).

The Government of Kenya has recently embarked on the eviction of illegal settlers from the Mau forest in an attempt to conserve the water tower, and this threatens the survival of the Ogiek community, which has not been granted exemption. As of 15 November 2009, a total of 11,674 squatters had left the forest in Chematich, Olenguruone, Kapkembu and Saino (*Daily Nation, 17 November 2009:9*). Representatives of families from the Ogiek community evicted from the Mau Water tower are reported to have said they were subjected to hunger and diseases, and many of their children had dropped out of school due to the difficult living conditions in temporary camps. Through the Ogiek Welfare Council lobby group, they demanded an immediate suspension of the on-going Mau evictions until a lasting solution for forest dwellers was addressed to avert further humanitarian crisis (*Daily Nation, 17 November 2009*). The evicted Ogieks made a strong claim to the Kenya Land Alliance fact-finding mission that they had lived in the forest for decades and evicting them had left them as internally displaced persons.

The Maasai community leaders argue that there should not be any compromise over the evictions, and that the illegal extension of ranches bordering the forest in 1998 by the Narok County Council was the genesis of the threat to the water-catchment area. They argue that the area was allocated to powerful individuals in Government who are now opposed to the evictions (*The Nairobi Chronicle, 2009:1*).

The Kipsigis community, the main occupants of the water-catchment area, oppose the eviction, saying they settled in the forest legally. Elders say their community is being
punished by the coalition Government following their stand in the 2007 General Election. The elders have warned the Government over the evictions, saying the move was causing panic among residents, some of whom were threatening to disrupt peace (The Nairobi Chronicle, 2009:1).

Currently there are serious threats to the forest and to traditional forest livelihoods. These threats mainly emanate from other non-indigenous communities residing in and around the forest, and also from those who have invaded the forests due to poor policy and legislation. Over-hunting has led to local extinctions of some animal species, and vegetation cover has been greatly reduced by indiscriminate harvesting of trees. The resulting huge biodiversity loss damages the Ogiek’s traditional dependence on forests, and also has serious implications for water availability, since the area acts as a water catchment area (Indigenous Information Network, 1994:14-15). However, the extent of the damage is yet to be accurately established.

To mitigate the effects of drought, the government has launched a multi-million dollar appeal to rehabilitate Mau Water towers. Tree planting exercise is on-going in the Mau Water tower and since the rehabilitation exercise began, the government has reclaimed 24,000 hectares of land and reduced destruction by 70 percent (UNEP, 2010:1). However, the government has also promised to protect the human and social needs of the people who must leave the forest. This is essential, because the sustainability of any rehabilitation efforts depends on these very people as friends of the forest. So far, illegal activities have been reduced by an estimated 60 - 70 percent in southern Mau (Zorba, 2010:1). The extent to which the Ogiek community is receiving government protection and assistance is yet to be documented, and must be periodically monitored.

Protection of the forest and protection of human rights are not mutually exclusive, and in the case of the Mau Forest evictions, the failure to address human rights has undermined protection of the forest. The overall consensus amongst environmentalists in Kenya is that the forced evictions have largely failed to protect the forest – in many cases people have simply returned to their former homes because they have nowhere else to go (The Nairobi Chronicle, 2009:3). The challenge in this study was to analyze the socio-economic consequences of the deforestation of the Mau Water Tower for the Ogiek community.
1.3 STUDY OBJECTIVES
This study aimed at analyzing the socio-economic impacts of Mau Forest deforestation and the governments’ subsequent eviction programme on the way of life of the Ogiek community. The specific objectives included:

1. To document the patterns of Mau Forest deforestation specifically in relation to the Ogiek habitat.
2. To evaluate the rationale and implementation of the governments’ wholesale eviction programme, and their implications for the Ogiek way of life.

1.4 SCOPE AND LIMITATIONS OF THE STUDY
The study analyzed the socio-economic impacts of Mau Forest deforestation, as well as the governments’ wholesale eviction programme, on the way of life of the Ogiek community. This study also focussed on the nature, frequency, magnitude and risks of the Mau\(^2\) destruction to the Ogiek community. The Mau Forest Complex is a 400,000-hectare area located toward the western wall of the Rift Valley. This forest cover is the largest closed canopy forest ecosystem in Kenya, and indeed East Africa, being equal in size to that of Mt Kenya and the Aberdares combined (Yambo, 2008:1).

This study also incorporated the Ministry of Forestry and Wildlife senior management and KFS forest managers who work in the forestry department. The field work took two months. It covered three forests within the Mau Complex; Tinet Forest, Nesuit Forest and Marioshoni Forest. Given the stated scope in terms of coverage, the interpretation of the findings are limited to the Ogiek community in the Mau forest. No attempt has been made to generalize beyond the selected forests or beyond the Mau Water tower.

The study concentrated on the socio-economic impact of deforestation and eviction on the Ogiek community in Tinet, Mariashooni and Nesuit forest areas of the Mau forest. It did not seek to shed light on other inhabitants of the Mau Forest for example the Maasai or the Kipsigis communities who are also known as illegal inhabitants of the Mau Forest. Likewise this study did not seek to shed light on other forest areas in the Mau Forest, it only concentrated in the three forest areas (Nesuit, Tinet and Mariashooni forests). The

\(^2\) Note: The term the Mau has been used in this document to represent the Mau Forest Water Tower as a whole.
accuracy of outcome of the study was limited to the degree to which respondents were willing to participate and to divulge the required information.
2.1 REVIEW OF EMPIRICAL LITERATURE

2.1.1 DEVELOPMENT AND CONCERNS OF DEFORESTATION AND EVICTION

According to Reed (1997:119), deforestation poses the most immediate danger by its contribution to other disasters. For example: Destabilized soils are more susceptible to landslides and may increase the landslide risk in areas vulnerable to earthquakes and volcanoes; loss of moisture from deforestation may contribute to drought conditions which in turn may trigger famines; Soil nutrients may also be lost through erosion of topsoil resulting in decreased food production and possible chronic food shortages; Erosion and dry conditions combined with loss of vegetation and soil compaction result in desertification and unproductive lands; dryness may accelerate the spread of fires; and research has also proven that deforestation of watersheds, especially around smaller rivers and streams, can increase the severity of flooding, reduce stream flows, dry up springs in dry seasons and increase the amount of sediment entering waterways.

The UK has initiated laws to govern deforestation and eviction and is hoping to reach an international agreement to reduce tropical deforestation by at least 50 percent by 2020, and to halt global forest cover loss by 2030. This is motivated by the fact that around 16 percent of global CO2 emissions are caused by deforestation, and halting it has been proposed as a cost-effective way of mitigating climate change. In 2007, the international community agreed that “Reducing Emissions from Deforestation and Degradation” (REDD) should be part of a global agreement to limit climate change.

Parties to the UN Framework Convention on Climate Change agreed in 2007 that efforts to Reduce Emissions from Deforestation and Degradation should play a role in climate change mitigation, partly because of co-benefits such as poverty reduction and biodiversity conservation. Under REDD, nations would be paid if they achieve a reduction in carbon emissions from deforestation. These payments could either be from a global fund, or as part of an international carbon market. The UK government believes that only a global market can deliver the necessary scale of finance in the long term. In areas where law enforcement is weak and land rights are insecure (which includes most tropical forests), criminalising deforestation or providing economic incentives to maintain
forests tends to be ineffective. In this situation, the establishment of protected areas is needed and these often have to be fenced and guarded, which in the past has caused conflict with local and indigenous peoples. In addition, running these protected areas is often beyond the financial means of poor nations. Many conservation organisations are hoping to use REDD finance to improve the effectiveness of protected areas, or to establish new ones. To this end, several large US conservation NGOs have joined with energy companies in lobbying for reductions in tropical deforestation to be used to meet US targets for emissions reductions.

Fiscal policy can also be used to make deforestation less financially rewarding by removing subsidies that raise the returns from logging and agriculture, including road and transport subsidies (Parliamentary Office of Science and Technology, 2009: 1-4).

Reed (1997:122-124), proposes a number of issues that would reduce deforestation: emphasis should be given to forest management and forestry, therefore, should be considered an integral part of land use and natural resource planning sectors of government. Any country that wants to address its loss of forests and ensure economic benefit from forests in the future, must take certain steps: Write forest law or basic forest policy that clearly states the objective of long-term sustainable management of the forest; Write and follow forest regulations or management guidelines; and Allocate sufficient financial and human resources to do the job.

Programmes that promote forestry management such as reforestation should be practiced. Reed (1997:123) has discussed a number of reforestation programmes including: Agro forestry – agro forestry combines agriculture and forestry practices in the same location. Increasing yields and reducing soil erosion. An important component of dryland agro forestry schemes are multi-purpose trees. Some of which grow quickly on lower grade soils and produce food, fodder, fuel wood, building timber or other products. An example is Acacia albida, a multi-purpose tree that is cropped with sorghum, millet and other field crops in semi-arid regions of Africa. It comes into leaf in the dry season, providing shade for plants and fodder for animals. The tree also fertilizes the soil by increasing nitrogen and phosphorus. In Senegal, yields of millet near Acacia albida trees were 21/2 times higher than in open fields.
Farm forestry – this is a type of social forestry where woodlots are established by farmers on their own land for personal use and for profit.

Silvopasture – trees and pastures are integrated to make livestock raising more productive. Grazing is regulated to prevent damage to trees. Other alternatives for reforestation and they include: Plantations – large scale plantations to meet fuel wood needs near Sahel have not met with complete success due to slow growth of trees under harsh local conditions. Tree crop plantations for lumber or wood products have been promoted by some governments by the use of economic incentives.

Management of natural woodlands – Recent data suggests that potential yields from natural woodlands have been underestimated and it should be possible to increase yields at a much lower cost than establishing new plantations. An advantage of natural woodlands is the natural production of a wide variety of harvestable products compared to single crop plantations.

Community participation in reforestation is also an integral part in forest management and the following are key specific steps that can be taken at the community level: Establishing community based education programs as part of school curricula and at village councils and the use of media such as radio, television and newspapers; Encouraging non-governmental organizations to foster grassroots programmes involving small farmers and landless people who depend on forests and trees for survival; Encouraging programmes at the village or farm level for reforestation and mitigation procedures for already deforested land with terrace and catch dams; Introducing alternative cook stoves that reduce fuel needs and alternative sources of fuel; and Promoting means to increase agricultural production such as use of fertilizer and improved varieties of seed (Reed, 1997: 124).

The Forest Sector plays vital roles in the livelihood of the Kenyan population through provision of invaluable forest related goods and services. The most significant contribution is in the energy supply for domestic and industrial processes, provision of timber for construction and trees for regulation of water flow. It is estimated that 80 percent of the population use biomass energy while urban development and hydro energy rely heavily on water. Forests will continue to provide essential goods and services such as timber, poles, fuel-wood, food, medicines, fodder and other non-wood forest products.
Forest resources and forestry development activities also contribute significantly to the national economy by supplying raw materials for industrial use and creating substantial employment opportunities and livelihoods. As important as our forests are to the national economy, their sustainable development and management continues to be hampered by a number of factors, including inadequate financial resources and the lack of an enabling policy and legislation. In addition, the increasing population and poverty continue to exert pressure on the country’s forest resource (Kaiza, 2010: 1).

2.1.2 DEVELOPMENT OF DEFORESTATION AND EVICTION POLICY FRAMEWORK IN KENYA

Kenya is internationally considered to be a low forest cover country as it has less than 10 percent of its total land area classified as forest. Forests cover less than 2 percent of the country’s landmass divided into natural (about 2 million ha) and plantation forests (about 0.24 million ha) (National Environmental Action Plan, 2009:9).

The Mau Forest Complex, a key water catchment is being deforested at an alarming rate due to charcoal production, logging, encroachment and settlements. One quarter of the Mau forest – some 100,000 hectares – has been destroyed since 2000 (UNEP, 2009:3). The five water towers - Mau Forest Complex, Aberdares Range, Mt. Elgon, Cherangani Hills and Kakamega Forest - are critical as water catchments, vital for tourism, and hence towards achieving Kenya’s vision 2030 (National Environmental Action Plan, 2009:9). Forests play a vital roles in the livelihood of the Kenyan population through provision of invaluable forest related goods and services. The most significant contribution is in the energy supply for domestic and industrial processes, provision of timber for construction and trees for regulation of water flow (National Environmental Action Plan, 2009:9).

Approximately 5,000 ha of forest cover is lost every year through illegal logging, encroachments, settlement of people, cultivation and development projects in forest reserves. In addition, unsustainable utilization of these resources, lack of capacity to value forest goods and services, forest fires, lack of harmonized guidelines on the management of trans-boundary forests resources and lack of forest zonation has exacerbated this trend (National Environmental Action Plan, 2009:9). Decrease in forest cover has led to the decline of ecological functions, including prevention of erosion, water yield and the conservation of wildlife habitats and genetic resources. This has also led to sedimentation
and siltation of downstream water resources and compounded land degradation in the arid and semiarid areas.

The most immediate threats to Kenya's forests are subsistence activities and agricultural expansion. In recent years conflicts between forest squatters and police have escalated as the government tries to crack down on deforestation. In 2005, the government evicted 10,000 - 50,000 families from the edge of the Mau Forest in the Rift Valley as part of its campaign to protect the country's natural resources (UNEP, undated).

The National Environmental Action Plan (2009:9), has made the following proposed interventions to curb the effects of deforestation: Increased planting of trees and rehabilitation of forested areas; Implement and enforce the Forest Act 2005 and Draft policy; Undertake research and enhance collaboration on the management of invasive species; Adopt economic incentives for management of forest products; Research on efficient charcoal production technology; Finalization and implementation of charcoal policy; Build capacity on fire management; Develop and harmonize management strategies for trans-boundary forests resources; Enforce existing legislations and increase forest cover (National Environmental Action Plan, 2009:10).

Land use policies and practices such as introduction of cultivation of new crops and cropping systems, subdivision of land, settlements and related activities, irrigation schemes, and sedentary farming and livestock management have often been promoted with regard to their impacts on the environment. Their impacts are now being seen in form of widespread land degradation especially in arid and semi-arid lands (ASALS), land use conflicts, unsustainable use of resources, loss of biodiversity, soil erosion, increased incidences of poverty (Sessional paper No. 6, 1999:10).

The Kenya Forest Act 2005, has made the following key policy recommendation issues regarding forest management touching on three priority areas:

- Strategic planning and management of the Kenya Forest Service (KFS).
- Enabling community participation and benefit sharing.
The forest deforestation and eviction regulation enforcement agencies include; Ministry of land and natural resources, Ministry of Wildlife, Ministry of forestry, Ministry of land, Amnesty International, Centre on Housing Rights and Evictions (COHRE), Hakijamii Trust, Kenya Land Alliance and Kenya National Commission on Human Rights, Kenya Forest Service, United Nations Environmental Programme (UNEP), National Environmental Management Authority (NEMA) and Ministry of Environment.

2.1.3 THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR DEFORESTATION AND EVICTION IN KENYA.

The Kenya’s Forest Act and regulations made there provide the legal and regulatory framework for deforestation and eviction in Kenya. As in other countries, the Act and the regulations represent a legislative recognition of the fact that each and every individual has a right to a healthy environment and fair treatment in case of eviction. There are other legislations and regulations which necessarily relate to the rights of individuals including forest inhabitants. They are discussed in turn below.

2.1.3.1 The Forest Act

The illegally and irregularly allocated land includes large tracts of protected forest. This is despite the Forest Act (Cap 385)(54) requiring that gazetted forest land (under statutory regulations) can only be allocated if it has first been be de-gazetted, and that such action should only be taken if it was in the public interest, and subject to provisions on land use contained in other legislation. After 2000 and the introduction of the Environmental Management and Co-ordination Act (1999), this included an Environmental Impact Assessment.

For many years, forest legislation and practice in Kenya has been criticized for failing to protect the country’s indigenous forests or to ensure sustainable use of plantations and other areas of forest and woodland. Most forest communities have felt disadvantaged in being excluded from forest management and there has been a history of poor management and abuse of powers. In 2005, a new act received parliamentary approval and endorsement from the President, and came into effect when it was formally gazetted on 9 February 2007. The new act contains many innovative provisions to correct previous shortcomings, including strong emphasis on partnership working, the engagement of local
communities, and promotion of private investment. It also extends the concept of timber management to farm forestry and dry land forests. The Forests Act 2005 creates a new semiautonomous body, the Kenya Forest Service (KFS) and supportive institutions for management and conservation of all types of forests.

Kenya Forest Service

KFS is responsible for formulating policies regarding the management, conservation and use of all types of forest areas in the country. KFS is also responsible for overseeing changes resulting from the act. The new act creates a Forest Management and Conservation Fund for purposes of funding activities of the KFS and other objects of the act. The principle change being that the Ministry of Finance will not be the sole source of funds for the forest sector. The act also has clear provisions for recognition and role of community forest associations in forest management. It enables members of forest communities to enter into partnership with KFS through registered Community Forest Associations. Provisions in the act also will require addressing potentially contentious issues. For example, prior to the new act, forest reserves were gazetted with people in them. This will be a source of problem under the new act as settlements in gazetted forests are now considered illegal. Similarly, sharing of benefits has been a source of diverging perspectives for a long time. Communities bordering on forests are the main group with complaints regarding the distribution of benefits from timber value. There are no clear provisions in the act, but this will need to be addressed. The adoption of new legislation and establishment of the semiautonomous KFS opens up a major opportunity to address the inequalities of the past and to improve the quality and sustainability of Kenya’s forests, trees, and woodland. KFS, however, will face many challenges in delivering the full range of services (The World Bank, 2005:4).

2.1.3.2 The Environmental Management and Coordination Act

The Environmental Management and Coordination Act (Republic of Kenya, 1999) establishes the legal and administrative framework for the protection, conservation, and maintenance of a clean and healthy environment for all Kenyans. It sets out to establish standards for protection of hill tops, hill sides, mountain areas and forests (Section 44) reforestation and a forestation of hill tops, hill slopes and mountainous areas (Section 46) other measures for management of hill tops, hill sides and mountainous areas (Section...
47) protection of forests (Section 48) and conservation of energy and planting of trees or woodlots (Section 49). In addition, the Act covers the protection of rivers, lakes and wetlands (Section 42 - 43). The Act also covers conservation of biological diversity in situ and ex-situ (Section 51 and 52 respectively). These elements of environmental issues are relevant to the threats the Mau is currently experiencing and will be explored in this study.

2.1.4 KENYA'S LEGAL FRAMEWORK FOR THE PROTECTION AGAINST FORCED EVICTIONS.

2.1.4.1 International law
The actions of the Government of Kenya in forcibly evicting tens of thousands of people from forests violates a range of human rights, which are contained in international instruments to which Kenya is a State Party. These treaties include the International Covenant on Economic, Social and Cultural Rights (ICESCR - 1996); the International Covenant on Civil and Political Rights (ICCPR - 1966); and the African Charter on Human and Peoples' Rights (1981).

In particular, the evictions in the Mau Forest Complex violate the right to adequate housing. This right is set out in Article 11(1) of the ICESCR and the African Commission on Human and Peoples' Rights has determined that the right to housing is part of the African Charter when Articles 14, 16 and 18 are read together. As noted in section 2 above, the United Nations Committee on Economic, Social and Cultural Rights has stated in General Comment No. 7 that evictions can only proceed where they are fully "justified", "carried out in strict compliance with the relevant provisions of international human rights law and in accordance with general principles of reasonableness and proportionality" with "appropriate procedural protection and due process". Moreover, "Evictions should not result in individuals being rendered homeless or vulnerable to the violation of other human rights. Where those affected are unable to provide for themselves, the State Party must take all appropriate measures, to the maximum of its available resources, to ensure that adequate alternative housing, resettlement or access to productive land, as the case may be, is available".

The African Commission on Human and Peoples' Rights drew directly upon this General Comment No. 7 in a 2001 landmark decision concerning a complaint against the Federal Republic of Nigeria. The Commission stated that, "at a very minimum, the right to shelter
obliges the Nigerian government not to destroy the housing of its citizens and not to obstruct efforts by individuals or communities to rebuild lost homes". Indeed, UN-Habitat criticised the Mau forest evictions for contravening United Nations standards, called for restraint and understanding, and noted that though they advocate protection of water catchment areas, there is a great need for the government to ensure security of tenure with regard to the settlement of its people.

Forced eviction is also prohibited under Article 17 of the ICCPR as part of the right not to be subjected to arbitrary or unlawful interference with one’s privacy, family and home. There was also a violation of the right to an effective remedy.


2.1.4.2 National law

While the Kenyan constitution does not provide explicit protection against forced eviction, a wide range of rights in the Bill of Rights can be interpreted to provide such protection, namely; right to life and its protection of rights to shelter (Section 26), right to security of the person and the protection of the law (Section 29), right to freedom of movement (Section 39), protection for the privacy of the home and other property and from deprivation of property without compensation (Section 40), protection from deprivation of private property (Section 40), and right not to be discriminated against on the basis of sex, race, tribe, place of origin, residence or other local connections, political opinion, colour or creed (Section 27).

2.1.5 NATURE OF DEFORESTATION AND EVICTION

2.1.5.1 Firewood Collection

Half of the trees cut down in the world are used for fuel. Firewood collection contributes to the depletion of tree cover, particularly in lightly wooded areas (Wikipedia: Undated: 1). Due to lack of alternative fuels and fuel efficient stoves, this is especially a problem in Africa and highland countries in Asia such as Nepal. In areas of dense woods, dead material may fill local requirements for fuel.
Fuel wood crisis – Today 100 million people in developing countries cannot meet their minimum needs for energy, and close to 1.3 billion consume fuel wood resources faster than they are being replenished. In India, firewood is subsidized for the poorest of the poor to prevent starvation (Reed, 1997:118). Developing countries rely heavily on wood fuel, the major energy source for cooking and heating (Brouwer and McCarl, 2006:57). In Africa, the statistics are striking: an estimated 90 percent of the entire continent’s population uses fuel wood for cooking, and in Sub-Saharan Africa, firewood and brush supply approximately 52 percent of all energy sources. Land clearing by farmers may contribute as much as fuel wood gathering in the depletion of tree stocks (Agyei, 1998:1).

2.1.5.2 Mining and Infrastructure

Rare minerals such as gold, bauxite (aluminium ore) and iron ore are often discovered in areas of rainforest. To mine them huge portions of rainforest are cleared, not just the area where the mine is, but also, routes for roads and areas for storage of equipment and housing for human. For example gold mining in the Amazon Brazil and tin-mining in Indonesia. In places where there are large rivers running through the rainforest, deforestation often takes place in order to build hydroelectric power station.

2.1.5.3 Lack of political will

The Mau eviction is part of the Government of Kenya efforts to reclaim 400,000 hectares destroyed by human settlements in the vital catchment area³ (The Standard, 17 November 2009). Mau evictions are not without hitches, as politicians have politicized the evictions and some believe that a certain community is targeted for the evictions. They have incited the illegal Mau settlers not to move out of the forest unless the Government of Kenya provides an alternative settlement, despite the cost, the Kenyan Government has no choice but to evict illegal settlers; however, the legal settlers have to be resettled and compensated. The Government of Kenya must find an alternative land in which to resettle them, and pay for it (Yambo, 2008:3). The politicians are also part of the problem, during the KANU regime, some politicians are reported to have used their

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³ Forty years ago, forests covered 12 percent of Kenya, but presently it is just 1.7 percent, this is due to unbridled greed, irresponsibility and mismanagement of public resources (Makori, Ben; Daniel Wallis, David Clarke and Giles Elgood, 2009: 2-3). The government must act now before the entire ecosystem is irreversibly damaged (Morgan, 2009:2).
political influence to acquire forest land which they eventually sold to the settlers (Daily Nation, 17 November 2009:12).

2.2 REVIEW OF THEORETICAL LITERATURE

2.2.1 CAUSES OF DEFORESTATION

Deforestation is caused by a number of factors, including: farming, grazing, firewood collection and logging (Reed, 1997: 102-3; Brouwer and McCarl, 2006:55 and 58). Beneath these obvious causes are fundamental problems in development such as insufficient agricultural practices, insecure land tenure, rising unemployment, rapid population growth, forest fires (World Rainforest Movement, 1999:2-9), poverty, inappropriate policies, weak and inefficient forest management institutions, non-involvement of indigenous people in planning and management of forests, conflict and contradictions on land use rights and responsibilities, poor design of agricultural and forestry projects financed by international aid agencies (FAO,1996:9) and environmental pollution. Approximately 17 million hectares of tropical forests and woodlands are converted into agriculture; pasture lands or other uses every year (FAO, 2001: 92). At the end of 1990, Africa had an estimated 528 million hectares, or 30 percent of the world's tropical forests. In several Sub-Saharan African countries, the rate of deforestation exceeded the global annual average of 0.8 percent. While deforestation in other parts of the world is mainly caused by commercial logging or cattle ranching the leading causes in Africa are associated with human activity (Agyei, 1998:1).

2.2.1.1 Farming

The major cause of forest loss is the spread of farming. Large areas of rainforest are cleared for farmland all over the world. Agricultural land may be cleared for commercial ventures such as sugarcane, coffee or rubber plantations, a principal cause of deforestation in Central America. In the tropical rainforests, both legal and illegal colonists are trying to farm the former jungle lands, where soil conditions are very fragile. Up to 90 percent of the nutrients are in the vegetation rather than in the soil. When the forest is cut and burned, a nutrient surge occurs in the soil, leading to initial fertility. After cropping and exposure to sun and rain, however, soil fertility rapidly declines and the area becomes unproductive, in many cases prompting the farmer to slash and burn new forest areas (Reed, 1997:117). In 1930, parts of Mau forests were cleared for the establishment of forest plantations using mainly exotic species. These occupy about 10 percent of the
forest. Most of these plantations found surrounding the indigenous forests have been cleared to pave way for agriculture. Without the protection offered by the plantation the indigenous forests are now threatened (Obare and Wangwe, Undated: 4).

2.2.1.2 Grazing or cattle-ranching
Areas of rainforest, generally in developing countries, are cleared to create grazing lands. In certain situations, pastures of grass are then grown and used for grazing cattle. In Central America, Virgin forest is being destroyed by ranchers who intend to export beef to the United States (Reed, 1997:117). Cattle ranching, particularly in Latin America, is a major cause of deforestation. Ranchers either occupy large tracts of forests and clear the land themselves or they buy the "improvements" made by small farmers. Open-range grazing as is practiced in the dry woodlands and savannas of Africa can be a major contributor to deforestation when herd populations exceed the carrying capacity of the range. It can also seriously degrade the composition and quality of the forest when practiced too intensively (Brouwer and McCarl, 2006).

Cattle pasture was originally established in the flat valley bottoms on soils best suited for permanent agriculture, but eventually spread to the forests in the surrounding mountains. Many ranchers took possession of large tracts of forested land and contracted labourers to clear it with chainsaws and fire. A more common method of acquiring new pasture land was to purchase the "improvements" to the untitled land held by slash-and-burn farmers (Brouwer and McCarl, 2006). These so-called "improvements" were little more than a few opening in the forest made by the farmers to plant their crops. After obtaining the squatter's rights, the rancher would then finish the land clearing, sow the grass, and fence in the property. Once the land was transferred to the rancher, the farmer would vacate the property and move deeper into the forest to repeat the same cycle of deforestation.

2.2.2 THEORIES OF LAND USE AND DEFORESTATION
2.2.2.1 The theory of land use
The driving force in the dynamic of land uses has been the economic gain (profit) that has been obtained from each alternative. Land uses, which can produce economic profit or other benefits to land owners (be they private or public) have been allocated more land at the cost of less productive or less intensive land uses (Munroe, K. Darla and Abigail M. York, 2003:301). Basically, the same principle works for forested land uses. If the
intensity of recreational use or tourism grows sufficiently then forested land would be re-allocated from wood production to recreational purposes. Changes in land use are brought about by changing profitability of a particular use, which can be caused by changes in prices, economic conditions, policies, or infrastructure development (Munroe, K. Darla and Abigail M. York, 2003:301).

Throughout history, the competition between forested and agricultural has been particularly intense. If the soil of forests was found to be good enough for sustainable agricultural production, being able to produce more economic benefits, then it was only logical to change the land use. However, in many cases, the shift from forested land use to agricultural land use has not resulted in sustainable agricultural production such as on the steep slopes of mountainous tropical forest areas. In some instances, this shift has been the result of excessive agricultural subsidies or tax exempts such as clearing forests for cattle production. Further, in other cases, it has caused biodiversity or other ecological losses (Munroe, K. Darla and Abigail M. York, 2003:300).

In almost all countries the state and the regional and/or local authorities are engaged in long term broad land use planning. Detailed local planning procedures also exist in order to promote balanced changes in land use and then to appropriately guide the spatial organization of different activities. However, very seldom has spatial planning helped in maintaining forest cover (Oryani, Kazem and Britton Harris, 1996:2).

Land use policies and practices such as introduction of cultivation of new crops and cropping systems, subdivision of land, settlements and related activities, irrigation schemes, and sedentary farming and livestock management have often been promoted with regard to their impacts on the environment. Their impacts are now being seen in form of widespread land degradation especially in arid and semi-arid lands (ASALS), land use conflicts, unsustainable use of resources, loss of biodiversity, soil erosion, increased incidences of poverty. This theory is inadequate and it does not provide a fully detailed explanation on the impacts of deforestation (World Bank, 1996: 21).
2.2.2.2 Modernization Theory

Modernization theory is a theory explains the process of Modernization within societies. The theory looks at the internal factors of a country while assuming that, with assistance, "traditional" countries can be brought to development in the same manner more developed countries have. Modernization theory attempts to identify the social variables which contribute to social progress and development of societies, and seeks to explain the process of social evolution. Modernization theory not only stresses the process of change but also the responses to that change. It also looks at internal dynamics while referring to social and cultural structures and the adaptation of new technologies.

A number of sociologists have written a lot of literature on modernization theory, they include: Max Weber, Georg Simmel, Emile Durkheim and John Shandra. Weber is most famous for his thesis on economic sociology, The Protestant Ethic and the Spirit of Capitalism. In this text, Weber argued that ascetic Protestantism particular to the Occident was one of the major "elective affinities" in determining the rise of capitalism, bureaucracy and the rational-legal nation-state. Weber (1930: 5 – 6), did not consider the development of capitalism in purely material terms; he instead emphasised religious influences embedded in culture.

Weber equates modernization with the emergence of bureaucracy and authority. He classifies authority into three types—legitimate, traditional, and charismatic. In these works Weber described what he saw as society's movement towards rationalization. He also sees the modern world as an iron cage of rational systems from which there is no escape. According to Weber an ideal bureaucracy has characteristics such as hierarchy of authority, impersonality, written rules of conduct, promotions based on achievement granted by superiors, specialized division of labour, efficiency and fixed salaries. He therefore argues that by following all these rules we become trapped in an iron cage.

Bureaucracy puts us in an iron cage which limits individual human freedom and potential instead of a “technological utopia” that should set us free. It’s the way of our institutions where we do not have a choice anymore (Calhoun, Gerteis, Moody, Pfaff and Virk, 2002:250).
Weber (1930:7), formulated a three-component theory of stratification, with Social class, Social status and party (or political) as conceptually distinct elements.

- Social class is based on economically determined relationship to the market (owner, renter and employee).
- Status is based on non-economical qualities like honour, prestige and religion.
- Party refers to affiliations in the political domain.

All three dimensions have consequences for what Weber called "life chances".

Simmel saw money as a component of life that helped us understand the totality of life. He believed people created value by making objects, then separating themselves from that object and then trying to overcome that distance. He found that things that were too close were not considered valuable and things that were too far for people to get were also not considered valuable. What was also considered in determining value was the scarcity, time, sacrifice, and difficulties involved in getting the object. As money and transactions increase, the value of the individual decreases and everything becomes about what the individual can do instead of who the individual is. Another negative effect of money is the effect it has on people's beliefs. Everything boils down to dollars and cents instead of emotional value (Simmel and Frisby, 2004:31 - 32).

Durkheim sees modernization as the decline of collective conscience – people not taking collective responsibility. He says that despite it offering greater freedom associated with organized solidarity, it also has unique problems like the decline of common morality (Calhoun, Gerteis, Moody, Pfaff and Virk, 2002:250).

Durkheim (1997:2) sees modernization as characterized by functionalism and he defines functionalism as;

1. A system of vital movements such as digestion and respiration without reference to the consequences of these movements; or
2. The relationship between these movements and the corresponding needs of the organism such as digestion incorporates food essential to replenish nutritional resources of the body, while respiration introduces the necessary gases into the body's tissues.
Durkheim (1997:9) suggested that in a capitalist society, with a complex division of labour, economic regulation would be needed to maintain order. He stressed that the major transition from a primitive social order to a more advanced industrial society could otherwise bring crisis and disorder.

Durkheim developed the idea of social evolution in which he argues that society evolves from a lower to a higher type, the bonds created by mechanical solidarity become still weaker. The strength of mechanical solidarity, Durkheim argued, depends on three conditions:

1. The relation between the volume of the conscience collective relative to the individual conscience;
2. The average intensity of the states of the conscience collective; and
3. The degree of the conscience collective (Durkheim, 1997:9).

According to Durkheim, as societies became modern, it was important to have rules and laws that governed these societies.

The modernization perspective argues that a unique relationship exists between economic development and deforestation, this relationship exists mainly because of the shift of economic production activities away from natural resource extraction toward service-based activities. In terms of this sectoral change, very poor nations have limited production functions based on primitive technologies and spiritual attitudes toward the physical world. These factors place a ceiling on productivity and largely limit economies to subsistence agriculture. With economic activity limited predominantly to this form of agriculture, deforestation should be relatively low (Ehrhardt-Martinez, Crenshaw, and Jenkins, 2002:228 – 230).

As countries begin to industrialize, the extraction of natural resources and the building of infrastructure play central roles in increasing economic development. These practices often increase deforestation because they are highly dependent upon the extraction of minerals and other natural resources such as logs and other forest products. During this period, timber for construction and charcoal for household and industrial use are also in high demand. At high levels of economic development, however, there are improvements in energy efficiency and growing service-based economic activities. Further, high levels of development are also characterized by a complete infrastructure, a shift to new
building materials, and more use of fossil fuels for energy, all of which may reduce pressure on forests.

Ehrhardt-Martinez, Crenshaw, and Jenkins (2002:230 - 231) argue that democracy may reduce deforestation. This is based on several factors. First, democratic nations have higher levels of activism than repressive nations because they provide their citizens with ways to engage in the public dialogue. This occurs by granting the freedoms of speech, press, and assembly. Second, democratic nations must be more responsive to political activism because of electoral accountability. The responsiveness of leaders in a democracy is partially based upon the need for public officials to win popular elections to maintain their positions. The officials, who fail to address the needs of citizens or at least give the impression of concern, face the risk of losing their positions in subsequent elections. Third, greater freedom of the press leads to wider diffusion of information, which, in turn, raises public awareness, combats corruption, and encourages environmental reform. Thus, this theory provides some aspects on deforestation in growing economies such as Kenya which this study is interested in exploring.

2.2.2.3 World-Systems Theory
Wallerstein (1974:229) defines the world system as a social system, one that has boundaries, structures, member groups, rules of legitimation and coherence. Its life is made up of the conflicting forces which hold it together by tension and tear it apart as each group seeks eternally to remould it to its advantage. It has the characteristics of an organism, in that it has a life span over which its characteristics change in some respects and remain stable in others. Life within it is largely self-contained, and the dynamics of its development are largely internal. He argues that the world system is a multicultural territorial division of labor in which the production and exchange of basic goods and raw materials is necessary for the everyday life of its inhabitants.

The division of labor refers to the forces and relations of production of the world economy as a whole and it leads to the forces and relations of production of the world economy as a whole and it leads to the existence of two interdependent regions: core and the periphery (Wallerstein, 1974:231).
Core regions benefited the most from the capitalist world economy. Much of the north-western Europe (England, France and Holland) developed as the first core region. Core countries are characterised by strong central governments, well developed infrastructure, extensive bureaucracies and large mercenary armies. The peripheral zones are characterised by weak central governments or controlled by other states, they export raw materials to the core and rely on coercive labour practices. The semi-periphery zones lie between the core and the periphery, these zones represent either core regions in decline or peripheries attempting to improve their relative position in the world economic system (Wallerstein, 1974:231). Third world nations, Kenya being one of them are considered as the periphery that exports forest products to core countries and this explains the continued rates of deforestation in these countries.

Canak (1989:235) argues in Latin America, the governments’ catastrophic accumulation of foreign debt is still their most pressing concern, not so much because it continues to limit external financial resources and continues to bring internal economic growth to a standstill, but because macroeconomic remedies for the crisis are so politically charged. With financial resources scarce, governments are forced to make difficult decisions about which social classes will bear the brunt of austerity and which will receive the nations limited resources. These decisions are never benign. They generate serious social conflicts, in turn challenging the capacity of national governments to implement these policies. Debt crisis has brought inflation, scarce credit, unemployment and reduced public spending and the growing power of international linked firms that accompany debt crisis and its attendant stabilization policies.

This theory may be useful in explaining the causes of deforestation in the Mau Water Tower and its impact on the Ogiek community. This study will explore the patterns of Mau Forest deforestation in relation to the Ogiek habitat.

2.2.2.4 Neo-Malthusian Theory

In his first essay Malthus offered the simple assertion that continues to dominate and haunt debates about human population: “the power of population is indefinitely greater than the power in the earth to produce subsistence for man” (Malthus, 1986:71). He argues that human beings have the reproductive potential to grow at a geometrical rate, multiplying their numbers every few years.
Malthus also believed that human beings had the potential to expand food supplies, but that the productive potential of mankind was substantially less than its reproductive capacity. Whereas human populations could grow multiplicatively, food supplies could only be expanded additively (Malthus, 1986 Vol. 2:20). The major factor limiting the expansion of food, according to Malthus, was the finiteness of land available for cultivation. According to Malthus, demographic factors, such as population growth, are a prominent cause of environmental degradation. Increases in population growth drive basic extraction, consumption and production activities.

All of these processes have the potential to generate deforestation. For example, economies of poor countries provide few livelihoods for poor peasants other than agriculture. Low levels of economic activity and the fiscal austerity associated with large foreign debts prevent the creation of jobs in sectors other than agriculture that otherwise might attract people to cities and relieve the human demand on forest resources (Burns et al, 2003:360; Ehrhardt-Martinez, Crenshaw, and Jenkins, 2002:231 - 232). The absence of alternative economic opportunities and the increase in the number of people competing for these opportunities compel individuals to expand agricultural production to survive by clearing forests (Burns et al, 2003:361). This often occurs when an army of surplus laborers moves to obtain property by clearing land when road building opens up a region for development. This theory will be useful in exploring the patterns of Mau Forest deforestation specifically in relation to the Ogiek habitat.

2.2.2.5 Econometric Model of Deforestation
This model argues that the complexity of deforestation problems around the world has brought some studies to classify the interaction of tropical deforestation causality into several categories. They can be defined generally as direct (or proximate) causes and underlying causes of deforestation (Zikri, 2009:3 - 4). Besides the two categories, Angelsens and Kaimowitz (1999: 75) added another group of variables, that is, agents of deforestation.
Angelsen and Kaimowitz (1999: 74), define five groups of variables needed for deforestation models: the magnitude and location of deforestation, which can be examined through their involvement in converting the land and their characteristics; the choice variables, which are set of options available to allocate the land for the agents; agents’ decision parameter which consists the external variables that affect agents’ decisions; the macroeconomic variables and policy instruments, which are the group of variables that affects the agents’ decision parameters as illustrated in **figure 1**.

However, current literature on economic models of deforestation makes no distinction between direct and indirect causes of deforestation in their models but rather to put all variables in a single equation. As a result, the relationship between deforestation and multiple causative factors are many and varied, showing no distinct pattern. For example,
it is reported that population growth increases deforestation in some studies but the other studies find it reduces deforestation (Angelsen and Kaimowitz 1999: 88 - 89).

The work of Mahapatra and Kant (2005: 4 - 5), is an exception and offers a better way to modelling deforestation because they are able to classify the causes of tropical deforestation in two levels: the first level (or direct) causes and second level (or indirect) causes. Then they developed one equation in first stage where deforestation as dependent variable: and four stage causal factors, consisting consumption and exports of forest products and changes in land usage for cropland and pasture as independent variables. All the four explanatory variables in the first stage equation are determined by the second stage causes of deforestation through four equations where most discussed factors in deforestation such as population and income as the explanatory variables.

2.2.2.6 The Sustainable Livelihood Approach (SLA) theory

Local livelihood strategies inevitably lead to deforestation. To understand the reasons for this, the complex issue of livelihood systems must be considered. The Sustainable Livelihood Approach (SLA), developed by DIFID and further modified and improved by Baumgartner und Högger (2004:46), enables analysis and explanation of decision making. It makes the distinction between context and core factors of a livelihood system.

*Context* represents risks and vulnerabilities, opportunities, services and policy processes and institutions. *Core* represents personal, emotional and spiritual aspects, as well as the material and non-material resources of a household. Orientation of the core is assessed at the individual, family and community levels. *Livelihood strategies* reflect the range of activities and choices that people make based on the given context and core factors. Livelihood outcomes are the result of livelihood strategies, which in turn influence the whole livelihood system. Livelihood systems are based on a network of interacting relationships between context factors and core factors. The SLA can be used to gain a holistic understanding of these factors and processes and to therefore better understand what is needed to halt current deforestation practices (Conference on International Research on Food Security, Natural Resource Management and Rural Development, 2010: Update)
The context factors of livelihood systems

**Vulnerability:** Cyclones periodically destroy part or the entire rice crop of individual households. Because of the extreme poverty in the region, households do not have enough flexibility to risk the loss of time and crops that searching for alternative agricultural techniques would demand. Instead, farmers prefer to maintain *Tavy*, which is a flexible, low-input system that is adapted to a climate that includes frequent cyclones (Brand, 1998:96).

**Services:** Even if adequate agricultural techniques were available, they would have to be introduced by agricultural consulting services and would need the constant support of local farmers. However, in eastern Madagascar, there is a significant lack of professional arrangements and limited access to knowledge. Most villages are located in remote regions at considerable distances from each other (up to 8 hours walking distance).

**Institutions and Policies:** Local customary rights hinder the adoption of alternative techniques for rice cultivation and are instead rather conducive to maintaining the *Tavy* system. According to customary rights, all framers (including immigrants) become the owners of converted land and of the surrounding forest fragments (Urech et al., 2010:25). Thus, people have a double interest in converting forest; on the one hand, people become owners of arable land and on the other, they become owners of forest fragments which act as future land reserves. For large, continuous forests, a custom of open-access also makes resource management challenging. In such situations, Hardin’s 1968 „tragedy of the commons“ theory becomes particularly relevant. The theory forecasts the over-exploitation of all common-pool resources as long as no local regulations are in place to ensure sound management (Ostrom, 1999: 102). Such regulations are overlooked in local customary rights. Only small forest fragments are considered the “private property” of a single family and can therefore be protected from further deforestation by other families.

**Opportunities:** Forests act as a safety net in times of shock and crisis, producing several non timber forest products (NTFPs) and timber that can be sold or used for personal consumption. However, the potential of these opportunities is limited or even unused due to the lack of regulation in customary rights, poor market access and ineffective (or nonexistent) governmental control mechanisms. As a result, for the local population the value of converted land is much higher than the value of forests. Thus, forest conversion
The core factors of livelihood systems

Forests act as a safety net in times of shock and crisis, producing several non timber forest products (NTFPs) and timber that can be sold or used for personal consumption. However, the potential of these opportunities is limited or even unused due to the lack of regulation in customary rights, poor market access and ineffective (or nonexistent) governmental control mechanisms. As a result, for the local population the value of converted land is much higher than the value of forests. Thus, forest conversion continues.

Context factors alone cannot explain the ongoing livelihood strategies that lead to deforestation if not considered in conjunction with the core factors of a household. Ultimately, value orientations, personal ambitions and existing material and non-material resources determine the decision making of a household. One of the most important core factors characterizing the rural population of the east coast is the strong attachment to ancestors. As mentioned before, deforestation enables land ownership; however, the conversion of forest into arable land is also considered essential for ensuring a connection between the ancestors and future generations (Keller, 2008:102). Descendants should be rooted in the land of the ancestors. According to long tradition, deforestation and subsequent cultivation are the only means of guaranteeing this connection. Villages with no forest left for deforestation may therefore be more amenable to adapting new and improved technologies. In such cases, alternative techniques help to reduce poverty and rice shortages, but not deforestation.

While exploring core factors, we also questioned people about their awareness of resource finiteness. Most farmers living close to the continuous forest massif are not able to envision a landscape without forests and therefore do not see forests as an exhaustible resource. Only farmers living far from the forest massif are aware of the exhaustibility of forest resources, as forests have already disappeared to a huge extent during the farmers’ own life spans. The further away from the continuous forest a household is, the higher its interest is in preserving remaining forests and in changing current livelihood strategies. But communal interventions and regulations to enhance sustainable forest management
are only possible if individual interest becomes collective concern. We did not observe any community-based approaches for sustainable forest management at any of our study sites. While tendencies toward management of particular forest products could be observed, no such regulation exists in regard to deforestation (Conference on International Research on Food Security, Natural Resource Management and Rural Development, 2010: Update)

2.2.2.7 Common Property Resource Theory
This theory argues that the benefits of forests But it is other benefits from forests that have been of greater interest to common property scholars – the immediate relevance of forests to the livelihoods of hundreds of millions of rural residents. Forests play a significant role in the livelihoods of the rural poor in the context of competing claims from multiple parties. Institutional solutions to competing claims are always complex because of the simultaneous importance of forests for global conservation and local livelihoods. Such solutions are also provisional and subject to ongoing revisions as a result of demographic shifts, developmental processes, changes in landscapes, and political alliances among other variables. As Dietz et al. (2003:1907) remark, ‘Successful commons governance requires that rules evolve’. The fascinating institutional interplay related to socio-ecological complexity and contextual change has helped generate a vast corpus of research on forests, both within and outside the field of common property. The size, variety, and depth of this body of research is a reasonable reflection of the many different ways in which forests have been, and continue to be, central to human survival, livelihoods, and prosperity.

2.3 Theoretical Framework
This study took a multiplicity of theories to provide the basic theoretical framework for analyzing the socio-economic impact of deforestation and eviction on the Ogiek community in the Mau forest, Kenya. The theories included; the theory of land use, Modernization theory, world system theory and Neo-Malthusian theory and the theories of eviction tend to emphasise one or more but limited aspects of deforestation and eviction.

The Modernization theory argues that there exists a unique relationship between economic development and deforestation in which deforestation increases in the early
stages of development but levels off and declines as economies mature. This theory also points out that as economies grow there is a shift from natural resource extraction to service based economic activities that reduce pressure on forests. This theory also argues that democracy may reduce or increase deforestation. The modernization theory was important in this study as it focussed on the sources of deforestation.

While modernization theory emphasizes on economic development, the world system theory focuses on the relationship between the rich economies and the developing countries. The World System theory puts emphasis on the “vertical trade” between the core countries and the peripheral countries in which developing countries import high-priced and technologically advanced manufactured goods from the developed nations. In order to pay for these imports, the developing nations have to exploit their natural resources through logging, mining, oil drilling and mono-crop agricultural production. The World System Theory was important in this study as it focussed on the intermediate causes of deforestation.

The Neo-Malthusian theory focuses on demographic factors such as population growth as the major cause of environmental degradation. This theory argues that, with increase of population, individuals are forced to expand agricultural production to survive by clearing forests. In respect to this, the Neo-Malthusian theory was in essence very important in my study of the Mau Forest Complex as it examined the impact of population growth in Kenya as a factor in contributing to the deforestation that has taken place in the Mau Complex.

**Figure 2 represents my integration of the deforestation and eviction theories.**

The equation consists of five explanatory variables that show the two sources of deforestation and eviction as depicted by the modernization theory that is the demand for forests extraction due to domestic consumption and exports as the first two intermediate causes; and demand for land conversions due to the growing demands for food, tea and land settlement as the three additional intermediate causes (world system theory).

All the five intermediate causes are determined in the second-stage system. The intermediate causes of forestry are explained in two equations, consisting consumption of
forest products and export of forest products. Meanwhile the intermediate causes for agriculture are expressed by three equations, containing respectively the changes in food cropland, tea cropland and land settlement. With increased demand for forests products, deforestation increases and this has a socio-economic impact on the lives of the evictees as not only are they bound to lose their natural habitat and culture as well as cultural practices but they are also forced to participate in the destruction of the forests through extraction of forests products for domestic consumption as well as exports. This has further causes drought in the country as the water sources dry up and forests that attract rainfall also are destroyed. Deforestation as well can lead to several secondary hazards including: landslides, drought and famine, desertification, fires, flooding and possible global warming and all these have a socio-economic impact on lives of the evictees as they may as well lead to death if not averted on time.

The deforestation equation shows the relationship between the amounts of forest loss with the amount of round wood consumed, the amount of forest products exported, change in food cropland, change in tea cropland and change in land settlement. With increased demand of conversion of forested land to agricultural land, this has had a socio-economic impact on the lives of the evictees as this has led to loss of trees that were valued for their medicinal value as well as plants that were a source of food to the forest dwellers, and thus this has further increased hunger due to lack of food as well as increase in diseases as well as disease transmissions amongst evictees due to lack of treatment due to lack of medicine.

The other main determinant is population. The Neo-Malthusian theory argues that increasing human population will put severe pressure on natural resources such as land and forests thus cause deforestation. This is evident in the Mau, with increased population growth, communities resorted to seek shelter in the forest by clearing down the forest to construct housing further causing deforestation of the Water Tower. Governments’ attempt to protect the Mau Water Tower from further destruction evicted the Mau settlers from the Mau Water Tower, thus the Mau evictees have been rendered homeless and destitute as they have no where to go and they have been waiting patiently for the Kenyan Government to resettle them in an alternative land, but seemingly it may take some time. This has further triggered insecurity amongst the evictees, as they are liable to attacks.
The equation of forest product export consists of four main explanatory variables: prices, exchange rate, foreign income and external debt. Decreased real wage rates and forest conversion costs due to increased labour supply and higher prices of agriculture land and agricultural products due to increased demand of both, create economic incentives to expand agriculture into forest areas leading to deforestation. Low levels of income and lack of access to capital force people to be at risk and adopt a high discount rate in utilizing natural resources such as forests leads to deforestation. Deforestation and eviction has a socio-economic impact on evictees since as a result of resource scarcities evictees who are mostly farmers become poorer, and they are pushed further into new areas expanding deforestation.

Deforestation and eviction also has an impact on the socio-economic lives of the evictees in terms of economy; with increased deforestation and eviction from forested areas, implies that the evictees have no access to firewood and thus commercially marketed firewood is becoming scarce and prices are growing higher and this has a negative impact on their livelihood, since it implies that they will have less income as well as lack fuel for cooking. Wood for construction is also scarce and this adversely affects availability of housing amongst evictees, thus this leads to violation of human rights especially the right shelter and proper as well as adequate housing.

Deforestation and eviction has also led to reduced income amongst evictees, with the destruction of bio-diversity animals and birds have been forced to migrate to other regions where the environment is conducive and this has led to reduced tourism in the country further causing poverty amongst the evictees who depended on this bio-diversity as a source of income, since most of them earned a living as guides or traders to visitors who frequented such places, for example the flamingos in Lake Nakuru and Lake Naivasha were forced to migrate due to severe scarcity of water.

Availability of capital helps in better forest management and creates awareness among citizens for forest preservation. An increase in income due to economic growth is expected to reduce deforestation. The Kenyan Government has set a side funding to protect the Mau from further destruction. Rising economic growth can also have detrimental effects on deforestation. The amount of local capital available for investment in forest regions (for logging) increases with economic growth leading to deforestation as
discussed in the modernization theory. Economic growth also increases demand for agricultural and forest products both for domestic consumption and export. Expansion of agricultural area and logging is necessary to meet these increased demands, thus deforestation increases. With the expansion of agricultural area and logging, the land surface is left bare, and hence liable to soil erosion as well as increased runoff and this has an impact on the lives of evictees as there is reduced food production, causing increase in food prices that the evictees cannot afford, thus increased hunger amongst evictees.

External debt is considered as one of the underlying factors driving tropical forest conversion. External debt service obligations push countries to make myopic decisions in order to increase export of primary products ignoring long term natural resources concerns. Such decisions may include economic incentives, in terms of reduced timber prices, taxes and other inputs at low prices, to increase production and export of timber. Similarly, agriculture and re-settlement policies may promote expansion of agricultural areas into forest areas to increase foreign exchange earnings from exports of agricultural products as represented by the world system theory. Capital scarcity also leads to low or no investment in forest research and management. All these policies will result into increased deforestation.

Modernization theory focuses on economic development, thus rising population growth in the rural areas accelerates migration of rural people to urban areas, thus plummeting pressure on forest areas. The demand for shelter in urban areas results in the construction of high-rise buildings or by developing new townships in fallow lands around the existing city, thus increased demand for commercial logging as well as demand for land conversion. The world system theory argues that expansion of commercial agriculture such as tea as well as shifting cultivation has resulted in the eviction of peasants from their land to forested areas. This is applicable in the case of the Mau where the Mau settlers were forced out of their homes and they ended up settling in the Mau Forest, this has had a great impact in their lives as they have been driven out of the forest and they do not have an alternative settlement, thus invading their privacy.

Increased deforestation and eviction is likely to result into the following socio-economic impacts: desertification; drought; climate change; loss of fuel, food and medicines;
destruction of biodiversity and traditional cultures; increased runoff; impact on economy; loss of soil fertility; soil erosion; violation of human rights; homelessness; insecurity; lack of privacy and increased number of internally displaced persons. These conditions are already being experienced currently in Kenya, as most of the rivers have dried up causing water shortages in urban centres, there is equally reduced electricity supply, families that were evicted from the Mau Water Towers are yet to be re-settled by the Kenyan Government. As a result of the drying rivers, the fauna and flora has been greatly damaged resulting to the death of animals hence reducing tourism in the country. Drought is also being experienced country wide and the government has already issued an alert especially to pastoralist communities so that the animal off take programme can begin to avert the crisis.

2.4 Research Questions

The following research questions arose from the literature review.

1. What conservation and resettlement programmes has the government instituted to protect the Mau from any further destruction?

2. How has the implementation of the forest eviction programme affected the way of life of the indigenous forest dwellers in the Mau Water Tower? Are there alternatives that could have been considered, or more humanitarian?

3. What limitations does the KFS have in ensuring that forest dwellers comply with forest protection from any form of destruction?
CHAPTER THREE: RESEARCH METHODS

3.1 Site of the study
This study was carried out in the Mau. It covered three forest areas namely; Tinet Forest, Nesuit Forest and Marishooni Forest, within the Mau Complex. Mau Water Tower is the largest forest in Kenya and was therefore the most appropriate in achieving the objectives of the study.

3.2 Research design
Research design is the process of creating an empirical test to support or refute a knowledge claim. Nachmias (1996:12), defines research design as the program that guides the investigator as he or she collects, analyzes, and interprets observations. This study employed descriptive study method to assist in providing adequate interpretation of the phenomenon under investigation. Descriptive study is a fact finding investigation. According to Gay (1981:48), a descriptive study determines and reports the way things are and commonly involves assessing attitudes, opinions, organizations and procedures. The source of information in this study are the Ogiek community in the Mau Forest and the Ministry of Forestry and Wildlife senior management and KFS forest managers.

3.3 Unit of analysis and unit of observation
The units of analysis were the three forest areas within the Mau. The units of observation were the Ogiek community, Ministry of Forestry and Wildlife senior management and KFS forest managers.

3.4 Sampling
3.4.1 Selection of Sample Forest areas.
The forests included in this study were selected on the basis of whether the forests represent habitation for the Ogiek community. They included; Tinet forest, Nesuit forest and Marishooni forest. Tinet forest in the Mau Water Tower is the original home to the Ogiek community. An initial exploratory survey was carried out to help in identifying the forests. The KFS being the regulatory authority were also studied.
3.4.2 Respondent selection

The KFS managers were expected to be familiar with the Forestry Act together with issues touching on the deforestation and eviction with the Act. They were therefore the key informants on the legal, deforestation and eviction issues. The Ogiek community who have witnessed the deforestation in the Mau Water Tower and as well undergone eviction were also interviewed. Other pertinent institutional information found in records both within the KFS and in the public domain were examined as secondary data.

3.4.2.1 Procedures for Respondent Selection

Three categories of respondents took part in this study: KFS forest managers, senior management at the Ministry of Forestry and Ogiek community members. A total of 45 KFS forest managers are located in 10 Forest Conservancy Areas, 71 Forest Zones, 150 Forest stations, and 250 Forest Extension areas. The Mau is one of the Forest Conservancy Areas in the country, and it has 22 Forest Zones, 7 Forest Extensions and 58 Forest Stations.

Thus, a total of 6 KFS forest managers based in the Mau were randomly identified, selected and interviewed from the existing pool of 45 managerial staff. The 6 KFS managers were selected randomly, 1 manager per core function based on the six core functions of KFS including: Forest Extension Services; Sales of forest and allied products; Regulatory Services; Commercial and Advisory Services; Forest protection, management and conservation services; and Training at KFC.

Similarly, a sample of at least 5 senior forest managers were selected randomly, 1 manager per department from the 10 departments from the Ministry of Forestry and Wildlife and interviewed. There are 14 senior managers in the Ministry of Forestry and Wildlife. The departments in the Ministry of Forestry and Wildlife include:

- Department of Forestry Development Policy;
- Department of Development of Forests, Reafforestation, and Agro forestry;
- Water Catchment Area Conservation department;
- Kenya Forestry Services department;
- Kenya Forestry Research Institute (KEFRI) department;
- Wildlife Conservation Policy department;
• Conservation and Protection of National Wildlife Heritage department;
• Kenya Wildlife Service (KWS) department and
• Wildlife Clubs of Kenya department and
• The Marine Parks department.

The 5 Senior forest managers were selected to participate in the interviews were the ones dealing with forest issues and they were selected from the following departments: Department of Forestry Development Policy; Department of Development of Forests, Reafforestation, and Agro forestry; Water Catchment Area Conservation department; Kenya Forestry Services department and Kenya Forestry Research Institute (KEFRI) department.

Likewise, a sample size of 30 Ogiek community members was selected through purposive sampling from a total of 15,000 Ogiek community members who live in the Mau Complex. Purposive sampling was the most appropriate method for sampling the 30 Ogiek community members since this method targets a particular group which in this case is the Ogiek community. This method was appropriate since the desired population for the study (Ogiek community) was very difficult to locate and recruit for the study. Ten Ogiek community members were sampled from each of the three selected forest areas, giving a total of 30. Proportional random sampling method could not be used in this study because the Kenya National Bureau of Statistics (1999) census report does not provide a breakdown of the population of the Ogiek in each of the three forest areas; it only provides the total population of the Ogiek. 

Table 1 below shows the distribution of respondents interviewed.
Table 1: Proposed composition of Respondents

<table>
<thead>
<tr>
<th>Target Respondents</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFS forest managers or other technical staff</td>
<td>6</td>
</tr>
<tr>
<td>Senior management at the Ministry of Forestry department</td>
<td>5</td>
</tr>
<tr>
<td>The Ogiek community</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
</tr>
</tbody>
</table>

3.5 Data Collection Methods

This study used two main methods, namely: examination of secondary data and interviews. The tools used in this study were the interview schedules and checklist for examination of secondary data. The researcher personally carry out the interviews and examination of secondary data.

3.5.1 Examination of Secondary Data

Available secondary data that were collected by KFS, international agencies and private organisations for some other purposes and that could give information relevant to the research questions and objectives were identified, examined and evaluated for suitability of purpose. Among others, key documents examined included: KFS annual reports, KFS Strategic Plan, KFS periodic reports, Environmental Management and Co-ordination Act and NEMA Environmental Assessment Impact Reports. A list of secondary sources examined is appended as ANNEX 1. The findings of interest from the documents have been grouped under themes which included causes of deforestation, governments' deforestation and eviction policies and impacts of deforestation and eviction.

3.5.2 Key informant Interviews

KFS managers and senior managers at the Ministry of Forestry and Wildlife were interviewed on causes of deforestation, impacts of eviction and effectiveness of the governments' eviction programme governments resettlement and conservation programmes. These issues provided a basis for the management and control of deforestation and eviction activities and are linked to the study objectives and research questions. Key informants for this study were KFS managers. The outline topics for interview with key informants are detailed in ANNEX 2. The interviews were held at the forestry department.
3.5.3 Interview of sampled Ogiek

The Ogiek community members were interviewed on the causes and impact of deforestation and impact of eviction. These issues provided a basis for the socio-economic impact of deforestation and eviction in the Mau Water Tower and are linked to the study objectives and research questions. The outline topics for discussion with the Ogiek community members are detailed in ANNEX 3. The interviews were held at the three forest areas, that is; Tinet Forest, Mariashooni Forest and Nesuit Forest in the Mau Water Tower.

3.6 Data collection tools

The data collection tools that were used in this study include interview schedule and in-person surveys.

3.6.1 Interview schedule

A set of questions were administered to the Ogiek community in the Mau to determine their views on the socio-economic impacts on deforestation and eviction (see ANNEX 3). A total of 30 Ogiek community members participated in this exercise.

3.6.2 In-person surveys

Face-to-face conversations were held with KFS forest managers as well as senior management at the Ministry of Forestry and Wildlife to get their views on some of the conservation and resettlement programmes that the government has instituted to protect the Mau from any further destruction. Six KFS forest managers and five senior management at the Ministry of Forestry and Wildlife participated in this exercise. Formal, structured guidelines presented in ANNEX 2 were used in this exercise. Each of the 6 KFS forest managers as well as the five senior managers at the Ministry of Forestry and Wildlife provided answers on a separate sheet of paper.

3.7 Techniques of Data Processing and Analysis

3.7.1 Data Processing Procedures

Data and information obtained from interviews and examination of secondary data were organized and grouped under appropriate categories and themes such as legal and regulatory framework; deforestation, eviction, organization structure; deforestation and eviction policies; and such other categories as may emerge from the data.
Processing data involved both manual tabulation as well as computer processing. Tabulation was not only the main component of data processing but the tables produced were the most visible outcome of the whole analysis and the most used output. Nevertheless, all preparations including tables and computer programs were completed and tested, and the data editing and corrections were properly done before the tabulation could become a reality. Data collected from the KFS forest managers as well as senior management from the Ministry of Forestry and Wildlife and data on factors affected forest dwellers' compliance with Mau Forest Water protection were manually tabulated. Data collected from the Ogiek community by use of interview schedule were processed by use of the computer (SPSS computer programme). The computer processing involved: data editing, data entry, sorting data, coding data, summarizing data, and converting data into more usable information.

3.7.2 Techniques for Answering Research Questions

3.7.2.1 Research Question 1: What conservation and resettlement programmes has the government instituted to protect the Mau from any further destruction?

This research question was answered by analysing responses to issues discussed as listed in ANNEXE 2. An analysis involving a classification scheme was carried out to identify specific conservation and resettlement programmes that the government has instituted to protect the Mau from any further destruction. The steps involved in the classification scheme in this case included grouping the responses under appropriate topics as indicated in the interview guide, that is, Legal framework, Policies, Resources, Resettlement and Conservation programmes. These responses were then assessed to identify the conservation and resettlement programmes that the government has instituted or not instituted in its attempt to protect the Mau from further destruction. This process involved systematic compression of information collected to fewer themes based on explicit rules of coding.

3.7.2.2 Research Question 2: How has the implementation of the forest eviction programme affected the way of life of the indigenous forest dwellers in the Mau Water Tower? Are there alternatives that could have been considered or more humanitarian?

Following from the findings related to research question 1, an analysis was carried out to identify how the forest eviction programme has affected the way of life of the indigenous forest dwellers in the Mau Water Tower. Other humanitarian alternatives that the
government has put in place or ought to have put in place during the eviction process were also analysed based on issues listed in ANNEX 3. These data was analysed through cross tabulation, which involved determining trends and possible association between deforestation and eviction.

3.7.2.3 Research Question 3: What limitations does the KFS have in ensuring that forest dwellers comply with forest protection from any form of destruction?

This research question was answered by analysing issues presented in ANNEX 4 and 5 through cross tabulation. Cross tabulation was used to analyse data on factors affecting Mau forest dwellers’ compliance with the Mau protection as well as factors limiting KFS in ensuring compliance with the Mau protection from any form of destruction. ANNEX 4 and 5 involve responses that are ranked (ordinal scale), thus the most appropriate way to analyse these data was through cross tabulation.

3.8 Problems Encountered in the Field

Language barrier was the main challenge experienced in the course of this study, the Ogiek community members that took part in the study were not able to speak Kiswahili or English, as a result a translator was engaged in this survey to help in translating the questions that were administered to the Ogiek community members to vernacular language for ease of understanding.

The target group for this study were the Ogiek community members, however, it was not an easy task to locate the Ogiek community members since a number of Ogiek community members have been assimilated by other tribes including; the Maasai and the Kipsigis. However, despite the difficulty in locating the Ogiek community, a purposive sampling method was used to identify the Ogiek community members who took part in the study.
CHAPTER FOUR: ANALYSIS OF KEY VARIABLES

4.1 Socio-demographic and economic characteristics of the sampled Ogiek community members.

4.1.1 Gender
This study noted the gender of the participants. A total of 12 (40%) women and 18 men (60%) took part in the study as illustrated in figure 3 below. Gender was important in this study since it was necessary to get the views of women on how eviction and deforestation in the Mau has affected their lives both socially and economically. Gender was also important because in most cases whenever there is a disaster, women are amongst the most affected population compared to men (Dhali, 2008:229).

Figure 3: Gender of the participants

4.1.2 Age
Participants in this study were also asked their ages. They gave their ages in a range of between 19 and 70 years of age. Table 2 below shows the trend of ages of the respondents.
Table 2 above indicates that majority of the Ogiek community members interviewed lie in the age cohort between 26 - 30 years and 41 - 45 years. Table 2 also indicates that the number of persons living in the Mau reduces when they reach 50 years and above. Age was important in this study considering the fact that the Mau is the original home of the Ogiek community members.

4.1.3 Highest level of education completed
Participants were asked their highest level of education. Responses were as follows: never went to school 1 (3.3%), incomplete primary school 9 (30%), primary school completed 5 (16.7%), incomplete secondary school 3 (10.0%), O level completed 11 (36.7) and University degree obtained 1 (3.3%). Table 3 on the next page, provides the cumulative frequency of the highest levels of education of the responses. The study established that 11 (36.7%) respondents had O level education and only 1 (3.3%) had a university degree. Forty years after independence, the state has not seen the need to come up with educational policies to suit the needs of minority communities. Marginalisation and constant evictions of the Ogiek by the state machinery has disoriented the community, such that they lack access to information on their right to education. The few with little education remain marginalized in all spheres of life. The political establishment has
constantly suppressed the voice of the few elites in an effort to instil fear and stop them from championing the community cause. This situation is exacerbated by lack of constitutional recognition of indigenous minority communities. The natural foresters are self-sufficient in their wisdom and knowledge of the environmental utilisation as pharmacies and laboratories (Ogiek Welfare Council and Kimaiyo, 2004:6-7).

Table 3: Highest level of education

<table>
<thead>
<tr>
<th>Highest level of education</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never went to school</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Incomplete primary school</td>
<td>9</td>
<td>30.0</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Incomplete secondary school</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>O level completed</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>University degree obtained</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Level of education is closely linked to the number of children people have, educated people tend to have few children because most of the time they are involved in nation building initiatives while people who have less education tend to have very many children because most of the time they are not engaged in economic development.

Level of education by gender

The study established that the levels of education were high amongst the male compared to the female. The study revealed that one male had a university degree 1 (3.3%), however no female was educated to that level. The study also found out that all the male participants had at one point enrolled in school, however one female had never gone to school 1 (3.3%). The study also found out that 8 (26.7%) males had completed O level of education, however the number of females who had completed O level of education were slightly lower 3 (10.0%) (see Table 4 on the next page).
Table 4: Highest level of education by gender

<table>
<thead>
<tr>
<th>Highest level of education by gender</th>
<th>Men</th>
<th>Percentage (%)</th>
<th>Women</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never went to school</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Incomplete primary school</td>
<td>4</td>
<td>13.3</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>3</td>
<td>10.0</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Incomplete secondary school</td>
<td>2</td>
<td>6.7</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>O level completed</td>
<td>8</td>
<td>26.7</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>University degree obtained</td>
<td>1</td>
<td>3.3</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>60</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>

4.1.4 Member of the Ogiek community

Participants were also asked their ethnic groups. It was noted that all the 30 (100%) participants in this study were Ogiek community members. This question was important because this study aimed at assessing the impact of deforestation and eviction on the socio-economic lives of the Ogiek people in the Mau and therefore it was important to interview the Ogiek community members.

4.1.5 Forest area of residence

Participants were also asked the forest area within the Mau Water Tower that they reside in. The responses were as follows: 10 (33.3%) Nesuit forest, 10 (33.3%) Tinet forest and 10 (33.3%) Mariashooni forest.

4.1.6 Time spent in the forest

The participants were also asked the number of years they had spent in the forest. All the participants responded that they had lived in the forest for over 10 years. This question was important in this study because this study aimed at determining how deforestation and eviction had affected the way of life of the Ogiek community members over a period of time (refer to pages 47 to 52 on the challenges of Mau Water Tower inhabitants; and pages 66 to 70 on the socio-economic impacts of eviction).
4.1.7 Family size

Participants were also asked their family size. The responses have been provided in table 5 below. This question was important in this study as it would help in determining the number of families that would be affected in this study.

Table 5: Family size

<table>
<thead>
<tr>
<th>Family size</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 person (widow)</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>2 people</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>3 - 6 people</td>
<td>9</td>
<td>30.0</td>
</tr>
<tr>
<td>7 - 10 people</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>11 - 14 people</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The study established that 10 (33.3%) respondents had a family size of between 7 and 10 people. Thus the question is, if at all these families were affected by deforestation or evicted from the Mau Water Tower, where were they going to live?.

4.1.8 Size of land

The respondents were also asked the size of land they owned in the Mau. This question was important because if these families would be affected by deforestation and eviction and the government thought of resettling them, it was important to determine the amount of land that each family owned. The study established that, 15 (50%) respondents, owned 2 to 5 hectares (50%) of land while 6 (20%) respondents did not own land in the Mau forest. Table 6 on the next page, shows the frequency distribution of land amongst the Ogiek community members. This question was also important since if the Ogiek community members were the inhabitants of the Mau, thus it implied that they owned land within the Mau.
Table 6: Size of land owned by the members of the Ogiek community in the Mau forest

<table>
<thead>
<tr>
<th>Size of land</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not have</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>1 hectare</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>2 – 5 hectares</td>
<td>15</td>
<td>50.0</td>
</tr>
<tr>
<td>6 – 9 hectares</td>
<td>4</td>
<td>13.4</td>
</tr>
<tr>
<td>10 – 13 hectares</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>14 – 17 hectares</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>18 – 21 hectares</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.2 Causes of deforestation in the Mau Forest

The 30 respondents were asked to mention seven main causes of deforestation in the Mau. Likewise the 30 respondents were also requested to rank each cause of deforestation in the Mau (see Annex 3: Interview schedule for the Ogiek community). The findings have been summarized in table 7 below.

Table 7: Causes of deforestation in the Mau, ranked by frequency of responses

<table>
<thead>
<tr>
<th>Causes of deforestation in the Mau Forest</th>
<th>Ranking based on frequency of responses (% in parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Least important cause</td>
</tr>
<tr>
<td>Logging activities</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Large scale farming</td>
<td>2 (6.7)</td>
</tr>
<tr>
<td>Settlement</td>
<td>2 (6.7)</td>
</tr>
<tr>
<td>Charcoal burning</td>
<td>9 (30.0)</td>
</tr>
<tr>
<td>Small scale farming</td>
<td>19 (63.3)</td>
</tr>
<tr>
<td>Grazing or cattle ranching</td>
<td>25 (83.3)</td>
</tr>
<tr>
<td>Firewood collection</td>
<td>26 (86.7)</td>
</tr>
</tbody>
</table>
Note: All the 30 respondents mentioned the seven main causes of deforestation in the Mau. Each respondent also ranked each of the individual causes of deforestation in the Mau.

Table 7 was constructed based on the causes of deforestation in the Mau, respondents were asked to rank the causes of deforestation in the Mau on a scale of 1 to 5, where 1 meant least important cause and 5 meant most serious cause, the responses have been provided in both frequencies and percentages. From Table 7, the main causes of deforestation in the Mau include; logging activities 26 (86.7%), large scale farming 22 (73.2%), settlement 16 (53.2%) and charcoal burning 10 (33.3%). The findings also indicate that small scale farming 19 (63.3%), grazing or cattle ranching 25 (83.3%) and firewood collection 26 (86.7%) are the least causes of deforestation in the Mau.

Thus, to save the Mau from any further destruction, the Government of Kenya needs to put emphasis on conservation and protection of the Mau by carrying out the following conservation measures; preventing logging activities in the Mau by ensuring that the Water Tower is protected 24 hours in a day, any suspicious person found loitering in the forest should be answerable for his or her actions and the community living around the forest need to be involved in the management and protection of the forest. Farming activities on-going in the Mau should be stopped with immediate effect, this would save the Water Tower from further destruction. The Government of Kenya should provide an alternative settlement area for families residing in the Mau and any person found burning charcoal in the Mau should be answerable in a court of law. If these strict measures are adhered to, the Mau would be protected from further destruction.

The Government of Kenya should also work on modalities of containing the least causes of deforestation that is, small scale farming, grazing or cattle ranching and firewood collection so that they do not escalate and become serious challenges in future. For example, farming in the Mau should be done a way with regardless of being small scale or large. Special arrangements should be done regarding firewood collection, where the communities living around the Mau should have special days for firewood collection may

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4 Table 7 is also a cross tabulation.
be twice in a week and they should only collect firewood that fallen down and not cut any tree. The community should also be encouraged to plant trees in the Mau.

**REDD (undated:13),** provides a list of underlying causes of deforestation as follows; governance drivers, policy drivers, economic drivers, technology drivers and cultural drivers. The drivers are summarized in order of importance including: (1) clearance for agriculture (linked to rural poverty); (2) unsustainable utilization (including timber harvesting, charcoal production, grazing in forests; and (3) poor governance and institutional failures in the forest sector. Based on the findings of this study am in agreement with the list provided by **REDD (undated:13)** on the underlying causes of deforestation that is logging activities, large scale farming, settlement and charcoal burning. The analysis has established that the main causes of deforestation in the Mau are; logging activities 26 (86.7%), large scale farming 22 (73.2%), settlement 16 (53.2%) and charcoal burning 10 (33.3%).

### 4.2.1 Logging activities

This factor was ranked as a very serious cause of deforestation by 26 (86.7%) respondents. The main interest of the saw millers is to take advantage of the confusion in the whole system and make more profits from harvesting trees. It is believed that they also collude with forest officers in this vice. It is evident that since 1991 the government has lost a huge amount of revenue from the timber industry as a result. This situation arose because the settlement was not planned and did not follow the normal constitutional channels (**Kimaiyo, 2001:130**).

### 4.2.2 Large scale farming

This factor was ranked as a major serious cause of deforestation by 22 (73.2%) respondents. Large scale farming has been cited as a major cause of deforestation in the Mau and this is depicted by the large tea plantations that dominate the forest including Kiptagich Tea farm.

### 4.2.3 Settlement

This factor was ranked as a very serious cause of deforestation in the Mau by 16 (53.2%) respondents. In 1993, the Kenyan Government steadily apportioned large huge areas of Mau Forest for distribution to members from other ethnic groups leading to clashes’ with
the Ogiek who saw the annihilation of the forests and the estrangement from their lands as a persistent risk to their survival (Kimaiyo, 2001:119). Settlement patterns shifted again as people moved to live on their own land, but it also attracted many Ogiek to lease or sell their lands to other ethnic groups. Many of these land sales were technically illegal as they were made before group-ranches were legally divided and many sales were undertaken before Ogiek learned about the market value of their land and at ridiculously low prices.

The settlement has not only introduced conflict over land, but has also generated other conflicts. Social conflict is one of them. Conflicting interests and different cultural and traditional beliefs are the cause. The Kalenjins have introduced their cultures and traditions, which are totally unheard of in Mau Forest. For example, the Kalenjins have renamed most parts they have occupied while the original names from the original owner are disregarded (Kimaiyo, 2001: 122).

4.2.4 Charcoal burning
This factor was ranked as a very serious cause of deforestation in the Mau by 10 (33.3%) respondents. A number of communities who have encroached the Mau, have been involved in charcoal burning as a source of livelihood in the Mau.

4.2.5 Small scale farming
This factor was ranked as a least cause of deforestation in the Mau by 19 (63.3%) respondents. Small scale farming in the Mau Forest is evident in terms of small farms that mostly the inhabitants use the produce food for home consumption. Thus, small scale farming is not a very serious cause of deforestation in the Mau. However, it is important for the Government of Kenya to take action in eradicating, reducing and/or limiting small scale farming since if action is not taken immediately it is likely to be vital challenges that will require more attention in future.

4.2.6 Grazing or cattle ranching
This factor was ranked as a least cause of deforestation by 25 (83.3%) respondents. Because the Maasai community have encroached into the Mau in search of pasture for their herds of cattle, they have contributed to deforestation in the Mau, but it has not been a serious cause of deforestation. For purposes of the Mau maintenance through ‘OKOA’
Mau programme, a special unit consisting of KFS rangers, Kenya Wildlife Service, Administration Police, County Council Askaris work together to protect the Mau Water Towers from intruders. On encroachment, KFS allows grazing at Ksh. 50 per head of cattle per month and Ksh. 25 per head of sheep per month. No goats are allowed.

4.2.7 Firewood collection
This factor was ranked as a least cause of deforestation in the Mau by 26 (86.7%) respondents. In 1903 the colonial government attempted to move the Ogiek out of the Mau near the Kenya-Uganda railway line so as to safeguard firewood for their locomotives (Kimaiyo, 2004:18). The Mau is a source of energy to communities living in the Forest. However, the government has put in place mechanisms to monitor utilization of forest resources, where communities living around the forest are allowed to collect firewood from the Water Tower twice per week, they are only allowed to collect the firewood that have dropped down and they are only allowed to get into the forest without any equipment and/or tool that might be used to cut down trees. For sustainability purposes, some community members living around the Mau are also working with KFS in ensuring that tree planting is also on-going in the Mau.

4.2.8 Summary of the most serious and least causes of deforestation in the Mau inhabitants
The three main causes of deforestation in the Mau are; logging activities 26 (86.7%), large scale farming 22 (73.2%) and settlement 16 (53.2%) (refer to pages 46 and 47 for more details). The study also established that the three least causes of deforestation in the Mau included; small scale farming 19 (63.3%), grazing or cattle ranching 25 (83.3%) and firewood collection 26 (86.7%) (refer to pages 47 and 48 for more details).

4.3 Challenges of the Mau inhabitants
The Ogiek community members were asked to mention and rank the challenges of inhabitants in the Mau on a scale of 1 to 5, where 1 meant least cause and 5 meant most serious cause. The challenges discussed and ranked have been summarized in table 8 below. The study established that the most serious challenges of the Mau inhabitants included; loss of culture 26 (86.7%) and climate change 25 (83.3%). The study also

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5 Table 8 is also a cross tabulation.
established that convergence of food, fuel and fibre prices in the international market leading to exploitation of forest products 21 (70%) was mentioned and ranked as the least challenge of the Mau inhabitants. These percentages are based on responses related to individual challenges. For example, 30 respondents were asked to rank loss of culture as a challenge facing the inhabitants of the Mau, and the responses provided by the 30 respondents were as follows; least challenge 0 (0%), moderate challenge 4 (13.3%), serious challenge 0 (0%) and most serious challenge 26 (86.6%) totalling to 30 (100%).

Table 8: Challenges of the Mau inhabitants, ranked by frequency of responses

<table>
<thead>
<tr>
<th>Challenges of the Mau inhabitants</th>
<th>Ranking based on frequency and (% in parentheses)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Least serious challenge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate challenge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serious challenge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most serious challenge</td>
<td></td>
</tr>
<tr>
<td>Least serious challenge</td>
<td>0 (0.0)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Moderate challenge</td>
<td>4 (13.3)</td>
<td></td>
</tr>
<tr>
<td>Serious challenge</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Most serious challenge</td>
<td>26 (86.6)</td>
<td></td>
</tr>
<tr>
<td>Lost of culture</td>
<td>2 (6.7)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Climate change</td>
<td>1 (3.3)</td>
<td></td>
</tr>
<tr>
<td>Lack of human and civil rights</td>
<td>9 (30.0)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Insecurity of land tenure</td>
<td>8 (26.7)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Changing land use practices</td>
<td>19 (63.3)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Insecurity of land tenure</td>
<td>7 (23.3)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Convergence of food, fuel and fibre prices in the international market leading to exploitation of forest products</td>
<td>21 (70.0)</td>
<td>30 (100)</td>
</tr>
</tbody>
</table>

Note: Each respondent ranked each challenge.

---

6 The respondents were explained the meaning of this concept in vernacular by an interpreter and they were able to understand and respond to the question promptly. Convergence was defined as change of raw materials into usable products.
4.3.1 Loss of culture
This factor was ranked as a most serious challenge facing the Mau inhabitants by 26 (86.7%) respondents. Loss of culture is blamed on ethnic diversity in the Mau. A number of ethnic communities with different cultural backgrounds have settled in the Mau, thus interfering with Ogiek community cultural practices and way of life. For example, the Ogiek are known as hunters and gatherers, but with the settlement of other new ethnic groups, their way of life has been interfered with, since these communities have continued to cut down the forest for cultivation purposes. Human habitation in the forest has also meant that a number of animals which the Ogiek community previously hunted, have had to run out of the forest to seek for habitation elsewhere. This has had an impact in the lives of the Ogiek since they have been forced to seek for alternative sources of food and livelihood.

Although the Ogiek are traditionally hunters and gatherers, today they also cultivate and keep animals as a result of interactions with other neighbouring communities but they mainly remain honey collectors. The Ogiek depend on the forest for their medicine and their food consists mainly of honey and wild game-meat.

In Narok, the Maasai asked the Ogiek community to give up their culture and adopt Maasai way of life including the language – those who refused moved out of these areas, the majority who remained behind were ‘assimilated’ to lead a life of slavery and today they are among the poorest Ogiek (Kimaiyo, 2001:117).

The Ogiek are uniquely specialized people intimately related to a particular ecosystem. They are incapable of retaining these essential characteristics, if that ecosystem is destroyed. Ogiek live in local groups dispersed throughout the highlands, typically near one or more other Ogiek groups and adjacent to more populous ethnic groups. In quite a good number of cases Ogiek speak their neighbours' language better than their own (Kimaiyo, 2001:114).
4.3.2 Climate change

The findings from the study show that climate change\(^7\) is a most serious challenge facing the Mau inhabitants, it was ranked as 25 (83.3%). The Mau is characterized by drying rivers and lakes, deforestation as a result of the huge tea plantations and human settlement. All this have resulted into climate change and this is evident with constant droughts in Kenya. Climate change has also affected the bio-diversity, this is characterized by the migration of the wild animals and birds from the neighbouring national parks to other parts of the country, migration of flamingos have been witnessed in Lake Nakuru and Lake Naivasha as a result of the reduced water from these lakes. Without Mau Forest, lakes Nakuru, Naivasha, Baringo, Natron in Tanzania and Turkana would dry up. The forest provides support to tourism and wide diversity of wildlife that inhabit the Maasai Mara National Game Reserve, LAKE Nakuru’s flamingos and other potential areas. These factors have affected the inhabitants of the Mau since they previously depended on these sceneries and tourist attraction sites as a source of livelihood, they benefited from employment and scenic beauty.

4.3.3 Lack of human and civil rights

This factor was ranked by 9 (30%) respondents as a most serious challenge facing the Mau inhabitants. This attribute is evidenced by the inhuman treatment that the inhabitants of the forest have witnessed in the recent past. The Mau inhabitants have been faced with evictions by the Government of Kenya with no place to go to and as a result they have been forced to move into the internally displaced camps without social amenities. A number of evictees have lost their lives in the process. Families evicted from the forest areas have also been faced with other challenges including lack of medical care and education for their children. This has affected the rights of the Mau inhabitants that gives them the right to life, right to adequate and proper housing, and right to education.

Note: The 9 (30%) Ogiek community members who felt that lack of human and civil rights was a serious challenge facing the Mau inhabitants are the Ogiek community members who are educated and are aware of human and civil rights. Majority of the

\(^7\) An interpreter explained the meaning of climate change in the vernacular language of the Ogiek community members and they all understood its meaning. Climate change was defined as change in the statistical properties of the climate system over long periods of time.
Ogiek community members who participated in this study are not all that conversant with their rights because of their low levels of awareness attributed to low levels of education.

4.3.4 Changing land use practices
This factor was ranked by 19 (63.3%) respondents as a moderate challenge of the Mau inhabitants. It has neither a serious challenge nor a least serious challenge on the Mau inhabitants. This is because the respondents felt that the inhabitants of the Mau benefit from the changing land use practices since they are able to farm and produce crops as well as the forest has provided them with a home. Traditionally the Ogiek hunt with dogs, bows and arrows, spears, clubs and poison. Traditionally they were going for buffalos, elephants, duikers, hyraxes, bongos, and giant forest hogs. Now that hunting is illegal, they only hunt with small traps around their garden farms resulting in some meat from monkeys and other smaller game. Starting in the 1920s’ the Ogiek started to cultivate small millet and maize gardens due to reduced production from the forest. This led to a more sedentary lifestyle in mid altitude forest and - in turn - a further increase of agriculture and/or pastoralism. Today, agriculture is the main source of subsistence and income, which is supported through some livestock rearing, hunting (which is illegal) and bee-keeping.

4.3.5 Insecurity of land tenure
This factor was ranked as a least challenge facing the Mau inhabitants by 9 (30.0%) respondents. Insecurity of land tenure is a minor challenge since the Mau is a gazetted government forest and the inhabitants of the forest are considered as illegal occupants of the forest. Despite the fact that the Mau is a gazetted government forest, the Ogiek community members believe that the Mau is their ancestral home thus it is not a serious challenge to them.

4.3.6 Convergence of food, fuel and fibre prices in the international market leading to exploitation of forest products.
This factor was ranked as a least challenge 21 (70.0%) facing the Mau inhabitants. There is no data that links deforestation in the Mau to international market.
4.3.7 Summary of the most serious and least serious challenges of the Mau inhabitants

The study established that the most serious challenges of the Mau inhabitants included; loss of culture 26 (86.7%) and climate change 25 (83.3%). Thus it is important for the Government of Kenya to take action right now to protect the indigenous inhabitants (the Ogiek community members) as well as the Mau. This would help in preventing extinction of the Ogiek community members and the Mau.

Loss of culture is attributed to ethnic diversity in the Mau. A number of ethnic communities with different cultural backgrounds have settled in the Mau, thus interfering with Ogiek community cultural practices and way of life. For example, the Ogiek are known as hunters and gatherers, but with the settlement of other new ethnic groups, their way of life has been interfered with, since these communities have continued to cut down the forest for cultivation purposes. Human habitation in the forest has also meant that a number of animals which the Ogiek community previously hunted, have had to run out of the forest to seek for habitation elsewhere. This has had an impact in the lives of the Ogiek since they have been forced to seek for alternative sources of food and livelihood.

Although the Ogiek are traditionally hunters and gatherers, today they also cultivate and keep animals as a result of interactions with other neighbouring communities but they mainly remain honey collectors. The Ogiek depend on the forest for their medicine and their food consists mainly of honey and wild game-meat.

In Narok, the Maasai asked the Ogiek community to give up their culture and adopt Maasai way of life including the language – those who refused moved out of these areas, the majority who remained behind were ‘assimilated’ to lead a life of slavery and today they are among the poorest Ogiek.

The Ogiek are uniquely specialized people intimately related to a particular ecosystem. They are incapable of retaining these essential characteristics, if that ecosystem is destroyed. Ogiek live in local groups dispersed throughout the highlands, typically near one or more other Ogiek groups and adjacent to more populous ethnic groups. In quite a good number of cases Ogiek speak their neighbours' language better than their own.
Climate change is yet another serious challenge of the Mau inhabitants. The Mau is characterized by drying rivers and lakes, deforestation as a result of the huge tea plantations and human settlement. All this have resulted into climate change and this is evident with constant droughts in Kenya. Climate change has also affected the biodiversity, this is characterized by the migration of the wild animals and birds from the neighbouring national parks to other parts of the country, migration of flamingos have been witnessed in Lake Nakuru and Lake Naivasha as a result of the reduced water from these lakes. Without Mau Forest, lakes Nakuru, Naivasha, Baringo, Natron in Tanzania and Turkana would dry up. The forest provides support to tourism and wide diversity of wildlife that inhabit the Maasai Mara National Game Reserve, Lake Nakuru’s flamingos and other potential areas. These factors have affected the inhabitants of the Mau since they previously depended on these sceneries and tourist attraction sites as a source of livelihood, they benefitted from employment and scenic beauty.

The study also established that convergence of food, fuel and fibre prices in the international market leading to exploitation of forest products 21 (70%) was mentioned and ranked as the least challenge of the Mau inhabitants. There is no data that links deforestation in the Mau to international market. However it is also important to prevent it this challenge at an early stage so that it does not escalate to a serious threat in future.

4.4 Cross tabulation

Cross tabulation is a presentation of data about categorical variable in a tabular form to aid in identifying a relationship between the variables. It is important to use cross tabulation to present the findings of this study so as to analyze the association between variables, in this case education and family size. It was important to examine the relationship between education and family size because in this study theories have shown that family size is influenced by levels of education. People who are educated tend to have small families unlike people who are not educated. This is attributed to the fact that people who are educated spend most of the time in school and in employment and this deters them from having relatively large families, unlike people who are not educated, they have time to organize for big families because they have the time. This crosstab is informed by the Neo-Malthusian theory that argues that “the power of population is indefinitely greater than the power in the earth to produce subsistence for man” (Malthus,
1986:71). Malthus argues that demographic factors, such as population growth are prominent causes of environmental degradation.

**Table 9: Relationship between the level of education and the number of years Ogiek community members have lived in the Mau**

<table>
<thead>
<tr>
<th>Highest level of education</th>
<th>Number of years the Ogiek community members have lived in the Mau Water Tower</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 – 6 years</td>
<td>7 – 9 years</td>
</tr>
<tr>
<td>Never went to school</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Incomplete primary school</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Primary school completed</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Incomplete secondary school</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>O level completed</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>University degree obtained</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

The variables examined in **Table 9** are level of education and the number of years the Ogiek community members had lived in the Mau. The study established that all the respondents had lived in the Mau for over ten years and thus education had no bearing on the length of stay in the Mau. The findings indicate that 11 people with O level education reside in the Mau and the best explanation for this is that they were born in the Mau and it is their home and thus they have nowhere else to go but to reside in the Mau. This crosstab is informed by the modernization theory that attempts to identify the social variables which contribute to social progress and development of societies, and seeks to explain the process of social evolution. In this case the social variable that contributes to social progress is education that the Ogiek community members living in the Mau have acquired.
Table 10: Relationship between forest area of residence and family size

<table>
<thead>
<tr>
<th>Forest area of residence</th>
<th>Family size</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 - 6 people</td>
<td>7 or more people</td>
</tr>
<tr>
<td>Nesuit Forest</td>
<td>5 (16.7)</td>
<td>5 (16.7)</td>
</tr>
<tr>
<td>Tinet Forest</td>
<td>6 (20.0)</td>
<td>4 (13.3)</td>
</tr>
<tr>
<td>Mariashooni Forest</td>
<td>5 (16.7)</td>
<td>5 (16.7)</td>
</tr>
<tr>
<td>Total</td>
<td>16 (53.3)</td>
<td>14 (46.7)</td>
</tr>
</tbody>
</table>

In Table 10 above, the variables examined in this crosstab are family size and forest area of residence. It was important to examine this relationship so as to determine in which forest area of residence that the Ogiek community members had the highest number of family members. This information was important as it would help the government determine the impact of increased population on the Mau. The study established that 16 (53.3%) respondents had a family size of 1 - 6 people, while 14 (46.7%) respondents had a family size of 7 or more people. It was also established Tinet Forest had the highest number of respondents with the highest number of family members, that is 6 (20.0%) respondents had a family size of 1 – 6 people. This crosstab is informed by the Neo-Malthusian that argues that increase in population growth drive basic extraction, consumption and production activities that lead to deforestation.

Note: A chi-square test cannot be used to test this data because the values in the second column would be less than 5, that is 4.6, and Chi-square rule states that Chi-square should not be calculated if the expected value in any category is less than 5.

65
### Table 11: Relationship between the forest area of residence and the size of land owned by the Ogiek community members in the Mau

<table>
<thead>
<tr>
<th>Forest area of residence</th>
<th>Does not own land</th>
<th>1 hectare</th>
<th>2 - 5 hectares</th>
<th>6 - 9 hectares</th>
<th>10 - 13 hectares</th>
<th>14 - 17 hectares</th>
<th>18 - 21 hectares</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nesuit Forest</td>
<td>1 (3.3)</td>
<td>0 (0.0)</td>
<td>4 (13.3)</td>
<td>2 (6.7)</td>
<td>2 (6.7)</td>
<td>1 (3.3)</td>
<td>0 (0.0)</td>
<td>10 (33.3)</td>
</tr>
<tr>
<td>Tinet Forest</td>
<td>2 (6.7)</td>
<td>1 (3.3)</td>
<td>7 (23.3)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>10 (33.3)</td>
</tr>
<tr>
<td>Mariashoooni Forest</td>
<td>3 (10.0)</td>
<td>0 (0.0)</td>
<td>4 (13.3)</td>
<td>2 (6.7)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>1 (3.3)</td>
<td>10 (33.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6 (20.0)</strong></td>
<td><strong>1 (3.3)</strong></td>
<td><strong>15 (50.0)</strong></td>
<td><strong>4 (13.3)</strong></td>
<td><strong>2 (6.7)</strong></td>
<td><strong>1 (3.3)</strong></td>
<td><strong>1 (3.3)</strong></td>
<td><strong>30 (100)</strong></td>
</tr>
</tbody>
</table>

The variables examined in Table 11 above are forest area of residence and the size of land owned by the Ogiek community members in the Mau. It was important to analyze the relationship between the forest area of residence and the size of land owned by the Ogiek community members in the Mau so as to determine if at all the Ogiek community members owned land in the Mau as inhabitants of the forest or are they squatters. The study established that 7 (23.3%) respondents in Tinet Forest owned 2 to 5 hectares of land, this was not individual ownership but communal ownership. Tinet Forest is part of Ogiek territory, and the Ogiek are its guardians. But since 1961, when the colonial government declared it a government forest, the Ogiek have lived there as squatters subject to constant harassment in their own lands. In 1991 the Kenyan government legally allocated five acres of the forest per family to 5,000 members of the Ogiek community, who began farming and constructing schools, while still using the forest and gathering honey (*World Rain Forest Movement, 2006:1*). This explains the reason as why 7 (23.3%) respondents had 2 – 5 hectares of land.

The study established that 15 (50%) respondents owned 2 to 5 hectares of land in the Mau. Land ownership is also related to the period that the respondents have lived in the Mau. The majority of the respondents have lived in the forest for over ten years the best explanation for this is the fact that they own the land in the Mau and they are natives of the Mau. The study also established that 6 respondents did not own land in the Mau. This theory is informed by the World System theory which advocates on property ownership.
Note: Land is communally owned in the Mau amongst the Ogiek community members, however a number of Ogiek community members have previously sold their lands to other tribes who have settled in the Mau for example the Maasai and the Kipsigis and this is the reason as to why six Ogiek community members who participated in this study did not own land in the Mau.
This chapter provides findings on policy dimensions of deforestation and eviction. This chapter is organized thematically in sections corresponding to research questions as follows; conservation and resettlement programs instituted in the Mau, impact of eviction programme in the Mau, and limitations of forest dwellers compliance with Mau protection.

Research Question 1: What conservation and resettlement programmes has the government instituted to protect the Mau from any further destruction?

Note: The evidence addressed below is used to answer research question 1.

5.1 Governments' conservation and resettlement programmes in the Mau

Legal framework

5.1.1 Laws and regulations governing forest management

The study established that persons who do not follow reforestation\(^8\) programmes are arrested and taken to court, this is recorded in the Legal Activity Occurrences Report records. KFS has no sympathy for poor people residing illegally in the forest but they say Army personnel who bought land in the Mau would be taught on how to live harmoniously with the forest - through tree husbandry practices. In as much as Ogiek community members were believed to be hunters and gatherers, the contemporary Ogiek community members have adapted to the capitalistic market economy and are therefore competitively fighting to exploit the natural resources including forests to earn a living. Their argument is that for the sake of conservancy, no one should be allowed near or in the demarcated forest areas.

The danger is that using Mau on a semi-permanent basis subjects the forest to exploitation. They give very little regard to forest conservation methods. The rate at which they exploit the natural forest, is unsustainable compared to persons who are permanently settled there. That is the justification for the rich being spared and the poor evicted.

\(^8\) The reforestation programmes include tree planting and weeding and all community members residing in and around the Mau Forest Water Tower are expected to participate in these reforestation programmes.
The Environmental Management and Co-ordination Act, 1999, cap 140 on offences relating to standards states that;

(c) Uses of environment or natural resources in a wasteful and destructive manner contrary to the measures prescribed under this Act;
Commits an offence and is liable upon conviction, to fine of not more than five hundred thousand shillings or to imprisonment for a term of not more than twenty four months or both such fine and imprisonment.

**Capacity for law enforcement:** The KFS is committed to service delivery despite the numerous challenges it is facing for example; absence of checks and balances, especially lack of participation by stakeholders; and the poor quality of information on performance through monitoring and evaluation. However, despite these challenges the KFS has been transforming its forest guard system to plagued by low morale due to low wages and poor equipments to paramilitary force who are better trained and equipped including with firearms. The forest guard force is also being increased, prosecutors have also been trained for purposes of prosecuting court cases.

For effective law enforcement the KFS department need to be strengthened by;

- Funding for forest conservation and management need to be increased to cater for adequate number of personnel, adequate salaries for staff, equipment and other logistics such as transportation.
- Forest personnel (forest guards and forest officers) need to be given adequate training on prosecution at the Kenya Forestry College.

The training of the forest guards and forest officers in law enforcement, including prosecutions is not a one time issue but part of a continuous process. It must be supported by policy makers, stakeholders and the public at large in order to attract the resources and collaboration needed for it to succeed. This calls for targeted public education and advocacy on forest policy and legislation.

**The sustainability of the Kenya Forest Service.** One of the challenges of being a corporate body is to demonstrate capacity to self-sustain. In this regard, KFS has to be more innovative in generating finances beyond the traditional sources such as the forest royalties.
KFS, in context of the Strategic Plan 2006-2011 put resource mobilization as a top priority and is in the process of establishing a “Business Enterprise Division” as a fully fledged programme headed by a Senior Deputy Director responsible for resource mobilization and the development of all public/private partnerships. The immediate challenge is the development of a strategy to guide this effort.

Part IV of the Forests Act (2005) provides the legal framework for community participation in the conservation and management of a state or local authority forest. The degree of participation however is limited to “permission to participate in the conservation and management of a state or local authority forest” following application to the Director of KFS (article 46(2)). No transfer of land ownership is implied under the Act, which ordinarily would be a major incentive, as it would allow for the associations to create and own forests of their own.

The management of natural high forests. The Forests Act (2005) (clause 41(1) provided for the sustainable multipurpose management of these forests, including ‘sustainable production of wood and non-wood products’. This creates a window for subjective interpretation of what constitutes “sustainable production” and risk of abuse. This puts a lot of pressure on the KFS to ensure strict management and conformity with the management plans of the respective forest ecosystems (as per article 35 (1) of the act), which are expected to be conservation oriented. It also requires a more intensive enforcement of the forest law and regulations. The application of the Water act will be an important complement in this regard. The main challenge for KFS is in ensuring that the management plans for the various ecosystems and forests are in place before the ban can be lifted.

The policy makers, stakeholders and the public are working hand in hand to ensure that the forest laws are enforced. The laws also need to be reviewed to check the viability and degree of enforceability. The Ogiek community members and the at large are expected to abide by these laws on forest management deviators should be punished.

The Emergency Management Coordination Act (1999:16), article 44 stipulates that, the Emergency Management Coordination Act shall, in consultation with the relevant lead agencies, develop issue and implement regulations, procedures, guidelines and
measures for the sustainable use of hill sides, hill tops, mountain areas and forests and such regulations, guidelines, procedures and measures shall control the harvesting of forests and any natural resources located in or on a hill side, hill top or mountain areas so as to protect water catchment areas, prevent soil erosion and regulate human settlement. Article 46 stipulates that, Every District Environment Committee shall specify which of the areas identified in accordance with section 45 (1) are to be targeted for afforestation or reforestation. (2) Every District Environment Committee shall take measures, through encouraging voluntary self-help activities in their respective local community, to plant trees or other vegetation in any areas specified under subsection (1) which are within the limits of its jurisdiction. (3) Where the areas specified under subsection (1) are subject to leasehold or any other interest in land including customary tenure, the holder of that interest shall implement measures required to be implemented by the District Environment Committee including measures to plant trees and other vegetation in those areas (Emergency Management Coordination Act, 1999:16).

The Forest Act 2005 Article 36 states that, all plantation forests owned by the state shall be managed by the Service on a sustainable basis with the primary objective being the production of wood and other forest products and services for commercial purposes (Forest Act 2005:30).

Article 52 of the Forest Act 2005 states that,

1) Except under a licence or permit or a management agreement issued or entered into under this Act, no person shall, in a state, local authority or provisional forest
   a) Fell, cut, take, burn, injure or remove any forest produce;
   b) Be or remain therein between the hours of 7 p.m. and 6 a.m. unless he is using a recognized road or footpath, or is in occupation of a building authorized by the Director, or is taking part in cultural, scientific or recreational activities;
   c) Erect any building or livestock enclosure, except where the same is allowed for a prescribed fee;
   d) Smoke, where smoking is by notice prohibited, or kindle, carry or throw down any fire, match or other lighted material;
   e) De-pasture livestock, or allow livestock to be therein;
   f) Clear, cultivate or break up land for cultivation or for any other purpose;
   g) Enter any part thereof which may be closed to any person;
h) Collect any honey or beeswax, or hang on any tree or elsewhere any honey barrel or other receptacle for the purpose of collecting any honey or beeswax, or enter therein for the purpose of collecting honey and beeswax, or be therein with any equipment designed for the purpose of collecting honey or beeswax;

i) Construct any road or path;

j) Set fire to, or assist any person to set fire to, any grass or undergrowth or any forest produce;

k) Possess, bring or introduce any chain saw or logging tools or equipment; and

l) Damage, alter, shift, remove or interfere in any way whatsoever with any beacon, boundary mark, fence notice or notice board.

2) Any person who contravenes the provisions of subsection (1) of this section commits an offence and is liable on conviction to a fine not exceeding fifty thousand shillings or to imprisonment for a term not exceeding six months, or to both such fine and imprisonment (Forest Act 2005: 45 – 46)

The public at large needs to adhere to these rules and regulations cited in Article 52 of the Forest Act 2005 so as to promote conservation, management and resettlement in the Mau. By conserving the Mau, a number of challenges that are associated with the destruction of the Mau are bound to be reduced for example drought, loss of culture, changing land use practices etc.

The Kenya Forest Service; Service Charter (2008:4), states that;

Forest protection, management and conservation services

1. All gazetted forests will be protected against all threats including human, animal and wild fires.

2. All degraded forests will be rehabilitated through planting or protection for natural regeneration in collaboration with stakeholders.

3. All forest boundaries will be maintained and maps updated every year.

4. All lawful investors in forests will be provided access into the forest.

5. Forest management plan for all forest blocks will be prepared by 2012.

The Government of Kenya is complying with the protection of the Mau. This is evident in the various evictions that have been going on in the Mau since 2004 up to date. The government had begun evicting people from Mau Forest Complex area in 2004, but had
been forced to halt the evictions following a High Court injunction granted to seven individuals on the basis that they held title deeds. In February 2005, the Minister of Lands reportedly announced that some 10,000 title deeds in Mau were cancelled. The cancellation of title deeds did not follow any legal process and the affected individuals did not receive individual notification (Amnesty International, 2007:9). Evictions should not result in individuals being rendered homeless or vulnerable to the violation of other human rights. Where those affected are unable to provide for themselves, the State Party must take all appropriate measures, to the maximum of its available resources, to ensure that adequate alternative housing, resettlement or access to productive land is provided to the evictees (African Charter on Human and Peoples' Rights (1981: Articles 14, 16 and 18). The Government of Kenya is working on the implementation of these laws in the Mau, the government has already bought land to resettle some evictees.

5.1.2 Awareness of existence of the Forest Act as well as the Environmental Management and Co-ordination Act

The Forest Act 2005 and Environmental Management and Coordination Act, 1999 exist in both the Ministry of Forestry and Wildlife and the Kenya Forest Service and the staff have been following guidelines on these documents to implement and manage forest programmes.

5.1.3 Forest regulations and management guidelines

The guidelines on reforestation are documented in the Forest Act 2005. It recognizes the participation of the local community and stakeholders in the forest sector in joint management of forest resources with the KFS. The Forest Act 2005 proposes a number of measures to enhance community participation in forest conservation and management. The measures include:

1. Encouraging sustainable use of forest resources.
2. Supporting the establishment of community forests associations through which communities can be able to participate in the conservation and management of forests.
3. Protecting the traditional interests of local communities customarily resident with and around the forests.
4. Recognizing cultural practices that are compatible with sustainable forest management.
The draft Forest Policy has put in place the following forest regulations and management guidelines;

The specific objectives of the revised Forest Policy are to:-

a) Contribute to poverty reduction, employment creation and improvement of livelihoods through sustainable use, conservation and management of forests and trees;
b) Contribute to sustainable land use through soil, water and biodiversity conservation, and tree planting through the sustainable management of forests and trees;
c) Promote the participation of the private sector, communities and other stakeholders in forest management to conserve water catchment areas, create employment, reduce poverty and ensure the sustainability of the forest sector;
d) Promote farm forestry to produce timber, wood fuel and other forest products;
e) Promote dry land forestry to produce wood fuel and to supply wood and non-wood forest products;
f) Promote forest extension to enable farmers and other forest stakeholders to benefit from forest management approaches and technologies; and
g) Promote forest research, training and education to ensure a vibrant forest sector.

5.2 Policies

The study established that the draft Forest Policy is still in bill form, the bill is under revision to improve it. The bill is yet to be disseminated, a number of staff are not conversant with the content. The policy is geared towards the operationalization of the Forest Act 2005.

The draft Forest Policy addresses indigenous forest management, farm forestry, industrial forest development, dry land forestry, forest health and protection, private sector involvement and participatory forest management. It recognizes that there are benefits arising from involvement of local communities and other stakeholders in forest management.

UNEP (undated:1), has developed four programme areas as guidelines to combat deforestation. The guidelines include;
A. Sustaining the multiple roles and functions of all types of forests, forest lands and woodlands. To implement this programme, the guideline stipulates that forest-related national institutions need to be strengthened to enhance the scope and effectiveness of activities related to the management, conservation and sustainable development of forests, and to effectively ensure the sustainable utilization and production of forests' goods and services. The guideline also stipulates that human, technical and professional skills need to be strengthened and improved to effectively formulate and implement policies, plans, programmes, research and projects on management, conservation and sustainable development of all types of forests and forest-based resources, and forest lands inclusive, as well as other areas from which forest benefits can be derived.

B. Enhancing the protection, sustainable management and conservation of all forests, and the greening of degraded areas, through forest rehabilitation afforestation, reforestation and other rehabilitative means. To implement this programme, the guideline stipulates that existing and future forests need to be conserved, maintain and increase the ecological, biological, climatic, socio-cultural and economic contributions of forest resources, and prepare and implement, as appropriate, national forestry action programmes and/or plans for the management, conservation and sustainable development of forests.

C. Promoting efficient utilization and assessment to recover the full valuation of the goods and services provided by forests, forest lands and woodlands. The UNEP guidelines stipulates that to achieve this program, awareness has to be created on the social, economic and ecological values of trees, forests and forest lands, including the consequences of the damage caused by the lack of forests. Promote more efficient and sustainable use of forests and trees for fuel wood and energy supplies. Promote more comprehensive use and economic contributions of forest areas by incorporating eco-tourism into forest management and planning.

D. Establishing and/or strengthening capacities for the planning, assessment and systematic observations of forests and related programmes, projects and activities, including commercial trade and processes. To implement this programme, the guideline stipulates that economists, planners, decision makers and local
communities should be empowered with sound and adequate updated information on forests and forest land resources. Strengthen or establish systems for the assessment and systematic observations of forests and forest lands with a view to assessing the impacts of programmes, projects and activities on the quality and extent of forest resources, land available for afforestation, and land tenure, and to integrate the systems in a continuing process of research and in-depth analysis, while ensuring necessary modifications and improvements for planning and decision-making.

5.3 Resources

5.3.1 Human Resources structure – distribution of staff
The study established that the KFS staff are few; more staff are required especially in the area of forest protection – forest rangers. Personnel involved in forest management include; casual workers, community forest associations, community scouts and forest rangers.

5.3.2 Financial allocation per year
The Kenya Forest Service is allocated by the Government of Kenya Ksh. 3.059 billion per year for both forestry management and human resources.

5.4 Resettlement and conservation programmes

5.4.1 Re-afforestation
In every forest there is a community forest association engaged in planting and weeding trees in the whole of the Mau. Forestry is labour-intensive, the activities are also season-based therefore they engage casuals and the retirees to carry out tree planting.

5.4.2 Community involvement in forest conservation programmes
In every forest there is a community forest association engaged in planting and weeding the trees. Community scouts also are engaged in protection. This complements the work done by the forest rangers. Traditional gender roles have inhibited the participation of women and youth in forestry development. In particular, the role of women and youth in forest and tree resource utilization and management, has not been fully recognised. Initiatives by women and youth have convincingly demonstrated the necessary and
potential value of their participation in forestry development, especially at the community level (Forest Policy, 2007:26).

5.4.3 Re-allocation of illegal forest dwellers
After the 1st phase of eviction, court litigation barred the government from proceeding with the 2nd phase. The Interim Coordinating Secretariat (ICS) in conjunction with Attorney General’s office set up a legal department in the Attorney Generals’ chamber to assess all title deeds, letters of allotment and determine documents that are genuine. This is done with the help of the Ministry of Lands.

It was agreed that the Ogiek community shall not be evicted until a head count is done to determine their number and enable the government resettle them. However, they have to be resettled near the forest to allow them accrue benefit from the forest. The new registration was done by the Ogiek themselves.

5.4.4 Training staff on forest conservation
It was reported that the forest staff are continuously trained on forest management and importance of forestry at large. The trainings are normally conducted at Kenya Forestry College.

5.4.5 Provision of security in forest areas
Through ‘OKOA’ Mau programme, a special unit consisting of KFS rangers, Kenya Wildlife Service, Administration Police, County Council Askaris work together to protect the Mau Water Towers from intruders. On encroachment, KFS allows grazing at Ksh. 50 per head of cattle per month and Ksh. 25 per head of sheep per month. No goats are allowed.

Research Question 2: How has the implementation of the forest eviction programme affected the way of life of the indigenous forest dwellers in the Mau Water Tower? Are there alternatives that could have been considered, or more humanitarian?

Note: The discussion that follows on pages 66 to 70, addresses research question 2.
5.5 Socio-economic impacts of eviction

The respondents were asked to mention and rank the socio-economic impacts of eviction. The impacts of eviction that were discussed and ranked have been summarized in Table 12.

Table 12: Socio-economic impacts of eviction

<table>
<thead>
<tr>
<th>Socio-economic impacts of eviction</th>
<th>Ranking based on frequency and (% in parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Least impact</td>
</tr>
<tr>
<td>Homelessness</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Lack of privacy</td>
<td>4 (13.3)</td>
</tr>
<tr>
<td>Internally displaced persons</td>
<td>2 (6.7)</td>
</tr>
<tr>
<td>Violation of human rights</td>
<td>2 (6.7)</td>
</tr>
<tr>
<td>Impact on economy&quot;</td>
<td>13 (43.1)</td>
</tr>
<tr>
<td>Insecurity&quot;</td>
<td>3 (10.0)</td>
</tr>
<tr>
<td>Impact on culture&quot;</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

The study established that homelessness 24 (80%), violation of human rights 21 (70%), insecurity 25 (83.4%) and impact on culture 26 (86.6%) are the most serious impacts of eviction. However, lack of privacy 11 (36.7%), internally displaced persons 11 (36.7%) and impact on economy 6 (20.0%) were ranked as the least impact consequences of eviction. Findings in Table 12 also indicate that the most serious impact of eviction in rank order are impact on culture 26 (86.6%), followed by insecurity 25 (83.4%), homelessness 24 (80.0%) and lastly, violation of human rights 21 (70.0%).

5.5.1 Homelessness

This factor was ranked as a most serious impact of eviction by 24 (80%) of the Ogiek sample. Eviction leads to homelessness, a number of families lose their homes and they end up being destitute in the internally displaced camps. The human rights stipulates that human beings have a right to proper and adequate housing, thus homelessness is against

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9 Impact on economy discussed in table 11 is the impact on economy of the Ogiek community members.
10 Insecurity was defined as a state of being subjected to danger or injury.
11 Culture was defined as behaviours' and beliefs characteristic of a particular social ethnic group, in this case the Ogiek community members.
human rights as it violates the right to proper and adequate housing. A direct consequence of the Mau forest eviction was the displacement of thousands of families (Amnesty International, 2007:11). In particular, the evictions in the Mau Forest Complex violate the right to adequate housing (Amnesty International, 2007:13).

5.5.2 Lack of privacy
Families evicted from their homes lose their houses and in most cases they find themselves in makeshift tents in internally displaced camps and this results in loss of privacy most of the time since they do not have housing. Despite lack of privacy as a result of eviction, 11 (36.7%) respondents felt that this factor was a least socio-economic impact of eviction.

5.5.3 Internally displaced persons
Eviction of families from their homes leads to internally displaced persons. This has been evident in the Mau, where a number of families who were evicted from the forest lost their homes and ended up as internally displaced persons in camps. This factor was ranked by 11 (36.7%) respondents as a least socio-economic impact of eviction.

5.5.4 Violation of human rights
Human rights violations were defined as a state where actors (the government) abuse, ignore, or deny basic human rights (including civil, political, cultural, social, and economic rights). This factor was ranked as a very serious impact of eviction 21 (70.0%). Violation of human rights is attributed to the number of persons that have been rendered homeless as a result of eviction. The bill of rights advocates for proper and adequate housing, thus with eviction, families lose the right to housing and thus their rights are violated. Forced evictions have been described as a “gross violation of human rights” by the former UN Human Rights Commission (now the Human Rights Council), of which Kenya was a frequent member. It has been defined by the UN Committee on Economic, Social and Cultural Rights (CESCR), as “the permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of and access to, appropriate forms of legal or other protection”. Under international and African human rights law, everyone has a right to be protected against forced eviction. Evictions can only take place as a last resort, after it has been determined that all other possible alternatives have been exhausted. Many people
were left without shelter, livelihoods, and many lost their possessions (Amnesty International, 2007:8). The evictions in the Mau violates the right to adequate housing. This right is set out in Article 11(1) of the ICESCR and the African Commission on Human and Peoples’ Rights has determined that the right to housing is part of the African Charter when Articles 14, 16 and 18 are read together (Amnesty International, 2007:13).

5.5.5 Impact on economy
Impact on economy was defined as an effect on livelihood, employment, or incomes produced by a decision, event, or policy. Impact on economy was ranked as the least impact of eviction 13 (43.3%). Economists argue, that the biggest percentage of Kenya’s economy, tea, dairy, horticulture, large and small scale farming are intricately intertwined with the Mau ecosystem. The Kenya Forest Service Strategic Plan (2009/10 – 2013/14:11), states that conversation and management of the water towers (Mt. Kenya, Aberdares, Mt. Elgon, Cherengany and Mau Complex) for supply of environmental goods and services and support to other sectors of the economy particularly agriculture, water and tourism.

5.5.6 Insecurity
Insecurity was defined as a state of being subjected to danger or injury. This factor was ranked as a very serious impact of eviction 25 (83.3%). Families evicted from their homes do not have security and they are liable to attacks from both thieves as well as animals since they do not have protection. Insecurity is also evident in terms of the bad weather that families are exposed to since they do not have shelter.

5.5.7 Impact on culture
Culture was defined as behaviours’ and beliefs characteristic of a particular social ethnic group, in this case the Ogiek community members. The study established that impact on culture is a very serious impact of eviction 26 (86.7%). Eviction has interfered with the cultural practices of the Ogiek community members who are famous for hunting and gathering, have had their lives tampered with since they have been forced to alter their livelihoods as a result of eviction. Those who have been evicted out of the Mau have been forced to adapt new lifestyles and livelihood practices so as to survive, thus this has completely altered their cultural practices and way of life.
5.5.8 Summary of the most serious and least serious impacts of eviction

The study established that the three most serious impacts of eviction in rank order are impact on culture 26 (86.6%), followed by insecurity 25 (83.4%), homelessness 24 (80.0%). The study established that eviction has interfered with the cultural practices of the Ogiek community members who are famous for hunting and gathering, have had their lives tampered with since they have been forced to alter their livelihoods as a result of eviction. Those who have been evicted out of the Mau have been forced to adapt new lifestyles and livelihood practices so as to survive, thus this has completely altered their cultural practices and way of life. Intermarriages have also taken place amongst the Ogiek community members and other tribes and this has further had a serious impact on their culture since they have been forced to adapt to other cultures. As a result of coming into contact with other tribes, the Ogiek dialect is threatened since they have had to learn other languages in order to communicate and conduct business with other tribes, this has further weakened their dialect and has had an impact on their culture.

The study also established that families evicted from their homes do not have security and they are liable to attacks from both thieves as well as animals since they do not have protection. Families evicted from the Mau, have also gone through traumatic experiences, a number have lost their belongings including land, food crops and livelihood in general. Insecurity is also evident in terms of the bad weather that families are exposed to since they do not have shelter, this has resulted into disease infection causing deaths amongst families.

The study also established that eviction leads to homelessness, a number of families lose their homes and they end up being destitute in the internally displaced camps. The human rights stipulates that human beings have a right to proper and adequate housing, thus homelessness is against human rights as it violates the right to proper and adequate housing. A direct consequence of the Mau forest eviction was the displacement of thousands of families (Amnesty International, 2007:11). In particular, the evictions in the Mau Forest Complex violate the right to adequate housing (Amnesty International, 2007:13).

Findings of the study also indicated that the least serious impact consequences of eviction in rank order are lack of privacy 11 (36.7%), internally displaced persons 11 (36.7%) and
impact on economy 6 (20.0%). Families evicted from their homes lose their houses and in most cases they find themselves in makeshift tents in internally displaced camps and this results in loss of privacy most of the time since they do not have housing. In most cases parents are forced to share sleeping space with their children and this has a negative impact on the growth of the young children since they are exposed to activities of adults at a tender age.

Eviction of families from their homes leads to internally displaced persons. This has been evident in the Mau, where a number of families who were evicted from the forest lost their homes and ended up as internally displaced persons in camps. This factor was ranked by 11 (36.7%) respondents as a least socio-economic impact of eviction.

Impact on economy was ranked as the least impact of eviction 13 (43.3%). Economists argue, that the biggest percentage of Kenya’s economy, tea, dairy, horticulture, large and small scale farming are intricately intertwined with the Mau ecosystem. The Kenya Forest Service Strategic Plan (2009/10 – 2013/14:11), states that conversation and management of the water towers (Mt. Kenya, Aberdares, Mt. Elgon, Cherengany and Mau Complex) for supply of environmental goods and services and support to other sectors of the economy particularly agriculture, water and tourism. This factor was considered as a least impact of eviction by the Ogiek community members since they are not involved in large scale farming but rather they practice subsistence farming in the Mau.

5.6 Proposed humanitarian programmes
This study established that 6 Ogiek community members were mistakenly evicted from the Mau Water Tower. As a result a focus group discussion was conducted with the evicted Ogiek community members to determine their view on the proposed humanitarian programmes that the government could have put in place. The Ogiek community members evicted reported that the government could have given them an alternative land to settle in, since the families who were evicted ended up in camps and some settled besides the roads because they had nowhere else to go to. They also felt that, alternatively the government could have given them money so that they would find their own land to re-locate to. They also felt the government could have built for the evictees houses so that they could settle in.
Research Question 3: What limitations does the KFS have in ensuring that forest dwellers comply with forest protection from any form of destruction?

Compliance with the Mau protection

5.7 Factors affecting forest dwellers' compliance with the Mau protection

Respondents were asked to rank the following issues in terms of the way they affected compliance of forest dwellers with the Mau protection. Table 13 provides a summary of the factors affecting forest dwellers compliance with the Mau protection. The study established that the main factors affecting forest dwellers compliance with the Mau protection include; lack of involvement of the community in the conservation and management of forests 26 (86.7%), abuse of office and/or corruption – the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests 29 (96.7%), weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation 30 (100%), and governments' inability to monitor illegal logging activities within the forest areas 29 (96.7%).
Table 13: Factors affecting forest dwellers’ compliance with the Mau protection

<table>
<thead>
<tr>
<th>Factors affecting forest dwellers’ compliance with the Mau protection</th>
<th>Ranking based on frequency and (% in parentheses)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very negative effect</td>
</tr>
<tr>
<td>1. Lack of involvement of the community in the conservation and management of forests.</td>
<td>26 (86.7)</td>
</tr>
<tr>
<td>2. Abuse of office and/or corruption – the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests.</td>
<td>29 (96.7)</td>
</tr>
<tr>
<td>3. Weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation¹².</td>
<td>30 (100)</td>
</tr>
<tr>
<td>4. Governments’ inability to monitor illegal logging activities within the forest areas.</td>
<td>29 (96.7)</td>
</tr>
<tr>
<td>5. Increase of population of forest dwellers leading to demand for more forest land.</td>
<td>20 (66.7)</td>
</tr>
<tr>
<td>6. Demand for forest products.</td>
<td>21 (70.0)</td>
</tr>
<tr>
<td>7. Forest dwellers way of life, some forest dwellers are pastoralists and this triggers the clearing of the forested land for pasture.</td>
<td>10 (33.3)</td>
</tr>
<tr>
<td>8. High poverty levels amongst the forest dwellers triggers forest exploitation for livelihood purposes.</td>
<td>11 (36.7)</td>
</tr>
</tbody>
</table>

¹² The respondents were explained the meaning of this concept in vernacular by an interpreter and they were able to understand and respond to the question promptly. Weak institutional capacity was defined as the inability of the government institutions charged with the responsibility of protecting, managing and conserving the forest to perform their duties as expected.
5.7.1 Lack of involvement by the community in the conservation and management of forests.

The study established that lack of community involvement in the conservation and management of forests had a negative effect and this factor affected forest dwellers compliance with the Mau protection. The study established that lack of community involvement in the conservation and management of Mau Water Tower was viewed as a negative effect 26 (86.7). For the community to comply with the protection of the Mau Water Tower from further destruction, it is important to involve the community so that they can understand and appreciate the benefits of forest protection. The community should be involved in tree planting exercises, advocacy campaigns should be conducted to the community members so that they learn the benefits of forest protections. Pamphlets on the importance of the forests should be distributed to the community as part of information, education and communication materials so that they have enough knowledge on the importance of forests.

5.7.2 Abuse of office and/or corruption – the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests.

Respondents were asked to rank abuse of office and/or corruption on how it has affected compliance in the protection of the Mau, 29 (96.7%) of the respondents felt that it had a very negative effect. Abuse of office and/or corruption is depicted in very many ways for example; mis-management of funds meant for forest conservation, an officer neglecting his or her responsibilities, work performance without diligence and propagating policies that hinder forest conservation and management. To promote the conservation, management and development of the Mau, an officer found guilty of violating forest laws should be held accountable.

5.7.3 Weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation.

Respondents were asked how this factor had affected compliance in the protection of the Mau, all the 30 (100%) respondents felt that it had a very negative effect on forest dwellers compliance with the Mau protection. This is attributed to the fact that the KFS has inadequate staff to cater for the need and demand in the Mau, the existing staff are
also not motivated, they work under very harsh conditions for example their salaries and allowances is very low and their housing is also poor and some staff even live in make shift tents while on duty. The forest guards also do not have adequate equipments for their work. The forest guards also do not have adequate training and knowledge on forest legislation, a number of them have basic knowledge but not extensive knowledge.

5.7.4 Governments' inability to monitor illegal logging activities within the forest areas.

Respondents were asked to rank this factor in terms of how it had influenced non-compliance of the Mau protection. This factor was ranked as a very negative factor by 29 (96.7%) respondents. The respondents felt that the government does not have the required machinery to monitor illegal logging in the Mau since the government does not have adequate staff deployed in the Mau. The number of staff deployed in the Water Tower also do not have adequate knowledge and skills on forest conservation and management. The staff also deployed in the Mau, work under very difficult conditions and this has contributed to demoralization amongst them, thus they do not work to achieve the objective of ensuring that the forest dwellers comply with the Mau protection. The funding allocated for forests conservation is also inadequate and therefore it is important for the government to increase the funding so as to improve conservation measures in the Mau including ensuring that the forest dwellers comply with the Mau protection.

The study also established that the following factors had no effect on the forest dwellers' compliance with the Mau protection; increase of population of forest dwellers leading to demand for more forest land 9 (30.0%), demand for forest products 9 (30.0%), forest dwellers way of life, some forest dwellers are pastoralists and this triggers the clearing of the forested land for pasture 20 (66.7%), and high poverty levels amongst the forest dwellers triggers forest exploitation for livelihood purposes 18 (60.0%). However, it is important for the Government of Kenya to take action in eradicating and/or limiting the effects of these activities since if action is not taken immediately they are likely to be vital challenges that will require more attention in future.
5.8 Government limitation in ensuring compliance with the Mau

Six KFS forest managers and five senior managers at the Ministry of Forestry and Wildlife were asked to rank the following issues on a scale of 1 to 5, where 1 meant very negative effect and 5 meant very positive effect on how they had limited KFS in ensuring compliance with the Mau protection from any form of destruction. The study established that the major causes of governments’ limitation in ensuring compliance with the Mau protection from any form of destruction included; level of funding for necessary activities 8 (73%), there is limited funding for Mau Water Tower protection and as a result the available funds is inadequate for all the forest protection related activities. Number of personnel 8 (73%) was yet another factor that was established as a major factor limiting the governments’ effort in protecting the Mau from any form of destruction, the number of personnel employed to protect the forest are few yet the forest is vast and as a result this exposes the forest to invaders without the forest guards realizing on time. Staff motivation 11 (100%) was yet another factor that the study established was a major limitation of the governments’ efforts in ensuring compliance with the Mau protection from any form of destruction. The study established that the staff the staff put more effort at work, yet they are not motivated at all. Corruption among some KFS officials 8 (73.0%) was yet another factor that limits the government in ensuring compliance with the Mau protection from any form of destruction. Political influence 8 (73.0%) was yet another factor that limits the government in ensuring compliance with the Mau protection from any form of destruction.

5.8.1 Level of funding for necessary activities

The study established that level of funding for necessary activities had limited the governments’ efforts in ensuring compliance with the Mau protection, this was reported by 8 (73%) respondents. The amount of funding allocated for forestry management and human resources is inadequate to meet all the needs. The funding of forestry activities has mainly been from the central Government (Treasury) and from development partners. This funding has been inadequate for the efficient management and conservation of the country’s forest resource (Forest Policy, 2007:23).

5.8.2 Number of personnel

The forestry department has inadequate personnel to cater for all the activities including guarding the forest from destruction and creating awareness amongst the community
members on the importance of forest management and conservation. Thus, the has triggered the destruction of the Mau since the available personnel employed to guard the forest are inadequate and encroachers have taken advantage of this and further contributed to the forest destruction. This factor was ranked by 8 (73%) of the respondents as having a very negative effect.

5.8.3 Motivation of staff
All the respondents 11 (100%) felt that staff motivation had a very negative effect on the governments effort on compliance with the Mau protection. It was reported that the staffs are under paid, they work under very harsh working conditions and they live in deplorable places and while in the field they live in make shift tents that are neither in good condition nor properly maintained. The allowances are very little and this further demoralized them.

5.8.4 Corruption among some KFS officials
This factor was ranked by 8 (73%) of the respondents as a very negative effect. The respondents reported that a number of KFS officials were coerced into activities that jeopardized the governments' effort in ensuring protection of the Mau due to low pay that they receive from the government and also some receive threats from well connected networks.

5.8.5 Political influence
Political influence was ranked by 8 (73%) respondents as a very negative effect on compliance with the Mau protection and had limited KFS in terms of protection of the Water Tower from any form of destruction. The government has facilitated the resettlement of the non-Ogiek community members in the Mau. Communities who have been resettled in the Mau have different cultural backgrounds and they have tampered with the Mau, they have cleared the forest to settle down, they have also cleared the forest for cultivation. Persons with political influence in the country have also acquired large chunks of forest lands for large tea plantations. According to Kimaiyo (2001:129), the government is highly controlled by the political class and this has made the government not neutral when making decisions regarding forests. The government's interest is to see that its supporters get the maximum benefit from the available resources so as to get more votes and remain in power in the next general election.
The study also established that in the recent past a number of non-governmental organizations had come up to give the government a hand in the protection and conservation of the Mau including the friends of Mau. The Government of Kenya has also taken an initiative to raise funds for tree planting purposes in the Mau. Thus 8 (73%) respondents felt that interests or support among key players in the sector had a positive effect in promoting the government's effort in ensuring compliance with the Mau protection.

5.8.6 Summary of the very negative factors affecting forest dwellers compliance with the Mau protection

The study established that the three main factors that had a very negative effect on forest dwellers compliance with the Mau protection included; abuse of office and/or corruption - the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests 29 (96.7%), weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation 30 (100%), and governments’ inability to monitor illegal logging activities within the forest areas 29 (96.7%).

Abuse of office and/or corruption - the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests is one of the very negative factor that has affected forest dwellers compliance with the Mau protection. Abuse of office and/or corruption is depicted in very many ways for example; mismanagement of funds meant for forest conservation, an officer neglecting his or her responsibilities, work performance without diligence and propagating policies that hinder forest conservation and management. To promote the conservation, management and development of the Mau, an officer found guilty of violating forest laws should be held accountable.

Weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation had affected compliance in the protection of the Mau, all the 30 (100%) respondents felt that it had a very negative effect on forest dwellers compliance with the Mau protection. This is attributed to the fact that the KFS has
inadequate staff to cater for the need and demand in the Mau, the existing staff are also not motivated, they work under very harsh conditions for example their salaries and allowances is very low and their housing is also poor and some staff even live in make shift tents while on duty. The forest guards also do not have adequate equipments for their work. The forest guards also do not have adequate training and knowledge on forest legislation, a number of them have basic knowledge but not extensive knowledge.

Governments’ inability to monitor illegal logging activities within the forest areas is also a very negative factor that has affected forest dwellers compliance with the Mau protection. The respondents felt that the government does not have the required machinery to monitor illegal logging in the Mau since the government does not have adequate staff deployed in the Mau. The number of staff deployed in the Water Tower also do not have adequate knowledge and skills on forest conservation and management. The staff also deployed in the Mau, work under very difficult conditions and this has contributed to demoralization amongst them, thus they do not work to achieve the objective of ensuring that the forest dwellers comply with the Mau protection. The funding allocated for forests conservation is also inadequate and therefore it is important for the government to increase the funding so as to improve conservation measures in the Mau including ensuring that the forest dwellers comply with the Mau protection.

The study also established that the following factors had no effect on the forest dwellers’ compliance with the Mau protection; increase of population of forest dwellers leading to demand for more forest land 9 (30.0%), demand for forest products 9 (30.0%), forest dwellers way of life, some forest dwellers are pastoralists and this triggers the clearing of the forested land for pasture 20 (66.7%), and high poverty levels amongst the forest dwellers triggers forest exploitation for livelihood purposes 18 (60.0%). However, it is important for the Government of Kenya to take action in eradicating and/or limiting the effects of these activities since if action is not taken immediately they are likely to be vital challenges that will require more attention in future.

Note: The study established that none of the factors discussed on table 13 had a very positive effect on the forest dwellers compliance with the Mau protection.
6.1 Summary

The study established that the government has put strict measures to ensure that the Mau is protected from further destruction. Persons who violate forest conservation and management programmes are arrested and taken to court. The government also has developed laws and policies on forest management and conservation which have been availed to the public through various channels, including the KFS website, the Ministry of Forestry and Wildlife website and as well hard copies on forest conservation and management are also available from the KFS offices, the Ministry of Forestry and Wildlife, information is also available on-line, in libraries and also at UNEP.

The government has also developed and made available materials on forest conservation and management to the public for example Forest Act 2005 and Environmental Management and Co-ordination Act, 1999. These Acts provide guidelines on forest management and conservation. The resettlement and conservation measures that the government has put in place to protect the Mau from further destruction include: re-forestation, in every forest there is a community forest association engaged in planting and weeding. Community involvement in forest conservation programmes; re-allocation of illegal forest dwellers; training staff on forest conservation; and provision of security in forest areas.

The study established that the main socio-economic impacts of eviction included: homelessness 24 (80%), violation of human rights 21 (70%), insecurity 25 (83.4%) and impact on culture 26 (86.6%). A number of squatters who have invaded the Mau consider the forest as their home and with eviction not only have they lost a place to call home but they have lost their livelihoods. Squatters in the Mau have been involved in subsistence farming and rearing of livestock such as cows, goats and sheep to meet their household demands. Thus, their livelihood has been lost with eviction. The Kenya constitution provides protection against forced eviction through the Bill of Rights which stipulates right to life and its protection of rights to shelter, right to security of a person and the protection of law. With eviction in the Mau, human rights have been violated since the people who were evicted from the forest have not all been resettled a number are still living in the internally displaced camps. Eviction also results into insecurity both for
property and life. The Bill of rights further stipulates that a person has a right to protection for privacy of the home and other property. Persons evicted from the Mau, ended in the internally displaced camps and security in these camps are not guaranteed by the government. Eviction has also had a toll on the culture of the Ogiek community members, loss of culture is blamed on ethnic diversity in the Mau and its environments. The Ogiek community members are famous for hunting and gathering, but with eviction their livelihood has been tampered with, they have been forced to alter their livelihoods. Those who have been evicted out of the Mau have been forced to adapt new lifestyles and livelihood practices so as to survive, thus this has completely altered their cultural practices and way of life.

The study established that the main factors affecting forest dwellers compliance with the Mau protection included; lack of involvement of the community in the conservation and management of forests 26 (86.7%), abuse of office and/or corruption – the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests 29 (96.7%), weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation 30 (100%), and governments’ inability to monitor illegal logging activities within the forest areas 29 (96.7%).

6.2 Conclusion
The Mau is a home to both flora and fauna as well as human beings, the Water Tower is under serious destruction and this requires immediate intervention. The Water Tower is a catchment for 12 main rivers - Nzoia, Yala, Nyando, Sondu, Mara, Kerio, Molo, Ewaso Ngiro, Njoro, Nderit, Makalia and Naishi, that drain into five major lakes; Baringo, Nakuru, Natron, Turkana and Victoria. The destruction of the Mau Forest Water has an impact not only in Kenya but also in other countries including; Tanzania, Uganda, Sudan, Ethiopia and Egypt. Thus an urgent intervention is required so as to save the Mau from further destruction.

The Mau is also the ancestral home of the Ogiek community, the Ogiek community members have previously been subjected to several evictions, persecution, harassment, intimidation, death threats and even murder by the colonial and post-colonial
governments of the day. The government need to take action so as to provide support to the Ogiek community and prevent them from extinction. The culture of the Ogiek community members also need to be preserved as the study established that their culture is threatened as a result of encroachment by the communities who have invaded the Mau.

Communities who have invaded the Mau have totally degraded and destroyed the environment to pave way for their settlement and farming. These combined activities have caused several rivers to dry up permanently. Lack of alternative livelihood opportunities in these areas has left land as the only resource to mine for people’s basic needs. Without a comprehensive approach to sustainable livelihoods, rural communities are degrading the very environment on which they depend on. Therefore, it is important for the government and the stakeholders to take an urgent action to solicit for funding for the Mau conservation and management.

6.3 Recommendations

It was reported that these re-settlement and conservation programs are inadequate, thus it is important for the development partners and the community to complement the government effort so as to protect the Mau from further destruction. The development partners need to provide funding to cater for the equipment and human resources required to maintain the forest. Likewise the community need to be involved in the conservation and management measures by planting tree, providing security to the forest and creating advocacy to the communities that live near the forest on the importance of forest conservation.

Families go through trauma when evicted from a place they previously called home, in future the government need to look at a possibility of either providing an alternative land to settle evictees, provide money to evictees to that they can buy land that suit their needs and settle or alternatively the government should consider building houses for persons evicted so as to re-locate them.

The study established that the community is not fully involved in the conservation and management of the Mau, they are side lined in all matters related to the forest management and conservation. For ownership purposes the community needs to be part and parcel of the Mau conservation and management. This would give the community a
chance to understand and appreciate the benefits of forest protection. The community should be involved in tree planting exercises, advocacy campaigns should be conducted to the community members so that they learn the benefits of forest protections. Pamphlets on the importance of the forests should be distributed to the community as part of information, education and communication materials so that they have enough knowledge on the importance of forests.

The study also established that abuse of office and/or corruption was also a major hindrance in amongst forest dwellers compliance with the Mau, funds meant for forest conservation are mis-managed and forest officers do not take their responsibilities seriously. To promote the conservation, management and development of the Mau, an officer found guilty of violating forest laws should be held accountable. Thorough audit need to be done on the funds meant for forest management and conservation. Officers deployed in the forest management and conservation need to be given adequate training and equipments for work, working conditions should be improved as well as salaries need to be reviewed so as to motivate the staff to conduct their duties with diligence as the study established that staff de-motivation was a major hindrance to the governments effort in ensuring compliance to the Mau protection. The forest officers also need to be empowered on forest legislation as the study established that majority did not have adequate knowledge on the forest legislation.

The study also established that the government does not have the required machinery to monitor illegal logging in the Mau since the government does not have adequate staff deployed in the Mau. The number of staff deployed in the Water Tower also do not have adequate knowledge and skills on forest conservation and management. The staff also deployed in the Mau, work under very difficult conditions and this has contributed to demoralization amongst them, thus they do not work to achieve the objective of ensuring that the forest dwellers comply with the Mau protection.

The funding allocated for forests conservation is also inadequate and therefore it is important for the government to increase the funding so as to improve conservation measures in the Mau, including ensuring that the forest dwellers comply with the Mau protection. Thus, to improve on the governments’ effort to monitor illegal logging in the Mau, the government needs to recruit and deploy a number of staff to meet the demand in
the Mau. These staff need to be equipped with relevant and adequate knowledge on forest management and conservation. The government also needs to improve on their living and working conditions, their salaries need to be reviewed and they ought to be provided with adequate and relevant equipment for their duties. The government also need to source for funding from development partners so as to maintain the Mau.

6.4 Areas for further study
Based on the findings over the course of this study the following research needs have been identified:

- The extent to which the Ogiek culture has been destroyed.

- The impact of climate change on the Mau Forest Water Tower.
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http://www.wrm.org.uy/bulletin/113/Kenia.html


Newspapers
ANNEX 1: CHECKLIST OF SECONDARY SOURCES

<table>
<thead>
<tr>
<th>Source Document</th>
<th>Used</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Strategic Plan - KFS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Organizational Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 UNEP guidelines on deforestation and eviction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 KFS Annual and other periodic Reports</td>
<td></td>
<td></td>
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<tr>
<td>5 KFS Investigation reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Forestry Act</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 NEMA Environmental Assessment Impact Reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Environmental Management and Coordination Act</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Corporation/company annual report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Other...........</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Other...........</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N/B

**Used** – In this section, the researcher will comment whether these documents exists in the first place and whether the management are aware of their existence and putting them into use.

**Comment** – In this section, the researcher will comment on whether the documents exists or do not exists and if they exist are they being put into use and is the management and staff aware of their existence. If the documents do not exist, what is the management doing about the issue? Is the management making an effort to make the documents available?
<table>
<thead>
<tr>
<th>Topic</th>
<th>Remarks/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0 Legal framework</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Laws and regulations governing forest management.</td>
<td></td>
</tr>
<tr>
<td>1.2 Awareness of existence of the Forest Act as well as the Environmental Management and Coordination Act.</td>
<td></td>
</tr>
<tr>
<td>1.3 Forest regulations and management guidelines.</td>
<td></td>
</tr>
<tr>
<td><strong>2.0 Policies</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Policies on forest management – existence, dissemination, comprehensiveness of coverage.</td>
<td></td>
</tr>
<tr>
<td><strong>3.0 Resources</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Human Resources structure – distribution of staff</td>
<td></td>
</tr>
<tr>
<td>3.2 Financial allocation per year?</td>
<td></td>
</tr>
<tr>
<td><strong>4.0 Resettlement and conservation programmes</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Re-afforestation</td>
<td></td>
</tr>
<tr>
<td>4.2 Tree nursery planting</td>
<td></td>
</tr>
<tr>
<td>4.3 Community involvement in forest conservation programmes</td>
<td></td>
</tr>
<tr>
<td>4.4 Re-allocation of illegal forest dwellers</td>
<td></td>
</tr>
<tr>
<td>4.5 Training staff on forest conservation</td>
<td></td>
</tr>
<tr>
<td>4.6 Provision of security in forest areas</td>
<td></td>
</tr>
<tr>
<td>4.7 Other (specify)</td>
<td></td>
</tr>
<tr>
<td>4.8 Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 3: INTERVIEW SCHEDULE FOR THE Ogiek Community

1. Gender
   a) Female
   b) Male

2. How old are you?

3. What is your highest level of education?
   a) Nursery school
   b) Never completed primary school
   c) Primary school
   d) Never completed secondary school
   e) O level
   f) A level
   g) University degree
   h) Masters degree
4. Are you a member of the Ogiek community?
   a) Yes
   b) No
   c) I don’t know

*If question 4 above is (a), please proceed to question 5 below, if b and c proceed to question 6.*

5. From which forest area do you reside? (tick only one)
   a) Nesuit forest
   b) Tinet Forest
   c) Marishooni Forest
   d) None of the above (state the forest area where you reside)

6. How long have you lived in the Mau? (tick only one)
   a) Less than 1 year
   b) 1 year
   c) 4 to 6 years
   d) 7 to 9 years
   e) 10 or more years
7. What is the size of your family?

a) 1 person
b) 2 people
c) 3 to 8 people
d) 9 to 14 people
e) 15 to 20 people
f) More than 20 people

8. What size of land do you own in the Mau?

a) 0.5 hectares
b) 1 hectare
c) 2 to 5 hectares
d) 6 to 10 hectares
e) 11 to 15 hectares
f) 16 to 20 hectares
g) 21 to 25 hectares
h) 26 to 30 hectares
i) Over 30 hectares
9. What are the causes of deforestation in the Mau? (tick all that apply) Rank the causes in a scale of 1 to 5 (by ticking the appropriate box). Ranking 1 means *Least cause* while 5 means *Most serious cause*.

<table>
<thead>
<tr>
<th>Causes of deforestation</th>
<th>Ranking (Tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Small scale farming</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>b) Large scale farming</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>c) Grazing or cattle-ranching</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>d) Logging activities</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>e) Settlement</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>f) Charcoal burning</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>g) Firewood collection</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>h) Other (specify)</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
10. What are the challenges of Mau inhabitants? Rank the following issues on a scale of 1 to 5 (by ticking the appropriate box). Ranking 1 means *Least cause* while 5 means *Most serious cause*.

<table>
<thead>
<tr>
<th>Challenges of Mau inhabitants</th>
<th>Ranking (Tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Loss of culture</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>b) Insecurity of land tenure</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>c) Climate change</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>d) Changing land use practices</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>e) Desertification</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>f) Lack of human and civil rights</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>g) Convergence of food, fuel and fiber prices in the international market leading to exploitation of forest products.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>h) Others (specify)...........</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
11. What are the socio-economic impacts of eviction? Rank the following issues on a scale of 1 to 5 (by ticking the appropriate box). Ranking 1 means *Least impact* while 5 means *Most serious impact.*

<table>
<thead>
<tr>
<th>Socio-economic impacts of eviction</th>
<th>Ranking (Tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Homelessness</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>b) Lack of privacy</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>c) Internally displaced persons</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>d) Violation of human rights</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>e) Impact on economy</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>f) Insecurity</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>g) Impact on culture</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>h) Other (specify)</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Are there alternative methods that could have been considered or more humanitarian by the government during the process of eviction?

Yes  [ ]
No   [ ]
I don’t know [ ]

If question 12 above is yes, proceed to question 13 below, if b and c do not answer question 13.

13. Which humanitarian programmes could the government have instituted in place? *(Probe more into how the Ogiek way of life has been affected)*

a) 

b) 

c)
ANNEX 4: FACTORS AFFECTING FOREST DWELLERS’ COMPLIANCE WITH THE MAU PROTECTION

To be answered by the 30 Ogiek community members. Each of the 30 Ogiek community members will tick a separate sheet.

Please rank the following issues (by ticking appropriate box) in terms of the way they affect compliance of forest dwellers with the Mau protection. Ranking 1 means Very Negative effect, 2 means Negative effect, 3 means No effect, 4 means Positive effect and 5 means Very Positive effect.

<table>
<thead>
<tr>
<th>Key issues</th>
<th>Ranking (Tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of involvement of the community in the conservation and management of forests.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Abuse of office and/or corruption – the political dimension associated with breakdown of law and order leading to excisions and uncontrolled exploitation of forests.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Weak institutional capacity for forest law enforcement and governance, associated with inadequate staff, low morale and poor equipment for forest guards and inadequate training and knowledge on forest legislation.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Governments’ inability to monitor illegal logging activities within the forest areas.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Increase of population of forest dwellers leading to demand for more forest land.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Demand for forest products.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Forest dwellers way of life, some forest dwellers are pastoralists and this triggers the clearing of the forested land for pasture.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. High poverty levels amongst the forest dwellers triggers forest exploitation for livelihood purposes.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. Other (specify)</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
ANNEX 5: KFS LIMITATIONS IN ENSURING COMPLIANCE WITH THE MAU PROTECTION FROM ANY FORM OF DESTRUCTION

To be answered by the KFS forest managers. Each of the 5 forest managers will tick a separate list of limitations.

Please rank the following issues (by ticking appropriate box) in terms of the way they limit or facilitate KFS in ensuring compliance with the Mau protection. Ranking 1 means Very Negative effect, 2 means Negative effect, 3 means No effect, 4 means Positive effect and 5 means Very Positive effect.

<table>
<thead>
<tr>
<th>Key issues</th>
<th>Ranking (Tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Level of funding for necessary activities.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Number of personnel.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Capacity of KFS to attract and retain skilled personnel.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Motivation of staff.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Corruption among some KFS officials.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Political influence.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Support from law enforcement agencies.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. Legal framework for effective enforcement.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. Frustrations from strong well connected networks.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. Threats from individuals.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11. Interest or support amongst key players in the sector.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. Other (specify)</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

THANK YOU AND GOD BLESS