# INFLUENCE OF HUMAN WILDLIFE CONFLICT ON SOCIO-ECONOMIC WELFARE OF LOCAL COMMUNITIES IN SABAKI SUB-LOCATION, KILIFI COUNTY, KENYA

**BY**

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## DECLARATION

This research Project report is my original work and has not been presented for any academic award in any university or institution of higher learning**.**

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**L50/78345/2015**

Signed …… Date ……..

This research Project report has been submitted for examination with my approval as the University Supervisor.

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## DEDICATION

I dedicate this report to my loving family members, especially to my beloved Husband Wycliffe, who had been a great encouragement to me and had given me adequate support to complete my studies. I cannot forget to mention my Siblings: Jared, Francis, Calvine and Florence who were always available for me including my sister in law Dorothy. May the Almighty God bless you in a special way. My Nephew, Isaac Junior deserves the best for the psychological strength that I got whenever he was on my side during this period. May the Almighty God bless you all.

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## ABBREVIATION AND ACRONYMS

**CAMPFIRE**- Communal Areas Management Programme for Indigenous Resources.

**CBC-** Community Based Conservation**.**

**DNPWLM**- Department of National Parks and Wildlife Management.

**GOK**- Government of Kenya.

**HWC-** Human Wildlife Conflict**.**

**KWS-** Kenya Wildlife Service**.**

**MDGS-** Millennium Development Goals.

**NC-** Nature Conservancy.

**UNDP-** United Nations Development Program

**UNESCO**- United Nations Environment, Social and Cultural Organization.

**US-** United States**.**

**WWF**- World Wildlife Fund.

## ABSTRACT

Conflicts between human and wildlife have occurred in the world since the dawn of humanity. These conflicts can cause damage or costs to both. Incidences of crop damage, death of domestic animals as well as human death can be realized as well as poor performance in schools due to absenteeism because of fear of being attacked by wild animals. The purpose of this study was to establish the influence of Human Wildlife Conflict on Socio-economic welfare of local communities in Sabaki Sub-location. The objectives of the study were to Determine the influence of land use to human wildlife conflict on socio-economic welfare of local communities in Sabaki sub-location, to determine the influence of poverty to human wildlife conflict on socio-economic welfare of local communities in Sabaki sub-location and to determine the influence of Wildlife Conservation Practice to human wildlife conflict on Socio-economic welfare of local communities in Sabaki Sub-location. Relevant literature was discussed in this research project with a view of establishing the gap between this study and other previous related studies. From the Theoretical perspective, the study used Karl Marx Conflict theory and Foucault's theory of the family as a guide to the buildup of the Research. The Literature revealed three important variables. These were how land use influenced Human Wildlife Conflict on Socio-economic welfare of local communities, how poverty influenced Human Wildlife Conflict on Socio-economic welfare of local communities and how wildlife conservation practice influenced Human Wildlife Conflict on Socio-economic welfare of local communities. Both primary and secondary data were used in this study and quantitative methods were used to collect data. Self administered questionnaires, focused group interviews and observation were used to collect primary data while secondary data was obtained from documents and publications. Hypotheses were tested and calculated using Chi-square and all the three Alternative hypothesis were accepted. All the research questions were answered and the three objectives achieved. The Non-Governmental Organizations concerned with Environmental conservation projects were recommended to team up with all the relevant stakeholders and focus on Community based projects in the studied area so as to promote sustainable wildlife conservation.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Around the world, humans have defended themselves and their property from wild animals (Woodroffe and Ginsberg 1998). Wildlife can pose serious problems when their activities intersect with those of humans (KWS 1996). For example, the U.S. federal agency charged with controlling agricultural damages caused by wildlife spent over $60 million in control operations during 2001 and estimated losses at nearly one billion dollars (Pati and Vijayan 2002). In addition to property losses, the occasional threats to human safety compound the vulnerability of rural communities (KWS 1996). For example, between 1980 and 2003, more than 1,150 humans and 370 elephants died as a result of conflicts in India (Pati and Vijayan 2002). Traditionally, the human response has been to kill the suspected wildlife and transform wild habitats to prevent further losses (Pati and Vijayan 2002).

Over the past 300 years, impact of land use change in Africa has increasingly assumed threatening proportions brought about by human agency (Western et al 2009). While human population has been on the increase, forests and grasslands have been on the decline (Western et al 2009)). Mankind's presence on the earth and his modification of landscape has had profound effect upon the natural environment. The change could be beneficial or detrimental (Okello 2005). Detrimental impacts are the chief cause of concern as they infringe on human well being and welfare especially conversion to crop land and forest clearance (Western et al 2009). Global land area converted to regular cropping has significantly increased in Africa, Asia and Latin America while there has been minimal change in Europe and USA mainly due to industrialization (Western et al 2009).

Interest on land use change in African countries has a long history as there have been no instances in which people use land and its resources without causing harm (Okello 2005). Magnitude of change varies with the time period being examined as well as the geographical area. Changes in area are difficult to assess unambiguously as they are haunted by definitional and data problems (Western et al 2009).

There is growing human population pressure on landscape as demands multiply for resources such as food, water, shelter and fuel (Pati and Vijayan 2002). These factors dictate utilization of land regionally. Land use practices develop over longer periods of time under different environmental, political, demographic and socio economic conditions. The conditions vary yet they have a direct impact on land use and land cover (Okello 2005). When Kenya attained independence in 1963, one million acres were targeted to be achieved in settlement schemes in various districts across the country after the creation of the Ministry of Lands and Settlement (KWS 1996). In Kilifi district, Kenya, 35,000 families were settled under the government resettlement programme. The seasonal Paper No. 1 of 1965 on African Socialism advocated for land buying companies and cooperative societies where some of these large scale farms formerly owned by European settler farmers were bought and converted to smallholder agriculture (KWS 1996).

The people of Kenya are steadily lifting themselves up from one of the lowest levels of poverty in the world. In 2002, the national per capita income was $210 and more than 70% of the population are rural and rely on subsistence and small-scale agriculture for their livelihood (Woodroffe and Ginsberg 1998). While the country's wildlife resources have been plundered over the last 30years, they are still very significant. Wildlife still represents a very valuable opportunity for the country and, if properly managed, can benefit the people that share the same area of land through sustainable utilization and tourism (KWS 1996).National Parks and Reserves have been created, yet people continue to live within them. There are also significant wildlife populations in some game ranches and in some areas occupied by resident communities (KWS 1996).

As both the human and wildlife populations' increase and people occupy new land, the level of conflict is also increasing. This unresolved human-wildlife conflict is creating negative attitudes towards both the Government and proposed new wildlife related developments (KWS 1996). Sabaki residents on the other hand had experienced a number of confrontations with the Hippopotamus which lived within the Sabaki River (Western et al, 2009). The locals had encroached the entire river. Many houses were built next to the river; numerous agricultural activities were being carried out as well as other socio-economic activities like fishing.

Students and teachers who went to school found difficulty in crossing over due to fear of being attacked (KCDP 2000). Climate change however, had reduced water level and the amount of green pastures forcing the hippos to feed in the local communities' gardens thus the increased conflict (Okello 2005).

In view of this, the National Government understood the urgent need to reduce the levels of human-wildlife conflict to ensure that where people lived with wildlife the benefits were greater than the costs. This study however investigated the influence of human-wildlife conflict on Socio-economic welfare of local communities in Sabaki Sub-location so as to provide an understanding of the problem as a basis of findings ways to mitigate them.

### 1.2 Statement of the Problem

Sustainable wildlife management is the sound management of wildlife species to sustain their population and habitat overtime, taking into account socio-economic needs of human populations (KWS 1996). This requires that all land users within the wildlife habitats are aware of and consider the efforts of their activities on the wildlife resources and habitats, and other user groups (Western et al 2009). In areas where sustainable wildlife management is practiced, there is an evidence of proper existence and relationship between wildlife and human. In view of the socio-economic value, wildlife is a renewable natural resource with significance in areas such as rural development, land use planning, food supply, tourism, scientific research and cultural heritage (KWS 1996). If sustainable managed, wildlife can provide continuous nutrition and income and contribute considerably to the alleviation of poverty as well as to safeguarding human and environmental health (Okello 2005). Human Wildlife Conflict occurs when the needs of wildlife encroach on those of human populations or the needs of human populations encroach upon those of wildlife (Western et al).

More broadly, interactions between wildlife and humans can cause damage or costs to both, and leads to conflicts between different groups of people (Human-Human conflicts) over wildlife. Conflicts between human and wildlife and between human over wildlife have occurred in Kenya since the dawn of humanity (KWS 1996).

However, in many regions, these conflicts have intensified over recent Decades as a result of human population growth and the related expansion of agricultural and industrial activities (Western et al). Conflicts have also arisen due to the growth of some wildlife populations and the presence of certain species e.g. (red fox, wild boar) in urban environments as well as a recurrent inability of institutions to manage such conflicts effectively. Climate change is exacerbating these conflicts through for example, increased competition for water and habitats (KWS 1996). Changing human values and attitudes are also shaping wildlife management approaches where egocentric, protectionist views of wildlife may not recognize or accommodate the needs of those living within wildlife (Western et al).

Writers however have identified some of the influence of human wildlife conflict on Socio-economic welfare of communities as poverty, land use, wildlife conservation practices in place and adding that not all wild animals influence the conflict but that there are specific wildlife species that do and have widespread effects than others ( KWS 1996). In areas where there is extreme poverty, residents can hardly access some of the basic needs like food. They therefore opt to kill wildlife as a source of food (Okello 2005). The wild animals in return fight for their lives and thus the confrontation with human beings. Local residents have however encroached into wildlife habitats. Poor conservation initiatives influence the conflict. In most of the areas, these initiatives are not in place and if in place then poorly practiced (Western et al).

In Sabaki Sub-location, very few studies had been undertaken on Human Wildlife Conflict , yet it was an area that was mostly affected, thus there was a need to collect data on the problem, analyze the data and draw various strategies that when implemented would help in reducing the menace.

### 1.3 Purpose of the Study

The purpose of the study was to establish the influence of Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location.

### 1.4. Objectives of the study.

The study was guided by the following three objectives.

i) To determine the influence of land use to Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-location.

ii) To determine the influence of poverty to Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-location.

iii) To determine the influence of wildlife conservation practice to Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-location.

**1.5 Research questions.**

The proposed study was guided by the following research questions.

i) How does land use influence Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location?

ii) How does poverty influence Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location?

iii) How do wildlife conservation practices influence Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location?

**1.6 Research hypothesis**

The study was guided by the following hypotheses which were tested at 95% level of significance.

**$H_1$1:** land use is a major influence to Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location.

**$H_1$2**: poverty influences Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location.

**$H_1$3**: Wildlife conservation practice influence Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-Location.

### 1.7 Significance of the study

First, the study was of great benefit to the local communities in terms of farmers who would be able to produce more from farms as hippos would be controlled and not able to destroy crops, Quality Education and improved performance of students in both primary and secondary schools in Sabaki Sub-location was going to be realized as there would be no attacks by wild animals, mortality rates of the locals as well as of domestic animals would also reduce significantly. Secondly, the study would assist Kenya Wildlife Service in laying strategies that when implemented would assist in reducing the menace thus promoting sustainable co-existence between human beings and wildlife in the said area of study. Thirdly, other neighboring communities living in an Ecosystem that had wildlife would also benefit from the study. Fourthly, other researchers who would be interested in studying issues of Human Wildlife Conflict would benefit from the study as well since they would borrow the literature which will be rich in information as well as the suggestions which will have been made for further research.

### 1.8 Assumptions of the study

The study was based on the following assumptions:

i) That there was close proximity between wildlife and human beings thus the continuous contradictions experienced in Sabaki.
ii) There had been cases of conflict reported between Human Beings and wildlife in Sabaki Sub-location.

### 1.9 Delimitations of the Study

This study was delimited to Sabaki Sub-location situated next to river Sabaki which was a home to the Hippopotamuses and other wild animals. The Sub-location was within Magharini Sub-County of Kilifi County, Coast region of Kenya. Additionally, the study was delimited to the study variables only.

### 1.10 Limitation of the study

**Finance-**the research was self sponsored and therefore the researcher was to work within the

limited personal finances available.

**Language barrier**- Some of the respondents were not able to understand English. To curb this limitation, there was a translator who translated English to vernacular language which was easily understandable**.**

### 1.11 Definitions of Significant Terms Used in the Study

For the purpose of this study, the following terms had the attached meaning:

***Land use***

Involves the management and modification of natural environment/ wilderness into built environment such as settlements and semi natural habitats such as arable fields, pastures and managed woods.

***Poverty level***

This is the general level of scarcity or the state of one who lacks a certain amount of material possessions, or money. It is a multi-faceted concept, which includes socio-economic and political elements.

***Current conservation initiatives practices***

These are various ways of managing natural resources.

***Socio-economic welfare of Community at Sabaki Sub-Location***

Was taken to refer to the wellbeing of a group of people living in the same place or having a particular characteristic in common.

### 1.12 Organization of the Study.

The study is organised into five chapters. Chapter one discusses the background of the study in which the contextual and conceptual issues are explored including the influence of Human Wildlife Conflict on Socio-economic welfare of communities. The chapter gives direction for the study through stating of objectives, the significance of the study, its delimitation and limitations.

Chapter two covers empirical and conceptual literature on the influence of Human Wildlife Conflict on Socio-economic welfare of local communities. The chapter provides a foundation upon which the findings of the study are discussed and conclusions drawn. The chapter finally identifies the knowledge gap from the literature studied.

Chapter three covers research methodology to be used in the study, research design, target population, sampling procedure, description of research instruments, validity and reliability of research instruments, methods of data collection, procedures for data analysis, operational definition of variables and ethical considerations.

Chapter four covers the data analysis, data presentation and interpretation of study findings while chapter five summarises the study findings, discusses the research findings, draws conclusions and recommendations and suggested areas for further research.

# CHAPTER TWO
# LITERATURE REVIEW

## 2.1 Introduction

This chapter contained an empirical review of pertinent literature on Land use, Poverty and Community Wildlife Conservation Practices. This review helped in identification of gaps in the empirical studies from which the conceptual framework was formulated.

## 2.2 Concept of Human Wildlife Conflict

Human-Wildlife Conflict (HWC) or negative interaction between people and wildlife has recently become one of the fundamental aspects of wildlife management as it represents the most widespread and complex challenge currently being faced by conservationists around the world. HWC arises mainly because of the loss, degradation and fragmentation of habitats through human activities such as, logging, animal husbandry, agricultural expansion, and developmental projects (Western et al 2009). As habitat gets fragmented, the boundary for the interface between humans and wildlife increases, while the animal populations become compressed in insular refuges (Western et al 2009).

## 2.3 Influence of land use to Human Wildlife Conflict on Socio-economic welfare of local communities.

Changes to land use and land cover have effects on the levels of human wildlife conflict, as well as on the availability of suitable habitat for wildlife. The alteration of land use and land cover by humans is one of the main causes of exacerbating human-wildlife conflict (Otuoma 2004, Treves and Karanth 2003). Recent rises in conflict in Kenya are attributable in great measure to changes in land use, caused by increases in human populations, the spread and intensification of agriculture and the increasing sedentary lifestyle of pastoralists in rangelands (KWS 1996). The traditionally nomadic pastoralists like the Maasai, have experienced steep increases in human-wildlife conflict in recent years (despite Community-Based Conservation efforts to minimize it) as they have introduced and expanded agriculture on their lands (Campbell et al. 2003). Shifts in land use towards agriculture mean an increase in wildlife on pastoral rangelands, where the environment still provides suitable habitat (KWS 1996).

This makes these pastoral rangelands critical keys in the conservation of wildlife, especially in areas where there are no large government protected areas. The rangeland then acts as sanctuary for wildlife in the region, and the support of those communities sharing the area is necessary for the success of conservation in the area. Furthermore, the reduction of natural habitat sizes also reduces the amount of available natural food, which can then promote conflict, in the form of depredation or crop-raiding (Naughton-Treves and Treves 2005, Woodroffe et al. 2005).

The use of natural water sources for irrigation, as well as the creation of artificial sources, often leads to conflict as the water attracts wildlife, increasing conflict opportunities (Thouless 1994). Though pastoralist rangeland is a most appropriate environment for the coexistence of humans and wildlife, human-wildlife conflict still exists and proper benefits must be provided to local people in order for them to tolerate the costs (Georgiadis et al. 2007).

Wildlife conservation was not known in pre-colonial African societies (Western et al). The approach taken by most African countries to wildlife management was conservation through protected areas. This approach has been challenged on the basis of the presence of wildlife in areas occupied by humans and on the grounds that more enclosure of land for wildlife use would infringe on the rights of communities to use land in areas around or in close proximity to wildlife(Georgiadis et al). Kenya's wildlife is under threat from population pressure and migration, land use changes, over harvesting of natural resources and climate changes (Thoules 1994). Human population growth and wildlife numbers are inversely related. In her study in Taita Taveta district, (Kamande, 2008) showed that wildlife numbers decreased with increase in population. A downward trend in wildlife numbers between 1970s and 1990s indicated that increase in human-wildlife conflicts was not triggered by increase in wildlife. She recommended a change in land use to one that is compatible with wildlife.

Research in land use change provides data necessary for analyzing the impacts of population growth and land use change (Kamande 2008). This information can be used to analyze the causes of human migration patterns and loss of natural resources. Each of these impacts is linked to the extent of change in agricultural land, forest land and settlements (KWS 1996). Planners use human population dynamics data to evaluate environmental impacts to develop land use zoning

plans and to gauge future infrastructural development (KWS 1996). Analysis of land cover change in Taita Taveta district in 1995 showed a loss of about 35% of original land cover to agricultural fields and sisal estates attributed to human population pressure, land tenure and water distribution (Kamande 2008). In areas where there was no change in land cover, the elephants were associated with destruction of woody species while in areas of land cover change; the elephants were associated with destruction of crops.

Human-wildlife conflict is a common malady of rural development is the result of rural growth, increase in human population density and increasing pressure on natural resources like browse and water. A study by Muoria, (2001) in Arabuko Sokoke forest found that there was a correlation between water availability, rainfall, food availability and crop raiding by elephants. Crop raiding by elephants occurred as a consequence of search for water Muoria (2001). Elephants moved out of forest in search for water and in the process raided farms near water sources (Muoria 2001). Crop raiding intensity was negatively associated with rainfall, water availability, wild fruit availability and availability of cultivated crops on farms Muoria (2001). Rainfall and water availability are low in the forest during the dry season and elephants search for water outside the forest (Muoria 2001). Wild fruit availability and farm food availability were also low during this period leading to a negative correlation between these two variables and crop raiding intensities. This agrees with (Western et al 2009) that human-wildlife conflicts intensified during the dry season, near the farms and permanent water sources.

To tolerate wildlife on farms and ranches, local communities need to be assured of economic gains (Kamande, 2008). Therefore there is need to have wildlife tolerance by local communities boosted by compensating them for losses incurred through destruction by wildlife. They should also receive tangible benefits from revenue accrued from wildlife which should also be combined with capacity building (Campbell et al 2005). Involvement of local communities in resource conservation has been emphasized not only for the Kenya government and Kenya Wildlife Service but also other countries (KWS 1996)). Involving local communities in any project gives them a sense of ownership.

## 2.4 Influence of poverty to Human Wildlife Conflict on Socio-economic welfare of local communities.

“Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go, not having the land on which to grow one’s food or a job to earn one’s living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living on marginal or fragile environments, without access to clean water or sanitation” (UN 1998).

Poverty is usually measured as either absolute or relative (the latter being an index of income inequality). Absolute poverty refers to a set standard which is consistent over time and between countries (Campbell et al). First introduced in 1990, the dollar a day poverty line measured absolute poverty by the standards of the world’s poorest countries. The World Bank defined the new international poverty line as $1.25 day in 2008 for 2005(equivalent to $ 1.00 a day in 1996 US prices). In October, 2015they reset it to $ 1.90 a day.

Absolute poverty, extreme poverty or object poverty is a condition characterized by severe deprivation of basic needs, including food, safe drinking water, sanitation facilities, health shelter, education and information (Western et al 2009). It depends not only on income but also on access to services. The term Absolute poverty, when used in this fashion, is usually synonymous with extreme poverty (Campbell et al 2005). Absolute or extreme poverty is a condition so limited by malnutrition, illiteracy, disease, squalid surroundings, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency. (Western et al 2009).

Poverty is when people lack the basic necessities for survival. For instance, they may be starving, lack clean water, proper housing, sufficient clothing or medicines and be struggling to stay alive, (Campbell et al 2005). The poor spend a lot of time in the forests looking for wild fruits and firewood, (Western et al 2009). They kill wild animals for meat which is a source of proteins.

Confrontation arises between animals and human beings as they try to defend their lives hence the Human wildlife conflict. More arguments continue to be made that the conservation of biodiversity can and should contribute to poverty alleviation, (Campbell et al 2005). Major programs such as the United Nations Development Programs aim precisely to reduce poverty through the conservation and sustainable use of biodiversity. (Mizutani 1999). In September, 2005 statement from the secretariats of the five biodiversity conventions argued that biodiversity underpinned all MDGS.

Wildlife conservation is however under constant threat as human populations increase and the expansion of settlement and extraction of resources put pressures on ecosystems and wildlife populations (Okello 2005). Expanding human settlement continues to reduce existing 'natural' habitat for wildlife, thus forcing animals into smaller and often more marginal areas, and into increased contact with humans (Shivik et al 2003). This intensified integration of human and wildlife habitats leads to the increased possibility of conflict between the two, incurring costs on the people living with wildlife (Omondi 1999). This influence that local people have on the well being of wildlife populations now necessitates their cooperation in conservation in order to achieve success (KWS 1996).

Biodiversity could, they suggested help alleviate hunger and poverty, promote good human health and be the basis for ensuring freedom and equity for all. One such argument, that ecosystem services underpinning welfare and livelihoods, particularly of the poor was central to the millennium ecosystem assessment, (Western et al 2009). The debate on poverty and conservation has become more sophisticated as well as more complex. Development has failed the truly poor and there is ample room for conservation organizations to work with small scale low output producers on the ecological frontier, (Sekhar 1998). There is call for new approaches to protected areas and there is recognition of the complexity and the linkages between biodiversity and poverty. These are dynamic and content specific, reflecting social and political factors and issues of geography and scale. Globally, the political challenge of conservation is increasingly being framed in terms of the environmental claims of the rich vs. the subsistence needs of the poor, (Campbell et al 2005)

## 2.5 Influence of Wildlife Conservation Practice to Human Wildlife on Socio-economic welfare of local communities.

In various parts of Africa a protectionist approach to wildlife conservation has been used for many years (Crosby 1986). The colonial powers neglected the utility of indigenous resources virtually everywhere they went. Europeans saw little need to learn from indigenous people as they concentrated their efforts on husbanding crops and livestock that they had domesticated in Europe (Crosby 1986). After an exploitation phase, Africa's wildlife was to become regarded as exotic recreational goods (Lamprey 2004). Wildlife was displaced by exotic plants and animals on all the most productive land because the colonial elite had no experience of or productive use for it. In consequence, proprietorship of indigenous resources was formally removed from Africans and made State property, managed by Wildlife and Forestry departments (Crosby 1986). This approach concentrated on wildlife conservation without involvement of local communities that live with the wildlife (Shivik et al. 2003).

The above approach is not sustainable and has been reviewed in many countries. For example in the 1960's, Zimbabwe's Department of National Parks and Wild Life Management (DNPWLM) reviewed the country's colonial style wildlife policy, which process culminated in a radical shift of direction. The old protectionist approach was replaced by a pragmatic strategy which aimed to link protected areas with sustained utilization of wildlife on communal and commercial land (Crosby 1986). Progressive conservationist thinking espoused the need for 'wise use' of natural resources (KWS 1996). This perspective asserted the view that as long as wildlife remained the property of the State, no-one could invest in it as a resource.

Consequently, management effort, on commercial and communal rangelands, was being put into domestic livestock (KWS 1996). The protected wildlife areas were in danger of becoming isolated and vulnerable ecosystems. This conservation insight provided the rationale behind the 1975 Parks and Wildlife Act (Iwamoto 1998). The impact of this legislation is seen in Zimbabwe today in a thriving wildlife industry on private land and increasingly in the communal sector as well. The 1975 Act was primarily aimed at giving private commercial ranchers an economic rationale for conservation by promoting the possibility for investment into productive wildlife

utilization (Shivik et al 2003). The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) was an attempt to make a social link with the economic and ecological objectives of the 1975 Act (Crosby 1986). Park's also had considerable management capability in its wardens and rangers who were able to carry out the management decisions of the ecologists such as capture, translocation and culling of large herbivores (Crosby 1986).

In Tanzania, the Maasai community had repeated conflicts with park authorities over land use in the Ngorongoro Conservation Area which originally was part of the Serengeti National Park created by the British in 1951(Campbell et al 2005). This led the British to evict them to the newly declared Ngorongoro Conservation Area in 1959 (Crosby 1986). The Ngorongoro Conservation Area Authority which is the governing body that regulates use and access to the Ngorongoro Conservation Area has managed the area to the extent that it became a UNESCO World Heritage Site in 1979 (Crosby 1986). Land in the conservation area is multi-use; it is unique in Tanzania as the only conservation area providing protection status for wildlife whilst allowing human habitation. Land use is controlled to prevent negative effects on the wildlife population (KWS 1996). Other examples are Lungwa Integrated Rural Development Programme (LIRDP) in Zambia, Eco-partners in South Africa among others. However, they have not been successful due to lack of responsive and supportive legal and institutional framework (KWS 1996).

The proposed Wildlife Conservation and Management Act 2013 addresses human wildlife conflict through a “protectionist approach” (Grana 2007). The control strategy concentrates on conflict prevention and land use planning through activities such as Community Based Forest Management and electric fencing (Western et al 2009). However it lacks a comprehensive conflict reduction mechanism where wildlife is viewed not as competitors with other human activities but complimentary (Altman 2000). Western suggests that equitable sharing of benefits from proceeds of wildlife conservation activities between the community and KWS needs to be put in place for the community to own up and fully participate in wildlife conservation activities. There is need, therefore, to put in place an ecotourism policy and guidelines to enable consumptive and non-consumptive use of wildlife resources (Western et al 2009).

This has been tried in Golini- Mwaluganje community conservancy in Kwale District with limited success (Western et al 2009).

The recognition of the large role that local communities play in wildlife conservation has accompanied significant shifts in the discourse of conservation (Pati and Vijayan 2002). Since the late 1980s the dominant narrative has changed, from a protectionist, top down approach, to a counter narrative of 'community conservation', focusing on the involvement and importance of local communities living in and near areas of conservation importance, and marrying the goals of conservation and development into single projects (Woodroffe and Ginsberg 1998). In many areas of Africa, including Kenya, this approach has been embraced and applied widely, often being treated as a 'privileged solution' (as discussed by Moses Makonjio Okello 2005), meaning that it has been applied based on an 'inherent rightness' instead of proven results. (Western et al. 2009) states that "Community conservation'' exploded in popularity, rapidly advancing from an untested idea attracting seed money to the 'best practice' for biodiversity conservation". But concrete successes in the field have been elusive, and, disconcertingly, delivering practical benefits to communities and achieving set goals has been rare, with reviews of the approach characterizing the successes to be modest at best (Caughley 1999). This disconnects between the promotion of conservation to achieve development, and the reality of the often unrealized expectations these projects can generate, is troubling for the future of conservation (KWS 1996).

It is crucial that local communities support conservation, and this necessitates that the benefits of living with wildlife (generated through community conservation projects) outweigh the costs (Pati and Vijayan 2002). The promotion and advocacy of conservation as a means to achieve development in local communities generates often unrealistic expectations and unrealized goals that can be problematic for the future of conservation support (Eltringham 1997). Without the benefits of conservation outweighing the costs of living with wildlife for local communities, support for conservation is unlikely to occur (Shivik et. al 2003).

The community conservation counter-narrative enjoyed considerable support in Kenya in the 1990s (GOK 2008). Under the direction of David Western, the Kenya Wildlife Service (KWS) established the Community Wildlife Service in 1992 and the *Parks beyond Parks Programme* in 1996(KWS 1996) both aimed at sharing the management and benefits of wildlife conservation with local communities (Okello 2005). In a country where it has been reported that up to 80% of wildlife found is outside of protected areas (KWS 1996) the role of the community involvement in conservation is significant (Furnes 1992). Tsavo area has been a prime location for community-based conservation initiatives, with abundant wildlife but no state run wildlife protected areas (Regina 2008).

**2.6 Theoretical Framework**

This research was grounded on the Karl Marx Conflict Theory and Foucault's Theory of the Family. These models were ideal since they supported the influence of the independent variables on the dependent variable under study.

**2.6.1 Karl Marx conflict Theory** - Focuses on the causes and consequences of class conflict between capitalists and the poor. This system premised on the existence of a powerful minority class (bourgeoisie) and an oppressed minority class (the proletariat), created class conflict because the interests of the two were at odds, and resources were unjustly distributed among them (Karl Marx 1997).

**2.6.2 Foucault's** - Contribution to sociology included theories of history, science and power, and much of his work is relevant to themes within the sociology of the family. Foucault argued that all social relations are produced by "power," with groups or classes in power creating themselves by constituting other groups as "Other." Sexuality was a "primary technology of power," with Foucault arguing that sex played the role for the bourgeoisie that blood played for the aristocracy; that is, as a means of defining the body. The bourgeoisie defined the body as an object to be known, controlled, and in general made use of in order to maximize life. The family, to Foucault, served to locate sexuality, to confine it and to intensify it. For example Foucault (1990) cites the prohibition of incest and the role of the family in the production of the psyche as key examples of the ways that the family acts as a key site for "power/knowledge".

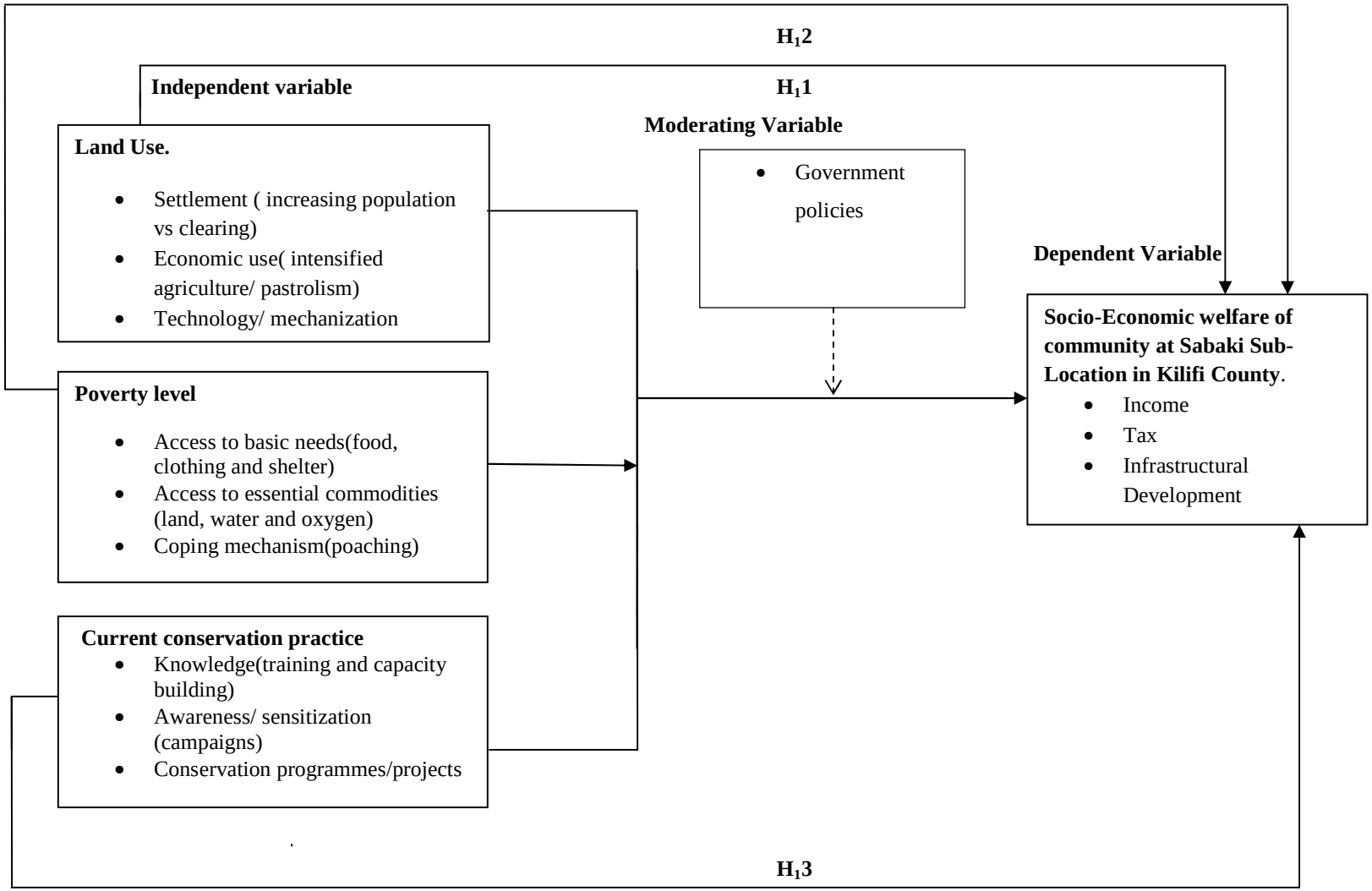


**Figure I: Conceptual Framework**

The Conceptual model indicated a relationship between the land use as a factor influencing Human Wildlife Conflict. The reviewed literature indicated major contribution of land use to the conflicts as there is competition of limited resources between human beings and animals thus the conflict. The extent of this relationship in this study was tested in hypothesis one.

The Conceptual model also showed a relationship between the level of poverty of the local residents and its influence to Human Wildlife Conflict. According to the literature reviewed, communities who were poor did not have basic needs like food clothing and shelter. They turned to killing wild animals like the hippos for meat which was a source of first class proteins. There was therefore a clear influence between the level of poverty and Human Wildlife Conflict whose extent was tested in hypothesis two.

Finally, the literature on wildlife conservation initiative practices showed clear relationship on Human Wildlife Conflict. Availability of wildlife conservation initiatives reduced the menace and such contradictions between man and animals were always noticed. The extent of this influence will be tested in hypothesis three.

The moderating variables on Government policies, culture and how they influenced Human Wildlife Conflict and its effects on Socio-economic welfare of the local community was not be studied.

### 2.8 Knowledge Gap

The report observed the gaps identified within the review of relevant literature as shown in the table below;

**Table 2.1: Knowledge Gap**

| Variable | Author and Year | Findings | Knowledge gap |
|---|---|---|---|
| Land use | Otuoma 2004), Treves and Karanth (2003) | Changes to land use and land cover have effects on the levels of human wildlife conflict, The alteration of land use and land cover by humans is one of the main causes of exacerbating human-wildlife conflict Otuoma (2004) Treves and Karanth (2003). | The existing literature only focuses on how land use influences HWC but doesn't emphasize on one basic factor behind land use which is population increase. |
| Poverty | Western et al (2009) | Poverty majorly contributes to HWC as local residents struggle to kill wild animals for food Western et al (2009) | There is limited literature on structural programmes in place which do not practice equitable distribution of resources amongst people. |
| Wildlife Conservation Practice | Pati and Vijayan (2002) | Local communities play a major role in Wildlife Conservation through acquisition of donor assistance. | There is limited literature on how embezzlement of donor funds are dealt with to ensure efficient and effective Environmental conservation |

### 2.9 Summary of the Literature Reviewed

Literature review comprised the empirical review and conceptual framework. It was estimated that predators and mega-herbivores accounted for approximately equal amounts of human fatalities per year on a global basis (Okello 2005). This was consistent with a seven-year study period in Kenya where 221 people were killed by elephants compared to 250 by predators (KWS 2006). The literature however focused on herbivores but not on reptiles and other carnivores. The empirical literature on how poverty influenced Human Wildlife Conflict exhaustively explained

how poor people depended on natural resources for survival. The poor would rather risk their lives in a thick forest searching for wood and other wild fruits than die with hunger. Western et al (1999.

Animals on the other hand retaliated hence the conflict (Western et al 1999). The literature additionally explained that it was estimated that predators and mega-herbivores accounted for approximately equal amounts of human fatalities per year on a global basis (Okello 2005). This was consistent with a seven-year study period in Kenya where 221 people were killed by elephants compared to 250 by predators (KWS 2006).There was adequate literature on how land use influenced Human Wildlife Conflict and its effects.

Changes to land use and land cover had influenced the levels of human wildlife conflict, as well as on the availability of suitable habitat for wildlife. The alteration of land use and land cover by humans was one of the main causes of exacerbating human-wildlife conflict (Western et al 1999). Recent rises in conflict in Kenya were suggested to be attributable in great measure to changes in land use, caused by increases in human populations, the spread and intensification of agriculture and the increasing sedentary lifestyle of pastoralists in rangelands (KWS 1996).

There was a recognized large role that local communities played in wildlife conservation that had accompanied significant shifts in the discourse of conservation (Pati and Vijayan 2002). Since the late 1980s the dominant narrative had changed, from a protectionist, top down approach, to a counter narrative of ‘community conservation’, focusing on the involvement and importance of local communities living in and near areas of conservation importance, and marrying the goals of conservation and development into single projects (Woodroffe and Ginsberg 1998). Good literature was exhaustively obtained in communities and conservation efforts.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter describes the methodology that was used to carry out the research so as to provide answers to research questions. The chapter covered the research design, sampling procedure, data collection methods, validity and reliability of research instruments, methods of data analysis, operational definition of variables and ethical issues.

## 3.2 Research design

This study adopted a descriptive survey research design which according to Mugenda and Mugenda (2003), is a systematic, empirical inquiry into which the researcher does not have a direct control of independent variables as their manifestation has already occurred or they cannot be manipulated. Descriptive research design is concerned with the diagnosis of a phenomena under study in terms of how, who, when and where so as to build profiles. (Mugenda and Mugenda 2003). Descriptive research involves a field survey where the researcher goes to the target population to investigate issues under study. The study took this type of design due to the fact that it can create a profile over phenomena under study. The researcher investigated the influence of land use, poverty and wildlife conservation practice to human wildlife conflict on socio- economic welfare of local communities and thereafter made inference about the relationships between variables which operate concurrently.

## 3.3 Target population

A population can be referred to as the entire set of relevant units of analysis, or data. It can as well be referred to as the “aggregate of all cases that conform to some designated set of specifications,” (Isidor, 1982). A population can also be understood to be an entire group of individuals, events or objects having common observable characteristics (Mugenda and Mugenda, 2003).

As such, this study mainly targeted 1,850 individuals who lived in Sabaki Sub-location. The study was conducted on 250 individuals who settled close to river Sabaki which is a wildlife habitat and was the group which were mostly affected by human wildlife conflict.

### 3.4 Sampling procedure and sampling size.

#### 3.4.1 Sampling procedure

Stratified random sampling was used in the study. The target of 250 individuals was categorized into five homogenous stratums i.e. Farmers, Fishermen, Pastoralists, Teachers and Pupils. The sampling size corresponding to 250 was obtained from Krejcie and Morgan's 1970 table and using proportions, the size of the sample from each stratum was calculated.

Simple random sampling was used to get the respondents that participated in survey from each of the five stratums.

#### 3.4.2 Sample size

The sample size that corresponded to 250 farmers from Krejcie and Morgan (1970) table was extrapolated as 50. Fifty respondents were then sampled in the study with each of the five stratums having sample sizes as indicated in table 3.1

**Table 3.1 Sampling Frame**

| Stratum | Target Population | Sample Size |
|---|---|---|
| Farmers | 45 | 7 |
| Fishermen | 55 | 13 |
| Pastrolists | 50 | 10 |
| Pupils | 48 | 8 |
| Teachers | 52 | 12 |
| **Total** | **250** | **50** |

### 3.5 Methods of data collection

#### 3.5.1 Questionnaires

Data was collected by using structured questionnaires following procedures described by (Okello 2005).

Prior to data collection, extensive discussions with the key informants was undertaken to locate the sites with the highest incidences of HWC in the study area.

Data was collected by employing a combination of social survey methods involving participatory techniques (focused group discussions and key informant interviews) and structured questionnaire survey of households.

Questions were designed to solicit information such as how poverty influenced HWC in the study area, how poverty influenced these conflicts as well as the wildlife conservation initiatives practices in place and their influence to these conflicts.

Questionnaires were distributed by research assistants. Two research Assistants who were fluent in both English and Giriama were engaged as enumerators. Questionnaires were issued to those who were able to read and write and collected later once they would have completed. For those who were not be able to read and write, research assistants questioned in the questionnaire in the order in which they were listed and recording the replies in the spaces meant for the same.

The questionnaire had four questions. Section A of the questionnaire had questions on the demographic characteristics of respondents. Section B of the questionnaire had questions on the contribution of land use to HWC. Section C on the level of poverty of the community, and section D on the current wildlife conservation initiatives in place in the area.

The structured sections of the questionnaire had a five-point Likert scale rating indicated thus:

(1) Strongly Agree (2) Agree (3) Neutral (4) Disagree (5) Strongly Disagree.

### 3.5.2 Observation

For land use assessment on settlement patterns, field visits and observation were mainly used to confirm the respondents' responses so that accurate and reliable information would be collected.

### 3.5.3 Focused Group Interview

A Focused group interview was done with the respondents whereby a research assistant assisting in translation of questions from English to Giriama and vice-versa.

### 3.5.4 Secondary data

Secondary data was sought from previous studies carried out on HWC at global, regional and local levels. Such information was obtained from published reports such as journals, thesis, relevant documentation and the internet.

## 3.6. Validity and Reliability of Research instruments.

Validity and reliability of research instruments were ensured and were done as described below.

### 3.6.1 Pilot testing of the research instrument

Initial testing of the instrument was done with respondents from Sabaki Sub-location. The subjects of the pre-test were encouraged to give suggestions on the instructions, clarity of questions, and sensitivity of the questions and the flow of the questionnaire. The pilot testing was done with seven respondents who constituted 14% of the sample size which was within the range of 10% to 20% of the sample size as recommended by (Baker 1994). The seven respondents were not included in the final survey.

After the filled pilot questionnaires were received together with suggestions and comments with respondents, the questionnaires were reviewed to find out the comprehension and suitability of the wordings used and the sequencing of the questions and the time taken to complete each questionnaire.

The study of the completed pilot questionnaires gave an indication of the reliability of the

instrument through the responses received on the influence of Human Wildlife Conflict on Socio-economic welfare of communities.

### 3.6.2 Validity of the research instrument

Construct and content validity were determined through review of the questionnaires by Kenya Wildlife Service staff in Malindi Marine Park who were experts and were in the HWC department to ensure adequate coverage of specific objectives of the study.

The validity of the research instrument was concerned with measuring what it was supposed to measure and nothing else, by ensuring that the questions were easily comprehensible, clear, used simple words familiar to all respondents and that they only conveyed one thought at a time. (Kothari 2004).

### 3.6.3 Reliability of the research instrument

Split half method was used to test the reliability of survey instruments to ensure that the results obtained through its use were consistent from one respondent to the other. The Questionnaire was split into two equivalent halves, odd and even questions for all the 5- Likert scale questions, and then a correlation coefficient for the two halves was computed and adjusted to reflect the entire questionnaire using the spearman-Brown prophecy formula rsb=2rhh/ (1+rhh); where rhh was the correlation coefficient between the two halves and rsb was the adjusted correlation also known as Spearman- Brown reliability. A correlation of 0.946 was computed from the two halves and this was corrected using the Spearman Brown prophecy formula and yielded a corrected Spearman- Brown reliability of 0.972. The instrument was therefore reliable since the correlation was above 0.8 which is considered the threshold of a reliable instrument when the number of questions is greater than eight (Monette, Sullivan & Dejong 2005).

### 3.7 Data collection procedures.

Permission to carry out the research was obtained from KWS under the Ministry of Environment before the commencement of data collection. After obtaining the permission, a travel to Sabaki was organized where the researcher met with two research assistants and the sub-chief of Sabaki

Sub-location, thereby informing them about the purpose of the visit.

After consent was given to enter the area, the research assistants distributed questionnaires to respondents who were able to read in English. For those who were not able to read, the research Assistants booked an appointment with them on the time they would be available to answer the questions. A focused group interview was done whereby a research assistant assisting in translation of questions from English to Giriama and vice-versa.

### 3.8 Data analysis techniques

(Orodho 2002) defines data analysis as the examination of what has been collected in a survey or experiment and making deductions and inferences for this data through organizing the data, breaking it into manageable units, synthesizing it as well as searching for patterns.

After the questionnaires were returned, the raw data was cleaned, edited, coded and tabulated in line with the study objectives. The quantitative data collection using the closed ended items of the questionnaires and interviews were assigned ordinal values and analyzed using statistics of frequency tables, percentages, mode and median.

The organized data was then used in testing the hypothesis of the study.

### 3.9 Ethical Considerations.

The researcher first obtained a research permit from the Ministry of Environment and Natural Resources so that they were legally authorized to carry out the research and collect data. The researcher then wrote a transmittal letter informing the respondents that the research was purely for academic purposes and assuring them of confidentiality of their identities. Enumerators were asked not to record the names of the respondents in the questionnaire. Informed consent was obtained from the respondents before data collection was done, and only those that agreed to participate were engaged in the survey.

**Table 3.2 Operationalization of Variables**

| Objectives | Type of Variable | Indicators | Measurement Scale | Methods of data collection | Data collection tools | Data analysis technique |
|---|---|---|---|---|---|---|
| To determine the influence of land use to HWC on Socio-economic welfare of local communities in Sabaki Sub-Location | Land use (Independent variable) | o No. of squatters in the area<br>o No. of kilometers from community activities to wildlife habitat | Ordinal | Administering questionnaire, interviews, observation | Questionnaire/ interviews | Frequency tables, percentages |
| To determine the influence of poverty to Human Wildlife Conflict on Socio-economic welfare of local communities in Sabaki Sub-location | Poverty level(Independent variable) | o No. of community members able to access basic needs<br>o No. of residents living close to wildlife habitat | Ordinal | Administering questionnaire, interviews, observation | Questionnaire/ interviews | Frequency tables, percentages |
| To determine the influence of wildlife conservation practice to Human Wildlife Conflict on Socio-Economic welfare of local communities in Sabaki Sub-County. | Current conservation initiatives (Independent variable) | o No. of community projects in place<br>o No of problematic animals attended to by KWS<br>o No of crop/human/property compensation<br>o No of awareness programs conducted | Ordinal | Administering questionnaire and interviews | Questionnaire/ interviews | Frequency tables, percentages |
| | Socio-Economic welfare of Community at Sabaki Sub Location(Independent variable) | o No. of reported deaths and crops caused by wildlife<br>o No of crops and deaths compensated | Ordinal | Administering questionnaires and interviews | Questionnaire/ interview | Frequency tables, percentages |

# CHAPTER FOUR.

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION.

## 4.1 Introduction.

This chapter analyses the data collected, presents it in tables and undertakes data interpretation. The chapter provides the major findings and results of the study as obtained from the questionnaire.

## 4.2 Questionnaire response rate.

Questionnaire response rate indicates the percentages of the questionnaires that were filled and returned by the respondents. The returned questionnaires were the ones analysed. Table 4.1 shows the response rate form the sample size.

**Table 4.1 Questionnaire Response Rate**

| Stratum | Questionnaires Sent | Questionnaires Returned | Percentage |
|---|---|---|---|
| Farmers | 7 | 7 | 15.5 |
| Fishermen | 13 | 12 | 26.7 |
| Pastoralists | 10 | 8 | 17.7 |
| Pupils | 8 | 8 | 17.7 |
| Teachers | 12 | 10 | 22.2 |
| **Total** | **50** | **45** | **100.0** |

Out of the 50 respondents targeted in the study, 45 completed and returned the questionnaire which constitutes a response rate of 90%. This response rate is excellent and a representative of the target population as noted by Mugenda and Mugenda (2003) who posits that a response rate above 70% is excellent while a response rate of 60% is good and 50% is adequate for analysis and reporting.

### 4.3 Demographic characteristics of respondents

As part of their demographic information, the study sough to establish the background information of respondents including Age, Proximity to Wildlife Habitat, length of stay in Sabaki Sub-location and occupation.

#### 4.3.1 Proximity to Wildlife Habitats

The study sought to find out the proximity of respondents to Wildlife Habitats. This was important because the Research mainly focused on residents who lived close to River Sabaki and the ones who were mostly affected by these conflicts.

**Table 4.2: Distribution of Respondents by Proximity to Wildlife Habitats**

| Proximity | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Sabaki | 45 | 100 | 100 |
| **Total** | **45** | **100** | |

As shown in table 4.2 above, 100% of the respondents were living close to River Sabaki. This is in line with the scope of the influence of Human Wildlife Conflict on Socio-economic welfare of the local communities which needed to have at least 75% of the respondents from the areas which were mostly affected by these conflicts.

#### 4.3.2 Age of the Respondents

The study also sought to establish the age of the respondents who were engaged in the study of the influence of Human Wildlife Conflict on socio-economic welfare of local communities in Sabaki Sub-location. The ages have been categorized as minor in age bracket of 12 to 18 years, youth in age bracket of 18-35 years, the middle aged from 36-50 years and elders as those 51 and above. There is need of inclusion of all age groups in the influence of Human Wildlife Conflict so that it is holistic and everyone is involved and engaged (Lederach 1997). The results obtained are as shown in table 4.3

**Table 4.3: Distribution of Respondents by Age**

| Age (years) | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| 12-18 | 7 | 15.5 | 15.5 |
| 19-35 | 18 | 40.0 | 55.5 |
| 36-50 | 8 | 17.7 | 73.2 |
| 51 and above | 12 | 26.6 | 100.0 |
| **Total** | **45** | **100.0** | |

As shown in table 4.3 above, 15.5% of the respondents were minors, 40.0% were youth, 17.7% were the middle aged and elders constituted 26.6% of the respondents. It therefore implied that the Research engaged majority of people who were the youth and took part in various Socio-economic activities. A quarter of the persons engaged in the Research were elders who were mainly the council of elders and mediators of communal conflicts between Human beings and wildlife.

### 4.3.3 Occupation

This study sought to establish the number of respondents from each of the groups affected by Human Wildlife Conflict. This was necessary to ensure that all the various groups that were affected by those conflicts were included in the study. This distribution is shown in table 4.4

**Table 4.4 Distribution of Respondents by Occupation.**

| Human Wildlife Conflict affected groups | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Farmers | 6 | 13.3 | 13.3 |
| Fishermen | 11 | 24.4 | 37.7 |
| Pastoralists | 9 | 20.0 | 57.7 |
| Pupils | 7 | 15.5 | 73.2 |
| Teachers | 12 | 26.6 | 100.0 |
| **Total** | **45** | **100.0** | |

From the findings, majority of the respondents engaged in the survey were Teachers at 26.6%,

followed by Fishermen at 24.4%. Pastoralists were third at 20.0%, pupils at 15.5% while farmers trailed at 13.3%. All the stakeholders who participated in the Human Wildlife Conflict project were therefore fairly represented in the survey.

### 4.3.4 Period of residence in Sabaki Sub-location

This study sought to establish the duration of residence of the respondents in Sabaki Sub-location. This would give an indication if they understood the nature and severity of Human Wildlife Conflict as well. This distribution is shown in table 4.5.

**Table 4.5 Distribution of Respondents by Period of Residence in Sabaki.**

| Duration in Sabaki Sub-location | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Less than 1 year | 2 | 4.4 | 4.4 |
| 1 – 7 years | 16 | 35.5 | 39.9 |
| Over 7 years | 27 | 60.0 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.5 indicates that majority of the respondents who constituted 60.0% were residents of Sabaki Sub-location for more than 7years and therefore understood how land use, poverty and conservation practices influenced Human Wildlife Conflict on Socio-economic welfare of the local community at Sabaki Sub-location. 35.5% of the respondents had lived for less than 7years and therefore had information on Human Wildlife Conflict as well. 4.4% of the respondents had lived in the area for less than 1 year and therefore had little idea on the same.

## 4.4 Land use

In an effort to determine the influence of land use to Human Wildlife Conflict on Socio-economic welfare of the local communities, respondents in this study were asked to indicate their levels of agreement with specific statements in the questionnaire that related to land use band its influence to Human Wildlife Conflict. The coding employed in the analysis was from 1 to 5, with 1 representing strong agreement and 5 representing strong Disagreement with the statements.

### 4.4.1 Location of Homesteads

The researcher determined how Land use influenced Human Wildlife Conflict on Socio-Economic Welfare of local communities by observing the location of homesteads. Non-participative Observation was done where the Researcher basically observed the study elements and recorded information without being involved with residents. it was evident that homesteads were within wildlife habitats because locals had settled very close to River Sabaki. Human settlement was accompanied by various domestic activities like laundry, swimming, fishing and domestic water harvesting hence the increased interaction.

### 4.4.2 Transport System and its effects on Wild Animals.

This question sought to determine if respondents felt that roads extended to Wildlife Habitats. The findings are as shown in table 4.6.

**Table 4.6 Transport System and its Effects on Wild Animals**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 8 | 17.7 | 17.7 |
| Agree | 31 | 68.8 | 86.5 |
| Neutral | 1 | 2.2 | 88.7 |
| Disagree | 2 | 4.4 | 93.1 |
| Strongly disagree | 3 | 6.6 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.6 shows that 17.7% of the Respondents Strongly agreed that roads as a major form of transport extended to Wildlife Habitats thus frequent disturbances experienced by wild animal through motorcycles used by human beings. 68.8% of the respondents however, agreed to the questionnaire item. Only 6.6% of the Respondents strongly disagreed that that roads as a major form of transport extended to Wildlife Habitats while 2.2% of the respondents were undecided on the issue. 4.4 % of the Respondents disagreed on the item. 86.5% agreement implies that indeed roads extended in Wildlife Habitats.

### 4.4.3 Use of Modern Technology and its Effects on Wild Animals

This question sought to determine if respondents felt that farmers used tractors for agriculture hence scaring wild animals and thus the continuous conflicts. The findings are as summarized below in table 4.7.

**Table 4.7 Use of Modern Technology and its Effects on Wild Animals**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 11 | 24.4 | 24.4 |
| Agree | 23 | 51.5 | 75.9 |
| Neutral | 6 | 13.3 | 89.4 |
| Disagree | 4 | 8.8 | 98.2 |
| Strongly disagree | 1 | 2.2 | 100.0 |
| **Total** | **45** | **100.0** | |

On the issue of farmers using Modern Technology for agriculture disturbing wild animals, 51.5% of the Respondents agreed with the statement while 13.3% of the respondents opted to remain neutral. 8.8% of the respondents disagreed with the questionnaire item while 2.2% of the respondents strongly disagreed with the statement. At 75.9% agreement, it is evident that farmers used tractors for agriculture hence scaring wild animals hence the influence of land use to Human Wildlife Conflict on Socio-economic welfare of communities.

## 4.5 Land use and its Influence to Human Wildlife Conflict on Socio-Economic Welfare of local communities.

Chi-Square analysis was conducted at 95% Confidence Interval and 5% Significance Level

### 4.5.1 Transport System and its Effects on Wild Animals

Road transport which was a major form of transport extended to wildlife Habitats thus frequent disturbances experienced by wild animals through the motorcycles used by the local communities.

Null Hypothesis ($H_o$): Transport System does not influence Human Wildlife Conflict on socio-economic welfare of local communities.

Alternative Hypothesis ($H_1$): Transport System influences Human Wildlife Conflict on socio-economic welfare of local communities.

The Hypothesis was tested and calculated using Chi-square and the results were as shown in Table 4.8

**Table 4.8 Chi-Square Test on Transport System**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 8 | 45 | 1369 | 30.4 |
| Agree | 31 | 45 | 196 | 4.6 |
| Neutral | 1 | 45 | 1936 | 43.0 |
| Disagree | 2 | 45 | 1849 | 41.1 |
| Strongly disagree | 3 | 45 | 1764 | 39.2 |
| **Total** | | | | **158.3** |

$Z^2_s = \sum (O-E)/E$

$Z^2_s = 158.3$

Df=4

At 5% level of Significance

$Z^2\alpha = 9.488$

Decision: Since $Z^2_s$ (Observed value) 158.3 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$ based on the sample information, Transport System influences Human Wildlife Conflict on Socio-economic welfare of local communities

### 4.5.2 Modern Technology and its Effects to Wild animals.

The modern technology like tractors used in Agriculture by residents cause disturbances to wild animals.

Null Hypothesis ($H_o$): Modern technology does not influence Human Wildlife Conflict on socio-Economic welfare of local communities.

Alternative Hypothesis ($H_1$): Modern technology influences Human Wildlife Conflict on Socio-Economic welfare of local communities.

The Hypothesis was tested and calculated using Chi-square and the results were as shown in Table 4.9.

**Table 4.9 Chi-Square Test on Modern Technology**

| **Scale** | **O** | **E** | **$(O-E)^2$** | **$(O-E)^2/E$** |
|---|---|---|---|---|
| Strongly agree | 11 | 45 | 1156 | 25.7 |
| Agree | 23 | 45 | 484 | 10.8 |
| Neutral | 6 | 45 | 1521 | 33.8 |
| Disagree | 4 | 45 | 1681 | 37.4 |
| Strongly disagree | 1 | 45 | 1936 | 43.0 |
| **Total** | | | | **150.7** |

$Z^2_s = \sum (O-E)/E$

$Z^2_s = 150.7$

Df=4

At 5% level of Significance

$Z^2\alpha = 9.488$

Decision: Since $Z^2_s$ (Observed value) 150.7 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information, Modern technology influences Human Wildlife Conflict on Socio-economic welfare of local communities.

**4.6 Poverty level.**

In an effort to determine the influence of Human Wildlife Conflict on Socio-economic welfare of communities, respondents in this study were asked to indicate their level of agreement with

specific statements in the questionnaire that related to poverty and its influence to Human Wildlife Conflict on Socio-economic welfare of local communities. The coding employed in the analysis was from 1 to 5, with 1 representing Strong agreement and 5 representing Strong disagreement with the statements.

### 4.6.1 Per Capita Income of Respondents.

This question sought to determine if respondents felt that most of the Residents in Sabaki were poor and their per capita income was below 1USD and therefore could not access some of the basic needs like food, clothing and shelter. The findings are as shown in table 4.10.

**Table 4.10 Per Capita Income of Respondents.**

| Monthly income(KSHS) | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| 0-2000 | 20 | 44.4 | 44.4 |
| 2000-4000 | 12 | 26.6 | 71.0 |
| 4000-6000 | 5 | 11.1 | 82.1 |
| 6000-8000 | 4 | 8.8 | 90.9 |
| 8000-10,000 | 3 | 6.6 | 97.5 |
| 10,000 and above | 1 | 2.2 | **100.0** |
| **TOTAL** | **45** | 100.0 | |

Table 4.8 shows that majority of the Respondents at 44.4% were earning between 0-2,000Kshs per month. 26.6% of the Respondents were earning between 2,000-4,000Kshs per month while 11.1% of the Respondents were earning between 4,000-6,000Kshs per month. It was found that only 2.2% of the Respondents earned 10,000Kshs and above while 6.6% earned between 8,000-10,000Kshs per month while 8.8% of the Respondents earned between 6,000-8,000Kshs per month. It was therefore evident that 44.4% of the Respondents earned below 2,000Khs per month and are absolutely poor.

### 4.6.2 Essential Commodities of Respondents

Respondents were asked to rate whether residents could not access essential commodities like water. This question however sought to determine if respondents felt that inability to access water forced the residents to use the only available Sabaki river water for various purposes hence

conflicting with wildlife. The findings are as shown in table 4.11

**Table 4.11 Essential Commodities of Respondents**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 10 | 22.2 | 22.2 |
| Agree | 20 | 44.4 | 66.6 |
| Neutral | 10 | 22.2 | 88.8 |
| Disagree | 3 | 6.6 | 95.4 |
| Strongly disagree | 2 | 4.4 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.9 shows that majority of the respondents who constituted 44.4% agreed that residents could not access essential commodities like water. 22.2% of the respondents strongly agreed with the claim and only 4.4% of the respondents strongly disagreed with the statement. 6.6% disagreed with the statement that residents could not access some of the essential commodities like water with 22.2% of the respondents deciding to remain neutral.

### 4.6.3 Incidences of Poaching

This question sought to determine if respondents felt that poverty was so high in Sabaki that respondents killed Hippopotamus for meat as a source of food hence the continuous conflict. The findings were as shown in table 4.12

**Table 4.12 Incidences of Poaching**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 7 | 15.5 | 15.5 |
| Agree | 24 | 53.3 | 68.8 |
| Neutral | 9 | 20.0 | 88.8 |
| Disagree | 3 | 6.6 | 95.4 |
| Strongly disagree | 2 | 4.4 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.10 shows that majority of the respondents at 68.8% were in agreement with the statement though at different extents, that Sabaki residents killed hippopotamus for meat, 53.3% agreed while 15.5% strongly agreed. 22.0% of the respondents were undecided on the statement. Only 11.0% of the respondents disagreed with the claim. It was therefore evident that the residents of Sabaki Sub-location killed hippopotamus for meat which is a source of food.

## 4.7 Poverty and its Influence to Human Wildlife Conflict on Socio-Economic Welfare of Local Communities.

The Chi-Square analysis was conducted at 95% Confidence Interval and 5% Significance Level.

### 4.7.1 Per Capita Income

Residents in Sabaki were poor and could not access some of the basic needs like food, clothing and shelter.

Null Hypothesis ($H_o$): Sabaki residents were not poor and could access some of the basic needs like food, clothing and shelter.

Alternative Hypothesis ($H_1$): Sabaki residents were poor and could not access some of the basic need like food, clothing and shelter.

Hypothesis was tested and calculated using Chi-square and the results presented in Table 4.13

**Table 4.13 Chi-Square Test on per capita income**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| 0-2000 | 20 | 45 | 625 | 13.9 |
| 2000-4000 | 12 | 45 | 1089 | 24.2 |
| 4000-6000 | 5 | 45 | 1600 | 35.6 |
| 6000-8000 | 4 | 45 | 1681 | 37.4 |
| 8000-10000 | 3 | 45 | 1764 | 39.2 |
| 10000 and above | 1 | 45 | 1936 | 43.0 |
| **Total** | | | | **193.3** |

$Z^2_s=\sum (O-E)/E$

$Z^2_s=193.3$

Df=5

At 5% level of Significance

$Z^2\alpha$=11.070

Decision: Since $Z^2_s$ (Observed value) 193.3 is greater than $Z^2\alpha$ (critical value) 11.070 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information, Sabaki residents were poor and could not access some of the basic need like food, clothing and shelter.

### 4.7.2 Essential Commodities.

Due to the nature of Poverty, Sabaki residents could not access some of the essential commodities like water.

Null Hypothesis ($H_o$): Sabaki residents were not poor and could access some of the essential commodities like water.

Alternative Hypothesis ($H_1$): Sabaki residents were poor and could not access some of the essential commodities like water.

The hypothesis was tested and calculated using Chi-square and the results were presented in Table 4.14

**Table 4.14 Chi-Square Test on Essential Commodities**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 10 | 45 | 1225 | 27.2 |
| Agree | 20 | 45 | 625 | 13.9 |
| Neutral | 10 | 45 | 1225 | 27.2 |
| Disagree | 3 | 45 | 1764 | 39.2 |
| Strongly disagree | 2 | 45 | 1849 | 41.1 |
| **Total** | | | | **148.6** |

$Z^2_s=\sum (O-E)/E$

$Z^2_s$=148.6

Df=4

At 5% level of Significance

$Z^2\alpha=9.488$

Decision: Since $\not{Z}^2_s$ (Observed value) 148.6 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information, Sabaki residents were poor and could not access some of the essential commodities like water.

### 4.7.3 Poaching Incidences.

Residents in Sabaki killed Hippopotamus for food as a mechanism of coping with poverty.

Null Hypothesis ($H_o$): Sabaki residents did not kill hippopotamus for food as a mechanism of coping with poverty.

Alternative Hypothesis ($H_1$): Sabaki residents killed hippopotamus for food as a mechanism of coping with poverty.

The Hypothesis was tested and calculated using Chi-square and results were presented in Table 4.15

**Table 4.15 Chi-Square Test on Poaching Incidences**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 7 | 45 | 1444 | 32.1 |
| Agree | 24 | 45 | 441 | 9.8 |
| Neutral | 9 | 45 | 1296 | 28.8 |
| Disagree | 3 | 45 | 1764 | 39.2 |
| Strongly disagree | 2 | 45 | 1849 | 41.1 |
| **Total** | | | | **151.0** |

$\not{Z}^2_s=\sum (O-E)/E$

$\not{Z}^2_s=151.0$

Df=4

At 5% level of Significance

$Z^2\alpha=9.488$

Decision: Since $Z^2_s$ (Observed value) 151.0 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information, Sabaki residents killed hippopotamus for food as a mechanism of coping with poverty.

### 4.8 Wildlife Conservation Practice.

In an effort to determine the influence of Human Wildlife Conflict on Socio-economic welfare of local communities, respondents in this study were asked to indicate their level of agreement with specific statements in the questionnaire that related to wildlife conservation practice and their influence to Human Wildlife Conflict on Socioeconomic welfare of local communities. The coding employed in the analysis was from 1 to 5, with 1 representing Strong Agreement and 5 representing Strong disagreement with the statements.

#### 4.8.1 Knowledge about Wildlife Conservation Practice

This question sought to determine if respondents understood what wildlife conservation practices were because they promoted sustainable wildlife conservation. The findings are as summarized in table 4.16

**Table 4.16 Knowledge about Wildlife Conservation Practice**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 12 | 26.6 | 26.6 |
| Agree | 23 | 51.1 | 77.7 |
| Neutral | 3 | 6.6 | 84.3 |
| Disagree | 3 | 6.6 | 90.9 |
| Strongly disagree | 4 | 8.8 | 100.0 |
| **Total** | **45** | **100.0** | |

From table 4.11, it is evident that majority of respondents at 51.1% Agreed that they clearly understood what wildlife conservation practice was. 26.6% of respondents strongly agreed with the statement while another 6.6% disagreed. Only 8.8% of the respondents strongly disagreed with the questionnaire item while 6.6 of the respondents were undecided. Majority of the

respondents at 77.7% agreed with the questionnaire item indicating that respondents clearly understood what wildlife conservation practice was.

### 4.8.2 Absence of Awareness campaigns

This question sought to determine whether awareness campaigns on the importance of wildlife were done in the area as part of wildlife conservation Practices. The findings are as summarized in table 4.17.

**Table 4.17 Absence of Awareness campaigns**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 5 | 11.1 | 11.1 |
| Agree | 30 | 66.6 | 77.7 |
| Neutral | 7 | 15.5 | 93.2 |
| Disagree | 2 | 4.4 | 97.6 |
| Strongly disagree | 1 | 2.2 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.12 shows that 11.1% and 16.6% of the respondents strongly agreed and disagreed respectively to the statement that awareness campaigns on the importance of wildlife were rarely done in the community. Only 2.2% of the respondents strongly disagreed with the statement while 15.5% of the respondents decided to remain neutral. However, 4.4% of the respondents disagreed with the claim. With a 77.7% agreement by respondents, it is clearly evident that awareness campaigns on the importance of wildlife were rarely done in the community.

### 4.8.3. Lack of Environmental Community Based Projects.

The statement sought to determine the availability of community based projects that the local community members utilize for sources of livelihoods. These projects provide alternative means hence the locals not able to kill animals for food. The findings are as summarized in table 4.18.

**Table 4.18 Lack of Environmental Community Based Projects**

| | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|
| Strongly agree | 11 | 24.4 | 24.4 |
| Agree | 22 | 48.8 | 73.2 |
| Neutral | 8 | 17.7 | 90.9 |
| Disagree | 2 | 4.4 | 95.3 |
| Strongly disagree | 2 | 4.4 | 100.0 |
| **Total** | **45** | **100.0** | |

Table 4.13 indicates that 24.4% of the respondents strongly agreed that there were no environmental community based projects that catered for alternative sources of livelihoods for members of the community. 48.8% agreed to the claim while 17.7% remained neutral. Only 4.4% of the respondents strongly disagreed to the claim while the same number again which was 4.4% disagreed**.**

## 4.9 Wildlife Conservation Practice and its Influence to Human Wildlife Conflict on Socio-Economic Welfare of local communities.

The Chi-square analysis was conducted at 95% confidence interval and 5% significance level.

### 4.9.1 Knowledge about Wildlife Conservation Practice.

Wildlife Conservation Practice promotes sustainable coexistence between Human beings and wild animals.

Null Hypothesis ($H_o$): Respondents did not have knowledge on what wildlife conservation practice was

Alternative Hypothesis ($H_1$): Respondents had knowledge on what wildlife conservation practice was.

This hypothesis was tested and calculated using Chi-square and results were presented in Table 4.19

**Table 4.19 Chi-Square Test on Knowledge about Wildlife Conservation Practice**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 12 | 45 | 1089 | 24.2 |
| Agree | 23 | 45 | 484 | 10.8 |
| Neutral | 3 | 45 | 1764 | 39.2 |
| Disagree | 3 | 45 | 1764 | 39.2 |
| Strongly disagree | 4 | 45 | 1681 | 37.4 |
| **Total** | | | | **150.8** |

$Z^2_s=\sum (O-E)/E$

$Z^2_s=150.8$

Df=4

At 5% level of Significance

$Z^2\alpha=9.488$

Decision: Since $Z^2_s$ (Observed value) 150.8 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information Knowledge about wildlife conservation practice.

### 4.9.2 Absence of Awareness Campaigns in the Community.

Awareness campaigns on the importance of wildlife resource are part of wildlife conservation practice and promote sustainable coexistence between human beings and wild animals.

Null hypothesis ($H_o$): There is no absence of awareness campaigns on the importance of wildlife.

Alternative hypothesis ($H_1$): There is absence of awareness campaigns on the importance of wildlife.

This hypothesis was tested and calculated using Chi-square and results were presented in Table 4.20

**Table 4.20 Chi-Square Test on Absence of Awareness Campaigns**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 5 | 45 | 1600 | 35.6 |
| Agree | 30 | 45 | 225 | 5.0 |
| Neutral | 7 | 45 | 1444 | 32.1 |
| Disagree | 2 | 45 | 1849 | 41.1 |
| Strongly disagree | 1 | 45 | 1936 | 43.0 |
| **Total** | | | | **156.8** |

$Z^2_s = \sum (O-E)/E$

$Z^2_s = 156.8$

Df=4

At 5% level of Significance

$Z^2\alpha = 9.488$

Decision: Since $Z^2_s$ (Observed value) 156.8 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information There is absence of awareness campaigns on the importance of wildlife.

### 4.9.3 Lack of Environmental Community Based Projects in the Community.

Environmental Community Based Projects provide alternative sources of livelihoods for the local community members. This therefore promotes peaceful coexistence between human beings and wild animals.

Null hypothesis ($H_o$): There is no lack of Environmental Community Based projects in the community.

Alternative hypothesis ($H_1$): There is lack of Environmental Community Based projects in the community.

This hypothesis was tested and calculated using Chi-square and results were presented in Table 4.21

**Table 4.21 Chi-Square Test on lack of Environmental Community Based Projects**

| Scale | O | E | $(O-E)^2$ | $(O-E)^2/E$ |
|---|---|---|---|---|
| Strongly agree | 11 | 45 | 1156 | 25.7 |
| Agree | 22 | 45 | 529 | 11.8 |
| Neutral | 8 | 45 | 1369 | 30.4 |
| Disagree | 2 | 45 | 1849 | 41.1 |
| Strongly disagree | 2 | 45 | 1849 | 41.1 |
| **Total** | | | | **150.1** |

$Z^2_s=\sum (O-E)/E$

$Z^2_s=150.1$

Df=4

At 5% level of Significance

$Z^2\alpha=9.488$

Decision: Since $Z^2_s$ (Observed value) 150.1 is greater than $Z^2\alpha$ (critical value) 9.488 at 5% level of significance, we accept $H_1$ and reject $H_o$. Based on the sample information There is lack of Environmental Community Based projects in the community.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1Introduction

This chapter presents a summary of the study findings, conclusions and recommendations. The findings are summarized in line with the objectives of the study which include land use, poverty level and wildlife conservation practices. These independent variables were studied against the dependent variable which is socioeconomic welfare local communities in Sabaki Sub-location.

## 5.2 Summary of findings

This section presents the findings from the study on the influence of human wildlife conflict on socio economic welfare of local communities in Sabaki Sub-location. It was established that all the objectives described in the study influenced human wildlife conflict and that the influence was statistically significant at 0.05 significance level.

### 5.2.1 Findings on Land use and its influence to Human Wildlife Conflict on Socio-economic welfare of local communities.

Following land use practices carried out in the Sub-location, it was noted through observation that homesteads were closely built within Sabaki River which was a wildlife habitat, 86.5% of the respondents noted that roads extended to wildlife habitats thus continuous disturbances due to motorcycles used by human beings while 75.9% were in agreement that farmers used tractors for agriculture hence continuously conflicting with wild animals. The study established that there existed a significant relationship between land use and Human Wildlife Conflict in Sabaki sub-location with a Chi-Square alpha value of 9.488 and a Chi-Square statistics value of 158.3 on transport system and a Chi-Square alpha value of 9.488 and Chi-Square statistics values of 150.7 on the use of Modern Technology.

### 5.2.2 Findings on Poverty level and its influence to Human Wildlife Conflict on Socio-Economic welfare of local communities.

The study established that majority of the respondents were in agreement with the positive role that poverty played in Human Wildlife Conflict. Majority of the respondents at 44.4% were earning from 0-2,000Kshs per month. This indicated that most of the residents were poor and could not access some of the basic needs like food, clothing and shelter. 66.6% noted that majority could not access essential commodities like water. However, 68.8% indicated that incidences of poaching existed whereby residents killed hippopotamus for meat as a source of food. The study also established that there was a significant relationship between poverty level and Human Wildlife Conflict in Sabaki Sub-location with a Chi-Square Alpha value of 11.070 and chi-square statistics value of 193.3 on per capita income, a Chi-Square Alpha value of 9.488 and chi-square statistics value of 148.6 on essential commodities while a chi-square Alpha value of 9.488 and chi-square statistics value of 151.0 on incidences of poaching.

### 5.2.3 Findings on Wildlife Conservation Practice to Human Wildlife Conflict on Socio-Economic welfare of local communities.

Majority of respondents in the study at 77.7% noted that they clearly understood what wildlife conservation practices were. They were in agreement that there was a vital role played by wildlife conservation practices in Human Wildlife Conflict. However, 77.7% indicated that awareness campaigns on the importance of wildlife were rarely done in the community and agreed at 73.2% that there were no Environmental Community Based projects that catered for sources of livelihoods for members of the community. The study established that there was a significant relationship between wildlife conservation practices and Human Wildlife Conflict at Sabaki Sub-location with a Chi-Square Alpha value of 9.488 and a Chi-Square statistics value of 150.8 on knowledge about wildlife conservation practice, a chi-square alpha value of 9.488 and a chi-square statistics value of 156.8 on absence of awareness campaigns and a chi-square alpha value of 9.488 and a chi-square statistics value of 150.1 on lack of environmental community based projects.

## 5.3 Discussion of Findings

The study showed a very strong relationship between all the three independent variables under study and human wildlife conflict. The discussion of findings from this study is presented as follows:

### 5.3.1 Land Use and its influence to Human Wildlife Conflict on Socio-economic welfare of local communities

The study established that land use highly influenced human wildlife conflict on socio-economic welfare of local communities in Sabaki sub-location. According to the study many homesteads were closely built within wildlife habitat which was river Sabaki. Road transport extended to wildlife habitats thus continuous disturbances experienced by wild animals through the motorcycles used by human beings for transport. Farmers also used the modern technology like the tractors for agriculture which cause serious disturbances to wild animals.

The study findings are in consonance with (Otuoma 2004, Treves and Karanth 2003), who asserted that, changes to land use and land cover have effects in the level of human wildlife conflict, as well as on the availability of suitable habitat for wildlife. (Naughton-Treves and Treves 2005, Woodroffe et al. 20015) also arrived at similar conclusions and added that, “the reduction of natural habitat sizes also reduces the amount of available natural food, which could then promote conflict in the form of crop raiding.”

### 5.3.2 Poverty level and its influence to Human Wildlife Conflict on Socio-economic welfare of local communities

The study established that poverty highly influenced human wildlife conflict on socio-economic welfare of local communities. Most of Sabaki resident’s per capita income is below 1USD. They are poor and cannot access basic needs like food, clothing and shelter. Majority can also not access essential commodities like water. Additionally, residents have developed a tendency of killing hippopotamus for meat thus the experienced incidences of poaching.

The study findings are in accordance to (Campbell et al. 2005) who defined poverty as, “poverty is when people lack the basic necessities for survival, for instance they may be starving, lack clean water, proper housing, sufficient clothing or medicines and may be struggling to stay alive.”

(Western et al 2005) posits that the poor kill wild animals for meat which is a good source of proteins, adding that confrontation therefore arises between wildlife and human beings as they try to cope with the situation hence the Human Wildlife Conflict.

### 5.3.3 Wildlife Conservation Practice and its influence to Human Wildlife Conflict on Socio-Economic welfare of local communities.

According to the study, wildlife conservation practices highly influences human wildlife conflict on socio-economic welfare of the local communities. Majority of the local residents have knowledge and clearly understand what wildlife conservation practices are and they are also saying that awareness campaigns on the importance of wildlife are rarely done in the community. Additionally, they are saying that there are no environmental community based projects that cater for sources of livelihoods for members of the community.

(Woodroffe and Ginsberg 1998) assertions are similar to these findings where they said that, since the late 1980s, the dominant narrative has changed form a protectionist top down approach to a counter narrative of community conservation, focusing on the involvement and importance of local communities living in and near areas of conservation importance and marrying the goals of conservation and development into single projects.

The findings on the study are also in accordance with assertions of (Pati and Vijayan 2002), that it is crucial that local communities support conservation, Adding that the benefits of living with wildlife generated through community conservation projects outweigh the costs. (KWS 1996) added that the promotion and advocacy of conservation as a means to achieve development in local communities generates often unrealistic expectations and unrealized goals that can be problematic for the future of conservation support.

## 5.4 Conclusion

Based on the findings of the study, the following conclusions are made on the influence of human wildlife conflict on socio-economic welfare of local communities in Sabaki sub-location.

All the three objectives studied influenced human wildlife conflict on socio-economic welfare of local communities in sabaki to almost similar extents as demonstrated by the Chi-square Alpha and the Chi-square statistics. Land use has been found to be a factor influencing human wildlife conflict in the studied area. This is seen because of the location of homesteads where majority of the residents have built houses next to river sabaki and therefore the encroachment of wildlife habitats. Normal domestic activities like laundry, swimming as well as water harvesting takes place because of the encroachment thus interactions with the hippopotamus and therefore continuous conflicts. Transport system extends into wildlife habitats and continuous disturbance of wildlife occur through motorcycles used by human beings for transport. The farming is done within wildlife habitats. Hippopotamus and other wild animals use these farms as feeding grounds especially at night when they are active. Furthermore, farmers who have planted some of the crops like Sukuma wiki, Mchicha, Tomatoes, Onions, Maize, Beans and Sugarcane use tractors for agriculture. The tractors are not environmental friendly as they pollute the air by producing noise which disturbs wild animals.

The level of poverty among residents living in sabaki is so high that they cannot afford some of the basic needs like food, clothing and shelter. This is why they kill the wild animals around for meat so as to enable them to cope with the situation. Poachers use arrows to kill the hippos and the process the hippos charge back and thus the continuous conflicts. Furthermore, local residents cannot afford some of the essential commodities like land, water and oxygen. This is why they have encroached wildlife habitats and built temporary houses within the fragile land. Their inabilities to access fresh water force them to use the only risky but available sabaki river water and thus the continuous confrontation with wildlife.

It has also been noted that there are no wildlife conservation practices in place in Sabaki sub-location. These greatly influence the conflicts that exist between human beings and wildlife. The local people clearly understand what these conservation initiatives are. Unfortunately, awareness

campaigns on the importance of wildlife are rarely done in the community. A good number of residents regarded wild animals as enemies who killed them, destroyed their crops and other property. The local communities did not see any vital role the animals played in the community. Moreover, there are no environmental community based projects that cater for alternative sources of livelihoods of members in the community. Absence of these projects in the area emphasizes how sustainable environmental conservation has been neglected and not practiced in the studied area.

### 5.5 Recommendations

1. Donor Agencies through Non-Governmental Organizations dealing in Environmental Conservation should launch Community Based Projects aimed towards the conservation of wildlife resources.
2. Future community Based Environmental Projects should focus on all the studied objectives
3. The Kenyan Government through Kenya wildlife service should resettle the poor local communities living along Sabaki River.

### 5.6 Suggestions for future research

On the basis of what has been found out from this study, the researcher recommends that similar studies be conducted in other Sub-locations along the Kenyan Coast bordering the Indian Ocean who have similar Human Wildlife Conflict to correlate these findings.

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## APPENDIX I: TABLE FOR DETERMINING SAMPLE SIZE FOR A GIVEN POPULATION.

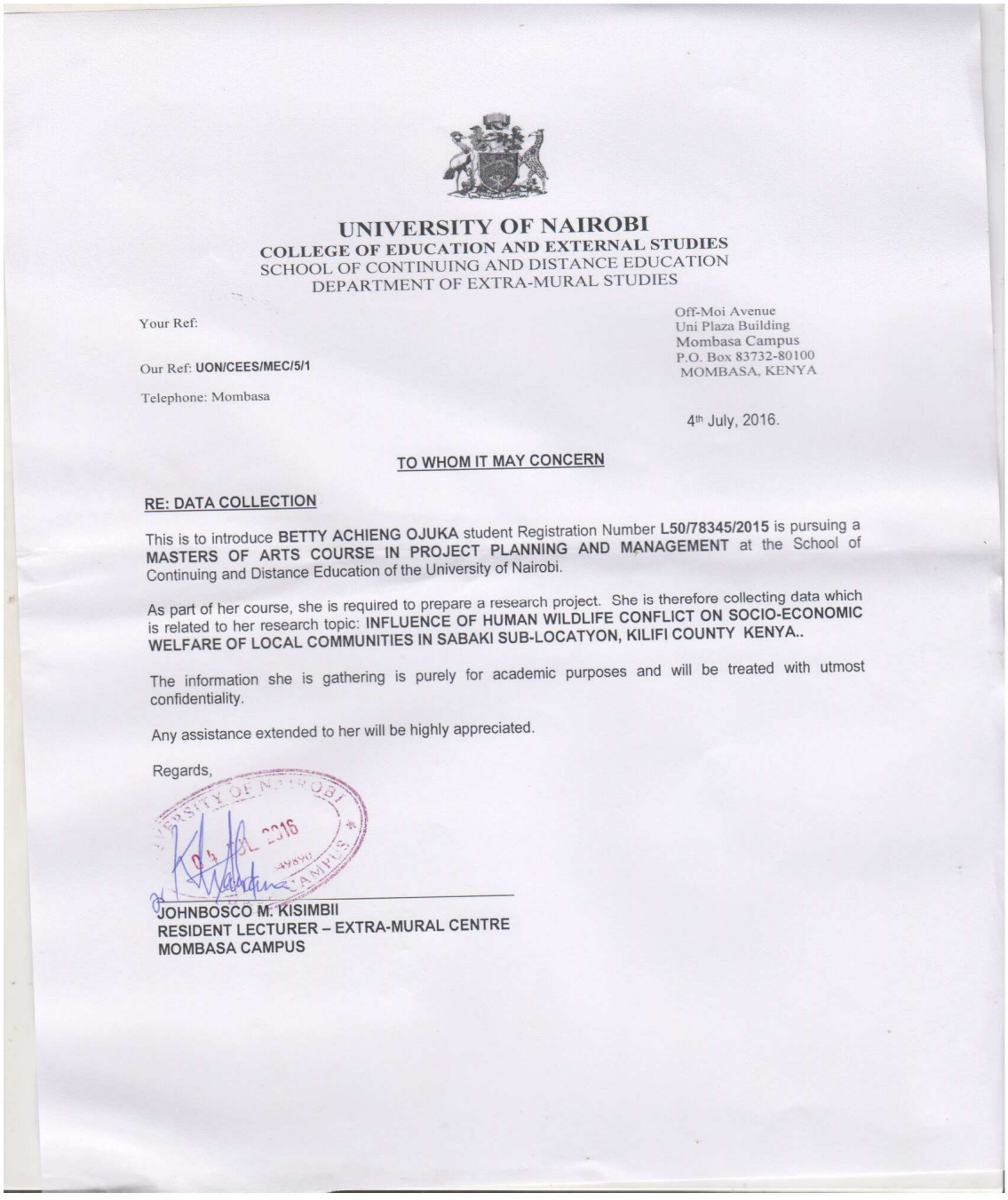
Table for Determining Sample Size for a Given Population

| N | S | N | S | N | S | N | S | N | S |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 100 | 80 | 280 | 162 | 800 | 260 | 2800 | 338 |
| 15 | 14 | 110 | 86 | 290 | 165 | 850 | 265 | 3000 | 341 |
| 20 | 19 | 120 | 92 | 300 | 169 | 900 | 269 | 3500 | 246 |
| 25 | 24 | 130 | 97 | 320 | 175 | 950 | 274 | 4000 | 351 |
| 30 | 28 | 140 | 103 | 340 | 181 | 1000 | 278 | 4500 | 351 |
| 35 | 32 | 150 | 108 | 360 | 186 | 1100 | 285 | 5000 | 357 |
| 40 | 36 | 160 | 113 | 380 | 181 | 1200 | 291 | 6000 | 361 |
| 45 | 40 | 180 | 118 | 400 | 196 | 1300 | 297 | 7000 | 364 |
| 50 | 44 | 190 | 123 | 420 | 201 | 1400 | 302 | 8000 | 367 |
| 55 | 48 | 200 | 127 | 440 | 205 | 1500 | 306 | 9000 | 368 |
| 60 | 52 | 210 | 132 | 460 | 210 | 1600 | 310 | 10000 | 373 |
| 65 | 56 | 220 | 136 | 480 | 214 | 1700 | 313 | 15000 | 375 |
| 70 | 59 | 230 | 140 | 500 | 217 | 1800 | 317 | 20000 | 377 |
| 75 | 63 | 240 | 144 | 550 | 225 | 1900 | 320 | 30000 | 379 |
| 80 | 66 | 250 | 148 | 600 | 234 | 2000 | 322 | 40000 | 380 |
| 85 | 70 | 260 | 152 | 650 | 242 | 2200 | 327 | 50000 | 381 |
| 90 | 73 | 270 | 155 | 700 | 248 | 2400 | 331 | 75000 | 382 |
| 95 | 76 | 270 | 159 | 750 | 256 | 2600 | 335 | 100000 | 384 |

Note: "N" is population size
"S" is sample size.

*Source: Krejcie & Morgan, 1970*

## APPENDIX II: LETTER FROM UNIVERSITY OF NAIROBI.



**UNIVERSITY OF NAIROBI**
**COLLEGE OF EDUCATION AND EXTERNAL STUDIES**
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES

Your Ref:

Our Ref: **UON/CEES/MEC/5/1**

Telephone: Mombasa

Off-Moi Avenue
Uni Plaza Building
Mombasa Campus
P.O. Box 83732-80100
MOMBASA, KENYA

4th July, 2016.

**TO WHOM IT MAY CONCERN**

**RE: DATA COLLECTION**

This is to introduce **BETTY ACHIENG OJUKA** student Registration Number **L50/78345/2015** is pursuing a **MASTERS OF ARTS COURSE IN PROJECT PLANNING AND MANAGEMENT** at the School of Continuing and Distance Education of the University of Nairobi.

As part of her course, she is required to prepare a research project. She is therefore collecting data which is related to her research topic: **INFLUENCE OF HUMAN WILDLIFE CONFLICT ON SOCIO-ECONOMIC WELFARE OF LOCAL COMMUNITIES IN SABAKI SUB-LOCATYON, KILIFI COUNTY KENYA..**

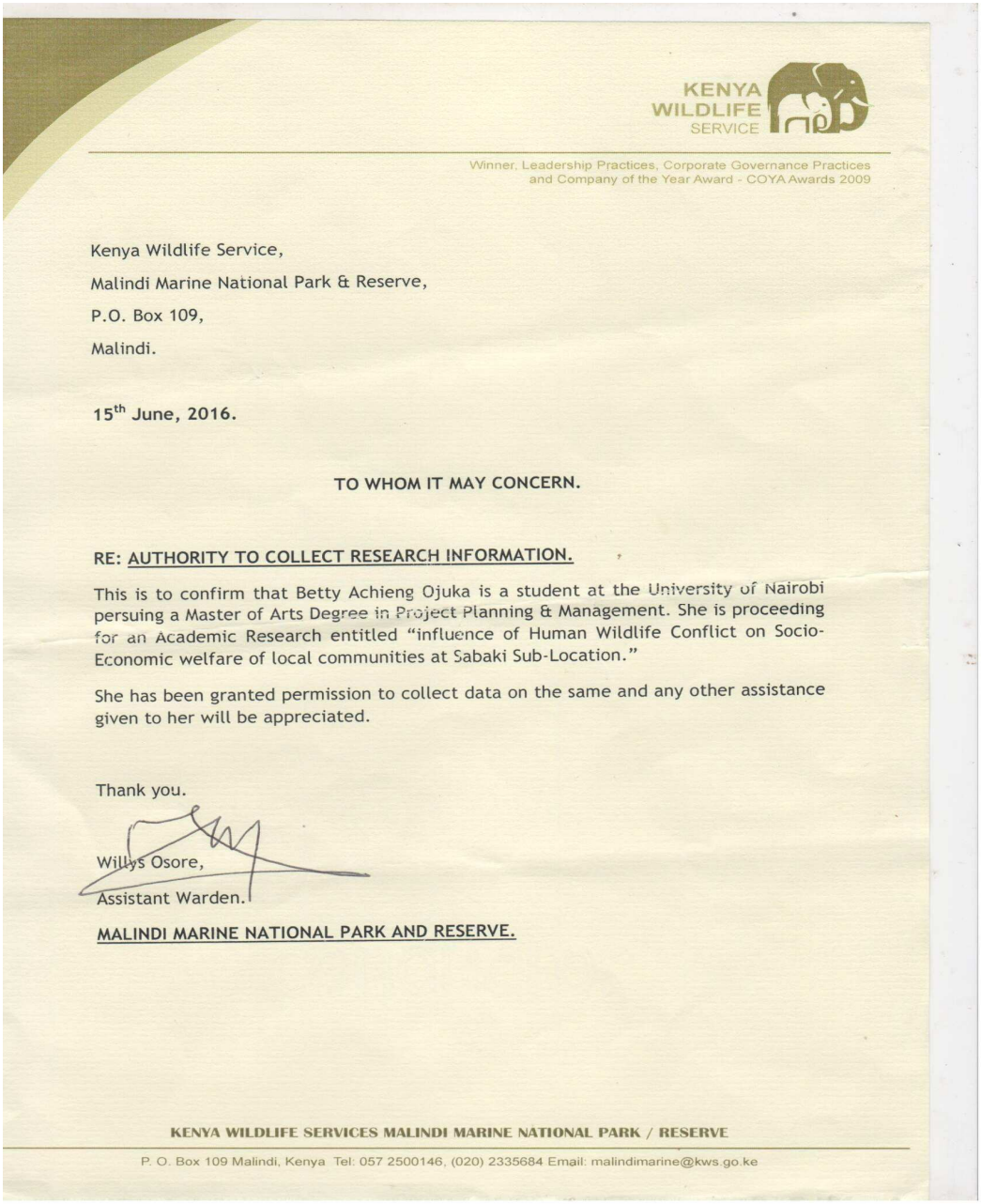
The information she is gathering is purely for academic purposes and will be treated with utmost confidentiality.

Any assistance extended to her will be highly appreciated.

Regards,

**JOHNBOSCO M. KISIMBII**
**RESIDENT LECTURER – EXTRA-MURAL CENTRE**
**MOMBASA CAMPUS**

## APPENXIX III: LETTER FROM KENYA WILDLIFE SERVICE.



KENYA WILDLIFE SERVICE

Winner, Leadership Practices, Corporate Governance Practices and Company of the Year Award - COYA Awards 2009

Kenya Wildlife Service,

Malindi Marine National Park & Reserve,

P.O. Box 109,

Malindi.

15th June, 2016.

TO WHOM IT MAY CONCERN.

RE: AUTHORITY TO COLLECT RESEARCH INFORMATION.

This is to confirm that Betty Achieng Ojuka is a student at the University of Nairobi persuing a Master of Arts Degree in Project Planning & Management. She is proceeding for an Academic Research entitled "influence of Human Wildlife Conflict on Socio-Economic welfare of local communities at Sabaki Sub-Location."

She has been granted permission to collect data on the same and any other assistance given to her will be appreciated.

Thank you.

Willys Osore,

Assistant Warden.

MALINDI MARINE NATIONAL PARK AND RESERVE.

KENYA WILDLIFE SERVICES MALINDI MARINE NATIONAL PARK / RESERVE

P. O. Box 109 Malindi, Kenya Tel: 057 2500146, (020) 2335684 Email: malindimarine@kws.go.ke

## APPENDIX IV: LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS

Betty Achieng Ojuka,
P.O Box 109-82100,
Malindi.

12th April, 2016.

Dear Respondent,

**RE: REQUEST TO PROVIDE RESEARCH INFORMATION**

I am a Master student at the School of Continuing and Distance Education at the University of Nairobi currently conducting a research study on *influence of Human Wildlife Conflict on Socio-economic welfare of local communities in Sabaki Sub-location, Kilifi County, Kenya.*

You have been selected as one of the respondents to assist in providing the requisite data and information for this undertaking. I kindly request you to spare a few minutes and answer a few questions. The information obtained will be used for academic purposes only, and will be treated with utmost confidentiality. Your identity will be anonymous and your name shall not be recorded.

Kindly respond to all the questions honestly and truthfully.

Yours faithfully,

Betty Achieng Ojuka.

## APPENDIX V: LETTER OF MINORS CONSENT

Betty Achieng Ojuka,

P.O. Box 109- 82100

**MALINDI.**

12th April, 2016.

Dear Parent,

**RE: REQUEST TO OBTAIN RESEARCH INFORMATION FROM YOUR CHILD.**

I am a Master student at the School of Continuing and Distance Education at the University of Nairobi currently conducting a Research study on Influence of Human Wildlife Conflict on Socio-Economic Welfare of local communities in Sabaki Sub-location, Kilifi County, Kenya.

Your Son/Daughter has been selected as one of the respondents to assist in providing the requisite data and information for this undertaking. I kindly request you to spare your child a few minutes and answer a few questions. The information obtained will be used for Academic purposes only, and will be treated with utmost confidentiality.

Yours Faithfully,

Betty Achieng Ojuka.

## APPENDIX VI: DATA COLLECTION QUESTIONNAIRE

The purpose of this questionnaire is to gather research information on the factors influencing increased Human Wildlife Conflict in Sabaki Sub- Location. The questionnaire has five sections. For each section, kindly respond to all items using a tick. Tick only **one** response per question.

**SECTION A: <u>DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS</u>**

a) Title/designation( Please TICK one in each of the questions a-d)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Farmer** | | **Fisherman** | | **Pastoralist** | | **Pupil** | | **Teacher** | |

b) What is your area of residence?

| | | | |
|---|---|---|---|
| **Sabaki** | | **Outside Sabaki** | |

c) Specify your age bracket in years

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **1-12** | | **13-17** | | **18- 35** | | **36 – 50** | | **51 and above** | |

d) How long have you lived in your area of residence?

| | | | | | |
|---|---|---|---|---|---|
| **Less than 1 year** | | **1 – 7 years** | | **Over 7 years** | |

**SECTION B: <u>INFLUENCE OF LAND USE TO HUMAN WILDLIFE CONFLICT</u>**

**Kindly select your level of agreement with the below statements by ticking only once in each of the questions?**

Use the scale where 1= strongly agree, 2= agree, 3= neutral 4= disagree and 5= strongly disagree

| | **Statement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| **1** | Many people have built houses next to Sabaki River | | | | | |
| **2** | Roads extend into wildlife habitats thus frequent disturbance by motorcycles used by human beings. | | | | | |
| **3** | Farmers use tractors for agriculture hence scare wild animals | | | | | |

**SECTION C: THE POVERTY LEVEL OF THE PEOPLE LIVING IN SABAKI SUB-LOCTION**

**Kindly select your level of agreement with the below statements by ticking only once in each of the questions.**

Use the scale where 1= strongly agree, 2= Agree, 3= Neutral 4= Disagree and 5= strongly disagree

| | **Statement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| **1** | Many of the Sabaki residents are poor and cannot access the basic needs like food, clothing and shelter | | | | | |
| **2** | Residents can hardly access essential commodities like water | | | | | |
| **3** | Sabaki residents kill hippopotamus for meat | | | | | |

**SECTION D: WILDLIFE CONSERVATION PRACTICE**

**Kindly select your level of agreement with the below statements by ticking only once in each of the questions.**

Use the scale where 1= strongly agree, 2= agree, 3= neutral 4= disagree and 5= strongly disagree

| | **Statement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| **1** | I clearly understand what conservation initiatives are. | | | | | |
| **2** | Awareness campaigns on the importance of wildlife are rarely done in the community | | | | | |
| **3** | There are NO Environmental Community Based Projects in the area that cater for sources of livelihoods of members of the community. | | | | | |

**Thank you for your Participation**

## APPENDIX VII: A FOCUSED GROUP INTERVIEW GUIDE

### INTRODUCTION

I am a student at the University of Nairobi conducting a research on the Influence of Human Wildlife Conflict on Socio-economic welfare of local communities in Sabaki sub-location, Kilifi County of Kenya. This will lead to my partial fulfilment for the award of a master of arts in project planning and management.

You have been identified as a potential respondent to share and give valuable information. Be assured that all the information provided and collected during the study will be treated as private and confidential.

Thank you in advance.

1) Land use
   i) How are the homesteads located in your areas of residence?
   ii) Do you think road transport in your area of residence has effects on wild animals? Kindly explain.
   iii) How often do you use tractors in your farms for agriculture? Is there any behaviour you spot on wild animals when using these tractors? Kindly explain.

2) Poverty level
   i) Food, clothing and shelter are some of the basic needs that human beings need to survive. Can you easily access these needs? If NO then why?
   ii) Kindly express your feelings towards the accessibility of water resources in your area of residence.
   iii) How often do you encounter incidences of poaching in your area of residence?

3) Wildlife Conservation Practice.
   i) What do you understand by the term wildlife conservation practice?
   ii) Are there awareness programmes done in your area of residence on the importance of wildlife resources?
   iii) Are there Community Based Projects in your location that cater for alternative sources of livelihoods for the residents?

## APPENDIX VIII: RESEARCH OBSERVATION FORM.

Name of the student: Title of the Research:

Institution: Place:

Starting time: Ending time:

Date:

**Description of Study Elements.**

**1. Land use**

a) Location of Homesteads

i)
ii)
iii)

Any other additional information.

b) Transport system.

i)
ii)
iii)

Any other additional information.

c) Modern technology

i)

ii)

Any other additional information

**2. Poverty level**

a) Access to basic needs

i)
ii)
iii)

Any other additional information

b) Access to Essential commodities

i)
ii)
iii)

c) Poaching incidences

**3. Wildlife Conservation Practice**

i) Awareness programmes

ii) Community Based Projects

Any other additional information.