



UNIVERSITY OF NAIROBI

INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES

**HUMAN WILDLIFE CONFLICT AS A THREAT TO HUMAN SECURITY IN
SOUTHERN AFRICA: A CASE OF NORTHERN BOTSWANA (2008 – 2018)**

ELIAS SEETSO

REG NO: R50/35349/2019

**RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT FOR
THE AWARD OF MASTER OF ARTS DEGREE IN INTERNATIONAL
STUDIES AT THE INSTITUTE OF DIPLOMACY AND INTERNATIONAL
STUDIES**

UNIVERSITY OF NAIROBI

JUNE, 2020

DECLARATION

This research project is my original work and has not been submitted for examination in any other University

Signature..... Date.....

Elias Seetso

This research project has been submitted with my approval as University Supervisor.

Signature..... Date.....

Dr. Martin Ouma

Institute of Diplomacy and International Studies

University of Nairobi

DEDICATION

I dedicate my success to my family; my wife Thandi and children who supported me throughout the difficult times of my studies. I also wish to thank the leadership of my organization, the Botswana Defence Force, especially the Commander Lt General Placid Diratsagae Segokgo for portraying his faith on me and giving me the opportunity to learn at this prestigious institute of learning.

ACKNOWLEDGEMENT

I would like to thank the almighty God for his amazing Grace and the Government of Botswana for sponsorship of the Course. I also acknowledge the National Defence College, Kenya together with the Leadership and the entire staff. I also acknowledge the efforts by the lecturers and my supervisor Dr. Martin Ouma and all the Botswana team that assisted with data collection.

ABSTRACT

Human Wildlife Conflict has been a protracted socio-economic challenge that confront all global human and wildlife habitats. Given its severity in majority of African states, where variety of wild animal population are found, the challenge presents a continental level threat to human security, which calls for a holistic policy and academic analysis pursued by this study. To better comprehend the challenge of HWC, as a challenge to human security, this study reviews a case of Northern Botswana where the HWC has been persistent for decades, with a multi-dimensional consequences which impacts on human security in different ways. The study has three objectives which are, firstly to determine the extent to which the HWC is a threat to human-security in Northern Botswana, secondly, to investigate the role of international community in HWC in Northern Botswana and thirdly, to evaluate the current approaches used to manage HWC in Northern Botswana. This study adopted two theoretical foundations: Social Conflict Theory and Stakeholder Theory. Based on the exploratory research design, data was collected from 104 persons (90 households in Chobe District, 4 officers in crop sector and livestock sector, 2 wildlife managers, 2 traditional leaders, 2 military officials and 4 representatives of the international community). Data was gathered through use of questionnaires as well as desktop-review of existing literature. Data was analyzed using SPSS and conceptual content analysis techniques. The findings obtained shows that, HWC occur due to encroachment of people on wildlife habitat. As a result, both parties compete for scarce resources, which leads to conflict that negatively affects humans' social, cultural and economic life. Further, the international community plays a great role in wildlife conservation in Botswana, through funding and formulation of conservation policies, which are domesticated into national policies. Lastly, the government of Botswana has initiated various strategies and approaches aimed at combating HWC. However, their effectiveness are outweighed by myriad of challenges, which require scientific evidence and engagement of all stakeholders in curbing this menace. Various recommendations can be deduced from the study which include; there is need to engage all the stakeholders in formulating strategies to mitigate HWC, with solutions that are not imported from outside, but coming from the community and suitable to the local situation. Additionally, the private sector investment should be engaged in the CBNRM identified projects in the communities, to expand the projects and create more opportunities and employment, in order to reduce reliance on hunting and dependency syndrome from government

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	viii
LIST OF TABLES	ix
ACRONYMS AND ABBREVIATIONS	x
CHAPTER ONE	1
INTRODUCTION AND BACKGROUND INFORMATION	1
1.0 Introduction	1
1.1 Background of the Study	1
1.2 Statement of the Research Problem.....	4
1.3 Research Questions	5
1.4 Research Objectives	5
1.5 Empirical Literature Review	6
1.5.1 The Extent to Which Human Wildlife Conflict is a Threat to Human Security ...	9
1.5.2 Influence of International Community on Human-Wildlife Conflict.....	10
1.5.3 Approaches Used to Manage Human Wildlife Conflict	11
1.5.4 Gaps in the Literature Review	13
1.6 Research Hypothesis	14
1.7 Justification of the Study	14
1.7.1 Academic Justification.....	14
1.7.2 Policy Justification	14
1.7.3 To the General Public	14
1.8 Theoretical Framework.....	15
1.8.1 Social Conflict Theory.....	15
1.8.2 Stakeholder Theory	16
1.8.3 Human Wildlife Conflict as Threat to Human Security.....	17
1.9 Research Methodology	18
1.9.1 Study Design	19
1.9.2 Study Area.....	19
1.9.3 Sampling Technique and Sample Size	19
1.9.4 Data Collection Methods.....	21
1.9.5 Instrument Reliability	22
1.9.6 Instrument Validity	22
1.9.7 Data Analysis and Data Representation	23
1.9.8 Legal and Ethical Considerations.....	23
1.10 Chapter Outline.....	23
CHAPTER TWO	24
THE EXTENT TO WHICH HUMAN WILDLIFE CONFLICT IS A THREAT TO HUMAN SECURITY IN NORTHERN BOTSWANA	24
2.1 Introduction	24
2.2 Response Rate	24

2.3 Demographic Characteristics	25
2.3.1 Gender of Respondents.....	25
2.3.2 Age of Respondents	25
2.3.3 Level of Education of Respondents	26
2.3.4 Marital Status of the respondents	27
2.3.5 Occupation of the Respondents	27
2.4 Impact of HWC in Northern Botswana	28
2.4.1 Psychological aspect of Human Security	32
2.4.2 Economic aspect of threat to Human Security	33
2.4.3 Physical aspect of Threat to Human Security	35
2.5 Chapter Summary	36
CHAPTER THREE.....	37
HOW THE INTERNATIONAL COMMUNITY HAS INFLUENCED HUMAN WILDLIFE CONFLICT IN NORTHERN BOTSWANA.....	37
3.0 Introduction	37
3.1 Review of Existing International Conventions/Agreements on HWC	37
3.2 Botswana’s Ratification of the KAZA TFCA Treaty	39
3.3 The Implication of Botswana’s ratification of the KAZA TFCA Treaty.....	40
3.1.2 The link between KAZA TFCA Treaty and the Local Communities	41
3.2 The role of International Community in mitigating HWC.....	45
3.3 Banning of Hunting due to International Cooperation	46
3.4 Chapter Summary	47
CHAPTER FOUR.....	48
STRATEGIES USED TO MANAGE HUMAN WILDLIFE CONFLICT IN NORTHERN BOTSWANA.....	48
4.1 Introduction	48
4.2 Evaluation of the approaches	48
4.2.1 Fencing.....	50
4.2.2 Chili Pepper.....	51
4.2.3 Translocation.....	51
4.2.4 Community Based Natural Resource Management.....	52
4.2.5 Demarcated Protected Areas	53
4.3 Chapter Summary	54
CHAPTER FIVE.....	55
SUMMARY, CONCLUSION AND RECOMMENDATIONS	55
5.1 Introduction	55
5.2 Summary of Findings	55
5.3 Conclusion	56
5.4 Recommendations.....	57
REFERENCES	59
Appendix 1:Study Area	64
Appendix 2: Research Authorization Letter by the University	65
Appendix 3: Research Questionnaire.....	66
Appendix 4: Summary of Approaches Used.....	72

Appendix 5: Request for additional data from key informants Group of the International Community	73
Appendix 6: Request for additional data from Department of Wildlife and National Parks	75
Appendix 7: Responses from key informants from DWNP	78

LIST OF FIGURES

Figure 1.1 Conceptual Framework.....	17
Figure 2.1 Genders of Respondents.....	25
Figure 2.2: Age of the Respondents.....	26
Figure 2.3: Education level of the Respondents.....	26
Figure 2.4: Marital Status of the Respondents	27
Figure 2.5: Employment Status of Respondents	28
Figure 2.6: Impact of HWC in Northern Botswana.....	29
Figure 2.7 Assessment of impact on HWC.....	32
Figure 2.8 Physical Threat to Human Security	35
Figure 3.1: HWC being sustained by Treaties.....	42
Figure 3.2 International Community and HWC.....	43

LIST OF TABLES

Table 1:1 Sample Size	20
Table 1:2 Target Population, Sample Size and Sampling Technique	21
Table 2.1 Response Rate	24
Table 4.1 Approach's to mitigate HWC in Northern Botswana	49

ACRONYMS AND ABBREVIATIONS

CBD	Convention on Biological Diversity
CBNRM	Community-based Natural Resource Management
CECT	Chobe Enclave Community Trust
CIT	Convention on International Trade
CNP	Chobe National Park
CoP	Conference of the Parties
CSO	Civil Society Organizations
CSR	Corporate Social Responsibility
DWNP	Department of Wildlife and National Parks
EPI	Elephant Protection Initiative
EU	European commission
FAO	Food and Agricultural Organization
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
HEC	Human-Elephant Conflict
IUCN	International Union for Conservation of Nature
JVP	Joint Venture Partnership
KCS	Kalahari Conservation Society
KNP	Kibale National Park
KZTCA	Kavango Zambezi Trans-frontier Conservation Area
NGO'S	Non-Governmental Organizations
SARPO	Southern African Regional Programme Office
SPSS	Statistical Package for Social Scientists
STMT	Sankuyo Tshwaragano Management Trust

SWCF	Save World Conservation Fund
TFCA	Trans-Frontier Conservation Area
TV	Television
UNDP	United Nations Development Programme
US	United State
WMA's	Wildlife Management Areas
WWF	World Wildlife Fund
WWFN	World Wide Fund for Nature

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.0 Introduction

Human wildlife conflict is a natural occurrence that happens whenever human beings and wildlife competes for the same scarce resources and landscape. The problem is experienced globally, and in different forms by all countries irrespective of whether the country is developed or not. This study therefore examines the HWC as a menace to human security in southern Africa: a case of northern Botswana (2008-2018). This chapter therefore covers “background to the study, problem statement, research questions, research objectives, literature review, hypothesis, justification of the study, theoretical framework and the study methodology”.

1.1 Background of the Study

HWC arises when wildlife infringe on human beings causing damage to property, loss of life and other destructions.¹ It is a natural occurrence that happens whenever people and wildlife competes for the same scarce resources and landscape. The problem is experienced globally, and in different forms by all countries irrespective of whether the country is developed or not. However, what may differ between the developed and undeveloped nations is the level of impact or threat on human security. For instance, there are reported cases of human beings and crocodile conflict in 33 countries globally. In North America, bears are notorious of raiding dustbins on the edge of towns that are near the national parks causing disorder and waking residents at night. Deers have been reported to have collisions with automobiles injuring thousands of people and destroying billions of properties. For

¹Gusset, M., Swarner, M.J., Mponwane, L., & Keletile, K. (2009). Human-wildlife conflict in northern Botswana: livestock predation by Endangered African wild dog *Lycaon pictus* and other carnivores. *Biodiversity and Conservation*, 43(1), 67-72

instance between 1982 and 1996 wolves were creating havoc in Canada killing domestic animals.²

In Europe, several wild animals have been accused of destroying crops and forests. Some have been killed outside the hunting season due to the damage they cause to the community. In 2007, France quantified the losses on crops caused by these animals to 22 million Euros. Beers and wolves are responsible for attacking sheep but the government has always been responsible and compensated the farmers against the damages.³ In Australia, rabbits have caused losses in productivity as a result of eating forage which has in turn caused lower lambing in sheep, reduction in livestock and death of livestock.

Several incidences of HWC have been reported across African countries. The larger herbivores such as buffalo, elephants, hippopotamus and elephants and other carnivore's animals are viewed as animals can cause great harm to human beings and are also responsible for most of the HWC in Africa. The impact of the activities of these animals differ in intensity and in some instances, can be enormous, causing a lot of trauma especially when human beings are killed and their livestock and crops are either killed or damaged.⁴

The HWC has been illustrated by the “conflict in Northern Botswana” where there has been encroachment of livestock farmers into wildlife habitat, adjacent to “Chobe National park and Moremi Game reserve” resulting into the increase in livestock predation reports.⁵ Even though the livestock losses have not been

²USDA. (2006). *The facts about Wildlife Services-wildlife damage management*. Washington, DC: USDA

³Weladji, R.B., &Tchamba, M.N. (2003).Conflict between people and protected areas within the Bénoué Wildlife Conservation Area, North Cameroon. *Oryx*, 37(1), 72-79.

⁴FAO. (2009). *Human wildlife conflict in Africa: Causes, Consequences and Management Strategies*. Rome: FAO

⁵Gusset, M.,Swarner, M.J.,Mponwane, L., & Keletile, K.(2009). Human-wildlife conflict in northern Botswana: livestock predation by Endangered African wild dog *Lycaon pictus* and other carnivores. *Biodiversity and Conservation*, 43(1), 67-72

quantified, the government of Botswana has spent large amount of funds in compensation. Elephants have the highest reported incidences of intrusion into the farms, destroying crops and injuring human beings.⁶ From the year 2008, wildlife population has grown spontaneously and today, Botswana is a home to 130,000 elephants which is second to none. This is because of the protection controls and sound conservation management regime that the country has that provides a conducive environment for wildlife to multiply. Government employs the military to reinforce security by augmenting the strength of the DWNP in the national game reserves. This may have contributed to the increase in elephant population in the national parks exceeding carrying capacities of these parks. Currently, “Chobe National Park” has around 120,000 elephant population. The government of Botswana in 2019, decided to lift the ban on elephants hunting as a result of increasing pressure due to the escalating HWC.⁷

Human wildlife conflict affect the tourism and human security which further exacerbates other aspects of security such as food security, personal security and slows down economy growth. The environment close to the” Chobe National Park” is home to the rural subsistence communities that rely on environmental resources such as agro pastoralism and nomadic pastoralism. The unresolved human wildlife conflict has led to the environmental change and degradation in Northern Botswana. Any property that is communally owned or those that are owned by the government have been treated as free resources and competition for these resources has led to their misuse leading to other consequences.⁸ The misunderstandings and conflict over natural resources has led to loss of life (both humans and wildlife), loss of property,

⁶ Ibid

⁷BBC News. (2019, July). Botswana lifts ban on elephant hunting. *BBC News*.

⁸Darkoh, MBK., & Mbaiwa, J. E. (2009). Land use and resource conflict in the OD, Botswana. *African Journal of Ecology*, 47(1), 161-165.

destruction of crops, loss of sources of livelihoods, trauma and resentment amongst the people living close to the CNP. There has never been a win-win situation where the stakeholders of the national park chose to collaborate and make concessions, as they share the problem, engage with clear goals and make awareness of trade-offs.⁹

1.2 Statement of the Research Problem

Incidences of HWC in northern Botswana have increased tremendously in recent years, attracting attention of both the international and the local communities in equal proportions. The increased trends of reports on incidences of the interaction between elephants and human beings in the fields and villages in the nearby national parks and water sources, have led to elephants causing fatalities to human beings, injuries and maiming, destruction of crops in the fields, leading to fear and trauma. These incidences have generated a lot of public interest. While the general trend from the international perspective has been leaning towards banning elephant hunting in order to curb illicit trade of ivory, Botswana is increasingly under pressure from the local communities, to come to the plight of her own people by lifting the ban on hunting, in order to reduce the elephant population that is perceived to have overgrown the national park's holding levels.

Historically, the government have been maintaining a policy of compensation with a view of reducing the effects of damage caused to property by elephants and other wildlife on human beings in order to mitigate the loss and the impact on human security. However, this has also created a negative perception from the general public who views that the policy does not address the problem for more or less of the following reasons. Firstly, the amount of compensation is not commensurate with the value of the loss, damage or loss to property. Secondly, it could be argued that,

⁹Redpath, S. M., Young, J., Evely, A., Adams, W. M., Sutherland, W. J., & Whitehouse, A. (2013). Understanding and managing conservation conflict. *Trends in Ecology and Evolution*, 28 (2), 100-109.

compensation cannot replace the loss. Thirdly, the perception of the community is that, government care more about wildlife than her own people. Lastly, the government is considering suspension of hunting, so as to reduce the number of elephants through trophy hunting in order to reduce threat to human security. However, this action has elicited war between the government and international community that views the intent as insensitive to the cause of wildlife. HWC in northern Botswana been continuing, and if not addressed adequately, it threatens to dent the reputation which the country has built overtime with respect to conservation.

HWC is a universal problem with wide ranging impact and varying degree of threat on human security. Due to emerging trend on population growth, change of habitat, distribution of different animals, effect of global warming such as increased heat and draught have contributed to shortage of natural resources such as water as well as availability of natural fodder. This has seen wildlife moving from one place to another therefore occupying natural habitat owned by human beings. However, this has created competition for resources due to quest for survival.

1.3 Research Questions

- 1.3.1 To what extent is HWC a threat to human security in Northern Botswana?
- 1.3.2 To what extent has the international community influenced HWC in Northern Botswana?
- 1.3.3 How effective are some of the current approaches used to manage HWC in Northern Botswana.?

1.4 Research Objectives

The broad objective of this study is to investigate HWC as a Threat to Human Security in Southern Africa using the Northern Botswana as a case study.

The specific objectives are:

1.4.1 To determine the extent to which the HWC is a threat to human- security in Northern Botswana

1.4.2 To investigate the role of international community in HWC in Northern Botswana.

1.4.3 Evaluate the current approaches used to manage HWC in Northern Botswana.

1.5 Empirical Literature Review

As the population increase and human activities become more rampant, this affect the wildlife and ecosystem, that in turn results to HWC. The conflict leads to displacement of wild life. HWC occurs when the human population overlaps within the wildlife space, resulting to competition for resources. Conflict can result into damages or loss of life to human and wildlife, injuries, destruction of crops and struggle for natural resources. As wildlife population increase, wildlife habitat is depleted, hence displacing them. This leads to reduction of natural pray/food for wildlife, whereby the animals are forced to seek for alternative sources of food. As the human populations expand, they create new food resources, such as crops and fruits which further attract the wildlife hence causing conflict. As both the population of wildlife and human increase, they overlap the geographical areas of interaction, thus increasing the physical conflict. The un-natural environment created by human in such areas, is not fit for wildlife existence hence potential destructive threat. Exploitation of natural resources also led to competition for food resources.¹⁰

Globally, HWC is not a new phenomenon but has existed for centuries and various have been developed to manage it. Historical records have documented people conflicting with wildlife across the globe. From the earliest Greece civilizations wild animals have wandered from their wild habitat and encroached

¹⁰Fedriani, JM., García, L., Sánchez, M., Calderon, J., & Ramo, C. (2017). Long-term impact of protected colonial birds on a jeopardized cork oak population: conservation bias leads to restoration failure. *Journal of Applied Ecology*, 54(2), 450-458.

human beings habitat occasioning unrepresented destruction that has led to socio-economic burden to the world. For instance, China has documented disastrous socio-economic cost attributed to WHC conflict before it adopted long lasting and sustainable strategies of mitigating the problem.¹¹ In 300BC, records exist of Elephants raiding crops in Asia particularly in China.¹² Many people lost their lives (estimated to be in thousands) resulting from tiger attacks. Consequently, many tigers were killed by human beings reducing their population drastically. This led to a war of nature by Mao Zedong in eradicating tigers in China. During those days, agricultural technologies and developments such as repellents and poison were used to reduce wildlife damage.¹³

Additionally, polar bears and tigers have caused deaths and critical injuries among human beings and livestock which characterises HWC in Europe. As a result people have hounded and greatly reduced their numbers in both Asia, Europe and North America.¹⁴ Elephants are some of the herbivores that have also caused significant damage to vegetation and crops in Asia.¹⁵ The cost of HWC in Europe have costed the government millions of dollars to contain.¹⁶ Today in Europe, there are millions of starlings that eat cattle feed, therefore exposing the livestock to disease transmission through contaminating the food and water troughs.¹⁷ In North America,

¹¹ Conover, MR. (2002). *Resolving Human-Wildlife Conflict: The Science of Wildlife Damage Management*. Boca Raton, FL: CRC Press Comprehensive summary of animal damage management

¹² Sukumar, R. (1989). *The Asian Elephant: Ecology and Management*. Cambridge, UK: Cambridge University Press

¹³ Philip, N. (2010). Human–Wildlife Conflict and Coexistence. *The Annual Review of Environment and Resource*, 41(1), 143–71

¹⁴ Gittleman, JL., Funk, SL., Macdonald, DW., & Wayne, RK. (2001). *Carnivore Conservation*. Cambridge, UK: Cambridge University Press

¹⁵ Hoare, R. (2012). Lessons from 15 years of human elephant conflict mitigation: management considerations involving biological, physical and governance issues in Africa. *Pachyderm*, 51(51), 60–74

¹⁶ Schley, L., Dufrene, M., Krier, A., & Frantz, A. (2008). Patterns of crop damage by wild boar (*Sus scrofa*) in Luxembourg over a 10-year period. *European Journal of Wildlife Research*, 54(4), 589–99

¹⁷APHIS-NWRC. (2015). *Innovative Solutions to Human-Wildlife Conflict: National Wildlife Research Center Accomplishments, 2014*. Animal and Plant Health Inspection Service Miscellaneous

there are many agricultural pests such as birds and starlings, which are considered exotic and are causing wanton damage.¹⁸ Domestic animals, feral cats and dogs are important predators that have attacked people and livestock, thereby causing wildlife disturbance and disease transmission. Elsewhere, in the US, domestic cats kill billions of birds and mammals annually,¹⁹ while in North America and Europe, Wolves kill hunting dogs, causing emotional and socioeconomic trauma for dog owners.²⁰

In Africa, HWC has been observed and documented in various countries such as “Uganda, Kenya, Nigeria, Ghana, Congo, Zanzibar, Tanzania and South Africa”, among others. As a result, there are documentations of human being encroaching into national reserves in these countries.²¹ As human population grow and more settlements established, the land cover is converted into other economically viable activities for livelihood sustainability. A study conducted in Kenya in Samburu, Taita, Kwale and Trans-Mara illuminated the interlinkage between the increasing conflict and land conversion to small-scale farming. Villagers living adjacent to Tsavo in Kenya for instance have suffered conflict leading to destruction of crops, livestock predation, destruction of water sources and fences.²²

In Botswana, elephants have wreaked havoc to people living adjacent to the conservation areas, where in collaboration with rhinos and other primates have exacerbated HWC phenomena which warranted this study. The menace caused by elephants compares similarly to the incidences experienced in KNP in Uganda, where

Publication No. 1611. Fort Collins, CO: US Department Agriculture Animal Plant Health Inspection service

¹⁸ Reidinger, RF., & Miller, JE. (2013). *Wildlife Damage Management: Prevention, Problem Solving, and Conflict Resolution*. Baltimore, MD: Johns Hopkins University Press

¹⁹Loss, SR., Will, T., & Marra, PP. (2013). The impact of free-ranging domestic cats on wildlife of the United States. *Nature communication*, 4(1386). doi.org/10.1038/ncomms2380

²⁰Lescureux, N., & Linnell, JDC. (2014). Warring brothers: the complex interactions between wolves (*Canis lupus*) and dogs. *Biological Conservation*, 171(233), 232–45

²¹ Benjamin, N. (2019). *An Assessment of the Human-Wildlife Conflict across Africa*. Available at: <https://www.intechopen.com/online-first/an-assessment-of-the-human-wildlife-conflict-across-africa>

²² Ibid

the African bush elephant accounts for approximately 7% of annual crop loss. Additionally, wild herbivores have threatened human socio-economic wellbeing by perennially destroying crops around Jazoni forest in Unguja, Zanzibar. The loss of coconut yields in Zanzibar is attributed to endangered primates such as the red colobus. In Northern Botswana, there are hundreds of free ranging elephants that share habitat with local people, but when they are dispersing from the national parks, they cause a deprivation of economic gains particularly when crops are destroyed. Additionally, lions cause the greatest losses when they attack livestock.²³

Further, in Northern Botswana, wildlife has continued to cause tremendous loss of livestock and food crops, where lion, cheetah and spotted hyenas roam out their habitat. For instance, in the years 1993-1996, several livestock were attacked and killed by some wild animals accounting to over one hundred per cent loss in household income. Baboons also killed small livestock, while large predators targeted large livestock such as cattle, sheep and donkeys.

1.5.1 The Extent to Which HWC is a Threat to Human Security

HWC occurs when essential needs of human beings clash with those of wildlife.²⁴ The emerging trends of increased population growth and distribution of animals have led to competition of scarce natural resources. This situation has exacerbated conflict between human beings and wildlife globally as they compete for these resources.²⁵ The conflict continues to persist especially in areas such as Northern Botswana where the surrounding community depend on livestock and crop production. Under this circumstances, conflict exist inform of crop raiding, property

²³ Ibid, pp.4

²⁴ Madden, F. (2004). Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human–Wildlife Conflict, *Human Dimensions of Wildlife. Pachyderm*, 51(51),60-74

²⁵ Wang, SW., & Macdonald, D. (2005). Livestock predation by carnivores in Jigme Singye Wangchuck National Park. *Biological Conservation*, 129(4), 558-565

damage, destruction of livestock and loss of lives. The uttermost form of HWC takes place when human beings lose their lives.²⁶ The HEC is one example of this form of conflict, which is widespread throughout Asia and Africa. Therefore, the effects of HWC do not only concern the local communities, which coexist with wildlife, but also a major issue for national governments, which requires engagement of all stakeholders.

1.5.2 Influence of International Community on HWC

Several international organizations have pitched camp in Botswana and are engaged with wildlife conservation efforts. Among these notable international conservation societies include; (KCS) which remains as one of the longest serving international NGO, dedicated to protecting the country's wildlife and community wellbeing. It has been an instrumental advocacy society, whose mandate entails protection of wildlife and natural resources particularly for communities which reside close to wildlife conservation areas.

The KCS has enumerated all the population of the elephants in Botswana and estimates that the country has and approximately 130,000 elephants which are freely-roaming. This international NGO has documented that Botswana is home to a worlds critically endangered species of wild dog and that, 25% of world cheetah are remaining. The international conservation society is also engaged in global awareness campaigns, aimed at fundraising for wildlife protection and conservation efforts with an overriding mandate of diffusing HWC in Botswana which is quite alarming.

The NGO has influenced HWC through continued investment in fencing of wildlife sanctuaries and habitats as well as advocacy of protection of endangered species. Additionally, another internationally renowned wildlife organization is

²⁶ Treves, A., Karanth, KU. (2003). Human–carnivore conflict and perspectives on carnivore management worldwide. *Biological Conservation*, 17(6), 1491–1499.

SWCF which operates in Botswana conserving the country's wildlife. The international NGO has been instrumental in feeding wild animals during drought seasons and ensuring their stay in their habitats, where they manage their movements which ensures minimizing the occurrence of HWC.

The European commission has also been pivotal in conservation end overs in Botswana. It plays an integral role in developing CSO's capacity to hold the government accountable in the event of HWC which requires compensation. It has also been engaged in supporting community-based adaptation to ecosystems, particularly where wildlife is in close proximity.

1.5.3 Approaches Used to Manage HWC

Conflict prevention and management is one of strategy of mitigating the effects of HWC in order to safeguard the lives of human beings and wildlife, reduce destruction of properties and general biodiversity.²⁷ Prevention strategies are important to avoid the emergence of conflict as well as solving its root causes. Protection strategies should be applied when certain that the conflict shall happen or has occurred. Mitigation reduces the impact and lessens the problem. There are two traditional approaches that have been adopted to address HWC. The first technique focuses on reducing or preventing the conflict by managing animal populations through various methods such as lethal control, trans-location, preservation of animal populations and regulation. The second technique requires that one understands the ecological and ethological environment of the wildlife. This entails behavioural change where human beings adopt interaction measures aimed at coexisting with wild

²⁷ Matinca, A. (2018). *Human-Wildlife Conflict in Northeastern Namibia. CITES, Elephant Conservation and Local Livelihoods*. Cologne: Cologne African Studies Centre

animals. Mitigation approaches utilized in managing HWC have entailed a range of activities which include; use of electric fence, and planning land use among others.²⁸

However, WWFN has collaborated with different stakeholders in order to reduce the effects of HWC globally so as to provide long term solutions that are site specific and tailored towards the community species engaged. For example, in Mozambique, population living in conservation areas used chili pepper to chase away elephants because they dislike plants with capsaicin. This way, elephants do not trample crop fields, and their safety has been ensured as well as protection of other species.

Human management has been done through creation of community awareness programs where innovative information is disseminated with intention of building capacity for the local community to enable them prevent occurrence of conflict. Both education and training have produced credible outcomes in relation to reducing HWC as documented in the training given to 50 farmers in 2003. After the training, farmers spread the message to their neighbours.²⁹

Compensation of the affected is also a good way of managing the conflict. In Africa, there are schemes that deal with compensation of losses caused by wildlife animals. However, this has not been very effective strategy in the region, since many governments in developing countries fail to compensate WHC victims. The local communities argue that, traditional methods have failed and there is need to replace them with modern-based approaches. This discourages the community from reporting their incidences. Insurance schemes have been promising, for example, the “Human

²⁸Ibid

²⁹FAO. (2009). *Human-wildlife conflict in Africa: Causes, Consequences and Management Strategies*. Rome: FAO

Animal Conflict Self Insurance Scheme in Namibia”. Wherever there are alternative options of resettling people, they can be voluntary moved to safer areas.³⁰

Cases of HWC in Botswana are increasing and their effect on the lives of the community is also high in terms of fatalities, food security and injuries. Elephants trample both human beings in the farms by either killing them or causing injuries and destroying their property such as crops in the field, homes and in many other forms, such as creating fear and therefore imposing curfew on them. The general perception is that, in an attempt to mitigate the negative impact caused by these animals, government has a policy that provides for compensation. However, the general perception is that, this compensation does not address the problem and therefore, the conflict persists. Secondly, it is generally argued that, the level of compensation is not commensurate with the value of the loss or damage.

1.5.4 Gaps in the Literature Review

The study found that, there is unsustainable use of the ecosystem management, for instance where people have been allowed to co-exist with wildlife, into areas which were exclusively designated for conservation from colonial era. The development has rendered the strategies commonly ineffective to succeed under such a circumstance. This mixture of people and wildlife has been created by the growth in human requirements for development and agricultural activities. The study identified knowledge gap from previous studies, where by the strategies used focused on addressing the visible effects of HWC and ignoring invisible impacts such as trauma and fear. Additionally, the study realizes that the international community had done little to alleviate the severity of HWC particularly in coercing the government to honor compensation claims resulting from the conflict. Another gap emerges from the

³⁰ Ibid, p.37

lack of effectiveness in the employment of traditional approaches which have utilized to coil HWC.

1.6 Research Hypothesis

H1: The HWC in Northern Botswana negatively impacts on human security.

H1: The international community has fueled the HWC in Northern Botswana.

H0: The strategies used to mitigate the impact of HWC in Northern Botswana are ineffective.

1.7 Justification of the Study

1.7.1 Academic Justification

The findings of this study will benefit upcoming scholars since it generated new literature for them. It also presents the reasons as to why HWC has endangered human security in Northern Botswana. The case study provides evidence of what happens across many African countries, where cases of HWC occur and evaluates mechanisms that could be applied to mitigate or reduce the conflict. The findings of this research will become invaluable literature in future studies on the same subject matter as it contextualises HWC to Botswana.

1.7.2 Policy Justification

The study has examined the extent to which HWC is a menace to human security in Northern Botswana. The study findings will influence policy review on conservation management in order to reduce HWC both in the region and also in other that experience similar challenges.

1.7.3 To the General Public

The study provides invaluable information to the general public on the significance of conservation and safeguarding of wildlife in order to reduce the

conflict, and subsequent threat to human security. The recommendations offer suggestions to various stakeholders for mitigating HWC in Northern Botswana.

1.8 Theoretical Framework

The study is guided by Social Conflict Theory and Stakeholder Theory.

1.8.1 Social Conflict Theory

This theory was formulated by Karl Max in 1971. He argued that individuals and groups in a community base their social relationships on conflict and not unit. Groups gain varying resources through many types of conflicts. He argued that, society is in a form of continuous conflict due to struggle for scarce resources. Karl Marx believes that social conflict is necessary for society to exist as it demonstrates divergence of thinking, demands to meet social needs and so forth. He observed that, people are not afraid of conflict because it makes them strong and therefore accepts it as a lifestyle.³¹ This theory does not take into account the community as immobile. Wooddrotte referred to the concept of HWC to explain a situation where, conflict between human beings and wildlife occurs for instance through agricultural field raids, livelihoods predation, poaching and killing of people.³²

Conflict may take place when groups are same players, struggling for similar prize like power, authority, territory or material or differences about the laws of the game. Basic necessities of people are both physical and psychological. Food, shelter and other needs are required for physical survival. Lack of these physical and psychological needs are responsible for occurrence of conflicts as argued by Karl Marx. In communities living in Northern Botswana around the CNP, the major source of conflict is wildlife invasion to their lands and homes destroying plants, crops,

³¹ Marx, K. (1971). *Theory of Conflict*. Oxford: Oxford University Press.

³² Thirgood, S., Woodraffe, R., & Rabinowitz, A. (2005). *The impact of human wildlife conflict on human livelihood in: People and wildlife: Conflict or Coexistence?*. Cambridge: Cambridge University Press, pp.13-26

property and in some extreme cases, causing death to people and injuries, killing livestock, which creates tension, intolerance and agitation for revenge. The theory is therefore very much applicable to this study.

1.8.2 Stakeholder Theory

This theory was formulated by Freeman in 1984. He argued that an event can be explained by interaction between individuals who influenced by its actions.³³ A legal stakeholder is one that is capable of influencing any results and needs to have resources and experience to engage in the process.³⁴ Communities adjacent to conservation areas are key stakeholders who need to be involved in decisions that affect them and their needs adequately taken into account when decisions that affect them and their needs are made. Bryson states that, key stakeholders must be contented with irreducible minimums so as to make policies initiated by government and other actors succeed.³⁵

Therefore, successful organizations are inclusive and engage all parties in decision making. For instance, communities in northern Botswana complain that their own welfare is compromised at the expense of welfare of wildlife. In order for this balance to be achieved and human wildlife conflict management to be successful, a range of stakeholders including the local population must be engaged in the programmes and process that affect them such as hunting policy. They must be consulted and be allowed to make choices, before such decisions are implemented and at times be made part of the implementers.³⁶

³³ Freeman, R. (2010). *Stakeholder Theory: The State of the Art*. Cambridge: Cambridge University Press.

³⁴ Baldauf, C. (2000). *Participation Biodiversity, Conservation: Concepts, Experience & Perspectives*. Berlin, Germany: Springer.

³⁵ Bryson, M. (2004). What to do when stakeholders matter: stakeholder identification and analysis techniques. *Public Management Review*, 6 (1), 21-53

³⁶ Phillips, R., & Wicks, A. (2003). What Stakeholder Theory Is Not. *Business Ethics Quarterly*, 13(4), 479-502 .

1.8.3 Human Wildlife Conflict as Threat to Human Security

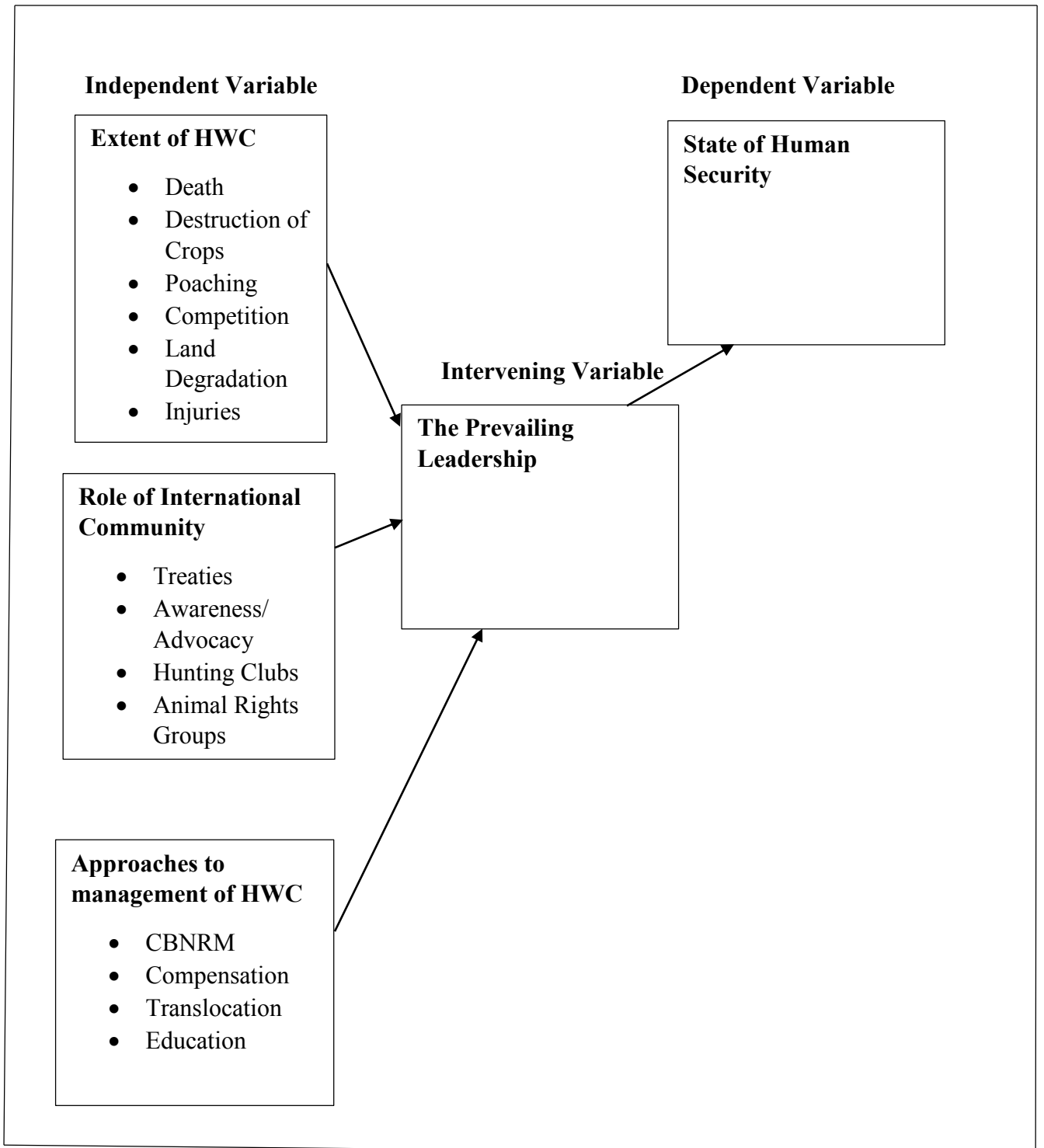


Figure 1.1 An analysis of the Conceptual Model

Source: Researcher, 2020

A conceptual model represents the researcher's synthesis of the literature on how to explain the interruption of different variables. It also refers to how the researcher understands how particular variables in the study connect with each other, thus it identifies the variables required in the research investigation.³⁷ Figure 1.1 demonstrates the factors which influence human security in Northern Botswana. These factors (independent variable) include the role played by international community (which involves signing of treaties, advocacy and awareness creation among others) and the factors which signify HWC among them death and injuries. For instance, if the conflict is high, threat to human security is also high and vice versa. Government summarizes factors that influence human wildlife conflict and what constitutes a threat to human security. It's noble to consider these factors in order to devise a strategy that takes all of them into consideration, so as to ensure sustainability of the strategy in mitigating the threat to human security. Understanding this relationship is important for development and application of the sustainable, long term strategy to mitigate the conflict. The strategy must balance the interest of all stakeholders. The framework depicts human wildlife conflict as a complex, multi-dimensional phenomenon that cannot be effectively be address through traditional approaches. It requires multiagency and multidimensional approaches to effectively address all the factors and resultant dynamics.

1.9 Research Methodology

This chapter outlines the methodological approach that was adopted. Herein, numerous sections are included. First and foremost, the study design and the reason for its choice is presented followed by the study area as well as target population. In

³⁷ Mcgaghie, W., Bordage, G & Shea, J. (2001). Problem, conceptual framework and research question. *Academic Medicine*, 76(9)923-924

addition, the sampling design and tools of data collection methods are also outlined. Lastly, pretesting of the study tools as well as data analysis and presentation.³⁸

1.9.1 Study Design

The study adopted mixed methods approach that helped in comprehending various aspects on the HWC in Botswana. Additionally, qualitative data was obtained through use of scholarly materials which offered credible insights on the subject under study.³⁹ To support these efforts, the analytical and descriptive research methods were used so as to address the research problem adequately.

1.9.2 Study Area

The study was conducted in Chobe District that hosts the CNP, in Northern Botswana. There are several villages in Chobe District, but Kasane village was chosen as a sample village because of its strategic position being the district headquarters. Kasane is located at the far flung North-Eastern corner of Botswana. It is the administrative capital for Chobe district. It's a very populous region with an estimated 8000 people.⁴⁰ It a popular tourist gateway point for Okavango Delta, Caprivi in Zambia and Victoria falls in Zimbabwe (Refer to Appendix 1). However, it's not separated from the park by any tangible fence. Game animals such as hippo, elephants and many others roam freely in the area through Kasane camp sites.

1.9.3 Sampling Technique and Sample Size

The study adopted systematic random sampling in choosing the interview respondents. The study assumed that, all the communities living in Chobe District have been affected by the human wildlife conflict in one way or another and each had

³⁸Frankfort-NachmiasC., Nachmias,D., & DeWaard, J. (2015). *Research Methods in the Social Sciences*. New York : Worth Publishers

³⁹Ritchie, J., & Lewis, J. (2004). *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. New Dehli: Sage Publishers

⁴⁰Ibid

a story to share. The sample members were derived from the households in Kasane village. The sample size was extracted from the published tables (see table 1.1). The table assumes that, the attributes in the population are distributed normally.⁴¹ From the population of 8000, a sample size of 104 was developed by use of Yamane formula as shown in table 1.1 below.⁴²

Table1:1 Sample Size

Determining Sample Size

Table 1. Sample size for $\pm 3\%$, $\pm 5\%$, $\pm 7\%$ and $\pm 10\%$ Precision Levels Where Confidence Level is 95% and $P=5$.

Size of Population	Sample Size (n) for Precision (e) of:			
	$\pm 3\%$	$\pm 5\%$	$\pm 7\%$	$\pm 10\%$
500	a	222	145	83
600	a	240	152	86
700	a	255	158	88
800	a	267	163	89
900	a	277	166	90
1,000	a	286	169	91
2,000	714	333	185	95
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	950	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99
20,000	1,053	392	204	100
25,000	1,064	394	204	100
50,000	1,087	397	204	100
100,000	1,099	398	204	100
>100,000	1,111	400	204	100

a = Assumption of normal population is poor (Yamane, 1967). The entire population should be sampled.

Source:

http://sociology.soc.uoc.gr/socmedia/papageo/metapyxiakoi/sample_size/samplesize1.pdf

⁴¹Israel, D. (1992). *Determining Sample Size*. Florida: Florida University Press

⁴²Ibid

Further, the study utilized simple random sampling to select 90 households from the surrounding villages in the Northern Botswana. Purposive sampling was also adopted to select officers in crop and livestock sectors, wildlife managers, community leaders, military officials and representatives of the international community as summarized on table 1.2 below.

Table 1:2 Target Population, Sample Size and Sampling Technique

Target Population	Sample size	Sampling technique
Households	90	Simple random sampling
Officers in crop sector	2	Purposive sampling
Officer in livestock sector	2	Purposive sampling
Wildlife managers	2	Purposive sampling
Traditional leaders	2	Purposive sampling
Military officials	2	Purposive sampling
Representatives of the international community	4	Purposive sampling
Total	104	

Source: Researcher, 2020

1.9.4 Data Collection Methods

This employed both primary and secondary data. A questionnaire was utilized in collecting primary data.⁴³ The purpose of using the questionnaire described above was that it achieves two broad purposes. In this regard, it allowed the respondents to freely give their opinions in some instances, while also restricting them to certain predetermined form of responses. This avails data that is rich and diverse. The questionnaire obtained data from households, agriculture sector, wildlife managers and traditional leadership in the sampled villages, the military, police and representatives of the international community. On its part, secondary data was collected from deskreview of existing literature such as public documents, books as well as journals on the study objectives among other sources.

⁴³Frankfort-NachmiasC., Nachmias,D., & DeWaard, J. (2015). *Research Methods in the Social Sciences*. New York: Worth Publishers.

1.9.5 Instrument Reliability

Piloting was conducted for purposes of checking the suitability of the study design, the research tools, challenges that could be faced as well as cost and time implications of the research.⁴⁴ Hence, pretesting of the questionnaire was done on a different population from the target population using 10 questionnaires.⁴⁵ The process assessed the capacity of the tools to obtain data that could best respond to the study objectives and questions. The data obtained in the pilot study was tested using the “Cronbach’s alpha”. This test, which ranges from 0 to 1 indicates the level to which the study tool can be relied upon in collecting data for use in a study. In this study, values greater than 0.7, which is the recommended cut-point were obtained. This shows that the questionnaire could be relied upon for data collection.⁴⁶

1.9.6 Instrument Validity

In order to test validity, both internal and external validity tests were undertaken.⁴⁷ Ease in answering the research questions by the respondents was used to test face validity. Thereafter, any difficulties encountered in answering any question were identified and appropriately mitigated. Furthermore, the study ensured that enough questions, that relates to the literature reviewed and the associated knowledge gaps were included in order to ensure content validity.⁴⁸ Lastly, the opinions of the university supervisor was also sought so as to make improvement on the tools for data collection.

⁴⁴ Hardy, M., & Bryman, A. (Eds.) (2004). *Handbook of Data Analysis*. New Delhi: Sage Publications.

⁴⁵ Mugenda, M., & Mugenda, O. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.

⁴⁶ Malhotra, N.K. (2004). *Marketing research: An applied orientation* (4th edition) Pearson Education Inc: New Jersey.

⁴⁷ Gay, L., Mills, G., & Airasian, P. (2006). *Educational research: Competencies for analysis and application* (8th ed.). New York: Prentice Hall.

⁴⁸ Cooper, D.R., & Schindler, P. S. (2003). *Business research methods* (8th ed.). Boston: McGraw-Hill.

1.9.7 Data Analysis and Data Representation

Qualitative data was analyzed through conceptual content analysis. This method is suitable since it examines the information collected to ascertain its relevance to the study constructs and makes suitable conclusions.⁴⁹ To this, measures of central tendency i.e. “frequencies, standard deviations, percentages and means” were applied to describe the prevailing perception of the respondents on the study questions.

1.9.8 Legal and Ethical Considerations

The researcher carried out this study with due regard of ethics to exhibit high standards of integrity, honesty and above all confidentiality of sensitive information. The research authorization from all the concerned authorities both in Kenya and in Botswana was sought.

1.10 Chapter Outline

Chapter one presents “ the introduction and the background to the study, statement of the problem, research questions, objectives of the study, literature review, research hypotheses, justification of the study, theoretical framework and methodology of the study”.

Chapter two delved into determining the extent to which the conflict is a threat to human security in Botswana

Chapter three investigates the role of international community in HWC in Northern Botswana.

Chapter four evaluated the approaches used to manage HWC in Northern Botswana.

Chapter five provided the “summary, conclusion and recommendations of the study”.

⁴⁹Mugenda, O.M., & Mugenda, A.G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.

CHAPTER TWO

THE EXTENT TO WHICH HUMAN WILDLIFE CONFLICT IS A THREAT TO HUMAN SECURITY IN NORTHERN BOTSWANA

2.1 Introduction

This chapter flows from objective one of the study; the extent to which HWC is a threat to human security in Northern Botswana. To achieve that, the chapter will first analyze the response rate and offer a brief demographic overview of the respondent. In this regard, the findings obtained are discussed against the literature reviewed in chapter one. A summary section is finally presented. The chapter also examines the type of human insecurity ranging from emotional effects, damage to crops and property, injuries and fatalities.

2.2 Response Rate

The study targeted 104 respondents. Out of these, 94 participated by successfully filling in the questionnaires. In this regard, the response rate of 90.4% was attained. Jack Fincham observes that 80% response is considered sufficient. This is more than half of the sample size and would not affect the accuracy of the data.

Table 2.1 Response Rate

Questionnaires Issued	Questionnaires returned	Response Rate
104	94	90.4%

Source: Field Data, 2020

2.3 Demographic Characteristics

2.3.1 Gender of Respondents

Gender aspect is important in any study since different groups are affected differently by the problem under investigation. Herein, the results obtained show that, 52% were female while 43% were male as presented on figure 2.1 below. Since none of the two genders constituted more than two thirds, it can be concluded that, each gender was adequately represented in the study.

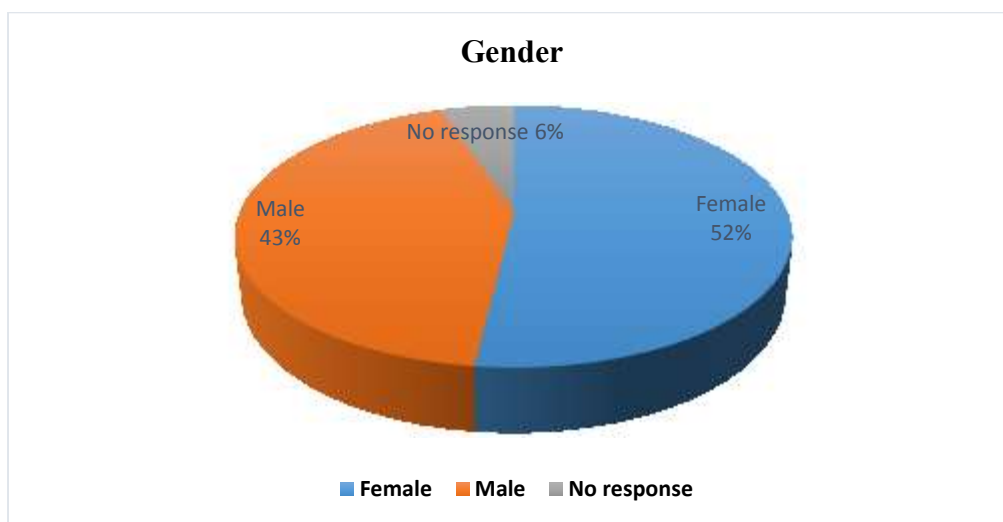


Figure 2.1 Genders of Respondents

Source: Researcher, 2020

2.3.2 Age of Respondents

Age requirement was deemed appropriate in this study since it informed personal experiences attributed with maturity. The findings obtained show that, majority of the participants aged 15-65 years. The middle age, 36-50 years constituted the largest percentage of the respondents (49%), while the youths (15-35 years) constituted 31%. The aged (51-65 years) were few (see fig 2.2).

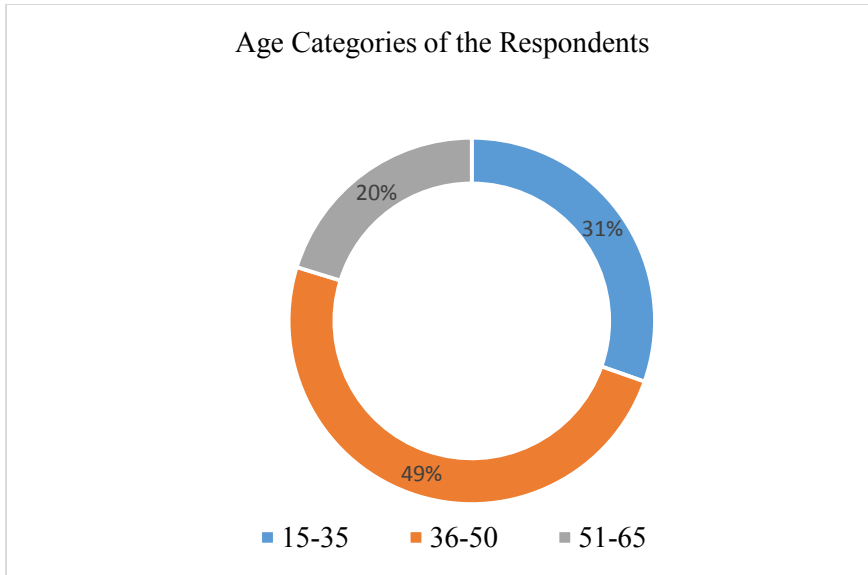


Figure 2.2: Age of the Respondents

Source: Researcher, 2020

2.3.3 Level of Education of Respondents

Level of education was considered important because education would shape one's perception and level reasoning which was an important aspect for this study. 34.2% had attained primary school education, while the majority, 45.6% had attained secondary school education. The least 20.3% had college education as shown in figure 2.3.

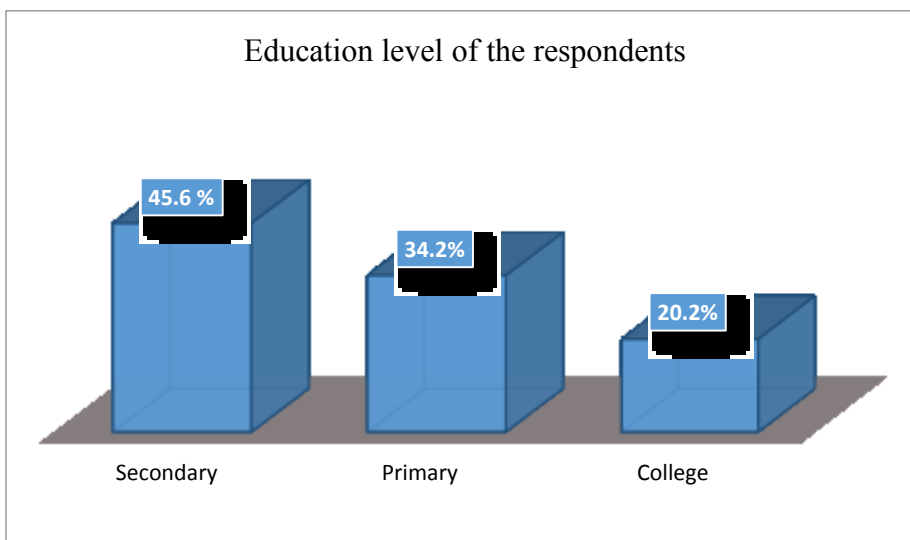


Figure 2.3: Education level of the Respondents

Source: Researcher, 2020

2.3.4 Marital Status of the respondents

The findings shows that, 62% of the participants were single, 33% were married whereas 5% were separated as exemplified on figure 2.4 below.

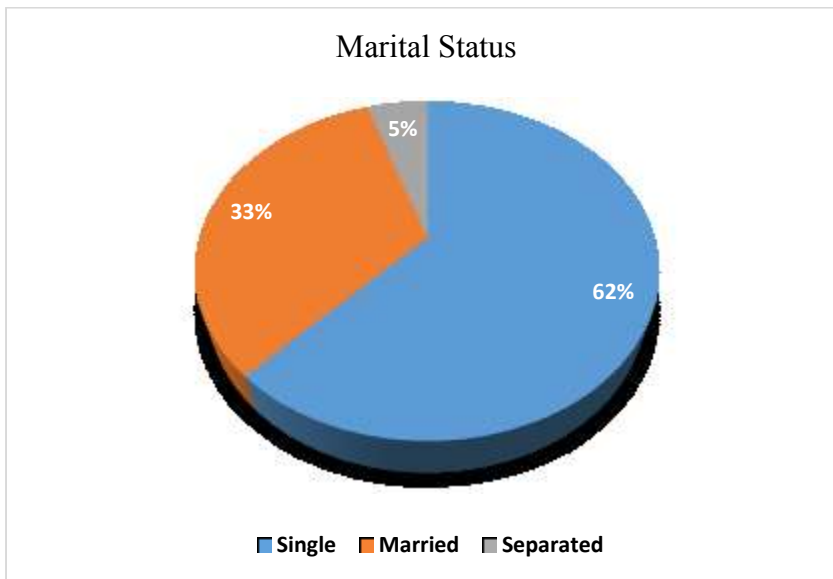


Figure 2.4: Marital Status of the Respondents

Source: Researcher, 2020

2.3.5 Occupation of the Respondents

The respondents, derived from Kasane village were engaged in different economic activities for their livelihoods. Over half of the respondents, 50% had a formal employment working as officers in crop and livestock sectors, wildlife managers, military officials, while the rest worked with international organizations dealing with wildlife conservation in Botswana. Those that were self-employed in their businesses were 59.6% while the casuals and unemployed ones were 19.2% and 33.6% respectively. Additionally, 4.8% of the respondents never indicated their occupation see fig. 2.5.

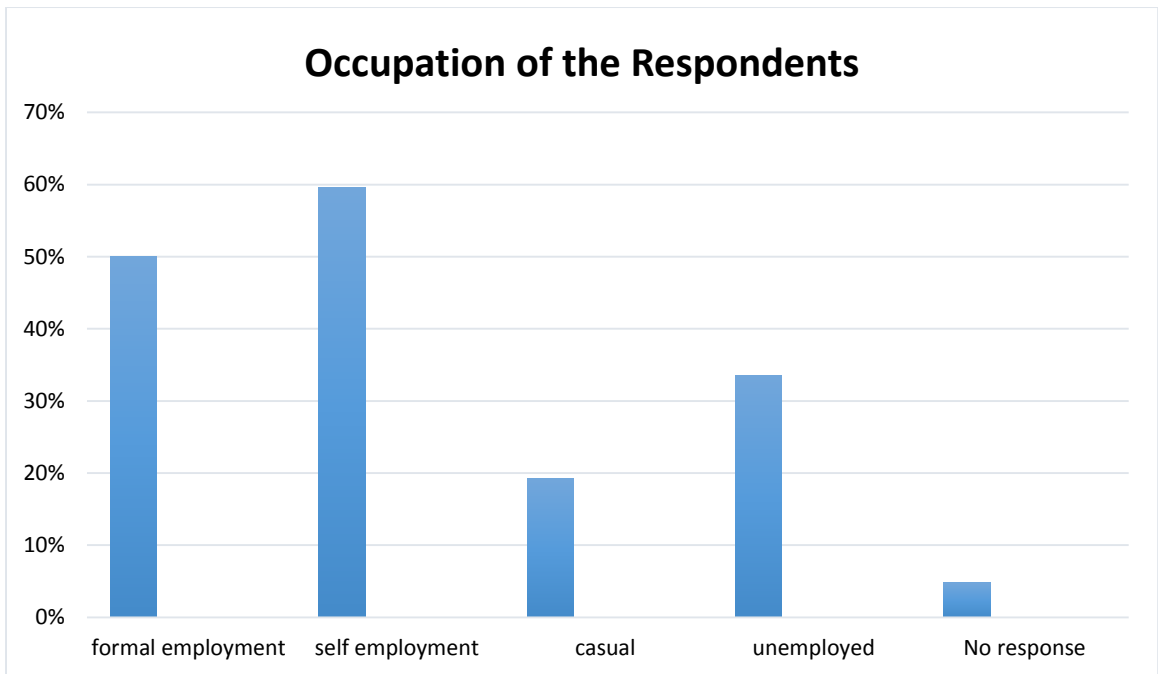


Figure 2.5: Employment Status of Respondents

Source: Researcher, 2020

Over 80% of the respondents lived or worked around the Chobe National Park, so they covered or were 1-5km between the wildlife reserves and their homes or where they did their farming or their sources of livelihoods. These are the people that experience or witness intense incidences and effect of HWC. The 19.7% lived or worked over 5km away from the game reserves, but still experienced or witnessed the HWC and impact from CNP.

2.4 Impact of HWC in Northern Botswana

In Botswana, the most common form of HWC is that which is between human beings and elephants. This happens as elephant's trespass people's farms where they destroy crops. Wildlife also encroaches into homesteads destroying lives and people's property. It was observed that, this has been attributed to the fact that, increasing human population has encroached into the wildlife's habitat. On the other

hand, due to human requirements for land, people are found in areas primarily reserved for wildlife as observed by the EWB surveys in 2010 and 2014.⁵⁰

As both parties compete for the resources, conflict arise, which negatively affect humans' social, cultural and economic life. The visible impact of human security is defined on the basis of property damage, crop loss, injuries and fatalities to human beings as well as emotional stress.⁵¹

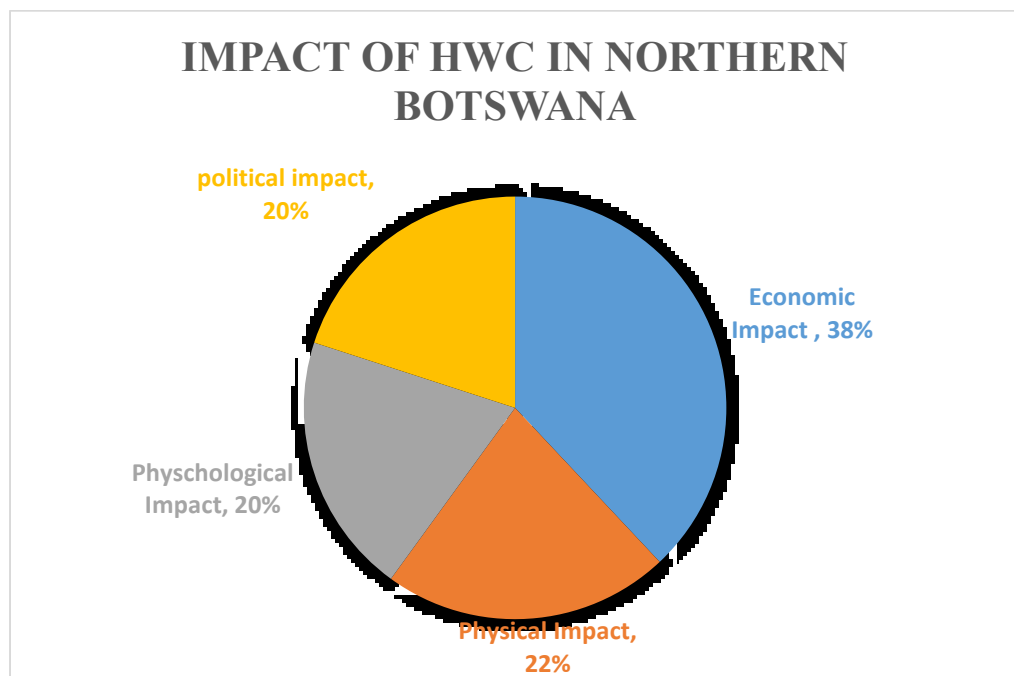


Figure 2.6: Impact of HWC in Northern Botswana

Source: Researcher, 2020

As shown in the figure 2.6 above, 38% of the respondents expressed economic threat as the most outstanding experience as a result of WHC. 22% indicated physical impact as a threat posed by WHC to people living in the Chobe District who deal with wildlife in their daily lives, with 20% reporting political and physiological effects for

⁵⁰Michael, C., Scott, S., Robert, S., & Elford, S. (2018). *Dry Season Aerial Survey of Elephants and Wildlife in Northern Botswana, July – October 2018*. Gaborone, Botswana: Department of Wildlife and National Parks

⁵¹Thirgood, S., Woodroffe, R & Rabinowitz.R. (2005). *The impact of human wildlife conflict on human lives and livelihoods. In: People and wildlife, conflict or coexistence?*. Cambridge: Cambridge University Press

the last five years respectively. The impact produced both negative and positive outcomes. For instance, local communities remarked that a ban on elephant hunting complicated their lives further because, while taking away their sources of revenue, elephants on the other hand torments them by destroying their livelihoods.

Further, villagers in Chobe District, like other villages in Botswana as a whole did not appreciate elephant's conservation. Respondents indicated that, elephant hunting earned them revenue which they used to construct the (CECT) which is offered employment opportunities to the youth in different professional disciplines, particularly in hotel and catering management. Lessons brought forth out by these responses are that; local communities are prepared to take care of natural resources around them, if their management is decentralized to them to manage and if they benefit directly from them.

These findings are in line with a report by ENCA of June 2019 which suggested that, HWC in Botswana has since reached crisis level as communities in Northern Botswana are living in constant fear of attack by Elephants.⁵² In a study conducted by Gupta around the Chobe National Park in 2013, residents agreed that wildlife has increasingly become less fearful of humans and as such, incidences of conflict are on the increase and that many incidences are unreported.⁵³ Similarly, a study by Kgathi *et al* revealed that, lions and hyenas are the common predators that have caused deaths of hundreds of livestock.⁵⁴ According to the (DWNP), the population of elephants have grown three fold and they constantly look for food and water in the neighbouring towns and villages. Up to June 2019, the government had

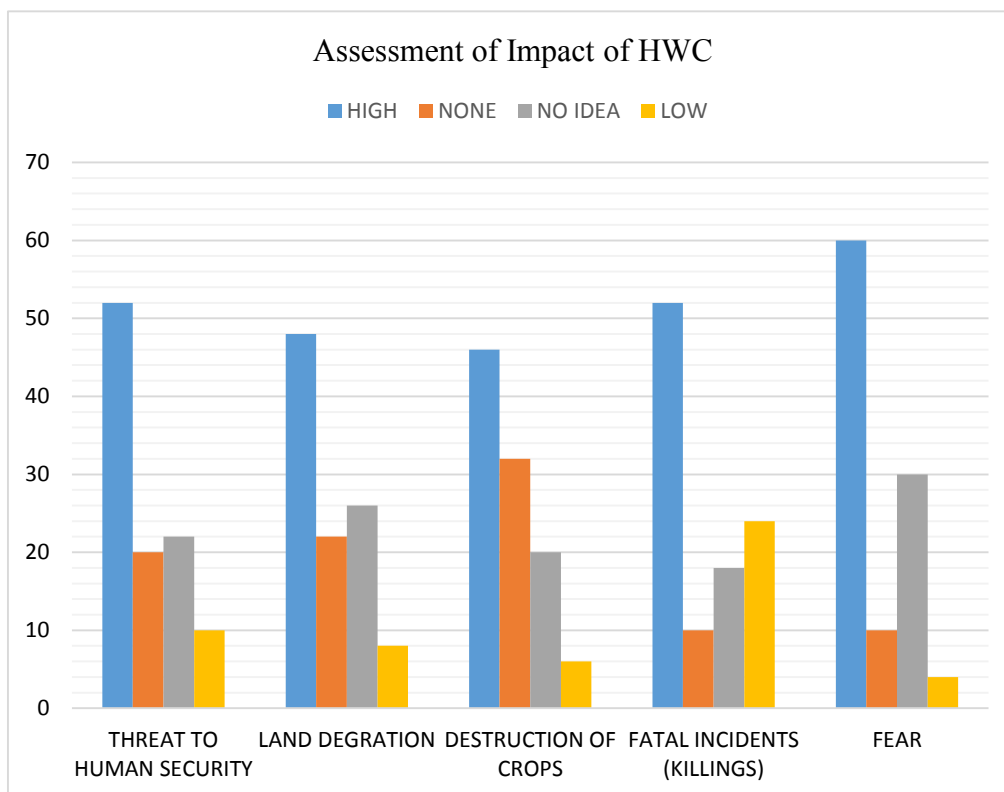
⁵²

⁵³Gupta, A. (2013). Elephants, safety nets and agrarian culture: understanding human-wildlife conflict and rural livelihoods around Chobe National Park, Botswana. *Journal of Political Ecology*, 20(1), 238-254.

⁵⁴Kgathi, D.L., Mmopelwa, G., Mashabe, B., & Mosepele, K. (2012). Livestock predation, household adaptation and compensation policy: a case study of Shorobe Village in northern Botswana. *Agrekon*, 51(2), 22-37.

documented over eight thousand (8000) incidences of human wildlife conflict with approximately 45 human deaths. While people depend solely on agricultural activities in Northern Botswana, human wildlife conflict continue to discourage them from engaging in such activities, due to the destruction in their fields which destabilises their farming activities.⁵⁵ In order to find a permanent solution to addresses the conflict, the government must come up with a strategy to separate human beings from the wildlife.

Further, according to the responses obtained from this study on the effects of HWC on various aspects of human life, instilling of fear was the most highly rated impact noted by most of the participants. Accordingly, 60% asserted that, wild animals instilled fear on them when they invaded their farm and destroyed their properties. Further, 50% of the respondents indicated that, wildlife poses other aspects of threat to human security as shown in the figure 2.7 below.



⁵⁵ Op Cit

Figure 2.7 Assessment of impact on HWC

Source: Researcher, 2020

2.4.1 Psychological aspect of Human Security

In an area where human beings (people) live in close proximity with wildlife, chances of wild animals invading them heighten exponentially. The effect of the conflict is usually felt in both material and economic consequences. Impacts may be felt in the form of persistent fear, worry, lost opportunities and changed behavior as a result of the persistent threat to human security posed by these animals which impacts negatively on their lives.⁵⁶ For instance, if communities know that elephants are fond of using the same route to the river, then the community will have fear and would not want to go to fetch water. This was observed by majority of the respondents. When fear and safety concerns disrupt every day activity of human beings, then there is loss of time, opportunity and productivity.⁵⁷ Further, this is likely to create competition in relation to accusations of resources and also travelling from one point to another in running daily chores.⁵⁸

In this study, 20% of the respondents reported that, they live in fear of attack and were emotionally affected as a result of the wildlife attacking and injuring people. Mayberry et al, carried out a study to assess the visible and invisible dimensions of impacts of HEC in “Khumaga, Northern Botswana”. In that study, respondents cited chronic fear and worries as a result of attacks by elephants.⁵⁹ Further, they posit that

⁵⁶Khumalo, K.E., & Yung, L.A. (2015). Women, human-wildlife conflict, and CBNRM: hidden impacts and vulnerabilities in Kwandu Conservancy, Namibia. *Conservation & Society*, 13(3), 232–243.

⁵⁷Barua, M., Bhagwat, S.A., & Jadhav, S. (2013). The hidden dimensions of human wildlife conflict: health impacts, opportunity and transaction costs. *Biological Conservation*, 157(9), 309–316.

⁵⁸Roskaft, E., Mojaphoko, R., RaihanSarker,A., & Jackson, C. (2014). *Human dimensions of elephant ecology*. In: Elephants and savanna woodland systems: a study from Chobe National Park, Botswana (eds. Skarpe, C., J. du Toit, and S. Moe). Chinchester: John Wiley & Sons Ltd.

⁵⁹Mayberry, A.L., Hovorka, A.J.& Evans, K.E. (2017). Well-being impacts of human-elephant conflict in Khumaga, Botswana: exploring visible and hidden dimensions. *Conservation and Society*, 15(3), 280-291.

mysterious sounds of elephants were reported as cause of fear, while on the other hand there are reports of mental and emotional trauma on the rural population. Majority of the efforts to address the conflict are centered at the physical and economic aspects, but it is important to attend to emotional aspects as well because it is a critical part of human aspect.

2.4.2 Economic aspect of threat to Human Security

The Chobe National Park which is in close proximity with villages like Kasane, Ngoma, Pandamatenga, Lesoma, is home to a number of elephants with the Chobe River, Savuti and the Okavango Delta being the epicenter of Botswana's wildlife. These villages rely mainly on subsistence farming in the form of crop production. In the surveys conducted by EWB in 2010⁶⁰ and 2014 it was revealed that, human resettlements have encroached on the areas originally reserved for wildlife, which has also increased chances of contacts and clashes between people and wildlife.⁶¹ The study documents a likelihood of elephants depleting pasture in their natural habitat in the park, as a result of their population increase, which intern forces them to leave the park and wander outside to look for pasture. When elephants raid on farms they cause a stampede by destroying crops and create food insecurity for these villagers who depend on farming. The destruction of crops in the farms impacts negatively on economic wellbeing of the community leading to food insecurity, which was classified by the "UNDP Human Security report (1994)" as a threat to human

⁶⁰Ibid

⁶¹Khumalo, K.E., & Yung, L.A. (2015). Women, human-wildlife conflict, and CBNRM: hidden impacts and vulnerabilities in Kwandu Conservancy, Namibia. *Conservation & Society*, 13(3), 232–243

security.⁶²This leads to revenge attacks by the affected community and therefore aggravates the conflict further.⁶³

The study found out that, 38% of the respondents have experienced or witnessed high incidences of crop destruction by wildlife especially elephants. One responded lamented that, their land was fertile but useless to them because they could not cultivate crops as wildlife destroys them. The other respondent further indicated that, elephant's presence in the area deterred them from travelling to the crop fields as a result of fear of attacks that leads the community to depend on buying food from the shops. In a similar study by Sifuna, in addition to livestock predation, human injury and destruction of domestic property, wildlife also damaged crops thus causing food insecurity.⁶⁴ In addition, indicates that, elephant's population in Kasane area has increased in recent years, suggesting that there is a potential linkage between the increased population and crops raiding in the farms.⁶⁵These have caused difficulties amongst the poor farmers, who do not only suffer from food insecurity but also end up with other domestic property like houses destroyed. These are huge economic losses to farmers, which sometimes even compensation efforts fail to fill. As contemporary human challenges are becoming complex, so is HWC. In order generate with sustainable ways of addressing the problem, there is a need to adopt a multi-dimensional and multi-agency approach strategy.

⁶²UNDP. (1994).*Human Development Report 1994: New Dimensions of Human Security*. Available at <http://www.hdr.undp.org/en/content/human-development-report-1994>

⁶³Kaswamila, A., Russell, S., & McGibbon, M. (2007). Impacts of wildlife on household food security and income in northeastern Tanzania. *Human Dimensions of Wildlife. An International Journal*, 12(6), 391–404.

⁶⁴Sifuna, N. (2009). *Legal and institutional arrangements for damage caused by wildlife in Kenya and Botswana*, PhD Thesis. Johannesburg: University of the Witwatersrand.

⁶⁵Pozo, RA., Coulson, T., McCulloch, G., Stronza, AL., & Songhurst, AC. (2017). *Determining baselines for human-elephant conflict: A matter of time*. <https://doi.org/10.1371/journal.pone.0178840>

2.4.3 Physical aspect of Threat to Human Security

In this study 40% of the respondents reported that, wildlife has killed people, with elephants taking the lead in causing the fatalities, while 35% of the respondents reported that they have experienced or witnessed injuries caused by elephants. 15% of the respondents also reported that they have lost their family members through fatal attacks, while 10% of the respondents are victims of the attacks as shown in figure 2.8 below.

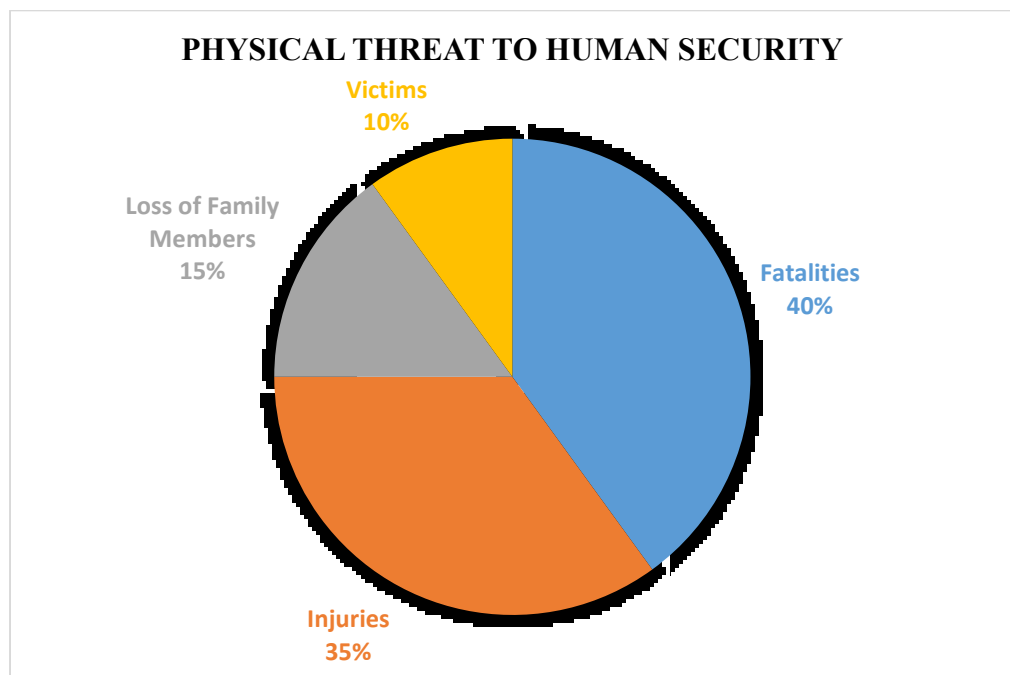


Figure 2.8 Physical Threat to Human Security

Source: Researcher, 2020

Further, a report by Ludo Chube, there were two incidences reported on elephant attacks, on two people that lost their lives in Chobe village.⁶⁶ Residents also complained that, they cannot plough their lands because elephants would destroy everything in the farm. However, in April 2019, an incident of a ten-year-old girl who was with her grandmother was reported, where the elephant attacked and broke her

⁶⁶Ludo, C. (2015, May). Another life lost in elephant attack in Botswana. *Daily News*

leg, but she narrowly escaped death.⁶⁷ While elephants contribute substantially to the Botswana's economy through tourism, their continued destruction of the people's livelihoods, causes concern which requires the government to formulate a sustainable solution that would address concerns of wildlife as well as those of human beings. Therefore, the government must partner with non-governmental organizations to engage in awareness and teaching people defence mechanisms, on the most sustainable ways of living with wildlife, while minimizing the effects of HWC.

2.5 Chapter Summary

This chapter assessed the effects of HWC on human security in Northern Botswana. It also analyzed the dynamics of the conflict and the resultant effects on both tangible and non-tangible items, destruction of property, injury and fatalities as a result of attacks of wildlife to human beings. The impacts range from physical, emotional, direct or indirect especially as result of elephant's actions.

⁶⁷ENCA. (2019, June). Botswana human-wildlife conflict nears crisis mode. *ENCA News*

CHAPTER THREE

HOW THE INTERNATIONAL COMMUNITY HAS INFLUENCED HUMAN WILDLIFE CONFLICT IN NORTHERN BOTSWANA

3.0 Introduction

This chapter investigated the role played by the international community in addressing the challenges presented by the HWC in Northern Botswana. The justification for comprehending the role of international community (which entails several actors) emanates from the realization that international community has been pivotal since effecting an international ban on ivory in 1989 and continues to influence the human-wildlife interaction in a myriad of ways. This chapter examined the role played by the international agreements to influence national conservation policies. This was achieved through a comprehensive consultative engagement with several international wildlife-centric actors who offered credible insights.

3.1 Review of Existing International Conventions/Agreements on HWC

The term international community in the context of this study is used to refer to international bodies such as wildlife scientists, wildlife advocacy groups, regional bodies, conservation groups and NGOs which formulates international policies and agreements centered on wildlife conservation and development. Some of the notable international agreements focusing on the wildlife conservation in the target area include; the KAZA TFCA treaty signed in 2011, binding among five states sharing the traverse Kavango-Zambezi (KAZA), (TFCA). A review of the existing ratification by partner states presents a policy debate worthy of an academic investigation. Reviewing the implication of the ratification of the KAZA TFCA treaty is an imperative abundant in knowledge for informing human-wildlife relations in regards to human security imperatives in northern Botswana.

Apart from the above treaty, this study further sought to establish other international agreements domesticated in Botswana pursuant to the country's conservation objectives. These are some of the specific study interest international conventions and agreements which have been domesticated in Botswana and which influences national wildlife policy for the country. They include; the WHC, CITES, CIT in endangered species, CMS as well as the CBD.⁶⁸ These international agreements constitutes the legal basis upon which states cooperate for conservation interest and collectively constitute what is referred to as international wildlife laws.⁶⁹

Historically, treaties have been utilized in pursuit of global interests of common concern among state-actors. The first international treaty governing shared wildlife conservation was the Rhine River treaty concerning the regulation of Salmon fishing in 1886.⁷⁰ It was originally signed by four countries which shared the Rhine river with the intention of regulating Salmon fishing by Germany and her Luxembourg neighbor and Switzerland as well as Netherlands which shared the river. Several international (developmental) actors which facilitated the signing of the treaty included the involvement of the German Government and the Peace Parks Foundation.⁷¹

With wildlife conservation featuring top among several national priorities, particularly among Africa's developing states, which rely primarily on wildlife for foreign exchange and tourism, the need for ratification of various international treaties and agreement into domestic laws cannot be gainsaid. Several African states have ratified a number of international wildlife conservation laws in their domestic

⁶⁸ Trouwborst, A. (2017). *International Wildlife Law: Understanding and enhancing its role in conservation*. Oxford: Oxford University Press

⁶⁹ Bowman, *et al.* (2010). *Lyster's International Wildlife Law*, (2nd) ed. Cambridge: Cambridge University Press.

⁷⁰ Lyster, S. (2012). *International Wildlife Law*. Cambridge: Cambridge University Press

⁷¹ Peace Parks Foundation. (2011). *Kavango-Zambezi TFCA*. Luanda: SADC Secretariat

legislations/laws and Botswana ranks among the South African states concerned with wildlife conservation, characterized by ratification of various international legal agreements, binding states to shared wildlife conservation. This chapter reviews the “KAZA treaty”-(as it will be referred to in this study) ratification in Botswana’s domestic laws in regards to wildlife conservation and the implication on human security.⁷²

3.2 Botswana’s Ratification of the KAZA TFCA Treaty

Botswana is founder member state of the KAZA TFCA treaty in partnership with four other states. This treaty which is centrally referred to in this study, clearly stipulates in its preamble that; the principle/sole purpose of signing the treaty among the five partners states was to harmonize policies and strategies as well as actual practices for managing shared natural resources found spread in their international boundaries.⁷³ This is in reference to the shared conservation interests among the five partners establishing the treaty. The binding nature of the treaty mandates partner states to align their national policies and action plans to conform to the treaty dictates. The ratification of the KAZA TFCA was to be effected in accordance to respective partner state’s domestic laws.

The ratification of treaties centric to wildlife conservation attracts a number of several other sector-interest actors who to a certain extend influence policy direction. Whereas, civil servants are the leading state actors, scientists and wildlife-rangers constitute frontline actors whose interest differs from those of tour operators while they also differ from those of a farmer adjacent to a conservation area. The national action plans and policy strategies are influenced by a myriad of other actors in the

⁷² Ibid

⁷³ KAZA TFCA TREATY. (2011). *Treaty between the Government of the Republic Of Angola, the Government of the Republic of Botswana, the Government of the Republic of Namibia, the Government of the Republic of Zambia, and the Government of the Republic of Zimbabwe on the establishment of the Kavango Zambezi trans-frontier Conservation Area*. Luanda: KAZA TFCA Secretariat

articulation and formulation of policy. They include; COP which set agendas and line actors which enforce compliance as well as NGOs and other interest groups which influence policy direction.

Botswana's ratification of the KAZA treaty followed the realization and need for a more holistic approach of the sharing the transnational resource which incorporated conservation and formation of the KZ-TFCA. The trans-frontier natural resource is also shared among Zimbabwe and Angola. As some studies show, KAZA area is one of the largest and ambitious trans-boundary conservation initiatives in the world which comprises five sovereign states. For Botswana, the primary interest for ratification of the treaty can be drawn from the need to provide the big herd of Elephants in her territory a traverse land for grazing.⁷⁴

3.3 The Implication of Botswana's ratification of the KAZA TFCA Treaty

Signed in 2011 at the SADC summit in Luanda by five presidents of the republics of; Botswana, Namibia, Zimbabwe, Zambia and Angola the treaty establishing the (KAZA TFCA) was established. The conservation area covered by the treaty covers the territories of five sovereign states. According to the current dimension offered in the treaty, it covers an estimated 520,000 square kilometers with the republic of Botswana providing the larger share of the area.⁷⁵ According to the treaty the KAZA conservation area merges more than 30 national parks, (WMAs) and community lands. It follows the Zambezi-Chobe river and incorporates the Okavango Delta which is termed as a world heritage site. It is an international tourism circuit which prides of the largest herd of Elephants (approximately 120,000).⁷⁶

⁷⁴ Mogende, E. (2016). *The politics of Kavango-Zambezi (KAZA) TFCA in Botswana*. Johannesburg: University of Cape Town

⁷⁵ Ibid

⁷⁶ Ibid

The bulging population of the Elephants in the conservation area has been inextricably linked with HWC for prolonged periods of time which warranted this research, to determine the nexus between the two. Several studies have demonstrated how the creation of the trans-frontier conservation area has resulted into a protracted human-wildlife conflict which currently characterizes northern Botswana. For instance, Barbancho *et al* demonstrated how the burgeoning number of Elephants was responsible for various economic implications in the area.⁷⁷ Affirmatively, Mogende asserts that; there exists a disparity between practice and theory in relation to national action plans and wildlife behavior.⁷⁸ They conclude that; since the KAZA treaty has not fulfilled its pledge to the local communities it therefore presents a complex and dynamic initiative worthy of a constant review.

3.3.1 The link between KAZA TFCA Treaty and the Local Communities

Through conservation initiatives propagated through the international binding agreements (for instance KAZA treaty) there has been realized an increase in the population size of certain animals, particularly elephants, which has seen their occurrence in more restricted areas.⁷⁹ What is clearly evident is the lack of public participation in formation and adjudication of the conservation area as most of the local residents/communities did not participate in the formation of the conservation, thus their contributions and interests are not factored in the treaty. The researcher sought to establish how international agreements were perceived that; binding international legal instruments play a significant role in sustaining HWC. This view was supported by majority of respondents (92.3%) who agreed to the sustenance of

⁷⁷ Barbancho, N. et al. (2005). *Economic Impacts of Trans-frontier Conservation Areas: Baseline of Tourism in the Kavango–Zambezi TFCA*. Johannesburg: Conservation International South Africa

⁷⁸ Op cit

⁷⁹ Stoldt, M. et al. (2020). *Trans-frontier Conservation Areas and Human-Wildlife Conflict: The Case of the Namibian Component of the Kavango-Zambezi (KAZA) TFCA*. Brussels: New Africa Books

HWC due to the ratification of internationally binding treaties while 7.7% disagreed.

The diagram below shows the distribution of the responses.

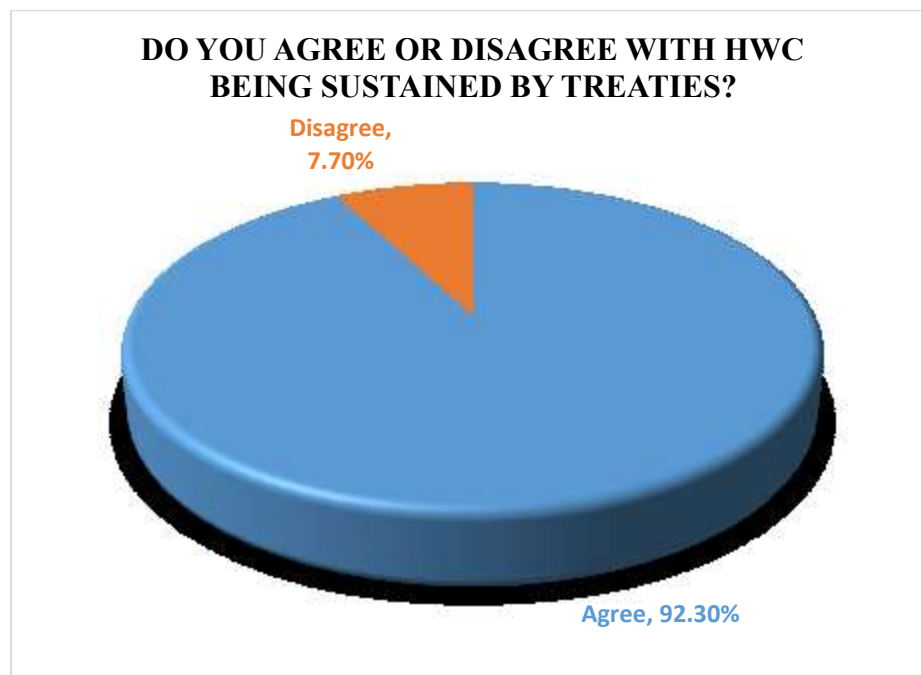


Figure 3.1: HWC being sustained by Treaties

Source: Field Data, Researcher 2020

Generally, majority of community residents in Kasane village had not heard of the KAZA treaty and how it managed to place them in a conservation area, subjecting many of them to perennial HWC over a long period. So when asked to respond on whether the government involves the community in wildlife management, majority of the respondents (92.3%) Disagreed while only 7.7% Agreed.

Additionally, majority of them (92.3%) agreed while (7.7%) disagreed that treaties signed without proper public participation were responsible for sustaining the protracted HWC in northern Botswana. This can be explained by the fact that; through binding legal instruments states entering into conservation treaties, increased wildlife roaming and grazing areas, thereby, facilitating increase in their populations which eventually encroach on human population habitats. These increasing wildlife

populations cannot be contained in treaty defined areas, hence, wander outside conservation zones/areas thereby occasioning HWC.

There is an ongoing perception and media reports which posits that the reason for HWC in Botswana is largely driven by; government and international community which cares more about wildlife than the welfare of its own people and that this is because of pressure from the international community which controls international tourism and hunting activities. The researcher asked the respondents to express their opinion on their perception towards the international community on their engagement with illegal activities for instance; international poaching and engagement in illegal trade of wildlife products. The responses are as shown below.

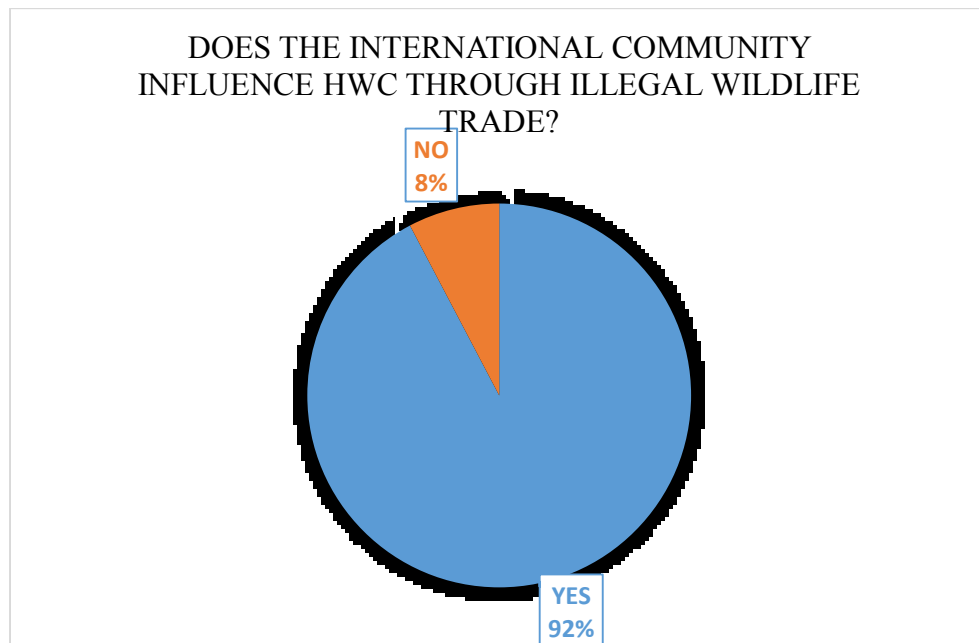


Figure 3.2 International Community and HWC

Source: Field Data, Researcher 2020

The responses shown above depict a negative perception regarding the role of international actors in fostering a mutual co-existence between wildlife and human beings. While there is acknowledgement of the noble role played by the international community in the promotion of tourism, there is almost a general consensus that

international community has facilitated HWC in Botswana through the increasing interest and advocacy of pro-wildlife policies which promote tourism activities and human settlement in conservation areas which increases risks particularly, the stochastic events (such as fire) which cause wildlife/game animals to flee their habitats towards people/human settlement hence causing HWC.

According to one of responses obtained by this study;

“The international community in collaboration with the media have been pushing the lifting of the hunting ban purely for their selfish interests which are termed as sensation seeking. For instance, national newspapers and electronic media reports have created a narrative which suits the angst of the current political impasse. Certain newspapers have perpetuated such narrative to suit their left or right wing agendas. Of course, the international community is itself divided over the lifting of the ban issue with about seventy percent against the re-introduction of hunting and thirty percent in favor thereof. For instance, the re-introduction of hunting has been heavily influenced by international interests, particularly by the Dallas Safari Club and the Safari Club International whose membership have lobbied for a return to hunting on Botswana”.

The researcher sought from the respondents whether the international community has influenced government’s decision or not when it (government) introduced international hunting ban. Respondents gave mixed responses to this question, with some agreeing with the perception while others disagreeing. However, statistically these opinions were insufficient to be proven because of the number of respondents to the question that was used to analyses this objective. So analyses of this objective relied on qualitative answers on in-depth knowledge of the respondents. Generally, respondents argued that, Botswana is part of the international community and therefore there was nothing wrong with government being influence by the international community to make national decisions in relation to conservation.

3.4 The role of International Community in mitigating HWC

The researcher sought to establish some of the ways through which the international community has been instrumental in diffusing HWC in Botswana. From the responses obtained, it was acknowledged that it is wrong to assume that one general solution is applicable to all the wide spectrum of HWC cases among the partner states since every country had its unique challenge fashioned in the local context. It was therefore imperative to analyze each individual partner state in respect to local context and establish different conceptuality which needs to be considered before drawing a conclusion. In this respect, the international community's role in mitigating HWC in Botswana has taken different unique approaches.⁸⁰

According to the findings established by this study the KAZA TFCA has approved two mitigation measures which can be employed to resolve HWC. They include traditional deterrents and modern deterrents. Traditional deterrents includes; use of noise, missiles, fire, simple fences, visual deterrents and lastly shooting problem animals. Modern deterrents includes; vigilance and cooperation among the farmers, alarm systems, chemical capture and translocation and use of sophisticated surveillance systems which entails use of CCTV and GPS boundary fencing. Additionally, the researcher found out that international community engages in fund-raising for HWC mitigation efforts which enables compensation to victims and facilitates conservation efforts through fencing and hiring of personnel.

When asked to respond on the involvement (role) of international community in solving the HWC, one of the respondents remarked;

“In my opinion, the international community will always play a part in in wildlife management throughout the world. Josef Settele once said “The essential interconnected web of life on Earth is getting smaller and increasingly frayed. This is a direct threat to all existence and certainly to human well-being in all regions of the

⁸⁰ Ibid

world". The wildlife in Botswana is a precious international resource, but it is the people of rural Botswana who have to live with the dangers and threats to their existence, so I think that the international community needs to invest in urban development in Botswana including in quality jobs, so that the countryside in Ngamiland, Chobe and Ghanzi Districts can bring huge international praise for protecting wildlife as was the case before."

Summarily, this study posits that HWC is a complex phenomenon which requires strategies which are based on scientifically proven solutions to mitigate. Failure to do that will aggravate the conflict rather than resolve it. Whatever mitigation strategy is preferred, international community should ensure local communities are involved all the way as important stakeholders for the success of the initiatives.

3.5 Banning of Hunting due to International Cooperation

Among the notable achievement of conservation in northern Botswana has been the banning of hunting and poaching. This was a milestone which was achieved through mutual cooperation among different states. Majority of respondents (56%) that comprised of community leaders, suggested that when hunting was stopped people were demotivated and did not see the benefits of continuing with conservation anymore. Their opinions were supported by the work of Mbaiwa who argued that the findings of EWB were not supported by any scientific evidence work, thus rendering the findings of EWB subjective.⁸¹

The other respondents blamed the conflict and the decline on wildlife species on mismanagement of wildlife which encouraged hunting for game trophies. They observed that the ban came about as a result of years of bad hunting oversight and implementation of hunting laws and regulation, bad practices by professional hunters as well as corruption and bad ethics that characterized the hunting industry. The

⁸¹Joseph, M. (2018). Effects of the safari hunting tourism ban on rural livelihoods and wildlife conservation in Northern Botswana, Okavango Research Institute, University of Botswana. *South African Geographical Journal*, 100 (1), 41–61

enactment of various relevant legal and policy instruments was fast-tracked with the facilitation of international community.

3.6 Chapter Summary

The chapter reviewed the role of international community actors in mitigating the HWC in northern Botswana and established a number of approaches engaged. Notably, the KAZA TFCA has been an international treaty binding among five countries which focuses on conservation and has been instrumental in militating against the HWC in its partner's states. There is general consensus that international actors have fueled HWC through prioritization of wildlife issues over those of human in northern Botswana. This has been actualized through increasing the range of conservation area which has resulted into increase in number of wildlife, consequently leading to increased incidents of HWC. The international community has also played a greater role in mitigating HWC through ratification of binding resolutions particularly those which entail banning of international trade in wildlife products, poaching and hunting resulting to increase in wildlife populations in protected areas which wander and challenge human security.

Contrastingly, the chapter also reveals an extensive intrusion of international actors in the management of wildlife affairs in Botswana where they influence national policy direction which informs the government actions on conservation efforts. The concerted efforts directed towards hunting ban in Botswana have been influenced by the international community and the media which has been instrumental in propagating the effecting of the hunting ban.

CHAPTER FOUR
STRATEGIES USED TO MANAGE HUMAN WILDLIFE CONFLICT IN
NORTHERN BOTSWANA

4.1 Introduction

This chapter is analyzed in line with the third objective which aimed at “investigating the approaches used in prevention and management of HWC in Northern Botswana”. It also analyzed the findings obtained from the study participants against the literature reviewed. It also discussed the policies that are currently in place which include; agreements with the private organizations and the international community, compensation, reduction of the wildlife population, translocation as well as monitoring and evaluation. Subsequently, a summary section is included.

4.2 Evaluation of the approaches

The types of human wildlife conflict and their causes differ from one situation to another, which means that there is no strategy which fits all situations. Mitigation strategies differ depending on the area the conflict takes place. In order to achieve ownership and to ensure success in resolving the conflict, the local inhabitants should fully be involved in the entire process from conceptualization, formulation through planning, implementation, monitoring and evaluation.⁸² This approach is also echoed by Simon Pooley *et al* who argues that, it ensures all local communities are not left behind when coming up with solutions to problems that affect their lives directly.⁸³ In majority of African states for-instance Botswana, strategies and laws governing

⁸²Francine, M. (2004). *Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human–Wildlife Conflict*. Milton Park, Abingdon: Taylor & Francis Inc.

⁸³ S. Pooley, M., Barua, W., Beinart, A., Dickman, G., Holmes, J., & Lorimer, A. J. (2017). An interdisciplinary review of current and future approaches to improving human–predator relations. *Conservation Biology*, 31 (3), 513-523.

conservation of wildlife were derived from colonial era, that have shaped the current approaches of management of wildlife.⁸⁴ They also apply in resolving of inherited land conflict, sharing of scarce resources, boundary disputes as a result of demarcation of lines by the colonial administration and sharing of resources. This has resulted into escalation of HWC in most of developing states in Africa.⁸⁵ Resolving conflicts successfully, requires a local plan and stringent measures aimed at preventing relapse. There exist various techniques from the DWNP provided by respondents that are frequently used to reduce the HWC in Botswana as shown in Table 4.1 below.

Table 4.1 Approach's to mitigate HWC in Northern Botswana

Approach	Type
Traditional	Noise Fire Sirens Fence Chili Pepper
Modern	CCTV Surveillance GPS Mapping Chemical Injection Translocation CBNRM Demarcated Protected Areas

Source; Field Data, 2020

According to the table above, there are various strategies adopted in Botswana, in-order to mitigate the effects of HWC. However, questions such as, why the conflict persists and whether communities are involved in formulating and implementing these strategies remains unanswered. According to Pooley *et al*, failure to engage local residents in conception and implementation of these strategies is a

⁸⁴ Mackenzie, JM. (1988). *The Empire of Nature: Hunting, Conservation and British Imperialism*. Manchester: Manchester University Press

⁸⁵ Ibid

recipe for their failure and the continued persistence of the conflict.⁸⁶ Some of the respondents argued that, the strategies are effective in mitigating the conflict, while others were partially effective and faced challenges.

4.2.1 Fencing

Most of the participants 70% argued that, the use of fences in some cases is effective in separating protected areas from communities and thereby helping to keep wildlife at bay. However, these fences are often destroyed by elephants and it takes longer to replace them because of high maintenance costs and insufficient funds allocated to the department of maintenance and replacement. This opinion is embraced by some scholars who argue that, use of fences have been used to control problematic wildlife species, since ancient times. However, in some cases, electric fences have also been used to show the intensity and complicated nature of the conflict by controlling movement of wildlife in order to protect the lives of people and their property.⁸⁷ Evidently, the use of electric fence is more efficient than the conventional wire fence, because of reduced labour costs during construction and maintenance. Some of the respondents were of the view that, in Botswana both electric and traditional methods of fencing are used, but electric fence is more efficient in curbing movement of wildlife. However, it experiences regular short out when in contact with snowdrifts or damp vegetation. Additionally, the method of controlling problematic animal is based on the animal's capacity to remember the effect of touching the fence, thereby rendering it a psychological rather than a physical barrier. Other disadvantages noted by scholars include reduced efficiency of electric fencing during dry conditions, due to poor grounding and if made of steel,

⁸⁶Op Cit

⁸⁷Seamans, T.W., & VerCaunteren, K.C. (2006). Evaluation of ElectroBraid fencing as a white-tailed deer barrier. *Wildlife Society Bulletin*, 34 (2), 8-15

fences are permanently structured and cannot be adjusted.⁸⁸ However, Chobe National Park in Northern Botswana is not fenced, because of its vastness which also points out to the inefficiency of this strategy.

4.2.2 Chili Pepper

20% of the respondents posit that, use of chili pepper is effective in keeping away wildlife from the communities. They argued that, its effectiveness is however limited by the wind direction if the scent of the burnt chili goes to the opposite direction of the elephants, they may not be effective in deterring them. According to Mdee and Zella, in wet season the chill application is a tedious work which increases human elephant conflict, due to heavy rains that wash away the mixture, making it easy for elephants to raid farms and destroy crops.⁸⁹ This is because their effectiveness in deterrence depends on contact with the animal. However, evidence the on ground shows the opposite as the conflict has overgrown notwithstanding the effectiveness of chili pepper. This study holds that, elephants are intelligent animals that study the environment they live in and the strategies used against them and hence develop strategies to defeat the trap. This therefore explains why some of these strategies have failed to produce tangible results.

4.2.3 Translocation

Translocation of trouble animals was observed as one of the effective strategies that reduces incidents of HWC in the communities. Some of the respondents cited various challenges that confront the effectiveness of this strategy such as; inadequate finances to move animals from one place to another, manpower, cages and drugs to relocate errant animals. Translocation has also been extensively

⁸⁸ Ibid

⁸⁹Mdee, N., & Zella, A. (2016). The Limit of Chill Method as a Non-Lethal Deterrent in Mitigating Human Elephant Conflict in Serengeti Ecosystem. *International Journal of Engineering Science Invention*, 5(12), 2319 – 6734

used in other areas with varying reasons. According to Griffith *et al*, during the late 1980's when the process of translocation that was carried out, majority of animals translocated were birds and mammals hunting purposes and not for conservation reasons.⁹⁰ Most of the studies on translocation show that, the process is mainly aimed at conservation but not mitigating of solving the HWC.⁹¹ Translocation is carried out in in-order to reduce the number of problematic animals in most of the conservancies. This therefore, makes the process ineffective in resolving the persisting menace.

4.2.4 Community Based Natural Resource Management

CBNRM as an initiative to give the communities rights to manage their resources has been regarded as an effective strategy in some areas such as Chobe as opined by 60% of the respondents. However, in some areas it has not brought any significant change. The program is said to empower communities in so many ways for instance escorting guides to control problematic wildlife. Most of the participants were of the view that, this strategy has been recommended by NGOs such as; Cheetah Conservation, Eco-Exist among others. Currently, the strategy has been rendered ineffective because of banning of wildlife hunting. CBNRM is established as a devolved and localized system, initiated to address the short comings associated with a centralized resource management system. Highly centralized systems are viewed as (far from reality) detached from local context and primarily driven by top notch elites and government officials who employ a top down approach in implementing them. CBNRM is a conservation oriented system guided by social ideals and values fashioned to suit community demands in as much as conservation is concerned. It is intended to realize both conservation objectives as well as improve community's

⁹⁰Griffith, B., Scott, J. M., Carpenter, J. W., & Reed, C. (1989). Translocations a species conservation tool-status and strategy. *Science*, 245(4), 477-480.

⁹¹Fischer, J., & Lindenmayer, D. B. (2000). An assessment of the published results of animal relocations. *Biological Conservation*, 96(2), 1-11.

livelihoods where it is instituted. Majority of the programs are established to manage forest and wildlife conservancies. At the heart of CBNRM is the welfare of communities residing adjacent to the wildlife sanctuaries. Therefore, understanding this concept holds the key to the success of conservation and eradication of HWC.⁹²

4.2.5 Demarcated Protected Areas

The use of demarcated protected areas (DPA) was rendered ineffective because some of these areas are not fenced and some agricultural activities conducted out in areas close to them. As a result wildlife moves out of these areas and get to human habitats, where they cause human wildlife conflicts. This has been witnessed in Northern Botswana along the Chobe National Park because it is not fenced. The finding of the survey reports by EWB has revealed that, human agricultural activities have already penetrated these areas that have rendered the policy ineffective in preventing the conflict. Some of the respondents also indicated that, in some instances, the strategy fail because of cross boarder influx of Elephants in some areas. For instance, Elephants from Zimbabwe are known to raid people's fields in Matopi area, despite the efforts initiated.

In summary, majority of the respondents argued that, some of the mitigation measures could still be effective if applied correctly. Others indicated that, some of the strategies work partially, but need human presence or intervention for instance; chili pepper so that, it is directed towards the direction of the wind as well as patrol to control problem animals, which require a lot of resources, e.g. manpower, vehicles etc.

⁹²Twyman, C. (2017) .*Community-based natural resource management*. In: Richardson et al (eds) *The international encyclopedia of geography*. New Jersey, USA: John Wiley & Sons.

4.3 Chapter Summary

This chapter examined the strategies employed to mitigate WHC in Northern Botswana. These measures range from international policy guidelines (agreements, resolutions and conventions), to national action plans as well as individual strategies, employed by various actors in mitigation of HWC. Internationally, there are binding treaties and conventions that dictate and guide the national action and policies regarding conservations. Notably, the chapter has established a policy that necessitated formation of management and governance of wildlife including WMs that formed the basis for wildlife conservation in Botswana. Further, it has revealed a number of approaches employed to mitigate HWC in Northern Botswana, which include traditional and modern approaches. The chapter therefore finds that, the approaches adopted by the government of Botswana have failed to mitigate HWC as a result of failing to incorporate local communities in conservation efforts.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The summary of the study findings, conclusion and recommendations in line with the objectives is presented in this chapter. The findings are contextualized in the broader study objective of investigating HWC as a menace Human Security in Southern Africa using the Northern Botswana as a case study. To this end, the study sought to: “determine the extent to which the HWC is a threat to human-security in Northern Botswana, investigate the role of international community in HWC in Northern Botswana and evaluate the current approaches used to manage HWC in Northern Botswana”. In this conclusion, the researcher gives some policy recommendation suitable for combating HWC which is a threat to Human Security of communities living in Northern Botswana.

5.2 Summary of Findings

Following a detailed examination and consideration of the summary of the findings, the study came up with the conclusions presented hereafter. Recommendations are then presented based on these findings.

In line with the first objective which assessed the extent to which the HWC is a menace to the security of the communities living in Northern Botswana. The study established that HWC is a threat to human security. This is evidenced by majority of the respondents (38%), who asserted that, WHC posed a great threat to human security. Further, this is collaborated by a study conducted by Kgathi *et al that* demonstrated how wild animals occasioned economic suffering to human beings, through deprivation of their economic livelihoods (killing livestock, destruction of crops and land degradation).

The second objective of this study sought to, “examine the role of the international community in HWC in northern Botswana”. Based on the observation by majority of the respondents and also the review of the existing international conventions and agreements, this study has established a number of notable international agreements/ conventions which have been domesticated in Botswana’s national wild life policies. While, a number of them exists, an outstanding the KAZA treaty stands out as one of the international legal instrument which has played a key role I resolving HWC in northern Botswana as well as offering a policy guideline in relation to HWC. Contrastingly, 80% of the respondents opined that, international actors have facilitated illegal wildlife trade which has exacerbated WHC in Northern Botswana.

In line with the third objective, which sought to examine the strategies employed in mitigating HWC in northern Botswana? The study established that there are various strategies and approaches that have been employed in order to mitigate WHC with varied measure of effectiveness. They include national policy instruments, institutional action plans, traditional and modern deterrent methods. Affirmatively, majority of the respondent’s 60% referred to government instituted policies as mitigating approaches to WHC. Several studies confirms to the availability of several initiatives and measures with varied levels of effectiveness.

5.3 Conclusion

This study concludes that, HWC takes place when the essential demand/needs of human being and those of wildlife clash with each other resulting to a conflict. In this regard, the study conclude that, HWC is a threat to human security of the people in northern Botswana, where local people regard values of wildlife being prioritized

than theirs and thus, feel inadequately employed to deal with the conflict. This therefore, confirms the first hypotheses.

Further, this study concludes that, the role of international community is double edged with positive and negative attributes. In this regard, while majority of the respondents indicated engagement of international community in the escalation of HWC, several studies documents the positive aspect of international community, which is realized through funding, research and advocacy. This neither confirms nor contrasts the second hypotheses.

Finally, several strategies have been initiated which feature international cooperation partnership and research aimed at combating WHC. In essence, collaborative approaches which entail all stakeholders (community stakeholders, policy formulators, institutions, governments, NGO's) have proved to be effective, as evidenced by 58% of the respondents and documented in several research publications. This therefore, contrasts the third hypotheses.

5.4 Recommendations

The study recognizes that, the strategies employed currently are commonly applied globally and were just adapted to the situation of Northern Botswana, without having tested them to the environment, to determine their suitability which may explain their failure. Secondly, they are not sustainable because they address short term objectives. Therefore in order to find long term sustainable solutions, the study recommends that;

Government should engage in scientific research to find solutions that are proven with data.

All stakeholders should be engaged and involved in formulating strategies to mitigate HWC with solutions that are not imported from outside but coming from the community and suitable to the local situation.

Implementation of the preferred strategies should be decentralized to foster local community participation and empowerment.

The private sector investment should be engaged in the CBNRM identified projects in the communities to expand the projects and create more opportunities and employment, to reduce reliance on hunting and dependency syndrome from government.

REFERENCES

- APHIS-NWRC. (2015). *Innovative Solutions to Human-Wildlife Conflict: National Wildlife Research Center Accomplishments*, 2014. Animal and Plant Health Inspection Service Miscellaneous Publication No. 1611. Fort Collins, CO: US Department Agriculture Animal Plant Health Inspection service
- Baldauf, C. (2000). *Participation Biodiversity, Conservation: Concepts, Experience & Perspectives*. Berlin, Germany: Springer.
- Barbancho, N. et al. (2005). *Economic Impacts of Trans- frontier Conservation Areas: Baseline of Tourism in the Kavango–Zambezi TFCA*. Johannesburg: Conservation International South Africa
- Barua, M., Bhagwat, S.A., & Jadhav, S. (2013). The hidden dimensions of human wildlife conflict: health impacts, opportunity and transaction costs. *Biological Conservation*, 157(9), 309–316.
- BBC News. (2019, July). Botswana lifts ban on elephant hunting. *BBC News*.
- Benjamin, N. (2019). *An Assessment of the Human-Wildlife Conflict across Africa*. Available at: <https://www.intechopen.com/online-first/an-assessment-of-the-human-wildlife-conflict-across-Africa>
- Bowman, et al. (2010). *Lyster's International Wildlife Law*, (2nd) ed. Cambridge: Cambridge University Press.
- Conover, MR. (2002). *Resolving Human-Wildlife Conflict: The Science of Wildlife Damage Management*. Boca Raton, FL: CRC Press Comprehensive summary of animal damage management
- Cooper, D.R., & Schindler, P. S. (2003). *Business Research Methods* (8th ed.). Boston: McGraw-Hill.
- Darkoh, MBK., & Mbaiwa, J. E. (2009). Land use and resource conflict in the OD, Botswana. *African Journal of Ecology*, 47(1), 161-165.
- ENCA. (2019, June). Botswana human-wildlife conflict nears crisis mode. *ENCA News*
- FAO. (2009). *Human wildlife conflict in Africa: Causes, Consequences and Management Strategies*. Rome: FAO
- Fedriani, JM., García, L., Sánchez, M., Calderon, J., & Ramo, C. (2017). Long-term impact of protected colonial birds on a jeopardized cork oak population: conservation bias leads to restoration failure. *Journal of Applied Ecology*, 54(2), 450-458.
- Fischer, J., & Lindenmayer, D. B. (2000). An assessment of the published results of animal relocations. *Biological Conservation*, 96(2), 1–11.

- Francine, M. (2004). *Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human–Wildlife Conflict*. Milton Park, Abingdon: Taylor & Francis Inc.
- Frankfort-Nachmias C., Nachmias, D., & DeWaard, J. (2015). *Research Methods in the Social Sciences*. New York: Worth Publishers.
- Freeman, R. (2010). *Stakeholder Theory: The State of the Art*. Cambridge: Cambridge University Press.
- Gay, L., Mills, G., & Airasian, P. (2006). *Educational research: Competencies for analysis and application* (8th ed.). New York: Prentice Hall.
- Gittleman, J.L., Funk, S.L., Macdonald, D.W., & Wayne, R.K. (2001). *Carnivore Conservation*. Cambridge, UK: Cambridge University Press
- Griffith, B., Scott, J. M., Carpenter, J. W., & Reed, C. (1989). Translocations a species conservation tool-status and strategy. *Science*, 245(4), 477–480.
- Gupta, A. (2013). Elephants, safety nets and agrarian culture: understanding human-wildlife conflict and rural livelihoods around Chobe National Park, Botswana. *Journal of Political Ecology*, 20(1), 238-254.
- Gusset, M., Swarner, M.J., Mponwane, L., & Keletile, K. (2009). Human–wildlife conflict in northern Botswana: livestock predation by Endangered African wild dog *Lycaon pictus* and other carnivores. *Biodiversity and Conservation*, 43(1), 67-72
- Hardy, M., & Bryman, A. (Eds.) (2004). *Handbook of Data Analysis*. New Delhi: Sage Publications.
- Hoare, R. (2012). Lessons from 15 years of human elephant conflict mitigation: management considerations involving biological, physical and governance issues in Africa. *Pachyderm*, 51(51), 60–74
- Israel, D. (1992). *Determining Sample Size*. Florida: Florida University Press
- Joseph, M. (2018). Effects of the safari hunting tourism ban on rural livelihoods and wildlife conservation in Northern Botswana, Okavango Research Institute, University of Botswana. *South African Geographical Journal*, 100 (1), 41–61
- Kaswamila, A., Russell, S., & McGibbon, M. (2007). Impacts of wildlife on household food security and income in northeastern Tanzania. *Human Dimensions of Wildlife. An International Journal*, 12(6), 391–404.
- KAZA TFCA TREATY. (2011). *Treaty between the Government of the Republic Of Angola, the Government of the Republic of Botswana, the Government of the Republic of Namibia, the Government of the Republic of Zambia, and the*

- Government of the Republic of Zimbabwe on the establishment of the Kavango Zambezi trans-frontier Conservation Area.* Luanda: KAZA TFCA Secretariat
- Kgathi, D.L., Mmopelwa, G., Mashabe, B., & Mosepele, K. (2012). Livestock predation, household adaptation and compensation policy: a case study of Shorobe Village in Northern Botswana. *Agrekon*, 51(2), 22-37.
- Khumalo, K.E., & Yung, L.A. (2015). Women, human-wildlife conflict, and CBNRM: hidden impacts and vulnerabilities in Kwandu Conservancy, Namibia. *Conservation & Society*, 13(3), 232–243.
- Lescureux, N., & Linnell, JDC. (2014). Warring brothers: the complex interactions between wolves (*Canis lupus*) and dogs. *Biological Conservation*, 171(233), 232–45
- Loss, S.R., Will, T., & Marra, P.P. (2013). The impact of free-ranging domestic cats on wildlife of the United States. *Nature communication*, 4(1386). doi.org/10.1038/ncomms2380
- Ludo, C. (2015, May). Another life lost in elephant attack in Botswana. *Daily News*
- Lyster, S. (2012). *International Wildlife Law*. Cambridge: Cambridge University Press
- Mackenzie, J.M. (1988). *The Empire of Nature: Hunting, Conservation and British Imperialism*. Manchester: Manchester University Press
- Madden, F. (2004). Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human–Wildlife Conflict, Human Dimensions of Wildlife. *Pachyderm*, 51(51), 60-74
- Malhotra, N.K. (2004). *Marketing research: An applied orientation* (4th edition) Pearson Education Inc: New Jersey.
- Marx, K. (1971). *Theory of Conflict*. Oxford: Oxford University Press.
- Matinca, A. (2018). *Human-Wildlife Conflict in Northeastern Namibia. CITES, Elephant Conservation and Local Livelihoods*. Cologne: Cologne African Studies Centre
- Mayberry, A.L., Hovorka, A.J. & Evans, K.E. (2017). Well-being impacts of human-elephant conflict in Khumaga, Botswana: exploring visible and hidden dimensions. *Conservation and Society*, 15(3), 280-291.
- McGaghie, W., Bordage, G & Shea, J. (2001). Problem, conceptual framework and research question. *Academic Medicine*, 76(9)923-924

- Mdee, N., & Zella, A. (2016). The Limit of Chill Method as a Non-Lethal Deterrent in Mitigating Human Elephant Conflict in Serengeti Ecosystem. *International Journal of Engineering Science Invention*, 5(12), 2319 – 6734
- Michael, C., Scott, S., Robert, S., & Elford, S. (2018). *Dry Season Aerial Survey of Elephants and Wildlife in Northern Botswana, July – October 2018*. Gaborone, Botswana: Department of Wildlife and National Parks
- Mogende, E. (2016). *The politics of Kavango-Zambezi (KAZA) TFCA in Botswana*. Johannesburg: University of Cape Town
- Mugenda, M., & Mugenda, O. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.
- Peace Parks Foundation. (2011). *Kavango-Zambezi TFCA*. Luanda: SADC Secretariat
- Philip, N. (2010). Human–Wildlife Conflict and Coexistence. *The Annual Review of Environment and Resource*, 41(1), 143–71
- Pozo, RA., Coulson, T., McCulloch, G., Stronza, AL., & Songhurst, AC. (2017). *Determining baselines for human-elephant conflict: A matter of time*. <https://doi.org/10.1371/journal.pone.0178840>
- Redpath, S. M., Young, J., Evely, A., Adams, W. M., Sutherland, W. J., & Whitehouse, A. (2013). Understanding and managing conservation conflict. *Trends in Ecology and Evolution*, 28 (2), 100-109.
- Reidinger, RF., & Miller, JE. (2013). *Wildlife Damage Management: Prevention, Problem Solving, and Conflict Resolution*. Baltimore, MD: Johns Hopkins University Press
- Ritchie, J., & Lewis, J. (2004). *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. New Dehli: Sage Publishers
- Roskaft, E., Mojaphoko, R., RaihanSarker, A., & Jackson, C. (2014). *Human dimensions of elephant ecology*. In: Elephants and savanna woodland systems: a study from Chobe National Park, Botswana (eds. Skarpe, C., J. du Toit, and S. Moe). Chinchester: John Wiley & Sons Ltd.
- S. Pooley, M., Barua, W., Beinart, A., Dickman, G., Holmes, J., & Lorimer, A. J. (2017). An interdisciplinary review of current and future approaches to improving human–predator relations. *Conservation Biology*, 31 (3), 513-523.
- Schley, L., Dufrêne, M., Krier, A., & Frantz, A. (2008). Patterns of crop damage by wild boar (*Sus scrofa*) in Luxembourg over a 10-year period. *European Journal of Wildlife Research*, 54(4), 589–99
- Seamans, T.W., & VerCaunteren, K.C. (2006). Evaluation of ElectroBraid fencing as a white-tailed deer barrier. *Wildlife Society Bulletin*, 34 (2), 8-15

- Sifuna, N. (2009). *Legal and institutional arrangements for damage caused by wildlife in Kenya and Botswana*, PhD Thesis. Johannesburg: University of the Witwatersrand.
- Stoldt, M. et al. (2020). *Trans-frontier Conservation Areas and Human-Wildlife Conflict: The Case of the Namibian Component of the Kavango-Zambezi (KAZA) TFCA*. Brussels: New Africa Books
- Sukumar, R. (1989). *The Asian Elephant: Ecology and Management*. Cambridge, UK: Cambridge University Press
- Thirgood, S., Woodroffe, R & Rabinowitz, R. (2005). *The impact of human wildlife conflict on human lives and livelihoods. In: People and wildlife, conflict or co-existence?*. Cambridge: Cambridge University Press
- Treves, A., Karanth, K.U. (2003). Human–carnivore conflict and perspectives on carnivore management worldwide. *Biological Conservation*, 17(6), 1491–1499.
- Trouwborst, A. (2017). *International Wildlife Law: Understanding and enhancing its role in conservation*. Oxford: Oxford University Press
- Twyman, C. (2017) .*Community-based natural resource management. In: Richardson et al (eds) The international encyclopedia of geography*. New Jersey, USA: John Wiley & Sons
- UNDP. (1994). *Human Development Report 1994: New Dimensions of Human Security*. Available at <http://www.hdr.undp.org/en/content/human-development-report-1994>
- USDA. (2006). *The facts about Wildlife Services-wildlife damage management*. Washington, DC: USDA
- Wang, S.W., & Macdonald, D. (2005). Livestock predation by carnivores in Jigme Singye Wangchuck National Park. *Biological Conservation*, 129(4), 558-565
- Weladji, R.B., & Tchamba, M.N. (2003). Conflict between people and protected areas within the Bénoué Wildlife Conservation Area, North Cameroon. *Oryx*, 37(1), 72-79.

Appendix 1: Study Area

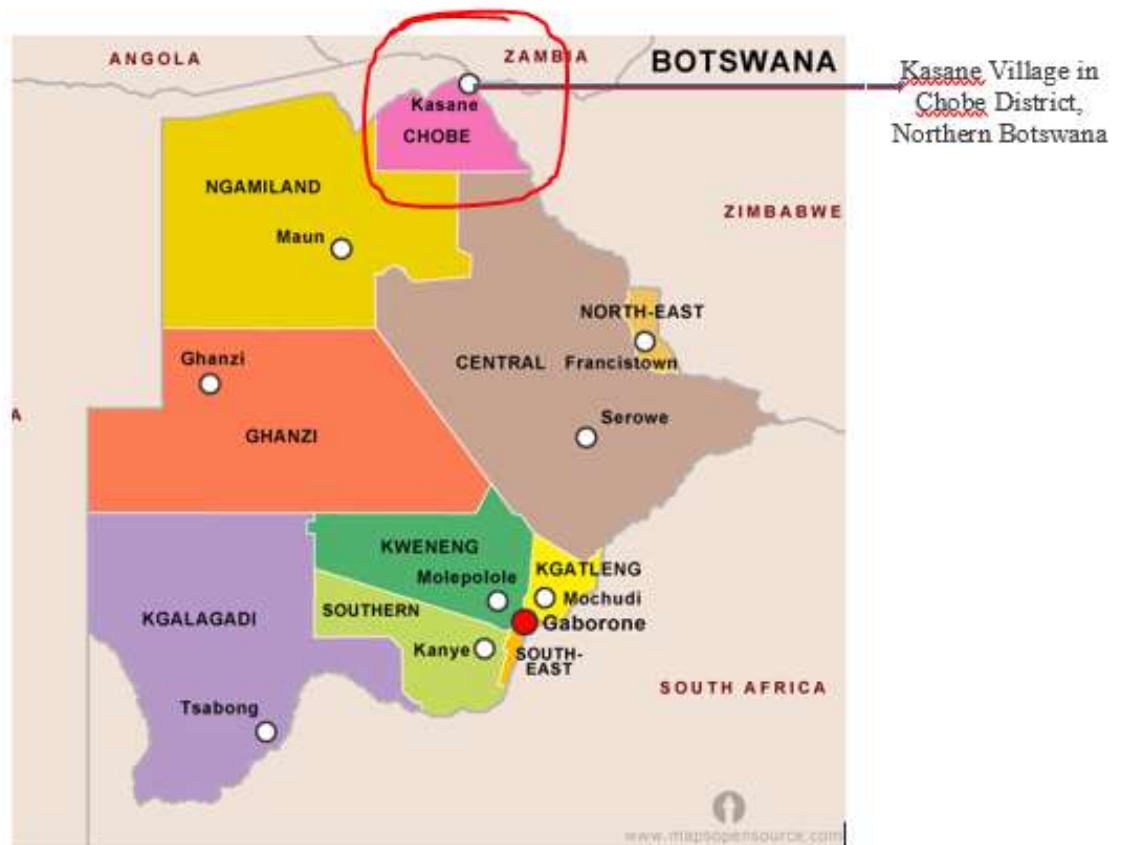
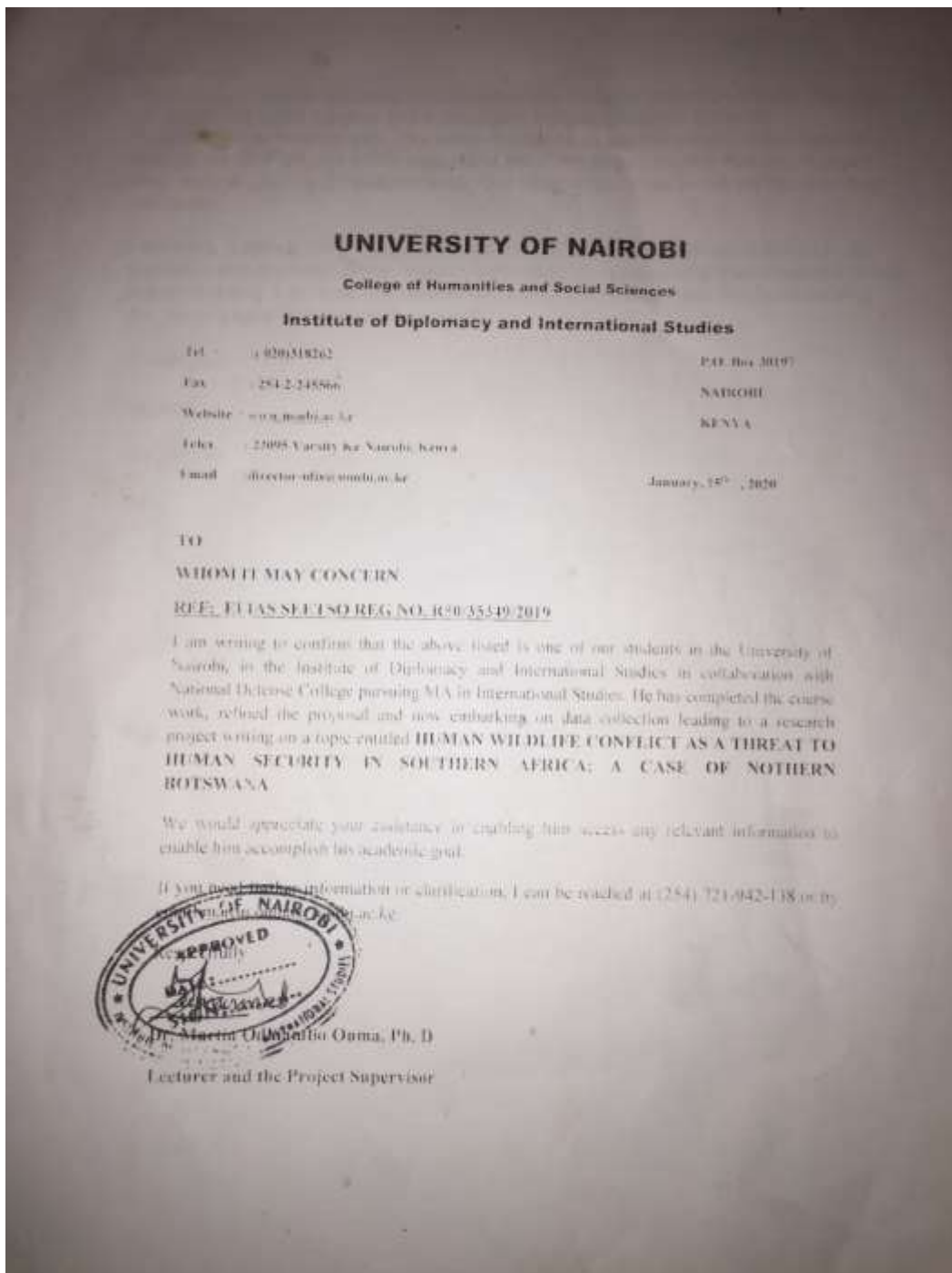


Figure 1: Map of Botswana showing Study area: Kasane Village in Chobe District

Source: <http://mapsopensource.com/images/botswana-districts-map.gif>

Appendix 2: Research Authorization Letter by the University



Appendix 3: Research Questionnaire

Introduction

My name is Colonel Seetso, in the Botswana Defence Force and also a student pursuing a Master's Degree in International Relations from the University of Nairobi, in collaboration with the National Defence College institution in Kenya. Part of my program requires that I conduct a study touching on security and international relations from the area of my choice. My research topic is on

“Human-Wildlife Conflict as a Threat to Human Security in Northern Botswana”.

The purpose of this research is to investigate the extent to which human-wild life conflict is a security threat to human life and their livelihood and to evaluate the strategies that have been put in place by government to mitigate its impact, while maintaining conservancy.

You are kindly requested to fill in the questionnaire which will be used in the study. I assure you that the information gathered will be used for the purpose of this research only and will be treated with strict confidentiality. Thank you in advance for your cooperation.

Part A: General Information

Tick the appropriate answer to your level best

1. Gender: Male Male

2. Age 15-35 36-50 51-65 above 65

3. Level of education:
Primary Secondary college University None

4. Marital status: Single Married Separated Divorced

5. Occupation: Self-employed Casual Formal employed
Unemployed

Please specify type of employment and nature of work done

.....
.....
Part B: The extent of human wildlife interaction

6. What is the distance between where you do your livelihood activity (home, farm, and / or field) and wildlife reserve area/ buffer zone?

Within wildlife reserve [], outside reserve but close (1km – 5km [] , far 5km – beyond []

7. Based on the choice in 6 above, what are likely chances of human-wildlife interaction?

Make the appropriate choice below

Highly likely [] Likely [] Neutral [] Unlikely [] Highly Unlikely []

8. What has been the observable human-wildlife conflict in the area over the past five years?

Increasing [] None [] Decreasing []

9. Based on the level of conflict between human and wildlife attributed above, make assessment of the impact on

a. threat to human security

High [] none [] no idea [] low []

b.land degradation

High [] none [] no idea [] low []

10. Based on the responses from 8-9 above, what is the extent of wildlife impact on human life?

a. Destruction of crops

High [] none [] no idea [] low
[]

b. Fatal incidents (killing of people)

High [] none [] no idea [] low []

c. Injuries

High [] none [] no idea [] low

[]

d. Instilling fear

high [] none [] no idea [] low

[]

e. Have you or anyone of your family member (s) been attacked by wild animals?

Yes [] No []

f. if yes (e, above) explain the experience

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

11. Explain the nature of threat to human life posed by wildlife based on the choices made in (a-d) in question 10 above

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

12. What is the government doing to mitigate the damage (threat to human security, eg compensation, and whether the strategy is effective or not? Explain.

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

13. Is the community is involved in the management of wildlife and conservation?

Yes [] No []

14. If yes what are the community involvement programs? Explain

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

Part C: The extent to which the international community has influenced human-wildlife conflict in Northern Botswana

15. What has been the impact of human wildlife conflict in Northern Botswana? Explain.

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

16. Do you think the international community has influenced human wildlife conflict? eg illegal trade of wildlife products, international poaching, etc.

Yes [] No []

17. If yes in 16 above, explain how.

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

18. In what ways have the international community contributed in resolving human wildlife conflict in Botswana, if any? (eg funding research, promoting conservancy, providing funds for compensation, etc).

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

Part D: Approaches towards managing human-wildlife conflict

19. What are some of the current approaches that are used to manage human wildlife conflict? Explain.

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

20. How effective are these approaches in addressing or mitigating the human wildlife conflict? Explain.

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

21. Does Botswana have a law that enforces conservancy and if so, how effective is this law implanted to reduce or curb illegal killing of wildlife and selling of wildlife products?

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

21. Does the government involve the community in wildlife management and conservancy?

Yes [] No []

22. If yes, explain this program (s) and how effective they are in reducing human wildlife conflict

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

23. Which mitigation measures do you propose for more effectively dealing with human wildlife conflict?

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

Thank you so much for your participation in this interview

Appendix 4: Summary of Approaches Used

Summary of the responses demonstrating the nature of threats to the humans as posed by dangerous wildlife.

Nature of threat to human posed by wildlife animals
Our fertile land becomes useless because we cannot plant because we cannot plant crops due to wildlife destruction
Our lives are in danger, we can get attacked while grazing livestock in the forest
People cannot move freely in the village
Elephants do massive destruction of our crop fields
Lions and hyena kill livestock such as cows and goats and sheep
Impoverishment of families because there is no food
Elephant's population has increased as they migrate from neighboring countries. They are displacing people now
Elephants kill people
People have encroached habitats of wildlife e.g. planting crops and grazing livestock
Dangerous wild life animals Instilling fear in people
Wildlife animals roaming at grazing area have attacked and killed people and livestock. We have reported incidences of Women attacked when collecting firewood
Hyenas have killed pupils going to school and killed livestock as well
It is dangerous to walk around the village at night

**Appendix 5: Request for additional data from key informants Group of the
International Community**

Objective: The extent to which the international community has influenced human-wildlife conflict in Northern Botswana

My name is Elias Seetso, a student pursuing a Master’s Degree in International Relations and Security Studies from the University of Nairobi, in collaboration with the National Defence College institution in Kenya. Part of my program requires that I conduct a study touching on security and international relations from the area of my choice. My research topic is on “Human-Wildlife Conflict as a Threat to Human Security in Southern Africa: Case study of Northern Botswana”.

The purpose of this research is purely academic and therefore will not be used for any other purpose.

There is perception in Botswana that human wildlife conflict increased between 2014 and 2019 as a result of the hunting ban policy introduced by government in 2014. This perception also posited that the international community through conservation organizations influenced the hunting ban policy. As a result, it has been posited that the international community played a part in influencing the human wildlife conflict in Botswana.

The term international community in this study is used to describe national, and or international conservation organizations and or NGOs or any other agency that may have or have participation or interests or projects related to conservation in Botswana and the SADC region.

The questionnaires are designed for this research only and assurance is given to the respondents that the information obtained will be used solely for the purpose of meeting the requirement of the course and will be treated with strict confidentiality.

I therefore request your organization to participate in this study by providing response to the questions stated below.

Please feel free to give a brief detail of your response so as to give the researcher a clear background for analysis purpose wherever you feel necessary. Thank you in advance for your cooperation.

Name of organization:.....

Your position in the organization:.....

1. Please give brief background/ role of your organization?

2. Briefly describe human wildlife conflict and what do you think are its causes in the context of Botswana.....

3. There is perception that human wildlife conflict in Botswana has escalated during the period 2014 – 2019. What is your view/opinion to this view?.....

.....

4. Further, it is perceived that human wildlife conflict in Botswana was fueled by the hunting ban policy of 2014. The objective of the hunting ban policy was to protect wildlife and safe guard certain species of wildlife whose population was said to be facing risk of extinction as a result of poaching.

a. Agree with the reasons given to justify the decision.....

b. Disagree with the reasons used to justify the policy.....

(Either way, please feel free to elaborate)

5. There was another perception which suggested that the international community played a part in influencing government to introduce the hunting ban policy in order to protect their interests in photographic businesses, at the expense of other stakeholders. What is your response to that?

.....
.....

6. In your opinion, what part do you think the international community played or ought to have played in providing solutions towards mitigation of human wildlife conflict in Botswana?

.....
.....

7. What strategies if any do you suggest to address this problem?

.....
.....

Please note that the space provided in the questionnaire may not be sufficient to accommodate your response, so feel free to type your response and attach it to the questionnaire in return. The response can be typed and be emailed in softcopy to elias.seetso@gmail.com.

**Appendix 6: Request for additional data from Department of Wildlife and
National Parks**

DATA COLLECTION QUESTIONNAIRE

Objective: Approaches towards Managing Human-Wildlife Conflict in Botswana

Part D:

My name is Elias Seetso, a student pursuing a Master’s Degree in International Relations and Security Studies from the University of Nairobi, in collaboration with the National Defence College institution in Kenya. Part of my program requires that I conduct a study touching on security and international relations from the area of my choice. My research topic is on “Human-Wildlife Conflict as a Threat to Human Security in Northern Botswana”.

Objective C seeks to obtain response from key informants group from the Department of Wildlife in the form of questionnaire. The purpose of this exercise is to obtain a response from key informants who are experts and have in-depth knowledge on the subject matter. Ideally, this would have been conducted through interview, but due to the constraint of time and space, a questionnaire should suffice. At least 10 officials from the Department of Wildlife are requested to respond to the questionnaire. The response can be typed and be emailed in softcopy to elias.seetso@gmail.com.

Department of Wildlife and National Parks.

Position held.....

1. Human wildlife conflict persists in Botswana despite efforts to address it. Do you agree or not?

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

2. What are strategies / approaches are used to manage human wildlife conflict in Botswana? List them.

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

.....
.....
3. What is the effectiveness of these strategies in addressing or mitigating the human wildlife conflict? Explain.

.....
.....
.....
4. In Northern Botswana, communities are forced to live in co-existence with wildlife because of the nature of terrain and share the same resources such as water from Chobe River. Under such circumstances, conflict is inevitable. What role does the Department of Wildlife play under such circumstances to mitigate, control or manages the conflict between wildlife and human beings?

.....
.....
.....
.....
5. Most of the strategies used to address human wildlife conflict are reactive in nature and therefore address symptoms rather than the causes to the problem. This could point to the persistence of human wildlife conflict in Botswana. Please provide your independent opinion to this.

.....
.....
.....
6. If you agree with (5) above, please suggest solution to improve the strategies

.....
.....
.....
7. Farmers are generally not happy with the strategy of compensation because payment is either done late, or fails to recognize the value of the loss and restore the claimant back to original position and/ or sometimes payment is not done at all. Give your position on this assertion.

-
.....
.....
8. If you agree with (7) above, what should be done to improve it

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

Thank you in advance for your participation

Appendix 7: Responses from key informants from DWNP

Strategies used in Botswana for mitigation of human wildlife conflict

	Current Approaches / Strategies used to mitigate human wildlife conflict Northern Botswana
1	Deployment of officers to hotspot areas of human-wildlife incidents.
2	Use of fire crackers
3	Use of chili pepper
4	Erection of fences and electric fences
5	Demarcated protected areas National Parks and Game Reserves
6	Community empowerment through Community Based Natural Resource Management programmes Community empowerment through Community Based Natural Resource Management
7	Environmental Education on Conservation
8	use of rubber bullets
9	Translocation of wildlife from human habitats to Protected Areas and provision of water in points
10	Compensation
11	demarcated corridors to be used by wildlife from forage sites to water drinking spots
12	lifting of the hunting ban
13	Use of guard dogs

Source: Researcher, 2020