

**INFLUENCE OF KENYA WILDLIFE CONSERVATION EDUCATION
PROGRAM ON REDUCING HUMAN WILDLIFE CONFLICT**

**BY
FARHANA ABUDULGHAFUR**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN
PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI**

2013

DECLARATION

This research project is my original work and has not been submitted for an award of a degree in any other university.

Farhana Abudulghafur
Reg. No: L50/69086/2011

Date

This research project has been submitted for examination with my approval as the university supervisor.

Dr. Dorothy Kyalo
Senior Lecturer
Department of Extra Mural Studies
University of Nairobi

Date

DEDICATION

This work is dedicated to my family members: Mr. Mehboob Mohammed Nizar and Mrs. Rissy Omar Awadh who offered me moral and financial support throughout the process of conducting this study. God bless you abundantly.

ACKNOWLEDGEMENT

Special thanks and acknowledgements are extended to my supervisor Dr. Dorothy Kyalo for providing vital guidance and knowledge for successfully conducting this study. Marvelous acknowledgements are also extended to all the lecturers of The University of Nairobi School of Distance and Continuing Education, and the department of extramural studies for providing the opportunity and foundation knowledge for making this research successful. To all Project Planning and Management students for the year 2011, I also wish to acknowledge your contributions towards making this work successful through group discussions and continuous consultations.

TABLE OF CONTENT

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	viii
LIST OF FIGURES	x
LIST OF ABBREVIATION AND ACRONYMS	xi
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	4
1.3 Purpose of the Study.....	5
1.4 Objectives of the Study	5
1.5 Research Questions	5
1.6 Significance of the Study	6
1.7 Delimitation of the study	6
1.8 Limitations of the study.....	6
1.9 Assumptions of the Study.....	6
1.10 Definition of Significant Terms	7
1.11 Organization of the Study.....	7
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction	9
2.2 The Concept of Community-Based Conservation Strategies	9
2.2.1 Influence of wildlife conservation strategy in reducing human wildlife conflict....	11
2.2.2 Influence of extension services in reducing human wildlife conflict	12
2.2.3 Influence Of Conservation Awareness In Reducing Human Wildlife Conflict	14
2.2.4 Influence of Community Participation in Reducing Human Wildlife Conflict.....	15
2.3 Theoretical Review:	18
2.3.1 Conflict Theory.....	18

2.4 Conceptual framework	20
2.5 Summary and Research Gap	22
CHAPTER THREE	23
RESEARCH METHODOLOGY	23
3.1 Introduction	23
3.2 Research design	23
3.3 Target Population	23
3.4 Sampling procedure and sample size	24
3.5 Data Collection Instruments	25
3.6 Instrument Validity.....	25
3.7 Instrument Reliability	25
3.8 Data Collection Procedure.....	26
3.9 Data Analysis	26
3.10 Ethical Consideration	27
3.10 Operational Definition of Variables	28
CHAPTER FOUR.....	29
DATA ANALYSIS, PRESENTATIONS AND INTERPRETATIONS	29
4.1 Introduction	29
4.2 Questionnaire Return Rate	29
4.3 General information of the Respondents.....	29
4.3.1 Distribution of Respondents by Gender.....	29
4.3.2 Age bracket	30
4.3.3 Time worked in the education program.....	31
4.3.4 Length of time in the Region	31
4.4 Influence of Kenya wildlife conservation education program on human wildlife conflict	32
4.4.1 KWS conservation education program	32
4.4.2 Influence of wildlife conservation strategy in reducing human wildlife conflict....	38
4.4.3 Influence of extension services in Reducing Human Wildlife Conflict	40
4.4.4 Influence of Conservation Education in Reducing Human Wildlife Conflict.....	43
4.4.5 Influence of community participation in reducing human wildlife conflict Kenya	46

4.5 Regression analysis	49
CHAPTER FIVE.....	51
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	51
5.1 Introduction	51
5.2 Summary of Findings	51
5.3 Discussion	52
5.4 Conclusions	58
5.5 Recommendations	59
REFERENCES.....	61
APPENDICES	65
Appendix I: Transmittal Letter.....	65
Appendix II: Staff Questionnaire	66
Appendix III : Community Questionnaire.....	73
Appendix IV : Research Permit.....	76

LIST OF TABLES

Table 3.1: Target Population.....	24
Table 3.2: Sampling Frame	24
Table 4.3: Operational Definition of Variables.....	28
Table 4.4: Questionnaire Return Rate.....	29
Table 4.5: Distribution of the respondents by their gender.....	30
Table 4.6: Distribution of respondents by Age	30
Table 4.7: Time worked in the education program	31
Table 4.8: Length of time in the region.....	31
Table 4.9: Whether KWS conservation education program influences human wildlife conflict in the region.....	32
Table 10: Extent to which the KWS conservation education programs help in reducing human wildlife conflict	33
Table 4.11: Whether the respondents are aware of the KWS conservation education program	34
Table 4.12: Whether wildlife education centres contribute to the reducing human wildlife Conflict.....	34
Table 4.13: Extent to which wildlife education centres contribute to the reducing human wildlife Conflict in Kenya.....	35
Table 14: Extent does the KWS conservation education program help in reducing the following	36
Table 15: Whether KWS have outreach sessions to schools and the community on HWC	37
Table 16: Whether wildlife conservation strategy influence to human wildlife Conflict.....	38
Table 4.17: Level of agreement with statements relating to the effect of wildlife conservation strategy in reducing human wildlife conflict	39
Table 4.18: Whether extension services influence in reducing human wildlife conflict in Kenya	40
Table 19: Extent to which extension services influence the reducing human wildlife Conflict in Kenya	41
Table 4.20: Level of agreement with statements relating to the effect of extension services in reducing human wildlife conflict	42

Table 21: Whether Conservation Education influence in reducing human wildlife conflict in Kenya	43
Table 4.22: Extent to which Conservation Education influence the reducing human wildlife Conflict in Kenya	44
Table 4.23: Level of agreement with statements relating to the influence of conservation Education in reducing human wildlife conflict.....	45
Table 4.24: Whether Community participation influences reducing human wildlife conflict in Kenya	46
Table 4.25: Extent to which Community participation influences the reducing human wildlife Conflict in Kenya	47
Table 4.26: Level of agreement with statements relating to the influence of Community participation on human wildlife conflict.....	48
Table 4.27: Coefficients	49

LIST OF FIGURES

Figure 1: Influence of Kenya wildlife conservation education..... 20

LIST OF ABBREVIATION AND ACRONYMS

CBC	Community-Based Conservation
CBNRM	Community Based Natural Resource Management
CEP	Conservation Education Program
HWC	Human-Wildlife Conflict
KWS	Kenya Wildlife Service
NGOs	Non-Governmental Organizations
SPSS	Statistical Package for Social Sciences
WCU	World Conservation Union
ICUN	International Union for Conservation of Nature
ITK	Indigenous Technical Knowledge
CAP	Child Access Prevention
CWS	County Wildlife Sites
US	United States

ABSTRACT

Human-wildlife conflict (HWC) is fast becoming a critical threat to the survival of many globally endangered species. Human-wildlife conflicts can have adverse impacts on wildlife and humans alike. Recently, there have been deplorable reports in the local and international press of human wildlife conflicts around wildlife protected areas in Kenya. Kenya wildlife Service is in-charge of wildlife conservation and management of protected areas has taken proactive approach to regularly evaluate status and threats of these areas. Strategies and linkages with key wildlife stakeholders have been identified to deal with these challenges facing wildlife conservation (Okello & Kiringe, 2004). This study sought to determine the Influence of Kenya wildlife conservation education program on reducing human wildlife conflict with focus to Kenya Wildlife Service conservation education program. The descriptive survey research design was used in this study. This research design was appropriate for the study because it was used to determine the influence of Community wildlife strategies in reducing Human wildlife Conflict in Kenya with reference to KWS conservation education program. The target population composed of 328 respondent drawn from staff of KWS education department, staff at education center in the field , teachers from school that visit these centers and community leaders . Stratified proportionate random sampling technique was used to select a sample of 99 respondents. Questionnaires was administered to the respondent through drop and pick method. A descriptive approach to data analysis was used to analyze collected data on the impact of most preferred community-based conservation strategies on reducing human wildlife conflict. Statistical Package for Social Sciences (SPSS) was used as a tool for data analysis and the results was presented in form of tables and percentages. The study found that wildlife conservation strategy, extension services, conservation education, community participation, affects human wildlife conflict in Kenya. The government involve all the stakeholders in the development of policies on Human/wildlife conflict which would make the conservation program successful; the government grant landowners use rights and cropping quotas; The government should embrace wildlife conservation programs by setting up a special branch in the ministry of tourism which would deal with wildlife conservation program; The academic institutions should include wildlife conservation in their curriculum which would increase community awareness; and that the KWS involve qualified personnel in the program which would ensure that the activities are professionally handled hence success.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Human-wildlife conflict (HWC) is fast becoming a critical threat to the survival of many globally endangered species, in particular to large and rare mammals such as the Sumatran tiger and the lion, but also to less endangered species such as the snow leopard and the Red colobus monkey. The numerous cases from countries all over the world demonstrate the severity of human-wildlife conflict and suggest that an in depth analysis is essential to understand the problem and support the conservation prospects of threatened and potentially endangered species. According to world conservation union (world park congress 2003) it occurs when wildlife requirements overlap with those of human populations, creating costs to residents and wild animals. Direct contact with wildlife occurs in both urban and rural areas, but it is generally more common inside and around protected areas, where wildlife population density is higher and animals often stray into adjacent cultivated fields or grazing areas.

Human-wildlife conflicts can have adverse impacts on wildlife and humans alike. In Kilimanjaro Heartland, Muruthi, (2005) found that in 1996 and 1997 at least 15 elephants, representing three-quarters of the local population's mortality, had been killed in conflict situations with local people. Between 1974 and 1990, one third of elephant mortalities (141 of 437 deaths) in the Amboseli ecosystem were caused by people, for example through spearing (Kangwana, 2003). The main problems in the Kilimanjaro Heartland are crop damage, competition for water and grazing, killing of livestock and risk of disease transmission, and human fatalities. In semi-arid areas in general, where livestock production constitutes a major part of local livelihoods, high levels of conflict can occur between livestock owners and wild carnivores due to predation.

Since Kenya's national economy is predominantly hinged on biological resources, wildlife protected areas are an important asset from which a significant amount of foreign exchange has been derived in the past few decades (Okello *et al.*, 2001). Even though tourism has recently declined for a variety of reasons, and the country currently faces a myriad of wildlife conservation challenges (Johnstone 2000; Kiringe 2004) conservation of

biological resources still remains one of the key national obligations of the Kenya Government (Mugabe *et al.* 1998; Kameri, 2002).

One of the core functions of KWS is to provide wildlife education and extension services to the public for their support in wildlife conservation. This contributes overall to the KWS mandate in terms of enhancing wildlife conservation, protection, and management, improving KWS's linkages, recognition and relationships with stakeholders. KWS has established education centres in Nairobi, Nakuru, Tsavo east and Meru National Parks and information centres in Saiwa Swamp, Kakamega, Hells Gate, Tsavo west, Malindi, Watamu, Kisite, Kiunga and Arabuko Sokoke. The centres offer conservation education programmes and hostel facilities to schools and organized groups. In addition, Animal orphanage, Nairobi Safari walk and Kisumu Impala Sanctuary offer similar programmes that are geared towards addressing the issues of HWC

Community wildlife service is a strategy recognized by the Wildlife Conservation and Management Act CAP 376. The Act calls for active community participation in wildlife conservation outside protected areas. The increase in human population has led to increased pressure on predominantly wildlife areas and encroachment onto protected areas (Sindiga 1995). The absence of a land use policy for the country has led to endless sub division of wildlife dispersal areas and wildlife corridors. Since the establishment of County Wildlife Society (CWC) department, a lot has been done and achieved in community based wildlife conservation which is not embedded in the current legislation and hence the current challenges facing wildlife conservation and management outside protected areas (Mwale, 2000).

Wildlife-human conflict has escalated in recent years because of changes in land-use, especially expansion and intensification of arable farming and standardization of Pastoralists in rangeland; inadequate wildlife control; they ban on hunting and capture of wildlife; and the natural increase of animal numbers. These changes have contributed immensely to the hardships of landowners, who tend to invest and lose more as they try to cope with the wildlife challenge in their land-use enterprises.

KWS's commitment to addressing HWC led to implementation various strategies. Conservation Education Program being one of them, which seeks to empower both the community and school going children on the importance of wildlife. Wildlife is mostly viewed as a source of suffering for many Kenyans. There is need to look at wildlife conservation and management from a different perspective in order to understand the value of this important tourism product (Okello, Wishitemi, Mwinzi, 2001). KWS has an established network through KWS offices across the country to address issues of wildlife outside the protected area system. The role of Community Wildlife Service in Kenya Wildlife Service is quite broad. Managing wildlife outside protected areas means that the unit has to interact with: members of parliament, Councilor's, opinion leaders, rural communities, provincial administration, NGOs, Civil society, private ranchers and other relevant ministries at the grass-root level (Okello et al., 2001).

A key function is to establish linkages and gain support form wildlife conservation with stakeholders and communities co existing with wildlife. KWS community wildlife programmes are hinged on the organization's mandate to conserve and manage wildlife outside protected areas (Okello & Kiringe 2004). Emerging challenges in community wildlife conservation and management such as increasing human population, incompatible land use changes, abuse of user rights, lack of a land use policy, shrinking wildlife habitats, inadequate incentives for community participation and lack of involvement in decision making calls for a strengthened community conservation strategy.

Recently, there have been deplorable reports in the local and international press of human – wildlife conflicts around wildlife protected areas in Kenya. Human-wildlife conflict has been on the rise recently in Kenya. For example, a few days ago it was reported that enraged pastoralists killed six lions in the Kitengela area surrounding Nairobi National Park. This sad incident was a serious threat to the lion population in this national park, which stood as at a mere 36 in total. It was followed by an apparent revenge attack by lions in the same area the following day and, as the situation stands, one cannot rule out counter revenge attacks in the same area. The Kitengela case is neither unique nor isolated. In the same week, similar conflicts were reported in Nguruman escarpment, in Taveta, Mt. Kenya and other places. Such reports are becoming so frequent and widespread that they call for an immediate

national response. Case of Human-wildlife conflict in Mount Kenya area; Smallholder farmers living in the buffer zone around the Mount Kenya National Park and Forest Reserve have struggled for years with the elephants that regularly invade their land and destroy their crops. For small-scale farmers, elephant crop-raiding is often an emotional issue. Livelihoods can be lost in a single night, Daily Nation, October 3Rd, 2012. In Ukambani region there has been numerous case of resident being attacked by snakes when they go to fetch firewood from the nearby forest. In August 2012 in Nark North there was relocation of elephant translocation to curb human-wildlife conflict.

In June 20th 2012 there were demonstration witnessed in July 2012 around Amboseli National Park and the City of Nairobi by the Maasai community; and the trampling of a woman by an elephant in the Mara that almost halted the tourism business in early August 2011. In all cases, the residents claim that they are not duly compensated for their loss whenever attacked, hence the threat to 'finish' the predators if the owners (seen as the government) do not keep them in the parks, (Business daily, June 20th 2012).

1.2 Statement of the Problem

Kenya wildlife Service is in-charge of wildlife conservation and management of protected areas has taken proactive approach to regularly evaluate status and threats of these areas. Strategies and linkages with key wildlife stakeholders have been identified to deal with these challenges facing wildlife conservation (Okello & Kiringe, 2004). Wildlife which is viewed as a source of suffering for many Kenyans needs a rethinking. There is need to look at wildlife conservation and management from a different perspective in order to understand the value of this important tourism product, (Ottichillo, 2000).

Various research works done on wildlife conservation (Sindiga, 2005; Smith, 2009; Ottichillo, 2000), have outlined some of the critical threats to protected areas that need to be seriously addressed. Attempts have been made to address and mitigate these threats but with mixed success through community wildlife strategies. Kenya Wildlife Service and the government in particular have re-examined wildlife conservation approaches, policies and objectives. Kenya Wildlife Service has recently adopted Community wildlife strategies such as Conservation education, Community wildlife service and Community Enterprise aiming at

reducing human wildlife conflict. To the researcher's knowledge no known local study that has been done on community-based conservation strategies in reducing human wildlife conflict. This study seeks to fill the existing research gap by conducting a study to influence of Kenya wildlife conservation education program on reducing human wildlife conflict with special reference to Kenya Wildlife Service Conservation education program.

1.3 Purpose of the Study

This study sought to determine the influence of Kenya wildlife conservation education program on reducing human wildlife conflict: a case of Kenya Wildlife Service conservation education program.

1.4 Objectives of the Study

This study sought to achieve the following objective;

- i. To determine the influence of wildlife conservation strategy in reducing human wildlife conflict in Kenya
- ii. To find out the influence of extension services in reducing human wildlife conflict in Kenya
- iii. To examine the influence of community participation in reducing human wildlife conflict in Kenya
- iv. To establish the influence of conservation awareness in reducing human wildlife conflict in Kenya

1.5 Research Questions

The study sought to answer the following research questions

- i. What is the influence of wildlife conservation strategy in reducing human wildlife conflict in Kenya?
- ii. How does the extension services influence on human wildlife conflict in Kenya?
- iii. How does community participation reduce human wildlife conflict in Kenya?
- iv. What is the influence of conservation awareness in reducing human wildlife conflict in Kenya?

1.6 Significance of the Study

Information about influence of Kenya wildlife conservation education program in reducing Human wildlife Conflict can be important in providing the roadmap to clear strategies of wildlife conservation. These strategies can be used to achieve greater success required. Data on the conservation education in reducing Human wildlife Conflict can also be important in formulating policies for solving the problem of human wildlife conflict. The policies can develop a better understanding of the concepts and practices relating to sustainable wildlife management in Kenyan parks. The study will also enrich literature on Community wildlife strategies and specifically conservation education in reducing Human wildlife Conflict and wildlife conservation.

1.7 Delimitation of the study

This study is concerned with establishing the influence of Kenya wildlife conservation education program on reducing human wildlife conflict with special references to Kenya Wildlife conservation education program. The study targeted 328 respondent drawn from staff of KWS education department, staff at education center in the field , teachers from school that visit these centers and community leaders . The study was conducted using descriptive survey design, to establish the influence of most preferred community-based conservation strategies on reducing human wildlife conflict with special references to Kenya Wildlife conservation education program.

1.8 Limitations of the study

The researcher had no control of other intervening variables which affect the effectiveness of KWS conservation education program in reducing Human wildlife Conflict in Kenya. The unpredictable political environment in the county during the period of conducting the study was a limitation to this study as some respondents may be reluctant to provide information about their activities.

1.9 Assumptions of the Study

In this study, it was assumed that the respondents were willing to respond to the questionnaires and provide valid and reliable information. It also assumed that the

respondents were truthful and honest in their responses untruthfulness was curbed by explaining the purpose of the study to the respondents. KWS conservation educations are effective in addressing the problem of human wildlife Conflict in Kenya. Wildlife education centers contribute in reducing human wildlife Conflict in Kenya.

1.10 Definition of Significant Terms

Community Participation; this is the involvement in conservation of wildlife it aims at enhancing nature conservation and providing social and economic gains for local people.

Conservation Awareness; this is knowledge created to the local on the need to conserve the wildlife, this aims at minimize the conflicts between the local communities and those who manage national parks. It attempts to ensure that the economic benefits from these natural resources are broadly shared among the stakeholders.

Conservation strategy – Measures taken to protect environment degradation such as spreading use and concentrating use of recreational sites, planning of recreational areas, designing, construction and maintenance of recreation facilities, enforcement of closures of recreation areas and relocation of recreation facilities.

Extension Service; these are conservation service offered by local communities and other stakeholders other than KWS staff , the contribute in terms of enhancing wildlife conservation, protection, and management, improving KWS's linkages, recognition and relationships with stakeholders.

Human-Wildlife Conflict; According to world conservation union (world park congress 2003) it occurs when wildlife requirements overlap with those of human populations, creating costs to residents and wild animals. Direct contact with wildlife occurs in both urban and rural areas, but it is generally more common inside and around protected areas, where wildlife population density is higher and animals often stray into adjacent cultivated fields or grazing areas.

1.11 Organization of the Study

This study is organized in five chapters. Chapter one deals with the background of the study, the statement of the problem, purpose of the study, objectives of the study, research hypotheses, significance of the study, assumption of the study, limitation of the study,

delimitations of the study, definition of terms and the organization of the study. Chapter two reviews the literature along the study objectives. It also presented the theoretical framework of the study. Chapter three gives the research methodology that was used by this study. It gives the research design, the target population of the study, the sample size and sampling techniques, research instruments, data collection methods and data analysis methods. Chapter four dealt with data analysis, interpretation, presentation and discussion. This was done along research objectives. Chapter five dealt with summary of findings, discussion of the findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter mainly highlights what other previous researchers have written on the influence of Kenya wildlife conservation education program on reducing human wildlife conflict. The section is organized into introduction, the body and the summary of the chapter.

2.2 The Concept of Community-Based Conservation Strategies

This section reviews various community based conservation Strategies used in reducing human wildlife conflict; in specific it covers, the influence of wildlife conservation strategy in reducing human wildlife conflict, influence of extension services in reducing human wildlife conflict, influence of Community Wildlife Management in Kenya and influence of Community Participation in Reducing Human Wildlife Conflict.

The 21st-century global landscape is increasingly human-dominated, with reports that every ecosystem on the Earth's surface has now been influenced by human activities (Vitousek et al, 2007). Around 40-50% of the earth's surface is estimated to have been transformed by humans, often with marked ecological effects: for instance, 10-15% of the global land surface is now covered by either row-crop agriculture or urban areas, while an additional 6-8% has undergone conversion to pasture (Vitousek et al, 2007). The resultant human transformation of the global environment, has been so striking that it has been defined by some as a new geological epoch, termed the 'anthropocene' (Sanderson et al, 2002).

With the spread of settlement and changing land use, natural habitats, and hence much of the world's remaining biodiversity, have become increasingly restricted to small, fragmented patches within a matrix of human-dominated landscapes (Laurance & Bierregaard, 2007). This intensifies the interactions and the potential conflicts between conservation and development. These are particularly intense in African savannah ecosystems, which juxtapose spectacular biodiversity and widespread concerns over habitat and species loss alongside the pressing development needs of human populations (Homewood & Brockington, 2009). This conflict is particularly problematic as the human populations concerned comprise some of the world's poorest and most vulnerable people in

terms of food security, health, education, infrastructure and social institutions, as well as often being exposed to violent conflicts over natural resources (USIP, 2001).

Living alongside wildlife can incur a substantial economic price-tag: in the United States, agricultural producers spent US\$2.5 billion to manage wildlife problems during the 1990s, while metropolitan households spent US\$5.5 billion over the same period (Bruggers et al. 2002). However, although costs can clearly be substantial wherever they occur, the economic impacts of human-carnivore conflict in particular are frequently borne by those very communities least able to manage such costs. Depredation can have a significant economic impact on the owners concerned: for instance, a level of only 2% stock loss to depredation cost households in Bhutan 18% of their per capita cash income (Wang & Macdonald 2006), while depredation by wolves and snow leopards (*Uncia uncia*) cost Nepalese villagers around 50% of their average annual per capita income (Mishra, 2007). The economic costs of maintaining large carnivores can extend much further than the individual farmers, however – a review by Swenson and Andren (2005) showed that in 2000 alone, the Norwegian government paid out more than US\$3 million in compensation for stock losses to carnivores.

A study by Hermann et al. (2001) revealed that livestock owners in Namibia spent around N\$260 (approximately US\$22) annually on ammunition to control predators, while farmers in Botswana employed an average of 3.5 herders at a cost of around R300 (approximately US\$30) each per month. However, not all these costs would disappear if predators did, due to the need to protect stock against other dangers: only 16% of farmers surveyed in northern Botswana would decrease the number of herders employed if no predators were present, as they were needed for other functions (Hermann et al. 2001), while ranchers in Kenya would require only 3% fewer herders if lions were not present, as they would still be needed to protect against theft (Frank, 2008).

There may also be additional ‘opportunity costs’ associated with the presence of wild animals, as the time required for livestock protection limits the amount of time that can be invested in other potentially important activities such as attending school or assisting with crop harvesting (Norton-Griffiths & Southey, 2005). There are other, less tangible but equally important, effects as well – for instance, interviews in the Transmara district of

Kenya revealed that people were afraid to conduct social and economic activities due to the presence of elephants, while the perceived danger also restricted children from travelling to and from school (Nyamwaro et al, 2006).

2.2.1 Influence of wildlife conservation strategy in reducing human wildlife conflict

Conservationists viewed the establishment of the first protected area in Kenya in the mid-1940 as a milestone towards preserving diminishing wildlife species and their habitats as well as reducing human wildlife conflict. Since then, a chain of such areas has been designated in various parts of the country encompassing ecologically diverse ecosystems specifically for biodiversity conservation (Kameri, 2007). Going by the economic returns from wildlife based tourism and tremendous loss of biodiversity globally; one appreciates Kenya's initiative to designate rich biota landscapes exclusively for nature preservation and reduction of human wildlife conflict (Mugabe, 2008; Kameri, 2007).

Human-wildlife conflicts can have adverse impacts on wildlife and humans alike. In Kilimanjaro Heartland, Muruthi et al. (2006) found that in 1996 and 1997 at least 15 elephants, representing three-quarters of the local population's mortality, had been killed in conflict situations with local people. Between 1974 and 1990, one third of elephant mortalities (141 of 437 deaths) in the Amboseli ecosystem were caused by people, for example through spearing (Kangwana, 2003). The main problems in the Kilimanjaro Heartland are crop damage, competition for water and grazing, killing of livestock and risk of disease transmission, and human fatalities. In semi-arid areas in general, where livestock production constitutes a major part of local livelihoods, high levels of conflict can occur between livestock owners and wild carnivores due to predation.

Since Kenya's national economy is predominantly hinged on biological resources, wildlife protected areas are an important asset from which a significant amount of foreign exchange has been derived in the past few decades (Okelloet *al.*, 2001). Even though tourism has recently declined for a variety of reasons, and the country currently faces a myriad of wildlife conservation challenges (Johnstone 2000; Okello & Kiringe 2004) conservation of

biological resources still remains one of the key national obligations of the Kenya Government (Mugabe *et al.* 2008; Kameri, 2002).

2.2.2 Influence of extension services in reducing human wildlife conflict

One of the core functions of Kenya Wildlife Service (KWS) is to provide wildlife education and extension services to the public for their support in wildlife conservation. This contributes overall to the KWS mandate in terms of enhancing wildlife conservation, protection, and management, improving KWS's linkages, recognition and relationships with stakeholders. KWS has established education centres in Nairobi, Nakuru, Tsavo east and Meru National Parks and information centres in Saiwa Swamp, Kakamega, Hells Gate, Tsavo west, Malindi, Watamu, Kisite, Kiunga and Arabuko Sokoke. The centres offer conservation education programmes and hostel facilities to schools and organized groups. In addition, Animal orphanage, Nairobi Safari walk and Kisumu Impala Sanctuary offer similar programmes that are geared towards addressing the issues of Human Wildlife Conflict.

Community wildlife service is a strategy recognized by the Wildlife Conservation and Management Act CAP 376. The Act calls for active community participation in wildlife conservation outside protected areas. The increase in human population has led to increased pressure on predominantly wildlife areas and encroachment onto protected areas, (Sindiga, 2003). The absence of a land use policy for the country has led to endless sub division of wildlife dispersal areas and wildlife corridors. Since the establishment of Community Wildlife Service department, a lot has been done and achieved in community based wildlife conservation which is not embedded in the current legislation and hence the current challenges facing wildlife conservation and management outside protected areas, (Mwale, 2000).

Emerging challenges have called for a more strategic approach to the implementation of the community wildlife programme. These include, increase in human wildlife conflicts, bush meat trade, snaring of wildlife, disappearance of wildlife dispersal areas and corridors, inadequate community benefits and the need to represent a positive image for the organization (Kameri, 2002). Strategies and linkages with key wildlife stakeholders have been identified to deal with these challenges.

The commitment to addressing Human Wildlife Conflict led to implementation various strategies; Conservation Education Program (CEP) being one of them, which seeks to empower both the community and school going children on the importance of wildlife. This pilot wildlife utilization scheme, which grants landowners use rights and cropping quotas, exceed the legal limits of the Director's Special Authorisation To Hunt (Cap 376, Section 26), the country's only statutory provision for hunting, which applies to "special circumstances". Wildlife is mostly viewed as a source of suffering for many Kenyans. There is need to look at wildlife conservation and management from a different perspective in order to understand the value of this important tourism product. The role of wildlife in the economic development of the country needs to be communicated to the people that bear the brunt of hosting wildlife on their land, (Okello et al., 2001).

There has an established network through KWS offices across the country to address issues of wildlife outside the protected area system. The role of Community Wildlife Service in Kenya Wildlife Service is quite broad. Managing wildlife outside protected areas means that the unit has to interact with: members of parliament, Councilor's, opinion leaders, rural communities, provincial administration, NGOs, Civil society, private ranchers and other relevant ministries at the grass-root level (Okello et al., 2001).

The Kenya Wildlife Service is a state cooperation established by the Act of parliament, CAP 376, with a mandate for wildlife conservation and management in Kenya. The Act spells out the functions of the organization both within and outside protected areas. A key function is to establish linkages and gain support form wildlife conservation with stakeholders and communities co existing with wildlife. KWS community wildlife programmes are hinged on the organization's mandate to conserve and manage wildlife outside protected areas (Okello & Kiringe, 2004). Emerging challenges in community wildlife conservation and management such as increasing human population, incompatible land use changes, abuse of user rights, lack of a land use policy, shrinking wildlife habitats, inadequate incentives for community participation and lack of involvement in decision making calls for a strengthened community conservation strategy.

2.2.3 Influence Of Conservation Awareness In Reducing Human Wildlife Conflict

Wildlife is an important natural resource in Kenya and is a major pillar of the tourism industry that generates substantial earnings annually (Waithaka, 2004). The wildlife are more abundant in the national parks and national reserves. They are however not confined to such areas. Presently, Kenya has a total of 26 national parks and 29 national reserves that altogether occupy a total area of 44,359 sq. kms or about 7.5 percent of the country's total area. The national parks and national reserves are characterized by considerable diversity. They range from marine parks, mountain, arid and semi-arid parks to lake ecosystems. The national parks and national reserves in Kenya are administered by the Kenya Wildlife Service (KWS), which is the agency that the government has mandated to undertake the conservation and management of wildlife resources in the country.

The establishment of national parks and national reserves in Kenya was a significant change in land use that shifted the resources in these areas from the local communities to the state (Songorwa *et al.*, 2000). It had a negative effect on the livelihoods of the local communities that could no longer use the land for agricultural production or to harvest valuable products (Okello & Kiringe, 2004). The local communities also felt alienated and this in some cases resulted in hostile relationships between them and the management of the national parks (Boonzaier, 2006). Furthermore, it made the policing of the natural resources in these protected areas expensive and in certain cases prohibitive (Songorwa *et al.*, 2000). An additional problem has been that the wildlife in the national parks frequently generate huge external costs to local communities by destroying their crops, preying on their livestock and endangering human life (Gadd, 2005). The benefits from these resources have however accrued, almost exclusively, to the state (Norton-Griffiths and Southey, 2005). The local communities who regard themselves as the rightful owners of these resources view this arrangement as exploitative and inequitable. Where policing has been weak, local communities have engaged in practices such as poaching, game hunting, and grazing their livestock in the national parks (Okello and Kiringe, 2004). In situations where these practices are occurring at high rates, the consequences have been widespread environmental degradation and rapid loss of biodiversity.

Community Based Natural Resource Management (CBNRM) is a way to minimize the conflicts between the local communities and those who manage national parks (Reid, 2001). It attempts to ensure that the economic benefits from these natural resources are broadly shared among the stakeholders. Gadd (2005) & Rozemeijer (2001) pointed out that such sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management. To this extent CBNRM is a means for fostering local economic development and improving the standards of living of local communities (Fabricius, 2004).

2.2.4 Influence of Community Participation in Reducing Human Wildlife Conflict

Community wildlife conservation is based on the principle that local communities shall participate in and benefit from wildlife conservation. This approach stems from the recognition that protected areas in Kenya as a developing country will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure. Community-based conservation is an emerging strategy which reconciles conservation goals and human needs. It is expected to have two main outcomes: enhancing nature conservation and providing social and economic gains for local people, (McCabe *et al*, 2002).

Pastoralists, livestock and wildlife have coexisted in Africa for the past 2,000 years (McCabe *et al*, 2002). Nsanjara (1993) describes a pre-colonial, traditional Africa where local people practiced “conservation” in a way that today’s conservationists consider innovative and successful; only certain classes of people were allowed by the chief to hunt certain species of animals (now known as *controlled harvesting*), while other animals were considered sacred and could not be killed under normal circumstances. The influx of European colonizers into Africa brought forth unsustainable hunting practices; the guns and rifles they brought were much more effective in making hunting an everyday event than the weapons used by tribal people and led to severe declines of many mammalian species (Nsanjara, 2003). Realizing that something needed to be done before all hunted species were eradicated, colonizers, eventually, implemented the “fences and fines” method of conservation, a method designed and implemented in and for Europe and North America

(Songorwa, 2009; Nsanjara, 2003), which forcibly removed tribal people from their lands and systematically alienated them from newly established national parks and reserves.

This conservation strategy, also known as *protectionism* or *fortress conservation*, ignored the needs of the local people (Hackel, 2009), since the exclusion of local peoples from protected areas made their use of plants and wildlife and, thus, to an extent, the role of wildlife in the traditional cultures, illegal (Nsanjara, 2003). The colonial conservation approach led, not only, to the failure in conservation, but also to a drastic change in the way local people viewed wildlife. Once viewed as irreplaceable assets which were highly guarded, local communities began to view wildlife as worthless. Locals also began to believe the only ones who benefited from wildlife were the state, wildlife departments, tourists and poachers. They began to despise the wildlife departments, and the relationships between the two quickly fell apart (Nsanjara, 2003).

In 1980, the World Conservation Union (IUCN) released The World Conservation Strategy, which forcefully argued that successful environmental conservation is contingent upon the active involvement and participation of local communities in environmental conservation (McCabe *et al*, 2002). The result of this document was a new conservation paradigm now known as Community-Based Conservation (CBC). The main objective of CBC is to alter the relationship between people and the environment through participatory, bottom-up methods, so as to create conditions whereby a maximum number of community members receive benefits and revenue from sustainable management and/or utilization of wildlife (Western, 2004; Songorwa, 2009). For CBC to work, it must demonstrate that wildlife conservation is a better option for land use than for cattle and/or agriculture (Nsanjara, 2003) otherwise, local people will likely look for more profitable economic alternatives.

Community-Based Conservation is now used globally in conjunction with the protectionism method, as more and more conservationists see that the solution to conservation in the third world countries lies with the local people themselves, particularly in areas outside of national parks and reserves (Murphree, 2000). At the core of CBC is the rejection of the notion that rural Africans should be viewed as degraders of the environment, (Hulme & Murphree, 2009), and recognizing the necessity of treating rural Africans as

stakeholders who have rights and responsibilities to the land and the animals is crucial to the success of CBC efforts. Thus, CBC makes an effort to put “indigenous technical knowledge” (ITK) of rural Africans to use, acknowledging that they have a sophisticated understanding of the environmental processes that go on around them (Hulme & Murphree, 2009; Murphree, 2000; Ntiamoa-Baidu *et al*, 2000). The use of ITK is the first attempt to revisit the conservation methods of pre-colonial wildlife management, (Nsanjara, 2003).

The use of CBC is neither uniform nor universal, yet it represents a hope of changing the way conservation has been practiced in developing countries and rural areas for far too long. CBC is seen by the international community as an obvious advance over past conservation practices that tended to ignore the needs of local people and their opinions (Murphree, 2000; Hackel, 2009), as it is designed to simultaneously empower local people and conserves wildlife, (Barrett & Arcese, 2005). CBC has also been projected to be the most efficient and practical way to conserve thus far in the modern, developing world (Mehta *et al*, 2008).

Murphree (2000) refers to CBC as “conservation *with* the people” (based on his four-fold categorization of stages in African conservation, CBC being part of the third stage). Until stage four, “conservation *by* the people”, can be reached, the stage where the locus of initiative and decision-making is shifted from the state to relatively autonomous localized jurisdictions while the state takes the role of facilitation through provision of coordination, infrastructure and arbitration, CBC seems to be the best option for conservation today. Moreover, it is agreed that unless we combine conservation and sustainable development and allow local communities into endeavors to conserve wildlife, conservation efforts are doomed to fail (Nsanjara, 2003).

The use of CBC management strategies is becoming popular in Kenya because of its role in helping to restore and maintain mutual relationships between governments, non-government organizations and local communities (Ogutu, 2002). It is a good start in the direction of integrating local people into the management of natural resources, but, it is just a start. Currently, rural communities do not see the link between themselves, tourism and CBC programs because they do not have access to money generated by tourism (Kirby, 2003).

2.3 Theoretical Review:

This section illustrates the theoretical basis that relate to wildlife conservation education program and human wildlife conflict. The study is based on the conflict theory which explains the human wildlife conflict.

2.3.1 Conflict Theory

Conflict theory is a perspectives in sociology that emphasize the social, political, or material inequality of a social group, that critique the broad socio-political system, or that otherwise detract from structural functionalism and ideological conservatism. Conflict theory draws attention to power differentials, such as class conflict, and generally contrast historically dominant ideologies. It is therefore a macro level analysis of society. Certain conflict theories set out to highlight the ideological aspects inherent in traditional thought. Whilst many of these perspectives hold parallels, conflict theory *does not* refer to a unified school of thought, and should not be confused with, for instance, peace and conflict studies, or any other specific theory of social conflict (Woodroffe et al., 2005)

Human wildlife conflicts occur when an animal or a human crosses a perceived borderline between nature and culture and enters into the realm of the other. The subject (human or animal) that crosses this border becomes a subject out of place, which means that the subject is then spatially located in a space where it should not be or where it does not belong according to tradition, custom, rules, law, public opinion, prevailing discourse or some other criteria set by human beings. Wild animals also have borders between the intra and inter species territories where conflicts occur when an individual animal enters the territory of another animal. Even though such wildlife wildlife conflicts are sometimes a partial cause to human wildlife conflicts in a spatial sense, these are not studied here. The borderline between nature and culture marks a perceived division of spatial content in our senses of place (Knight, 2000).

A subject out of place may be considered as a source of disorder, like in a study of Mary Douglas (1966) on the concern for purity as a key theme in every society. She used the concept of dirt to comprehend the established assumptions and need for order in human

societies. She writes that dirt is essentially disorder, an offence against order. Eliminating dirt is regarded as a positive effort to organize the environment. Douglas writes that if uncleanliness is matter out of place, we must approach it through order. This insight is present in human societies and it does not involve any clear cut distinctions between sacred and secular or between primitive and modern societies. Obviously, all human beings have a subjective view on the place of different animals in their life world. Our individually perceived and publicly negotiated nature culture borderlines are dynamic and extend from our intimate space to public space. We accept some animals to enter our intimate space but dislike others and want to keep a longer distance to those animals. For example, people who do not like dogs at all may accept them in public space but cannot stand the presence of dogs in their social space, such as at home or in the garden.

Woodroffe et al. (2005) use the term human wildlife conflict to describe a phenomenon where a conflicting situation between people and wildlife takes place in the form of crop raiding, livestock depredation, predation on managed wild animal species or killing of people. These conflicts occur worldwide and can be found on land and in waters, in the city as well as in the countryside. Sukumar (1998) describes the incursion of elephants into the suburbs of Bangalore in India as a modern example of human wildlife conflict there. According to John Knight (2000), human wildlife conflicts appear universally but occur most often in human settlements in forest edge regions. People wildlife conflicts usually arise from territorial proximity, reliance on the same resources or threat to human livelihoods and safety. He distinguished eight different human wildlife conflicts: attacks on people; attacks on livestock; crop; raiding; forestry damage; competition for ; wild forage with humans, livestock or with game animals; competition for prey with hunters; house and other building infestations and threats to other natural species and to biodiversity.

One strand of a structuralism approach to animal symbolism has emphasized the role of classification of animals in terms of space. Here space is understood as being culturally divided into different spheres, such as land and water. Some species will become anomalous because they are associated with more than one different sphere. Such social understanding of environmental order makes animals, which are found out of space, pests or vermin. This anthropological point of view explains that at least some wildlife pestilence is connected to

boundary crossing behavior of different spatial spheres as much as its economic consequences. Those species crossing the spatial boundary are often subjected to negative symbolism and regarded as immoral characters, such as thieves or murderers (Knight 2000). Human wildlife conflicts can also have consequences on personal safety. Henry Buller (2008) addresses the concept biosecurity through the reintroduction of the Grey Wolf to the southern French Alps. He defines biosecurity by stating that it simply means policies and measures to protect people from “being eaten by big and ferocious wild animals.

2.4 Conceptual framework

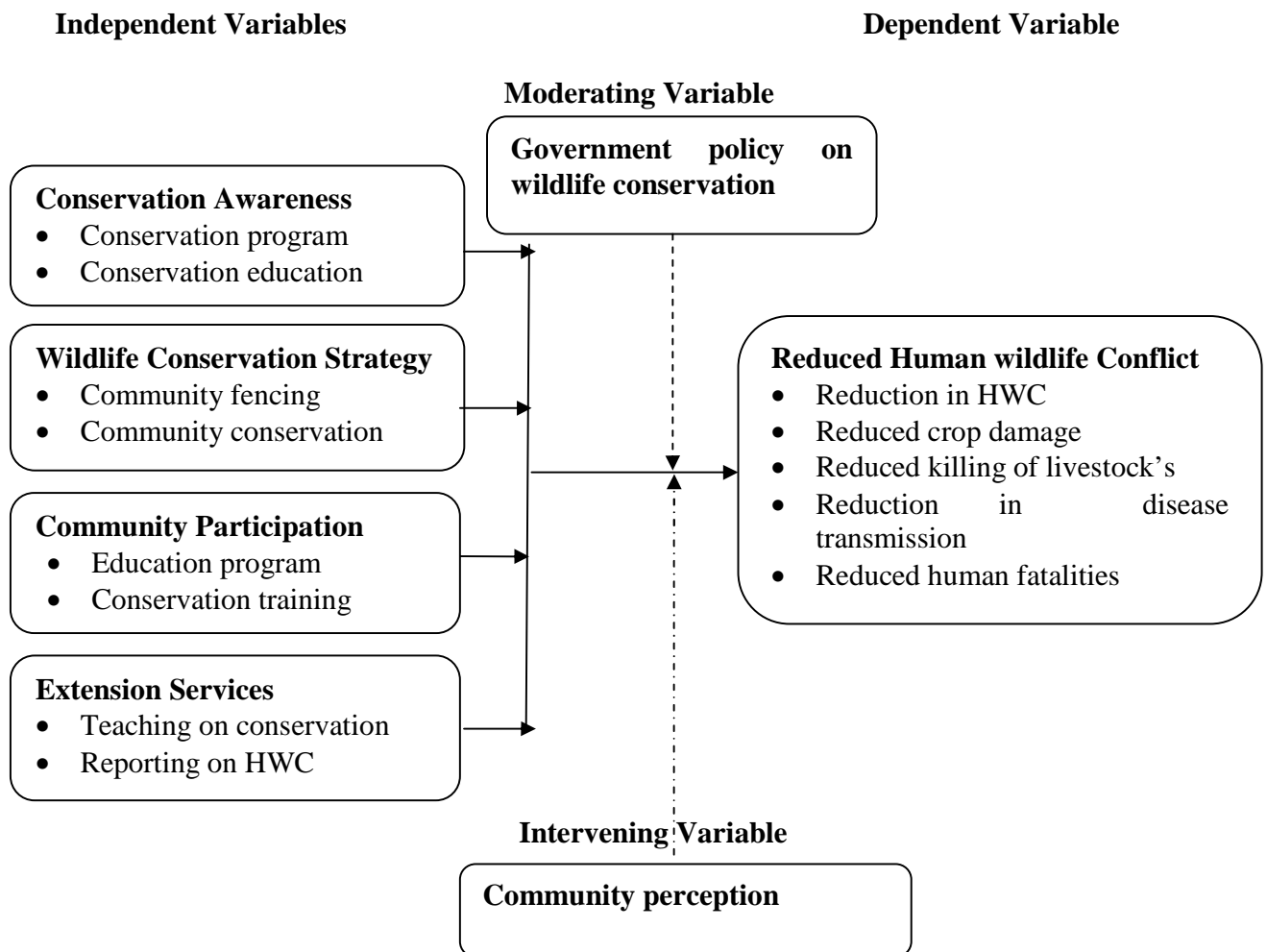


Figure 2.1: Influence of Kenya wildlife conservation education program on reducing human wildlife conflict

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate this. Community-based conservation is an emerging strategy which reconciles conservation goals and human needs. It is expected to have two main outcomes: enhancing nature conservation and providing social and economic gains for local people.

Human-wildlife conflicts can have adverse impacts on wildlife and humans alike. Since Kenya's national economy is predominantly hinged on biological resources, wildlife protected areas are an important asset from which a significant amount of foreign exchange has been derived in the past few decades (Okello *et al.*, 2001). One of the core functions of Kenya Wildlife Service (KWS) is to provide wildlife education and extension services to the public for their support in wildlife conservation. This contributes overall to the KWS mandate in terms of enhancing wildlife conservation, protection, and management, improving KWS's linkages, recognition and relationships with stakeholders.

One and most important mandate of the KWS is to raise conservation awareness among local public to save forest, wildlife and environment. It is imperative to convince the people that biodiversity conservation is vital for a better way of life. Biodiversity conservation can succeed only when people realize the values of biodiversity.

Community wildlife service is a strategy recognized by the Wildlife Conservation and Management Act CAP 376. The Act calls for active community participation in wildlife conservation outside protected areas. The increase in human population has led to increased pressure on predominantly wildlife areas and encroachment onto protected areas, (Sindiga, 2003). The commitment to addressing Human Wildlife Conflict led to implementation various strategies; Conservation Education Program (CEP) being one of them, which seeks to empower both the community and school going children on the importance of wildlife.

There has an established network through KWS offices across the country to address issues of wildlife outside the protected area system. The role of Community Wildlife Service in Kenya Wildlife Service is quite broad. Community Based Natural Resource Management (CBNRM) is a way to minimize the conflicts between the local communities and those who manage national parks (Reid, 2001).

Community wildlife conservation strategy is based on the principle that local communities shall participate in and benefit from wildlife conservation. This approach stems from the recognition that protected areas in Kenya as a developing country will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure. Community-based conservation is an emerging strategy which reconciles conservation goals and human needs.

2.5 Summary and Research Gap

The reviewed literature demonstrates influence of Community wildlife strategies in reducing Human wildlife Conflict. The studies quoted were conducted in foreign countries. Hence, there is a need to conduct a local study (in Kenya) to assess the impact of Community wildlife strategies in reducing Human wildlife Conflict in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the intended research design for the study, the target population for the study, the sampling procedure to be used in conducting the study, methods of data collection, instrumentation issues with regard to validity and reliability, operational definition of variables, method of data analysis to be used in conducting the research and finally the summary of the chapter.

3.2 Research design

The descriptive research design was used in this study because it does not involve manipulation of variable under investigation but seeks to establish the status of the phenomena (Borge & Gall, 1983). It is relevant because it is used to assess attitude and opinions about events, individual or procedure (Gray, 1992, Mugenda & Mugenda, 1999). This research design was therefore appropriate for the study because it was used to determine the impact of Community wildlife strategies in reducing Human wildlife Conflict in Kenya with a case study of KWS conservation education program.

3.3 Target Population

According to Ngechu (2004) a study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. The target population composed of 328 respondent drawn from staff of KWS education department, staff at education center in the field , teachers from school that visit these centers and community leaders . This population was chosen since the people in the management are the ones involved in the day to day running of the organisation and thus are well conversant with the impact of Community wildlife strategies in reducing Human wildlife Conflict in Kenya with reference to KWS conservation education program. Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. For purpose of this study the target population was stratified through staff of KWS education

department, staff at education center in the field , teachers from school that visit these centers and community leaders from the sites.

Table 3.1: Target Population

Level	No in Position	Percentage of Total Population
Staff of KWS education department	46	14.0
Staff at education centers in the field	83	25.3
Teachers	67	20.4
Community leaders	132	40.2
Total	328	100.0

3.4 Sampling procedure and sample size

Ngechu (2004) underscores the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms were selected in order to make a sample. Stratified proportionate random sampling technique was used to select the sample. According to Ngechu (2004) stratified proportionate random sampling technique produce estimates of overall population parameters with greater precision and ensures a more representative sample is derived from a relatively homogeneous population. Stratification aims to reduce standard error by providing some control over variance. From each stratum the study used simple random sampling to select 99 respondents, this represented 30% of the entire population, Gay recommends a 10% of the accessible population for descriptive studies (Mugenda & Mugenda, 2003) but says the larger the sample the more reliable the data is.

Table 3.2: Sampling Frame

Level	Frequency	Proportion	Sample size
Staff of KWS education department	46	0.3	14
Staff at education centers in the field	83	0.3	25
Teachers	67	0.3	20
Community leaders	132	0.3	40
Total	328	0.3	99

3.5 Data Collection Instruments

The use of survey method of data collection was chosen for this study. The study used semi structured questionnaires containing closed ended and open ended questions to collect primary data. Questionnaires were administered to the respondent through drop and pick method. The reason for choosing a survey method was because the method is more efficient and economical as compared to other methods such as observation. Disseminating the questionnaires to the respondents through email was chosen because it gave the respondent ample time to give true and accurate information, less costly than personal interviews. Drop and pick questionnaires gave the respondents enough time to think about the response they wanted to give concerning the impact of community wildlife conservation Strategies on human wildlife conflict. Secondary data regarding this study was sourced from KWS reports and other studies. Together with the data collected using the questionnaire, analysis was done and findings and conclusions drawn.

3.6 Instrument Validity

Validity refers to the accuracy and meaningfulness of inferences based on the research results (Mugenda & Mugenda, 2003) can be enhanced by absence of errors in the data collected. The research instrument was piloted in with 10 respondents who did not form part of the schools selected for the study. This was ensured by going through the questionnaire with the respondents to ascertain that each of the items is framed in the least ambiguous way. The pilot study aims at establishing construct validity of the instruments (Mugenda & Mugenda, 1999). The pilot study assisted in identifying the problems which the respondents may encounter in the process of answering the questions put across to them. The piloted questionnaire was revised and ambiguous items modified.

3.7 Instrument Reliability

In this study, a pilot study was carried out on 10 staff of KWS who were not included in the actual data collection. The researcher administered the instruments personally to the respondents. The feedback was used to validate the instruments in readiness for the study. After administering the instruments to the selected respondents, the data obtained was a true reflection of the variables under study. To test the reliability of the instruments, the

researcher used the split-half technique. The instrument was split into two sub sets (the sets which have odd numbers and even numbers). All even numbered items and odd numbered responses in the pilot study were computed separately. By using this method, the researcher aimed at determining the co-efficient of internal consistency and the reliability co-efficient whose value varied between 0.00 (indicating no reliability) and +1.00 (indicating perfect reliability). The odd numbered scores for all items were correlated with even numbered scores using Pearson Product Moment Correlation Co-efficient of the entire test.

The researcher used Spearman Brown Prophecy formula:

$$= \frac{2 \times \text{Corr. between the halves}}{1 + \text{Corr. between the halves}} \quad \text{Or } Re = \frac{2R}{r+1}$$

Where Re = reliability of the original test

r = reliability of the coefficient resulting from correlating the scores of the odd items with the scores of the even items. A coefficient of 0.70 was considered adequate but a coefficient of 0.80 is good according to Gay (2003).

3.8 Data Collection Procedure

The researchers applied for a permit from National Council for Science and Technology before embarking on the study. The researcher sought an appointment with respondents before administering research instruments. The questioners were administered by the researcher and trained research assistants through a drop-wait-and-collect method. The researcher and the research assistants took the questionnaire to the selected respondents who were selected through a random procedure to fill the questionnaires as they are waited. The key informants' interviews were conducted by the researcher on appointment with the heads of departments in their offices.

3.9 Data Analysis

In this study, a descriptive approach to data analysis was used to analyze collected data on the influence of Kenya wildlife conservation education program on reducing human wildlife conflict. The research perused completed questionnaires. Quantitative data collected

was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts. This involved tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS. Content analysis was used to analyze data that is qualitative nature or aspect of the data collected from the open ended questions. In addition, a multiple regression was used to measure the quantitative data and was analyzed using SPSS too.

The regression equation is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y is the dependent variable (human wildlife conflict), β_0 is the regression constant, β_1 , β_2 , β_3 and β_4 are the coefficients of independent variables, X_1 is Conservation Awareness, X_2 is Wildlife Conservation Strategy, X_3 is Community Participation, and X_4 is Extension Services.

3.10 Ethical Consideration

The ethical issues related to the study were addressed by maintaining high level confidentiality of the information volunteered by the respondents and never intending to use of the respondents was optional and were not to be disclosed to protect their rights. All the personal details were limited to general information.

3.10 Operational Definition of Variables

Table 3.3: Operational Definition of Variables

Objective	Variable	Indicators	Measure	Data collection tool	Type of Analysis
To determine the influence of extension services in reducing human wildlife conflict in Kenya	Independent variable Extension Services	<ul style="list-style-type: none"> • various education forums • employing of local teachers to work on their behalf • Training Program 	No of teachers involved No community leaders involved	Questionnaire	Descriptive statistics Mean Standard deviation Percent Frequency
To examine the influence of community participation in reducing human wildlife conflict in Kenya	Independent variable Community Participation	<ul style="list-style-type: none"> • community participation in conservation of education • Teachers participation in educating the local communities • Locals participation in conservation education programmes 	No of people involved in the program	Questionnaire	Descriptive statistics Mean Standard deviation Percent Frequency
To establish the influence of conservation awareness in reducing human wildlife conflict in Kenya	Independent variable Conservation Awareness	<ul style="list-style-type: none"> • Including conservation education into curriculum • Community education on importance of wildlife conservation • Conservation awareness programs 	Number of class per week /month	Questionnaire	Descriptive statistics Mean Standard deviation Percent Frequency
To find out the influence of wildlife conservation strategy in reducing human wildlife conflict in Kenya	Independent variable Wildlife Conservation Strategy	<ul style="list-style-type: none"> • fencing around national parks and reserves • community education on importance of wildlife • community reporting on case of Human wildlife conflict 	Community Fencings	Questionnaire	Descriptive statistics Mean Standard deviation Percent Frequency
Human Wildlife Conflict	Dependent variable Human Wildlife Conflict	<ul style="list-style-type: none"> • Reduction in HWC • Reduced crop damage • Reduced killing of livestock's • Reduction in disease transmission • Reduced human fatalities 	Crop damages Disease transmission Human fatalities	Questionnaire	Descriptive statistics Mean Standard deviation Percent Frequency

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS AND INTERPRETATIONS

4.1 Introduction

This chapter presents the research findings to determine the influence of Kenya wildlife conservation education program on reducing human wildlife conflict, a case of Kenya Wildlife Service conservation education program. Descriptive statistics was used to analyze the data. In the descriptive statistics, relative frequencies were used in some questions and other were analyzed using mean scores with the help of Likert scale ratings in the analysis.

4.2 Questionnaire Return Rate

The study was conducted on 99 respondents who were served with a questionnaire; out of 99 targeted respondents 80 respondents filled-in and returned the questionnaires which make a response rate of 81%.

Table 4.4: Questionnaire Return Rate

	Frequency	Percent
Dully filled and returned questionnaire	80	81
Un returned questionnaire	19	19
Total	99	100

4.3 General information of the Respondents

General information was collected on the gender of respondents, period worked with humanitarian agencies and the length of time in the organization and region.

4.3.1 Distribution of Respondents by Gender

The study also determined the gender of the respondents. It is now an established fact that there is no correlation between gender and humanitarian emergency programs, but it was necessary to determine the gender balance among the stakeholders in the KWS education

program. The results are summarized in Table 5.

Table 4.5: Distribution of the respondents by their gender

	Frequency	Percent
male	53	66.3
female	27	33.8
Total	80	100.0

From the findings, majority of the respondents as shown by 66.3% (53) indicated that they were males whereas 33.8% (27) of the respondents indicate that they were females, this is an indication that both genders were involved in the study through not in equal proportion.

4.3.2 Age bracket

The results in the Table 4.6 show the distribution of the respondents by age.

Table 4.6: Distribution of respondents by Age

	Frequency	Percent
20 to 30 years	11	13.8
31 to 40 years	38	47.5
41 to 50 years	21	26.3
Above 50 years	10	12.5
Total	80	100.0

From the findings, most of the respondents as shown by 47.5% (38) indicated that they were aged 31 to 40 years, 26.3% (21) indicated that they were aged 41 to 50 years, 13.8% (11) indicated that they were aged 20 to 30 years whereas 12.5% (10) of the respondents indicated that they were aged above 50 years, this is an indication that the respondents were well distributed in terms of their age.

4.3.3 Time worked in the education program

The Table 4.7 shows the tabulation of the findings on the time worked in the education program of the KWS

Table 4.7: Time worked in the education program

	Frequency	Percent
0 to 5 years	6	17.9
6 to 10 years	16	46.2
11 to 15 years	8	23.1
Above 15 years	5	12.8
Total	35	100.0

The findings show that most of the respondents as shown by 46.2% (16) had worked with the KWS education program for 6 to 10 years, 23.1% (8) had worked with KWS education program for 11 to 15 years, 17.9% (6) had worked with KWS education program for less than 5 years whereas 12.8% (5) had worked with KWS education program for more than 15 years, this is an indication that respondents had worked with KWS education program for more than 6 years.

4.3.4 Length of time in the Region

The results in Table 4.8 show the length of time spent in the region.

Table 4.8: Length of time in the region

	Frequency	Percent
0 to 5 years	6	13.3
6 to 10 years	19	42.2
11 to 15 years	12	26.7
Above 15 years	8	17.8
Total	45	100.0

The findings show that most of the respondents as shown by 42.2% (19) had been in their area for 6 to 10 years, 26.7% (12) had been in their area for 11 to 15 years, 17.8% (8) had been in their area for less than 5 years whereas 13.3% (6) had worked with been in their area for more than 15 years, this is an indication that respondents had been in their area for more than 6 years.

4.4 Influence of Kenya wildlife conservation education program on human wildlife conflict

The aim of this study was to determine the influence of Kenya wildlife conservation education program on human wildlife conflict in Kenya. The influence was hypothesized as wildlife conservation strategy, extension services, community participation, and conservation awareness. This section presented information on the influence of each of these on human wildlife conflict.

4.4.1 KWS conservation education program

The general objective of this study was to determine the influence of Kenya wildlife conservation education program on reducing human wildlife conflict.

Table 4.9: Whether KWS conservation education program influences human wildlife conflict in the region

The results in the Table 4.9 shows whether KWS conservation program influence human wildlife conflict in the region.

	Frequency	Percent
Yes	54	67.5
No	26	32.5
Total	80	100.0

From the findings, majority of the respondents as shown by 67.5% (54) indicated that KWS conservation program influence human wildlife conflict in their region whereas 32.5% (26) of the respondents indicate that KWS conservation program do not influence human wildlife conflict in the region, this is an indication that KWS conservation program influence human wildlife conflict in the region.

Table 10: Extent to which the KWS conservation education programs help in reducing human wildlife conflict

Table 4.10 shows results on the extent to which the KWS conservation education program help in reducing human wildlife conflict in Kenya.

	Frequency	Percent
Very great extent	13	16.3
Great extent	59	73.8
Moderate extent	8	10.0
Total	80	100.0

The study found that majority of the respondents as shown by 73.8 % (59) indicated that KWS conservation education program help in reducing human wildlife conflict to great extent, 16.3% (13) indicated that KWS conservation education program help in reducing human wildlife conflict to very great extent whereas 10% (8) indicated that KWS conservation education program help in reducing human wildlife conflict to moderate extent, this is an indication that KWS conservation education program help in reducing human wildlife conflict in Kenya to great extent.

Table 4.11: Whether the respondents are aware of the KWS conservation education program

The results in Table 4.11 show the findings on the community awareness of the KWS conservation education program.

	Frequency	Percent
Yes	31	68.9
No	14	31.1
Total	45	100.0

From the findings, majority of the respondents as shown by 68.9% (31) indicated that they were aware of the KWS conservation education program whereas 31.1% (14) indicated that they were not aware of the KWS conservation education program, this is an indication that Kenyans are aware of the KWS education program.

Table 4.12: Whether wildlife education centres contribute to the reducing human wildlife Conflict

The Table 4.12 shows the results on whether wildlife education centres contribute to the reducing human wildlife Conflict in Kenya.

	Frequency	Percent
Yes	58	72.5
No	22	27.5
Total	80	100.0

From the findings, majority of the respondents as shown by 72.5% (58) indicated that wildlife education centres contribute to the reducing human wildlife Conflict whereas 27.5%

(22) indicated that wildlife education centres do not contribute to the reducing human wildlife Conflict, this is an indication that wildlife education centres contribute to the reducing human wildlife Conflict in Kenya.

Table 4.13: Extent to which wildlife education centres contribute to the reducing human wildlife Conflict in Kenya

Table 4.13 shows results on the extent to which wildlife education centres contribute to the reducing human wildlife Conflict in Kenya in Kenya.

	Frequency	Percent
Very great extent	26	32.5
Great extent	48	60.0
Moderate extent	6	7.5
Total	80	100.0

The study found that majority of the respondents as shown by 60% (48) indicated that wildlife education centres contribute to the reducing human wildlife Conflict in Kenya to great extent, 32.5% (13) indicated that KWS conservation education program help in reducing human wildlife conflict to very great extent whereas 7.5% (8) indicated that wildlife education centres help in reducing human wildlife conflict to moderate extent, this is an indication that wildlife education centres help in reducing human wildlife conflict in Kenya to great extent.

Table 14: Extent does the KWS conservation education program help in reducing the following

The Table 14 below tabulates information on the effect of KWS conservation education program.

Attribute	Very great extent	Great extent	Moderate	Less extent	Not at all	Mean	Standard deviation
Hunting	11	16	8	0	0	1.91	0.20
Animal killing by wildlife	3	19	9	3	1	2.43	0.21
Human encroachment into the park	13	15	5	2	0	1.89	0.19
Converting land for agriculture	9	20	4	2	0	1.97	0.23
Performing retaliatory killings of predators	14	16	3	1	1	1.83	0.21
conservation of biological resources as one of the key national obligations of the Kenya Government	8	21	5	1	0	1.97	0.24

The table reveals that those affected to a great extent were Performing retaliatory killings of predators as shown by mean of 1.83, Human encroachment into the park as shown by mean of 1.89, Hunting as shown by mean of 1.91, Converting land for agriculture as shown by the mean of 1.97, conservation of biological resources as one of the key national obligations of the Kenya Government for agriculture as shown by the mean of 1.97 and Animal killing by wildlife as shown by mean of 2.43. This is an indication that KWS conservation education program has an effect on the human wildlife conflict.

Table 15: Whether KWS have outreach sessions to schools and the community on HWC

The table 4.15 below shows results on whether KWS have outreach sessions to schools and the community on HWC.

	Frequency	Percent
Yes	32	71.1
No	13	28.9
Total	45	100.0

From the findings, majority of the respondents as shown by 68.6% (32) indicated that KWS have outreach sessions to schools and the community on HWC whereas 27.5% (13) indicated that KWS does not have outreach sessions to schools and the community on HWC, this is an indication that KWS have outreach sessions to schools and the community on HWC. On how wildlife education centres contribute to the reducing human wildlife Conflict in Kenya, the study found that wildlife education centres help in reducing human wildlife conflict through information sharing among the stakeholders, increased community understanding on the value of wildlife, improved policing of the natural resources by the government, and reduced external costs to local communities. The schools and community benefit from the KWS education office through increased understanding of wildlife, their habitats and the need for conservation of the wildlife and natural resources; the importance of healthy environments, water availability and usage; interpretative tours and game drives and reduced external costs from wildlife attack. The study found that the effectiveness of conservation education in reducing the human wildlife Conflict in Kenya can be enhanced through government involvement, community participation, relevant policies, involvement of qualified personnel in the program, and reduced bureaucracy in the Kenya wildlife service.

4.4.2 Influence of wildlife conservation strategy in reducing human wildlife conflict

The first objective of this study was to determine the influence of wildlife conservation strategy in reducing human wildlife conflict Kenya.

Table 16: Whether wildlife conservation strategy influence to human wildlife Conflict

The Table 4.16 below shows results on whether wildlife conservation strategy affects human wildlife Conflict in Kenya.

	Frequency	Percent
Yes	27	77.1
No	8	22.9
Total	35	100.0

From the findings, majority of the respondents as shown by 77.1% (27) indicated that wildlife conservation strategy affects human wildlife Conflict whereas 22.9% (8) indicated that wildlife conservation strategy does not affect human wildlife Conflict, this is an indication that wildlife conservation strategy affects human wildlife Conflict in Kenya.

Table 4.17: Level of agreement with statements relating to the effect of wildlife conservation strategy in reducing human wildlife conflict

The Table 4.17 below tabulates information on the level of agreement with statements relating to the effect of wildlife conservation strategy in reducing human wildlife conflict.

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Standard deviation
Community based conservation strategy helps in reducing crop damage	5	26	3	1	0	2.00	0.31
Through community based conservation strategies there has been reduced competition for water and grazing	6	23	3	2	1	1.97	0.26
There has been reduction in killing of livestock and risk of disease transmission through community based conservation	12	21	2	0	0	1.71	0.26
Community based conservation strategies have helped in reducing human fatalities which are caused by human wildlife conflict	8	18	6	2	1	2.14	0.19
Conflict between livestock owners and wild carnivores due to predation has been significantly reduced	10	14	9	1	1	2.11	0.17
conservation of biological resources is one of the key national obligations of the Kenya Government	12	15	7	1	0	1.91	0.19

The Table 4.17 reveals that the respondents agreed that There has been reduction in killing of livestock and risk of disease transmission through community based conservation as shown by mean of 1.71, conservation of biological resources is one of the key national

obligations of the Kenya Government as shown by mean of 1.91, Through community based conservation strategies there has been reduced competition for water and grazing as shown by mean of 1.97, Community based conservation strategy helps in reducing crop damage as shown by the mean of 2.00, conflict between livestock owners and wild carnivores due to predation has been significantly reduced as shown by the mean of 2.11 and that community based conservation strategies have helped in reducing human fatalities which are caused by human wildlife conflict as shown by mean of 2.14. The study found that wildlife conservation strategy help in in reducing human wildlife conflict in Kenya by establish practical mechanism for benefit sharing with relevant stakeholders through consultation, negotiation and consensus building; providing required support for community projects; establishing mechanism to minimize conflicts; protect people and their property from injury or damage caused by wildlife and facilitate wildlife compensation claims.

4.4.3 Influence of extension services in Reducing Human Wildlife Conflict

The second objective of this study was to determine the influence of extension services in reducing human wildlife conflict Kenya.

Table 4.18: Whether extension services influence in reducing human wildlife conflict in Kenya

The Table 4.18 below shows results on whether extension services influence in reducing human wildlife conflict in Kenya.

	Frequency	Percent
Yes	25	71.4
No	10	28.6
Total	35	100.0

From the findings, majority of the respondents as shown by 71.4% (25) indicated that extension services influence in reducing human wildlife conflict whereas 28.6% (10) indicated that extension services does not help in reducing human wildlife conflict, this is an indication that extension services influence in reducing human wildlife conflict in Kenya.

Table 19: Extent to which extension services influence the reducing human wildlife Conflict in Kenya

Table 4.19 shows results on the extent to which extension services influence the reducing human wildlife Conflict in Kenya in Kenya.

	Frequency	Percent
Very great extent	6	17.1
Great extent	21	60.0
Moderate extent	8	22.9
Total	35	100.0

The study found that majority of the respondents as shown by 60% (21) indicated that extension services influence the reducing human wildlife Conflict in Kenya to great extent, 22.9% (8) indicated that extension services influence the reducing human wildlife conflict to moderate extent whereas 17.1% (6) indicated that extension services influence the reducing human wildlife conflict to very great extent, this is an indication that extension services influence in reducing human wildlife conflict in Kenya to great extent.

Table 4.20: Level of agreement with statements relating to the effect of extension services in reducing human wildlife conflict

The table 4.20 tabulates the results on the level of agreement with statements relating to the effect of extension services in reducing human wildlife conflict.

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Standard deviation
Wildlife education and extension services to the public support in wildlife conservation.	7	23	5	0	0	1.94	0.27
Extension service contributes overall to the KWS mandate in terms of enhancing wildlife conservation	11	18	3	2	1	1.97	0.21
Wildlife education and extension service help in protecting and management of wildlife in Kenya	5	16	9	4	1	2.43	0.17
Through extension service KWS has been able to improve their linkages, recognition and relationships with stakeholders	13	17	4	1	0	1.80	0.22
Active community participation in wildlife conservation outside protected areas has helped in reducing human wildlife conflict	9	22	3	1	0	1.89	0.26

The table 4.20 reveals that the respondents agreed that through extension service KWS has been able to improve their linkages, recognition and relationships with stakeholders as shown by mean of 1.80, Active community participation in wildlife conservation outside protected areas has helped in reducing human wildlife conflict as shown by mean of 1.89,

Wildlife education and extension services to the public support in wildlife conservation as shown by mean of 1.94, Extension service contributes overall to the KWS mandate in terms of enhancing wildlife conservation as shown by the mean of 1.97, and that Wildlife education and extension service help in protecting and management of wildlife in Kenya as shown by mean of 2.43. The study on how extension services help in reducing human wildlife conflict in Kenya revealed that extension services help in reducing human wildlife conflict through grants landowners use rights and cropping quotas, communication of the role of wildlife in economic development, increased community knowledge, established linkages, and increased support for wildlife conservation with stakeholders.

4.4.4 Influence of Conservation Education in Reducing Human Wildlife Conflict

The third objective of this study was to determine the influence of Conservation Education in reducing human wildlife conflict Kenya.

Table 21: Whether Conservation Education influence in reducing human wildlife conflict in Kenya

The Table 4.21 below tabulates results on whether Conservation Education influence in reducing human wildlife conflict in Kenya.

	Frequency	Percent
Yes	28	80.0
No	7	20.0
Total	35	100.0

From the findings, majority of the respondents as shown by 80% (28) indicated that Conservation Education influence in reducing human wildlife conflict whereas 20% (7)

indicated that Conservation Education does not help in reducing human wildlife conflict, this is an indication that Conservation Education influence in reducing human wildlife conflict in Kenya.

Table 4.22: Extent to which Conservation Education influence the reducing human wildlife Conflict in Kenya

The results from the Table 4.22 show the extent to which Conservation Education influence the reducing human wildlife Conflict in Kenya in Kenya.

	Frequency	Percent
Very great extent	9	25.7
Great extent	22	62.9
Moderate extent	4	11.4
Total	35	100.0

The study found that majority of the respondents as shown by 62.9% (22) indicated that Conservation Education influence the reducing human wildlife Conflict in Kenya to great extent, 25.7% (9) indicated that Conservation Education influence the reducing human wildlife conflict to very great extent whereas 11.4% (4) indicated that Conservation Education influence the reducing human wildlife conflict to moderate extent, this is an indication that Conservation Education influence in reducing human wildlife conflict in Kenya to great extent.

Table 4.23: Level of agreement with statements relating to the influence of conservation

Education in reducing human wildlife conflict

The Table 4.23 tabulates the results on the level of agreement with statements relating to the effect of extension services in reducing human wildlife conflict.

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Standard deviation
Conservation education helps to minimize the conflicts between the local communities and those who manage national parks	9	20	3	2	1	2.03	0.23
Conservation education ensures that the economic benefits from these natural resources are broadly shared among the stakeholders	6	18	8	3	0	2.23	0.20
Sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management	10	16	4	2	0	1.77	0.19
Community based national resource management helps in fostering local economic development and improving the standards of living of local communities	8	17	5	3	2	2.26	0.17

The Table 4.23 reveals that the respondents agreed that Sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management as shown by mean of 1.77, Conservation education helps to minimize the conflicts between the local communities and those who manage national parks

as shown by mean of 2.03, Conservation education ensures that the economic benefits from these natural resources are broadly shared among the stakeholders as shown by mean of 2.23, and that Community based national resource management helps in fostering local economic development and improving the standards of living of local communities as shown by mean of 2.26. The study found that conservation education impact the reducing human wildlife conflict by highlighting the direct benefits of conserving biodiversity, showing people ways in which to live side by side with wildlife, and suggesting ways in which people can turn the presence of wildlife on their land into a financially beneficial situation like creating conservation areas which will attract tourism.

4.4.5 Influence of community participation in reducing human wildlife conflict Kenya

The fourth objective of this study was to determine the influence of Community participation in reducing human wildlife conflict Kenya.

Table 4.24: Whether Community participation influences reducing human wildlife conflict in Kenya

The Table 4.24 below tabulates results on whether Community participation influences reducing human wildlife conflict in Kenya.

	Frequency	Percent
Yes	26	74.3
No	9	25.7
Total	35	100.0

From the findings, majority of the respondents as shown by 74.3% (26) indicated that community participation influences reducing human wildlife conflict whereas 20% (9)

indicated that community participation does not influence reducing human wildlife conflict, this is an indication that community participation influence reducing human wildlife conflict in Kenya.

Table 4.25: Extent to which Community participation influences the reducing human wildlife Conflict in Kenya

The results from the Table 4.25 show the extent to which Community participation influence the reducing human wildlife Conflict in Kenya in Kenya.

	Frequency	Percent
Very great extent	10	28.6
Great extent	18	51.4
Moderate extent	7	20.0
Total	35	100.0

The study found that majority of the respondents as shown by 51.4% (18) indicated that Community participation influence the reducing human wildlife Conflict in Kenya to great extent, 28.6% (10) indicated that Community participation influence the reducing human wildlife conflict to very great extent whereas 20% (7) indicated that Conservation Education influence the reducing human wildlife conflict to moderate extent, this is an indication that Community participation influence in reducing human wildlife conflict in Kenya to great extent.

Table 4.26: Level of agreement with statements relating to the influence of Community participation on human wildlife conflict

The Table 4.26 tabulates the results on the level of agreement with statements relating to the effect of Community participation in reducing human wildlife conflict.

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Standard deviation
Community wildlife conservation is based on the principle that local communities shall participate in and benefit from wildlife conservation	8	23	4	0	0	1.89	0.27
Community participation stems from the recognition that protected areas in Kenya will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure	11	17	3	2	2	2.06	0.19
Community-based conservation is an emerging strategy which reconciles conservation goals and human needs through community participation	12	16	4	2	1	1.97	0.19
Community based conservation enhances nature conservation and providing social and economic gains for local people through their participation	8	17	7	3	0	2.14	0.18
Combined conservation and sustainable development and allow local communities into endeavors to conserve wildlife, conservation efforts are doomed to fail	9	22	3	1	0	1.87	0.26

The table 4.26 reveals that the respondents agreed that combined conservation and sustainable development and allow local communities into endeavors to conserve wildlife, conservation efforts are doomed to fail as shown by mean of 1.87, Community wildlife conservation is based on the principle that local communities shall participate in and benefit from wildlife conservation as shown by mean of 1.89, Community-based conservation is an emerging strategy which reconciles conservation goals and human needs through community participation as shown by mean of 1.97, Community participation stems from the recognition that protected areas in Kenya will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure as shown by the mean of 2.06, and that Community based conservation enhances nature conservation and providing social and economic gains for local people through their participation as shown by mean of 2.14. The study reveals that community participation helps in reducing human wildlife conflict through appreciation of wildlife by community, development of effective policies on Human/wildlife conflict, assistance in wildlife killing by exposing the illegal poachers and embracing wildlife conservation programs by the government.

4.5 Regression analysis

Table 4.27: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.833	.172		4.847	.000
Conservation Awareness	-.142	.082	-.132	-1.739	.034
Wildlife Conservation Strategy	-.643	.082	-.586	-7.835	.000
Community Participation	-.232	.083	-.246	-2.806	.006
Extension Services	-.162	.063	-.223	-2.583	.011

From the finding in table 4.27 the established regression equation was

$$Y = 0.833 - 0.142 X_1 - 0.643 X_2 - 0.232X_3 - 0.162 X_4$$

From the above regression model, holding Conservation Awareness, Wildlife Conservation Strategy Community Participation and extension Services constant zero Human wildlife Conflict would be at 0.833. It was established that a unit increase in conservation awareness would cause an decrease in Human wildlife Conflict by a factor of 0.142, unit increase in Wildlife Conservation Strategy would lead to decrease in Human wildlife Conflict by a factor of 0.643, also a unit increase in community participation would cause decrease in Human wildlife Conflict by a factors of 0.232, further unit increase in extension would cause an decrease in Human wildlife Conflict by a factor of 0.162.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of key findings, which are set out in line with the study themes or objectives. The themes were to determine the influence of wildlife conservation strategy in reducing human wildlife conflict in Kenya, find out the influence of extension services in reducing human wildlife conflict in Kenya, examine the influence of community participation in reducing human wildlife conflict in Kenya, and to establish the influence of conservation awareness in reducing human wildlife conflict in Kenya. It also presented the conclusion, and recommendations of the study.

5.2 Summary of Findings

The study revealed that KWS conservation program influence human wildlife conflict in the region. This study found that KWS conservation education program help in reducing human wildlife conflict in Kenya to great extent. The study also found that Kenyans are aware of the KWS education program.

The study found that wildlife education centres contribute to the reducing human wildlife Conflict in Kenya to great extent. The study reveals that KWS education program affects human-wildlife through performing retaliatory killings of predators, human encroachment into the park, hunting, conversion of land for agriculture, conservation of biological resources as one of the key national obligations of the Kenya Government for agriculture and Animal killing by wildlife. The study also found that wildlife conservation strategy affects human wildlife Conflict in Kenya.

The study established that extension services influence in reducing human wildlife conflict in Kenya. The study also found that extension services influence in reducing human wildlife conflict in Kenya to great extent, On how extension services help in reducing human wildlife conflict in Kenya revealed that extension services help in reducing human wildlife conflict through grants landowners use rights and cropping quotas, communication of the role of wildlife in economic development, increased community knowledge, established linkages, and increased support for wildlife conservation with stakeholders.

The third objective of this study was to determine the influence of Conservation Education in reducing human wildlife conflict Kenya, the study revealed that conservation Education influence reducing human wildlife conflict in Kenya to a great extent. The study found that sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management.

The fourth objective of this study was to determine the influence of Community participation in reducing human wildlife conflict Kenya. The study found that community participation influence reducing human wildlife conflict in Kenya to a great extent. The found that combined conservation and sustainable development and allow local communities into endeavours to conserve wildlife, conservation efforts are doomed to fail.

5.3 Discussion

The general objective of this study was to determine the influence of Kenya wildlife conservation education program on reducing human wildlife conflict. The study found that KWS conservation program influence human wildlife conflict in the region. This study found that KWS conservation education program help in reducing human wildlife conflict in Kenya to great extent. The study also found that Kenyans are aware of the KWS education program.

The study found that wildlife education centres contribute to the reducing human wildlife Conflict in Kenya to great extent. The study reveals that KWS education program affects human-wildlife through performing retaliatory killings of predators, human encroachment into the park, hunting, conversion of land for agriculture, conservation of biological resources as one of the key national obligations of the Kenya Government for agriculture and Animal killing by wildlife. These findings are in agreement with Muruthi et al. (2006) who found that in 1996 and 1997 at least 15 elephants, representing three-quarters of the local population's mortality, had been killed in conflict situations with local people. The main problems in the Kilimanjaro Heartland are crop damage, competition for water and grazing, killing of livestock and risk of disease transmission, and human fatalities (Kangwana, 2003).

The study established that KWS have outreach sessions to schools and the community on HWC. On how wildlife education centres contribute to the reducing human wildlife Conflict in Kenya, the study found that wildlife education centres help in reducing human wildlife conflict through information sharing among the stakeholders, increased community understanding on the value of wildlife, improved policing of the natural resources by the government, and reduced external costs to local communities. Okelloet *al.*, (2001) revealed that Kenya's national economy is predominantly hinged on biological resources, wildlife protected areas are an important asset from which a significant amount of foreign exchange has been derived in the past few decades.

The schools and community benefit from the KWS education office through increased understanding of wildlife, their habitats and the need for conservation of the wildlife and natural resources; the importance of healthy environments, water availability and usage;

interpretative tours and game drives and reduced external costs from wildlife attack. The study found that the effectiveness of conservation education in reducing the human wildlife Conflict in Kenya can be enhanced through government involvement, community participation, relevant policies, involvement of qualified personnel in the program, and reduced bureaucracy in the Kenya wildlife service. Sindiga (2003), revealed that the absence of a land use policy for the country has led to endless sub division of wildlife dispersal areas and wildlife corridors. The current challenges facing wildlife conservation and management outside protected areas, (Mwale, 2000).

The first objective of this study was to determine the influence of wildlife conservation strategy in reducing human wildlife conflict Kenya. The study also found that wildlife conservation strategy affects human wildlife Conflict in Kenya. The study reveals that there has been reduction in killing of livestock and risk of disease transmission through community based conservation as shown by mean of 1.71, conservation of biological resources is one of the key national obligations of the Kenya Government, through community based conservation strategies there has been reduced competition for water and grazing, community based conservation strategy helps in reducing crop damage, conflict between livestock owners and wild carnivores due to predation has been significantly reduced and that community based conservation strategies have helped in reducing human fatalities which are caused by human wildlife conflict, The role of wildlife in the economic development of the country needs to be communicated to the people that bear the brunt of hosting wildlife on their land, (Okello et al., 2001).

The study found that wildlife conservation strategy help in in reducing human wildlife conflict in Kenya by establishing practical mechanism for benefit sharing with relevant

stakeholders through consultation, negotiation and consensus building; providing required support for community projects; establishing mechanism to minimize conflicts; protect people and their property from injury or damage caused by wildlife and facilitate wildlife compensation claims. Managing wildlife outside protected areas means that the unit has to interact with: members of parliament, Councilor's, opinion leaders, rural communities, provincial administration, NGOs, Civil society, private ranchers and other relevant ministries at the grass-root level (Okello et al., 2001).

The second objective of this study was to determine the influence of extension services in reducing human wildlife conflict Kenya. The study found that extension services influence in reducing human wildlife conflict in Kenya. The study found that extension services influence in reducing human wildlife conflict in Kenya to great extent. The study reveals that the through extension service KWS has been able to improve their linkages, recognition and relationships with stakeholders as shown by mean of 1.80, Active community participation in wildlife conservation outside protected areas has helped in reducing human wildlife conflict, Wildlife education and extension services to the public support in wildlife conservation, Extension service contributes overall to the KWS mandate in terms of enhancing wildlife conservation and that Wildlife education and extension service help in protecting and management of wildlife in Kenya. A key function is to establish linkages and gain support form wildlife conservation with stakeholders and communities co existing with wildlife. KWS community wildlife programmes are hinged on the organization's mandate to conserve and manage wildlife outside protected areas (Okello & Kiringe, 2004).

The study on how extension services help in reducing human wildlife conflict in Kenya revealed that extension services help in reducing human wildlife conflict through

grants landowners use rights and cropping quotas, communication of the role of wildlife in economic development, increased community knowledge, established linkages, and increased support for wildlife conservation with stakeholders. Wildlife is an important natural resource in Kenya and is a major pillar of the tourism industry that generates substantial earnings annually (Waithaka, 2004).

The third objective of this study was to determine the influence of Conservation Education in reducing human wildlife conflict Kenya. The study found that Conservation Education influence reducing human wildlife conflict in Kenya to a great extent. The study found that sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management as shown by mean of 1.77, conservation education helps to minimize the conflicts between the local communities and those who manage national parks, conservation education ensures that the economic benefits from these natural resources are broadly shared among the stakeholders, and that community based national resource management helps in fostering local economic development and improving the standards of living of local communities, Furthermore, it made the policing of the natural resources in these protected areas expensive and in certain cases prohibitive (Songorwa *et al.*, 2000). An additional problem has been that the wildlife in the national parks frequently generate huge external costs to local communities by destroying their crops, preying on their livestock and endangering human life (Gadd, 2005).

The study found that conservation education impact the reducing human wildlife conflict by highlighting the direct benefits of conserving biodiversity, showing people ways in which to live side by side with wildlife, and suggesting ways in which people can turn the presence of wildlife on their land into a financially beneficial situation like by creating

conservation areas which will attract tourism. Gadd (2005) & Rozemeijer (2001) pointed out that such sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management.

The fourth objective of this study was to determine the influence of Community participation in reducing human wildlife conflict Kenya. The study found that community participation influence reducing human wildlife conflict in Kenya to a great extent. Nsanjara (1993) describes a pre-colonial, traditional Africa where local people practiced “conservation” in a way that today’s conservationists consider innovative and successful; only certain classes of people were allowed by the chief to hunt certain species of animals (now known as *controlled harvesting*), while other animals were considered sacred and could not be killed under normal circumstances.

The found that combined conservation and sustainable development and allow local communities into endeavours to conserve wildlife, conservation efforts are doomed to fail as shown by mean of 1.87, community wildlife conservation is based on the principle that local communities shall participate in and benefit from wildlife conservation, community-based conservation is an emerging strategy which reconciles conservation goals and human needs through community participation, community participation stems from the recognition that protected areas in Kenya will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure, and that community based conservation enhances nature conservation and providing social and economic gains for local people through their participation. They began to despise the wildlife departments, and the relationships between the two quickly fell apart (Nsanjara, 2003).

The study reveals that community participation helps in reducing human wildlife

conflict through appreciation of wildlife by community, development of effective policies on Human/wildlife conflict, assistance in wildlife killing by exposing the illegal poachers and embracing wildlife conservation programs by the government. The use of ITK is the first attempt to revisit the conservation methods of pre-colonial wildlife management, (Nsanjara, 2003).

5.4 Conclusions

The study concludes that KWS conservation program influence human wildlife conflict in Kenya. This study also concludes that KWS conservation education program help in reducing human wildlife conflict in Kenya to great extent. The study also concludes that most Kenyans are aware of the KWS education program. The study concludes that wildlife education centres contribute to the reducing human wildlife Conflict in Kenya. The study established that schools and the community benefit from KWS education office through outreach sessions on HWC.

The study concludes that wildlife conservation strategy affects human wildlife Conflict in Kenya. The study also concludes that there has been reduction in killing of livestock and risk of disease transmission through community based conservation. The study concludes that wildlife conservation strategy help in reducing human wildlife conflict by establishing practical mechanism for benefit sharing with relevant stakeholders through consultation, negotiation and consensus building.

The study concludes that extension services influence in reducing human wildlife conflict in Kenya. The study also concludes that extension services influence in reducing human wildlife conflict in Kenya to great extent.

The study concludes that conservation education influence reducing human wildlife conflict in Kenya to a great extent. The study concludes that sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management.

The study concludes that community participation influence reducing human wildlife conflict in Kenya. The study concludes that community participation influence reducing human wildlife conflict in Kenya to a great extent. The study concludes that combined conservation and sustainable development and allow local communities into endeavours to conserve wildlife, conservation efforts are doomed to fail.

5.5 Recommendations

From the findings and conclusions above the study makes the following recommendations

The KWS should involve qualified personnel in the program which would ensure that the activities are professionally handled hence an effective wildlife strategy. The Kenya wildlife service should establish practical mechanism for benefit sharing with relevant stakeholders through consultation, negotiation and consensus building, and facilitate wildlife compensation claims.

The government should increase the access of the KWS education services through awareness campaigns. The government should involve all the stakeholders in the development of policies on Human/wildlife conflict which would make the conservation program successful.

The government should grant landowners use rights and cropping quotas which will reduce the human wildlife conflict through setting the rules and boundaries. This would empower the wildlife conservation strategy. The government should embrace wildlife

conservation programs by setting up a special branch in the ministry of tourism which would deal with wildlife conservation program. The academic institutions should include wildlife conservation in their curriculum which would increase community awareness and participation.

5.6 Suggest Area For Further Research

The study sought to determine the influence of Kenya wildlife conservation education program on reducing human wildlife conflict: a case of Kenya Wildlife Service conservation education program. The study recommends an in-depth study should be carried out on the challenges facing Kenya wildlife conservation education program on reducing human wildlife conflict in Kenya.

REFERENCES

- Beresford, M. & Phillips, A. (2000): *Protected Landscapes: A Conservation Model for the 21st century. Forum 17(1): 15-26.* The Journal of George Wright Society. Hancock, Michigan, USA.
- Fabricius, C. (2004), "The Fundamentals of Community-Based Natural Resource Management", in Fabricius, C., Koch, E., Magome, H., Turner, S. (Eds), *Rights, Resources and Rural Development: Community-Based Natural Resource Management in Southern Africa*, Earthscan, London
- Fabricius, J. L.. (2005). Past and future carnivore extinctions: a phylogenetic perspective. Pages 11-34 in J. L. Gittleman, S. M. Funk, D. Macdonald, and R. K. Wayne, editors. *Carnivore Conservation*. Cambridge University Press, Cambridge, U. K.
- Gadd , V. Christensen. (2005). Primary production required to sustain global fisheries. *Nature 374:255-257.*
- Gadd, M.E. (2005), "Conservation Outside Of Parks: Attitudes of Local People in Laikipia", *Kenya, Environmental Conservation*, Vol. 32 No.1, pp.50-63.
- Gittleman, J. L., S. M. Funk, D. W. Macdonald, and R. K. Wayne, editors. (2001). *Carnivore Conservation*. Cambridge University Press, Cambridge, U. K.
- Hackel, H. (2009), "Contractual national parks and the Makuleke community", *Human Ecology*, Vol. 29 No.2, pp.135-55.
- Henry, P. M., and Buller, J. L.,. (2008). Human Domination of Earth's Ecosystems. *Science 277:494-499.*
- Hernes G., Maitlis, B. (2011), Sense-Making Theory and Practice: An Overview of User Interests in Knowledge Seeking and Use, *Journal of wildlife Management*, Vol. 2, No. 2, pp. 36-46.
- Homewood, K., and D. Brockington. (2009). Biodiversity, Conservation and Development in Mkomazi Game Reserve, Tanzania. *Global Ecology and Biogeography 8:301-313.*
- Homewood, M.K. (1992), "Why Masaai Mara is the most visited reserve in East Africa", in Gakahu, C.G. (Eds), *Tourist Attitudes and Use Impacts in Masaai Mara National Reserve*, Wildlife Conservation Society, New York, NY, pp.6-10.
- John, K, M and Knight, H . (2000). *AIDS and Violent Conflict in Africa*. Page 12. United States Institute of Peace, Washington D.C.
- Johnstone A (2000), *National Wildlife Refuge*, University of Chicago Press, Chicago, p. 35

- Kadzo Kangwana (2003). *Studying Elephants*. Dareesaalam. African Wildlife Foundation Nairobi, Kenya
- Kameri, C. (2002), "The opportunity costs of biodiversity conservation in Kenya", *Ecological Economics*, Vol. 12 No.2, pp.125-39.
- Kameri, P. M. (2007): Property Rights And Biodiversity Management In Kenya: The Case Of Land Tenure And Wildlife. – African Centre for Technology Studies (ACTS), Nairobi
- Kangwana, N.W., (2003), *Wildlife and People: Conflict and Conservation in Masaai Mara*, International Institute for Environment and Development (IIED), London, Kenya Wildlife and Development Series No. 14, .
- Kokai, M.K. (2002), "Why Masaai Mara Is The Most Visited Reserve In East Africa", in Gakahu, C.G. (Eds), *Tourist Attitudes and Use Impacts in Masaai Mara National Reserve*, Wildlife Conservation Society, New York, NY, pp.6-10.
- Laurance, W. F., and R. O. J. Bierregaard, editors , (2007). *Tropical Forest Remnants: Ecology, Management and Conservation Of Fragmented Communities*. University of Chicago Press, Chicago, Illinois.
- Laurence, E. W and M. Bierregard, M. A.. (2002). The Human Footprint and the Last of the Wild. *BioScience* 52:891-904.
- Mugabe, J. (2008): Biodiversity and Sustainable Development in Africa. – In: Mugabe, J. & Clark, N. (eds) *National systems of conservation and innovation in Africa*, African Centre for Technology Studies (ACTS), Nairobi, Kenya
- Muruthi P., (2005). *Reducing Human Wildlife Conflict*. African Wildlife Foundation, Nairobi, Kenya
- Mwale S. (2000): Changing Relationships: The History and Future Of Wildlife Conservation In Kenya. *Swara* 22(4): 11-17.
- Norton-Griffiths, M., Southey, C. (2005), "The Opportunity Costs of Biodiversity Conservation in Kenya", *Ecological Economics*, Vol. 12 No.2, pp.125-39.
- Norton-Griffiths M. (2005): Why Kenyan Conservation Is Failing. – *Swara* 19(6) and 20(1):6-8.
- Nsajara, W. F., (2003). *Tropical Forest Remnants: Ecology, Management and Conservation of Fragmented Communities*. University of Chicago Press, Chicago, Illinois.
- Nyamwaro, K.. (2009). Biodiversity, conservation and development in Mkomazi Game Reserve, Tanzania. *Global Ecology and Biogeography* 8:301-313.

- Okello, M.M., Kiringe, J.W. (2004), "Threats to Biodiversity and Their Implications in Protected and Adjacent Dispersal Areas of Kenya", *Journal of Sustainable Tourism*, Vol. 12 No.1, pp.55-69.
- Okello, M.M., Wishitemi, B.E. & Mwinzi, A.M. (2001): Relative Importance Of Conservation Areas In Kenya Based On Diverse Tourist Attractions. *The Journal of Tourism Studies* 12(1): 39-49.
- Ottichilo, W. (2000): An Analysis of Change in the Maasai-Mara Ecosystem Of Kenya. Ph.D. thesis, Wageningen University, Netherlands
- Pauly, D., and V. Christensen. (2005). Primary Production Required To Sustain Global Fisheries. *Nature* 374:255-257.
- Purvis, A., G. M. Mace, and J. L. Gittleman. (2001). Past and Future Carnivore Extinctions: A Phylogenetic Perspective. Pages 11-34 in J. L. Gittleman, S. M. Funk, D. Macdonald, and R. K. Wayne, editors. *Carnivore Conservation*. Cambridge University Press, Cambridge, U. K.
- Reid, H. (2001), "Contractual National Parks and the Makuleke Community", *Human Ecology*, Vol. 29 No.2, pp.135-55.
- Rozemeijer, N. (2001), *Community-based Tourism in Botswana, the SNV Experience in Three Community Tourism Projects (SNV/CBNRM Support Programme)*, SNV/CBNRM Support Programme, Botswana, .
- Sanderson, E. W., M. Jaiteh, M. A. Levy, K. H. Redford, A. V. Wannebo, and G. Woolmer. (2002). The Human Footprint And The Last Of The Wild. *BioScience* 52:891-904.
- Sanderson, J. L., S.. (2001). *Carnivore Conservation*. Cambridge University Press, Cambridge, U. K.
- Sindiga, I. (2005): Wildlife-based tourism in Kenya: Land use conflicts and government compensation policies over protected areas. *The Journal of Tourism Studies* 6(2): 45-55.
- Songorwa, A.N., Buhrs, T., Hughey, K. (2000), "Community-Based Wildlife Management in Africa: A Critical Assessment of the Literature", *Natural Resources Journal*, Vol. 40 No.3, pp.603-43.
- Sukumar, P. M.,. (2005). Human appropriation of the products of photosynthesis. *BioScience* 36:368-373.
- Thirgood, S., R. Woodroffe, and A. Rabinowitz. (2005). The Impact of Human-Wildlife Conflict On Human Lives And Livelihoods. Pages 13-26 in R. Woodroffe, S. Thirgood, and A. Rabinowitz, editors. *People and Wildlife: Conflict or Coexistence?* Cambridge University Press, Cambridge, U.K.

- USIP. (2001). AIDS and Violent Conflict In Africa. Page 12. United States Institute of Peace, Washington D.C.
- Vitousek, P. M., H. A. Mooney, J. Lubchenco, and J. M. Melillo. (2007). Human Domination of Earth's Ecosystems. *Science* 277:494-499.
- Vitousek, P. M., P. R. Ehrlich, A. A. Ehrlich, and P. A. Matson. (2006). Human Appropriation of the Products of Photosynthesis. *BioScience* 36:368-373.
- Waithaka, J. (2004), "Masaaai Mara: An Ecosystem under Siege: An African Case Study on the Societal Dimension of Rangeland Conservation", *African Journal of Range and Forage Science*, Vol. 21 No.2, pp.79-88.
- Walpole, M.J., Karanja, G.G., Sitati, N.W., Leader-Williams, N. (2003), *Wildlife and People: Conflict and Conservation in Masaaai Mara*, International Institute for Environment and Development (IIED), London, Kenya Wildlife and Development Series No. 14, .
- Weick, Jan-Hendrik B., Claus K. (2009), *Owls of the World*, London, A&C Black publishers
- Weick, R. (1995). The Sense-Making Theory-An Alternative to Intermediary-Centered Approaches in Wildlife Management. Pp 149-164, London: Taylor Graham.
- Whiteman G. and Cooper. W, (2011). Ecological Sense making. *Academy Of Management Journal*, Vol. 54, No 5, pp. 889-911.
- Woodroffe, S., R.. (2005). The impact of human-wildlife conflict on human lives and livelihoods. Pages 13-26 in R. Woodroffe, S. Thirgood, and A. Rabinowitz, editors. *People and Wildlife: Conflict or Coexistence?* Cambridge University Press, Cambridge, U.K.

APPENDICES

Appendix I: Transmittal Letter

From: Farhana Abudulghafur

To: Respondent

Dear, Sir/Madam,

RE: Questionnaire

I am a student at University Of Nairobi pursuing a degree in Master of Art in Project planning and Management. In order to fulfill one of the requirements of the MA course at University of Nairobi, I am conducting a study on **Influence of Kenya wildlife conservation education program on reducing human wildlife conflict: a case of Kenya Wildlife Service Conservation Education Program**

The results of the questionnaires will be used purely for academic purposes and will not impact your current job in any way or form. All information obtained will be treated with utmost confidentiality.

Thank you for taking your time to complete the questionnaire.

Yours sincerely,

Farhana Abudulghafur

MA Student, UoN

Appendix II: Staff Questionnaire

Part A: Background Information

1. Gender of the respondent:

Female [] Male []

2. Age of the respondent

20 to 30 years [] 31 to 40 years []

41 to 50 years [] Above 51 years []

3. Length of time in the organization

0 to 5 years [] 6 to 10 years []

11 to 15 years [] Above 15 years []

Part B: Influence of KWS conservation education in reducing Human wildlife Conflict

4. Does KWS conservation education influence human wildlife conflict in the region?

Yes [] no []

5. To what extent does the KWS conservation education program help in reducing human wildlife conflict?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

6. Does wildlife education centres contribute to the reducing human wildlife Conflict in Kenya

Yes [] no []

7. To what extent does wildlife education centres contribute to the reducing human wildlife Conflict in Kenya?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

8. Does KWS have outreach sessions to schools and the community on HWC?

Yes [] no []

9. How does wildlife education centres contribute to the reducing human wildlife Conflict in Kenya

.....
.....
.....

10. How does the schools and community benefit from the KWS education office?

.....
.....
.....

11. What should be does to enhance the effectiveness of conservation education in reducing the human wildlife Conflict in Kenya

.....
.....
.....

Influence of wildlife conservation strategy in reducing human wildlife conflict

12. In your opinion, does wildlife conservation strategy influence the reducing human wildlife conflict in Kenya?

Yes [] No []

13. To what extent do you agree with the following statement relating to the influence of wildlife conservation strategy in reducing human wildlife conflict?

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree
Community based conservation strategy helps in reducing crop damage					
Through community based conservation strategies there has been reduced competition for water and grazing					
There has been reduction in killing of livestock and risk of disease transmission through community based conservation					
Community based conservation strategies have helped in reducing human fatalities which are caused by human wildlife conflict					
Conflict between livestock owners and wild carnivores due to predation has been significantly reduced					
conservation of biological resources is one of the key national obligations of the Kenya Government					

14. Kindly indicate in your opinion, how else does wildlife conservation strategy influence the reduction of human wildlife conflict in Kenya; that is not mentioned above?

.....

.....

.....

Impact of extension services in reducing human wildlife conflict

15. In your opinion, do extension services influence the reducing human wildlife conflict in Kenya? Yes () No ()

16. To what extent do you agree with the following statement relating to the influence of extension services in reducing human wildlife conflict?

Attributes	Strongly agree	Agree	Moderate	Disagree	Strongly disagree
Wildlife education and extension services to the public support in wildlife conservation.					
Extension service contributes overall to the KWS mandate in terms of enhancing wildlife conservation					
Wildlife education and extension service help in protecting and management of wildlife in Kenya					
Through extension service KWS has been able to improve their linkages, recognition and relationships with stakeholders					
Active community participation in wildlife conservation outside protected areas has helped in reducing human wildlife conflict					

17. Kindly indicate in your opinion, how else does extension services in reducing human wildlife conflict in Kenya; that is not mentioned above?

.....

.....

.....

Influence of Conservation Education in Reducing Human Wildlife Conflict

18. In your opinion, does conservation education impact reducing human wildlife conflict in Kenya?

Yes [] No []

19. To what extent do you agree with the following statement relating to the influence of conservation education in reducing human wildlife conflict?

Attribute	Strongly agree	Agree	Moderate	Disagree	Strongly disagree
Conservation education helps to minimize the conflicts between the local communities and those who manage national parks					
Conservation education ensures that the economic benefits from these natural resources are broadly shared among the stakeholders					
Sharing of the economic benefits from wildlife is critical if local communities are to have an incentive to protect the wildlife and participate in their management					
Community based national resource management helps in fostering local economic development and improving the standards of living of local communities					

20. Kindly indicate in your opinion, how else does conservation education impact reducing human wildlife conflict in Kenya; that is not mentioned above?

.....

.....

.....

Influence of Community Participation in Reducing Human Wildlife Conflict

21. In your opinion, does community participation in help in reducing human wildlife conflict in Kenya?

Yes [] No []

22. To what extent do you agree with the following statement relating to the influence of community participation in reducing human wildlife conflict?

Attributes	Strongly agree	Agree	Moderate	Disagree	Strongly disagree
Community wildlife conservation is based on the principle that local communities shall participate in and benefit from wildlife conservation					
Community participation stems from the recognition that protected areas in Kenya will survive in so far as they address human concerns and that the future of protected areas that do not have the support of local people is insecure					
Community-based conservation is an emerging strategy which reconciles conservation goals and human needs through community participation					
Community based conservation enhances nature conservation					

and providing social and economic gains for local people through their participation					
Combined conservation and sustainable development and allow local communities into endeavors to conserve wildlife, conservation efforts are doomed to fail					

23. Kindly indicate in your opinion, how else does community participation in help in reducing human wildlife conflict in Kenya; that is not mentioned above?

.....

.....

Thank you

Appendix III : Community Questionnaire

Part A: Background Information

1. Gender of the respondent:

Female [] Male []

2. Age of the respondent

20 to 30 years [] 31 to 40 years []

41 to 50 years [] Above 51 years []

3. How long have you been in this region?

0 to 5 years [] 6 to 10 years []

11 to 15 years [] Above 15 years []

Part B: Influence of Community wildlife strategies in reducing Human wildlife Conflict

4. Are you aware of the KWS conservation education program in the region?

Yes [] no []

5. To what extent does the KWS conservation education program help in reducing the following?

	Very great extent	Great extent	Moderate	Less extent	Not at all
Hunting					
Animal killing by wildlife					
Human encroachment into the park					
Converting land for agriculture					
Performing retaliatory killings of predators					

6. To what extent does the KWS conservation education program help in reducing human wildlife conflict?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

7. Are you aware of the wildlife education centre in the region?

Yes [] no []

8. Does wildlife education centres contribute to the reducing human wildlife Conflict in Kenya

Yes [] no []

9. To what extent does wildlife education centres contribute to the reducing human wildlife Conflict in Kenya?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

10. Does KWS have outreach sessions to schools and the community on HWC?

Yes [] no []

11. To what extent do schools and the community learn from the KWS centers?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

12. Do you think that the KWS education program helps to reduce HWC?

Yes [] no []

13. If yes, to what extent?

Very great extent []

Great extent []

Moderate extent []

Less extent []

Not at all []

14. What should be done to enhance the effectiveness of conservation education in reducing the human wildlife Conflict in Kenya

.....
.....
.....

Appendix IV : Research Permit