

EXAMINING FACTORS RESPONSIBLE FOR THE CONTINUED ILLEGAL USE OF
WILDLIFE RESOURCES AT BWINDI IMPENETRABLE FOREST
NATIONAL PARK.

BY

MUHUMUZA AMBROSE

2019/A/KTH/1858/F

A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF TOURISM AND
HOSPITALITY MANAGEMENT IN PARTIAL FULFILMENT
OF THE REQUIREMENTS OF THE AWARD OF BACHELOR'S DEGREE
IN TOURISM MANAGEMENT
OF KABALE UNIVERSITY.

MARCH, 2023

DECLARATION

I, Ambrose Muhumuza, declare that this Research report is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature ~~~

MUHUMUZA AMBROSE

APPROVAL

This research has been done under my supervision and it is ready for submission

Signature

Date

Dr. CHRISTINE AMPUMUZA

DEDICATION

I dedicate this research to my guard father Prof. Aryeija Warren for unconditional love, encouragement and financial support during my time of Study. I would love to say that you have been the best in my academic journey. May our good lord bless you more.

ACKNOWLEDGEMENT

The preparation of this research has been long and a difficult task that has had many challenges. Nonetheless, I take the pleasure to acknowledge the advice, support and encouragement extended **to** me at various stages.

I would like to thank the almighty God for enabling me to persevere the hard times and above all protecting me up to this time.

I thank my supervisor Dr. Christine Ampumuza for her patience and guidance to me in all effort to come up with this research.

I am also grateful to my Guard father Prof. Aryeija Warren for the financial support and to my friends for the foundation they built that gave me strength during the entire period of this research.

Lastly but not least, I thank the respondents that were involved in this research study. I cannot thank you enough. God bless you all

LIST OF ACRONYMS

UTB	Uganda Tourism Board
NFA	National forestry Authority
PA	Protected Area
UWA	Uganda Wildlife Authority
BINP	Bwindi Impenetrable forest National Park
RS	Revenue Sharing
USD	United States Dollar
GDP	Gross Domestic product
WTO	World Tourism Organization
ICDP	Integrated Conservation and Development Program

TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
DEDICATION	iii
ACKNOL WLDGEMENT	iv
LIST OF ACRONYMS	v
TABLE OF CONTENTS	vi
CHAPTER ONE	1
INTRODUCTION	1
1.0 Introduction	1
1.1 Background of the study	1
1.2 Statement of a problem	2
1.3 Objectives of the study	3
1.3.1 General objective	3
1.3.2 Specific objectives	3
1.4 Research questions	3
1.5 Significances of the study	3
CHAPTER TWO	5
REVIEW OF RELATED LITERATURE	5
2.0 Introduction	5
2.1 Forms of illegal use of wildlife resources	5
2.2 Causes of illegal use wildlife resources in Bwindi impenetrable forest national park	6
2.3 The effects of illegal use of wildlife resources	8
CHAPTER THREE	10
METHODOLOGY	10
3.0 Introduction	10
3 .1 Research Design	10
3.2 Study population	10
3.3. Study Area	10
3.4 Sample Size determination	10
3.5 Sampling techniques	11

3.5 Research Instruments	11
3.6 Data Collection Procedures	12
CHAPTER FOUR	16
DATA PRESENTATION, ANALYSIS AND INTERPRETATION	16
4.0 Introduction	16
4.1 Demographic Characteristics	16
4.2 Forms of illegal use of wild life resources	19
4.3 Causes of illegal use of wild life resources	21
4.4 Effects of illegal use of wild life resources	23
CHAPTER FIVE	25
DISCUSSION, CONCLUSION AND RECOMMENDATIONS	25
5.0 Introduction	25
5.1 Discussion	25
5.1.2 Causes of illegal use of wildlife resources in Bwindi Impenetrable forest National Park	27
5.1.3 The effects of illegal use of wildlife resources	31
5.2 Conclusion	33
5.3 Recommendations	33
5.4 Areas for further research	34
REFERENCES	35
APPENDICES	37

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, and significance of the study, scope of the study and definition of operational terms.

1.1 Background of the study

The illegal use of wildlife is a threat to biodiversity globally, causing negative biological, ecological, economic and social impacts and acting as a primary threat to maintaining national parks (Spalding & Lysenko, 2005)

The Asian Tropical forests are among the most affected by overhunting of wildlife species for bush meat as a source of food and also as income due to the increasing regional demand for wildlife products. Hunting of wildlife in Southeast Asia has occurred for thousands of years mainly for nutritional and economic resources (Fa et al. 2002, Corllet 2007)

Furthermore, illegal exploitation of wildlife resources presents a significant threat to national parks across Africa (Milner-Gulland and Rowcliffe 2007)

In central/ Western Africa for example illegal bush meat hunting has reached a crisis level and the wildlife population cannot sustainable off take levels for different species (Wright and Priston 2010). In Africa, south of Sahara (Mkanta and Chimtembo 2002) illegal fishing is also common in PAs for example in the Genarezhou national park of Zimbabwe (Gandiwa el al. 2012).

At Bwindi impenetrable forest national park south western Uganda, When the national park was set up by an act of parliament in of Uganda 1991, it caused high levels of conflict and resistance from local people who became excluded from the area and its resources. As a result, in the years that followed, a number of 'integrated conservation and development' (ICD) interventions were carried out to reduce conflict by improving the livelihoods of communities living around Bwindi National Park. For example, activities the Mgahinga and Bwindi impenetrable forest Trust was established in 1995 as a non-government organization to improve the wellbeing of people in

community surrounding Bwindi. Interventions such as tourism bring in significant amounts of revenue and also provide employment opportunities

According to R Ashley, D Russell, B Swallow - Biodiversity & Conservation, 2006 Springer press, Illegal use of wildlife at BINP is a pressing biodiversity conservation and protected area management challenge. An Integrated Conservation and Development Program (ICDP) was established in Bwindi in 1994 to address local community livelihoods, whilst dissuading illegal activity and associated impacts on the protected area. The Bwindi Mgahinga Conservation Trust (BMCT) and Uganda Wildlife Authority (UWA) and other development organizations have been implementing ICDP initiatives that involve funding and implementing community livelihood projects around Bwindi over the past 25 years. (Robert & Badru 2021) These projects are premised on the fact that improving local people livelihoods will reduce local pressure on the park's resources and illegal activities as well.

However, all the above interventions initiated by the government in order to increase community's willingness to involve in conservation have actually increased the rate of illegal wildlife use at Bwindi impenetrable forest national park. (Julia Baker & Mariel Harrison 2014). The researcher therefore sets to understand the factors responsible for the continued illegal use of wildlife resources at Bwindi impenetrable forest national park.

1.2 Statement of a problem

The illegal use wildlife resources of encroachment, cutting trees for poles and timber, illegal grazing, harvesting medicinal plants and hunting wild animals has been a great concern at Bwindi impenetrable forest national park.(Global forum on forests 2022). People from communities around the Park hunt and kill animals for meat posing great risks of reducing the number of mountain gorillas and other threatened mammals, birds and insects(Hickey et al 2019), loss of montane flora and fauna and reducing diversity of co-evolving habitats. As a result, interventions were carried out to reduce conflicts and increase willingness to manage and protect wildlife resources (Julia Baker, 2015).The interventions of providing employment opportunities to community members adjacent to the park, revenue sharing in form of small grants for projects, supporting infrastructure development like roads, health centers and schools. According to the recent guidelines (UWA 2021) the overall goal of the above interventions was to ensure strong partnership between Bwindi impenetrable national park and the community to

obtain financial benefit derived from the existence of this park to contribute to the .improvement in people's welfare and help gain support for BINP conservation. However, despite all the above interventions, the illegal wildlife resources from the park have greatly increased. This prompted the researcher to go to the field to investigate the factors responsible for the continued illegal use of wildlife resources at Bwindi impenetrable forest national park.

1.3 Objectives of the study

1.3.1 General objective

The general objective was to understand factors responsible for the continued illegal use of wildlife resources at Bwindi Impenetrable forest National Park.

1.3.2 Specific objectives

1. To analyze the forms of illegal use of wildlife resources
2. To investigate the causes of illegal use of wild resources in Bwindi impenetrable forest national park
3. To analyze the effects of illegal use of wildlife resources.

1.4 Research questions

1. What are the forms of illegal use of wild life resources?
2. What are the causes of illegal use of wildlife resources at Bwindi impenetrable forest national park?
3. What are the effects of illegal use of wildlife resources?

1.5 Significances of the study

The study findings can be helpful to policy makers in the areas of illegal extraction of resources to design appropriate policies and help in implementation.

These study findings will add data to existing knowledge or literature in areas of tourism and development.

The research study is an important requirement to the researcher for the fulfillment of the necessary requirements for the award of a Bachelor's degree in Tourism and Hospitality Management.

It shall also contribute to the existing scanty information about illegal harvesting of resources in national parks in particular with hope of leading to better conceptualization of knowledge on illegal utilization of resources on tourism sector and its effects both on conservation areas and local communities

Though there was on-going awareness about illegal use of resources in national parks and its impact on both sides' conservation areas and communities around, people should be adequately taught on the measures of values of animals and tourism at large. Therefore this study will be necessary in adding to the current strategies to reduce illegal use resources in national parks that affect these protected areas

1.6 Defintion of operational terms

Education: The process of imparting skills and knowledge to a person usually through rigorous training in an organized setting such as a school or institute, with a prescribed curriculum.

Culture: This means societal norms and values.

Tourism: This is an industry consisting of tourists, a business and an environment or local community for operations.

Sports: The whole range of competitive and non-competitive active pursuits that involve skill, strategy, and/or chance in which human beings engage, at their own level, simply for enjoyment and training or to raise their performance to levels of publicly claimed excellence.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter presents the literature in regard to the study. Covers forms, causes and effects of illegal use of resources in Bwindi impenetrable forest national park.

2.1 Forms of illegal use of wildlife resources

Logging activity; was most frequently concentrated at East Ugalla national park, a tread reported by Wilfred and macColl (2014). Presence of illegal logging was identifiable from cut tree stumps, which were most numerous at East Ugalla. This fits the offence records, which showed that the majority of arrests at East Ugalla were for illegal logging (36% of arrests during 2013-2009.). Forest logging in protected areas has resulted in growing illegal human access to national parks for provision of food for loggers camping in the forest (Meijaard 2005)

Illegal hunting; Hunting of wildlife in Southeast Asia has occurred for thousands of years mainly for nutritional and economic reasons (Fa et al 20002, Corlett 2007, but wildlife meat is not just a source of food but has become an important income source due to the increasing due to the increasing regional demand for wildlife products backed by an illegal market such as traditional medicine, pets trophies and decoration (Rao et al 2005, Corlett 2007)

Illegal hunters in lake Mburo national park mostly target the lesser mouse deer and the Eurasian pigs as meat sources for locals and markets, while the common water monitor is hunted not just for its meat but specifically for common value of its skin in the leather trade and its fat for traditional medicine (Bennet et al 2010). Even if these species are classified of least concern, by the IUCN, hunters often use unselective traps to catch these animals since snaring requires less effort and time than active hunting. Hence, even if hunting activities are not directly targeting the endangered species present in the area, trapping can have serious effects on their persistence, eventually causing shifts in faunal species composition (Jerozolinski Perez 2003, Corlott 2007)

Illegal Grazing; wild animals are prone to avoid areas disturbed by humans (Rich et al 2016; Moris et al, 2019). Human disturbances like livestock grazing degrades habitats and has multiple effects on medium large sized mammal distribution (Karanth et al 2011; Soofi et al 2018) livestock causes wide spread change in plant structure and adversely impacts wild ungulates via

trophic competitions (Haris et al., 2019) livestock grazing also facilitates forest accessibility for illegal hunting, thus mammals exerting detrimental effects on the survival and movement large mammals (Laurence et al., 2008; Soofi et al 2018)

2.2 Causes of illegal use wildlife resources in Bwindi impenetrable forest national park

A set of global trends has contributed to the escalation of illegal practices in national parks worldwide. These can be grouped into human population growth, land fragmentation, species habitat loss, degradation and fragmentation, growing interest in ecotourism and to nature reserve, increasing livestock population and competitive exclusion as a result of conservation program, climate factors and stochastic events.

Human population growth

Demographic and social changes place more people in direct contact with wildlife: as human population grows, settlements expand into and around protected areas as well as in urban and sub-urban areas. In Africa, human population has led to encroachment into wildlife habitats, construction of species into marginal habitat patches and direct competition with local communities (IUCN, world park congress, 2003)

Land use transformation

This driving force is very much associated with the previous one, as the transformation of forests savannah and other ecosystem into agrarian areas or urban agglomerates is a consequences of the increasing demand for land, food production energy and raw materials. in Uganda, in many areas with abundant wildlife such as queen Elizabeth national park, Murchison falls NP, lake Mburo national park, Kidepo valley national parks, illegal use of park resources are intensified by land use fragmentation and the development of small scale farming. In fact, state and trust ranches have subdivided and sold as smallholdings and cultivated with commercial horticulture crops. In the Asian state of Gujarat, on the periphery of Gir national park and sanctuary intense and escalating illegal extraction of resources (Vijayani and Pati 2002).

Tradition and culture.

Tribes and indigenous people use par resources illegally to observe their tradition and culture and for various beliefs in the contemporary world. These are communities and tribes that still

practice these activities. For instance, some ethnic groups living next to the oceans and national parks hunt turtles and use them to make soup which is believed is used to make them stronger. As a result, some species turtles are verge of extinction in Vietnam because of this superstitious practice. In Africa, the Masai tribe hunt lion as a rite of passage to gain recognition for their bravery. Various ethnic groups across the world also involve in such practices by killing orangutans, Gibbons monkeys and whales on the basis of different traditional and religious beliefs. Collectively, these practices have increased cases of people illegal practices of hunting resulting in endangerment animal and some plant species.

Overhunting for food.

Since the first time humans set foot on this planet, they have always hunted for food. Furthermore some of the earliest archeological paintings and cave paintings reveal the dependence of pre-historic man on depending on wildlife for food. To date, men still go into game reserves and national parks to hunt for food and coupled with the ever increasing human population and environment needs, people continues to engage even more in illegal activities in national parks which has led to endangerment and extinction. The continued growth of human population means the need for more and more food that makes it difficult for some species of animals and plants survive or regenerate in national parks. What makes the matter worse is that it is now done by big business that engage in the activities on a very expensive scale.

Economic values.

Animal and plants species in national parks in particular are sources used to produce several raw materials for manufacture of products such as clothes, body creams and lipsticks among other artifacts. Some of the materials extracted from animals also have very high economic values and some people use them for decoration or to signify their power and superiority. Consequently, more resources are extracted from national parks illegally to fulfill the market demands for animals products like fur, skins bones teeth and fins just to mention a few.

Indirect compensation.

Indirect compensation of damages caused by wildlife rely on giving out licenses to exploit natural resources through tourism, hunting or collecting fuel wood, timber mushroom, fodder among others. This type of compensation scheme, also known as the "settlement of rights" to use

natural resources, and it appears to be more indirect and not appreciated by the communities near protected areas. Indeed, the less benefits derived from the legitimate use of natural resources influence the continuous illegal activities in national parks and the negative attitudes and perceptions of rural residents (Sekher, 1998)

Abundance and distribution of wild prey.

Many authors recognize that when native prey is abundant, wild predators consume it in preference to livestock and impoverishment of prey population is the major cause of carnivores shifting their diet to livestock. This is clearly due to the ease of capture and limited escape abilities of livestock (Mishra et al, 2003). The locals have therefore extensively engaged in illegal activities in return to intervene.

Increasing livestock populations

Mishra et al (1997) indicated that growing densities in livestock population can create an overlap in illegal grazing in the protected areas. The competition of livestock and wild herbivores for forage results in overgrazing and decline or local extinction in world herbivores population. In India, domestic animals outnumber wild wildlife sanctuaries and 39% of protected areas and it has been ascertained that livestock graze in 75 of wildlife sanctuaries and 39% of protected areas. Under these circumstances, the increase in population of livestock become an importance cause to the increase in illegal grazing in national parks

2.3 The effects of illegal use of wildlife resources.

Illegal exploitation of natural resources presents a significant threat to protected areas (P As) across Africa- Milner-Gulland and Rawcliffe (2007). In central/ west Africa, for example, illegal bush meat hunting has reached a crisis level and the wild life population cannot support sustainable off-take levels and the species. Noss 1998 et al. (2000) also documents similar issues, including that there was extinction of species; since the 17th century, excessive illegal extraction of resources from national parks is recorded as the third notorious cause of animal and plant extinction. The world wildlife fund (WWF) reports that illegal activity hunting in protected areas is responsible for 23% of extinction. Many humans are forcing animals and plants into extinction by over consuming them or selling for economic gains.

Historically, overhunting is the cause of the extinction of giant lemur's elephants, birds in Madagascar, Waldron's red colobus monkeys in Ghana, moas in New Zealand, Alagoas curassow in north- eastern Brazil and giant Kangaroos in Australia. It affects the interconnectedness of the ecosystem. Illegal harvesting of resources in national parks not only affect plants and animals but also affect the entire Biosphere. Consequently, it affects the interconnections of the ecosystem since the living organisms need each other together with their natural habit to survive. In other words, illegal activities like hunting disturb the natural order and since every ecosystem is unique and different, the removal of a living creature from their natural environment results in an unbalanced ecosystem. The dire consequences are the possibilities of overpopulation due to the incapability to keep one population at their natural levels or extinction due to lack of food Gulland (2000).

Rawcliffe (2007) asserts that it affects the food chain with reference to how illegal use of resources in national parks affects the interconnectedness of the ecosystem, it means other species of animals, trees, and plants are equally affected. As previously discussed, it causes either an increase or decrease of specific population within a habitat. When this happens, it directly impacts the natural habitat in that it gets rid of natural predation and population growth which in turn disrupts the food chain.

Endangerment to the general wildlife population and their habitats; way into the forests or other wild areas, they destroy the natural environments and add carbon footprints by emitting carbon dioxide from their vehicles. The campsites set up upon arrival at the illegal desired locations also commonly lead to lots of littering. The smoke emitted from the campfires also negatively affects both wildlife and their natural environments Noss et al. (2000)

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter consists of research design, area of study, study population, sample size and sampling techniques and methods of Data collection, sources of data, data analysis, data collection procedure, ethical considerations, research limitations and delimitations.

3.1 Research Design

A research design is a plan, structure and strategy of investigation used to obtain answers to research questions or problem (Kumar, 2005). A cross sectional study design was applied in order to gather information. The study also adopted both qualitative and quantitative research approaches because they helped the researcher to elicit the views, opinions and perceptions of the respondents about the study. They emphasized the importance of brainstorming the opinions, views and perceptions about the study.

3.2 Study population

Study population is a collection of all members or units of a group that is of interest in a particular study (Amin, 2005). A population means a group of individuals, objects or items from which samples were taken for measurement. The population of this study comprised of house hold heads in Ruhija Sub County Rubanda district and the staff of the park.

3.3. Study Area

The study was conducted in Ruhija Sub County Rubanda district.

3.4 Sample Size determination

The study considered a sample size of 96 out of 2670 household heads from Ruhija Sub County and law enforcement officers of the park. The sample size was arrived at using Slovin's formula as follows;

$$n = \frac{N}{1 + N(e)^2}$$

Where N is the target population (2.670), n is the required sample size and e is the level of significance at 0.05.

$$n = \frac{2,670}{1 + 2,670 \times (0.05)^2}$$

Sample size, = 96 respondents

3.5 Sampling techniques

According to Oso & Onen (2005), a sampling technique is a description of strategies which the researcher used to select representative elements/ subjects/ respondents from the target population. The study employed both purposive and non-probability sampling design using quota sampling technique. The sampling involved careful understanding of the features of the population such as level of education, gender, age and marital status. This followed the fact that respondents were not homogeneous and thus a cross section of views was needed for this study. **3.6 Data sources**

The researcher obtained information using secondary and primary data sources. Secondary data helped to guide the researcher to establish what other researchers found out previously on illegal use of wild life resources. This enabled the researcher to fill some gaps that would otherwise be left out. In this respect, textbooks, journals, newspapers and other relevant records were used hand in hand with primary data in order to come up with valid information relevant to the study topic.

3.5 Research Instruments

Interviews, Questionnaire, and observation were employed so as to maximize availability of data.

3.5.1 Interviews

These involved face-to-face interactions with the respondents. A formal interview guide was used for the investigation. This assisted in getting first-hand information from the respondents who were selected to provide the required data. Using the above method, the researcher was able to correct data directly through face to face interactions. An interview guide was developed in advance and in a sequence that made sense to interviewees or respondents. This helped the researcher to interact with respondents who were illiterate and unable to fill the questionnaires. It helped in covering information that would have been skipped by the questionnaires.

3.5.2 Questionnaires.

According to Kothari (2004), a questionnaire is a tool with a collection of questions which leaves some gaps for the respondents to fill in the line/ space provided. A structured questionnaire consisting of both open-ended and close-ended questions was used. This was used mainly

because it helps a researcher to get responses from literate respondents who can easily read and write. The instrument was purposely selected because it would seek personal views of the respondents and thus enabled the park officials to provide a wide range of data as they would not shy away in any way. This in addition helped to avoid repetition of questions.

3.6 Data Collection Procedures

Permission for collecting data from the field was guaranteed by the introductory letter which the researcher obtained from the Head of Research Department of Kabale University. This became a key to execution of activities in the field. During interviews, the researcher motivated the respondents by sufficiently building rapport or making good working relationship with them.

The researcher also dressed, appeared, looked and conducted himself decently to influence the respondents' motivation towards their participation in the research process. Interviews were conducted to get first hand information especially from eligible respondents. This was ideal in capturing non verbal communication in the case of face to face interviews. An Interview guide was used too and this helped in controlling the environment when asking questions, by controlling the order or the flow of the questions.

Questionnaires were designed and presented to the selected respondents for filling. Thorough explanations on how to answer the questions was extended to the respondents by the researcher, appointments on when to pick the filled questionnaires was always made and by coincidence if the respondent was found absent at the time of collecting the left tool, then a conveying letter was left to him or her as a reminder. At the time of picking the filled questionnaires, the researcher first read through to ensure that all questions are well answered and the researcher acknowledged or thanked the respondents for the work done.

Related documents and sources which were deemed imperative for the success of the study were also accessed. These included journals, magazines, internet sources, newspapers, policy documents and these guided the researcher in comparisons and to establish more information.

3. 7 Data presentation and analysis.

The process of Data analysis began with putting together sophisticated data that was noted during interactions with the respondents. This is referred to as *Data assembling* '. Then data was sorted using a computer through use of codes, frequencies and percentages for easy comparisons.

Data was then organized and tabulated. Descriptive statistics were thereafter employed to make comparisons that could easily be interpreted by everybody.

3.8 Ethical considerations.

Harrington, (2005) has it that the Universalists or deontological school of ethics argue that "*an action is inherently right or wrong*" and therefore implying that ethical rules are universal. On the other hand, the relativist or teleological school holds that "*ethical principles are contingent on context*" meaning; ethical decisions may vary 'on the basis of the context in which they are made or on the basis of the consequences that result'. Ethics is thus defined as "the set for rules of conduct that enable us to operate defensibly in the political contexts in which we have to conduct educational research" (Simmons, 2004). In addition, ethical issues in research include codes of conduct that are concerned with the protection of the researched from physical, mental, and/or psychological harm (Chilisa, 2005). The codes of conduct to protect the researched include ensuring the anonymity of the researched and confidentiality of the responses as put up by Chilisa. Diener & Crandall, (1998) indicated that in doing research, there are several aspects that surround ethics, however, there are four main principles which are whether there harm to participants; whether there is a lack of informed consent; whether there is an invasion of privacy and whether deception is involved.

During this study, the interviews were taken in peaceful environments which were selected by the participants. A central individual was reached initially, who further reached out to those who would volunteer to be a part of the study. In doing so, the rationale of the study would be explained so that volunteers of the area be able to know what they are to be engaging in. Officers in the Tourism sector of Kabale District were contacted individually and asked if they would like to be interviewed about the issue of park resources.

In terms of consent, it was done verbally upon the beginning of the meeting and participants had the freedom to withdraw from the study at any time in case they felt uncomfortable with it. Each participant was free to speak, and they would not in any way be forced to respond to what they did not feel comfortable with. To enable and maintain their confidence and not crash their selfesteem, participant's responses were not labeled as right or wrong and they were assured that each response was of importance. As stated, participants chose the location for the interviews and this was part of having their privacy respected and protected. In addition, their identity in the

study will remain anonymous; rather codes and not their names were used. Consent would be sought for each participant in the study and nobody was forced to do so, and they were free to withdraw. Transparency was practiced such that every necessary information that they would need to know was told to them for example the rationale of the study, why they were chosen and that they would be recorded for transcription's sake. They were made fully aware of what was going on. The researcher wrote her research report without fabrications or distortions so that reliable findings and recommendations are arrived at.

3.9 Research limitations and delimitations.

The downside to this is that bias could not be avoided. This is in the sense that most of the respondents in the study area were familiar with the interviewer (me), because I had worked in this area before. Because of this, at times their answers were directed at complaining about the new system of my old workplace as perceived. Despite this, the researcher would make sure that there is no hinderance of self-esteem. Neither of them experienced it because it is not a visible factor. In addition, the findings cannot be generalized and therefore should be understood within the context of illegal use of wild life resources and clients within the study area, although they may easily be related to other areas. The findings however should provide relevant information for the topic and comprehending any related or similar problems.

Resistance from the respondents was also another problem. Preliminary research had revealed that the closed nature of Ruhija sub-county would be a tremendous challenge. This assertion was based on the argument that most of the residents of this area were so secretive and not willing to disclose much regarding their take on issues of illegal use of wild life resources in the area to any unknown person they were not familiar with. However to reduce on this problem, the researcher had to always first establish a rapport to capture the attention of his respondents on top of an introductory letter which also supplemented his defence.

Language barrier was also a challenge in this study. The fact that Bwindi impenetrable forest national park and the areas around has people of varied languages such as the Batwa, Bakiga and park rangers and warden were speaking different languages. It was thus hard for the researcher to rely on English only during data collection. Even some of the targeted respondents could not easily interpret the instruments like questionnaires since they were designed in English. However, the researcher used one other person who was well versed with the languages of the

people in the park area, who tried to translate the questions for easy and better understanding. With this, the study had to succeed.

Last but not least, the study was limited by its time scope and the resource constraints. On the side of resources, the researcher encountered a problem of limited funds for transport to move around the area of study, photocopying and printing. However, transport costs were later lowered when financial assistance was sought from parents and relatives. More so, this helped on the cost of printing and photocopying, a combination of which enabled the study to succeed. On the side of time, the researcher would always find himself fixed with his other personal commitments, hence he lacked adequate time for collecting data for research. To mitigate this, the researcher drafted a daily work plan on which he set specific time for research activities. This enabled the study to succeed.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the findings of the study regarding factors responsible for the continued illegal use of wildlife resources at Bwindi Impenetrable Forest National Park. Data was collected using questionnaires, interviews and document analysis and is presented by tabulation in form of frequencies and percentages. Graphs are in some cases used to show some of the responses.

4.1 Demographic Characteristics

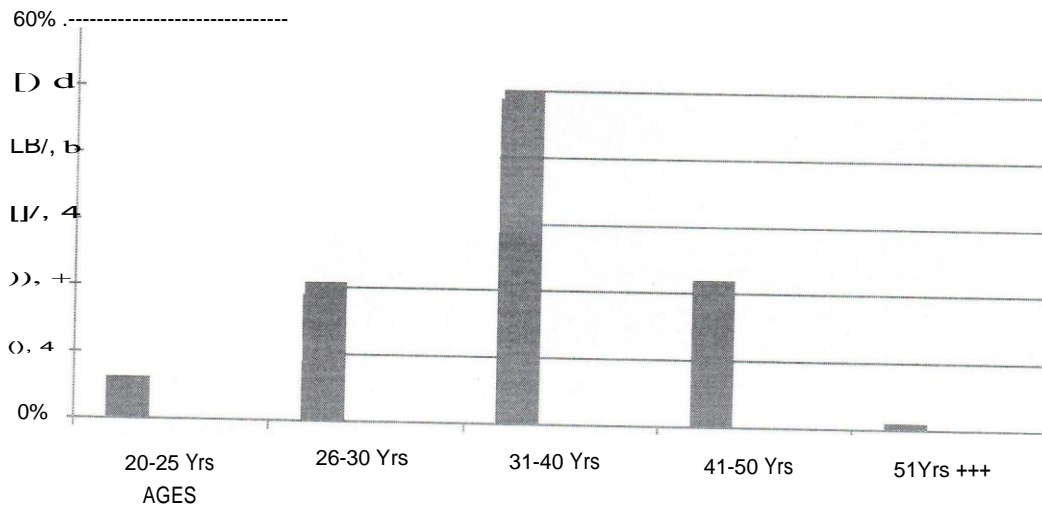
Data pertaining the demographic characteristics of the respondents was also collected. This included gender, age, marital status and other special attributes. It was deemed necessary to identify the demographic characteristics because the study respondents were not homogeneous hence a cross section of views was needed for the study to be successful. Further, the demographics were useful as it helped in identifying the eligibility of respondents in the study. This helped in getting particular information from eligible respondents.

4.1.1 Age range of respondents

Table 4: 1: Showing age range of respondents

AGE RANGES	FREQUENCY	PERCENTAGE
20-25 years	06	6.2
26-30 years	20	20.8
31-40 years	48	50
41-50 years	21	22
51 years and above	01	1.0
TOTAL	96	100

Source: primary data 2023

Figure 4.1: Showing respondents' age ranges.**Source: primary data 2023**

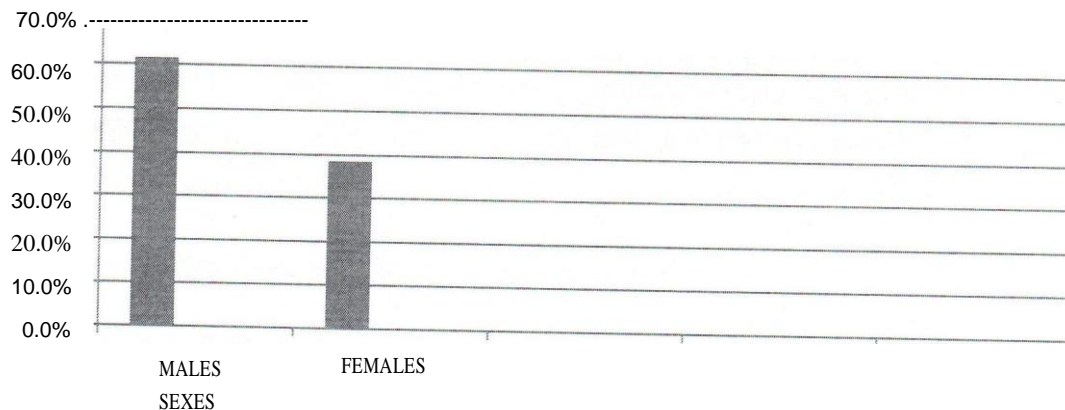
From the table and also figure 4: 1 above, findings indicate that a good number of respondents of varied ages turned up for this study. The study was largely dominated by individuals in the age bracket of 31- 40 years as represented with 50%, followed by ages 41-50 years (22%) and 26-30 years (20.8%) although there were even people ranging from 20-25 (6.2%). Only one individual (1.0%) was in the age bracket of 51 years and above. This implies that majority of the respondents who participated in this study were adults, indicating that they had a lot of knowledge on the activities of the park.

4.1.2. Gender of respondents

Table 4.2: Showing respondents' sexes.

Gender	Frequency	Percentage
Males	59	61.5
Female	37	38.5
Total	96	100

Source: Primary Data 2022

Figure 4.1: Showing the sexes of study participants.

Source: primary data 2023

From the study carried out, both males and females were fairly represented. Nevertheless, males were very many compared to their female counterparts. This is represented by 61.5% and 38.5% of males and females respectively as indicated in table and figure 4:2 above. The gender of respondents was considered feasible towards the success of this study because the study needed a cross-section of views that required the researcher to consider different sexes for purposes of obtaining particular information. In this context, both males and females participated in this survey.

4.1.3 Roles and categories of respondents.

Table 4:3: Shows roles and categories of study participants

ROLES/CATEGORY	FREQUENCY	PERCENTAGE
Tourism officers	18	18.8
Game wardens	38	39.6
Game rangers	32	33.3
Community conservationists	02	2.1
Community leaders	06	6.2
TOTAL	96	100

Source: primary data 2023

Over all, the study participants included tourism officers, game wardens, game rangers and community conservationists, as well as some community leaders. It involved wardens as presented by 39.6%, game rangers 33.3%, tourism officers 18.8% and also community conservationists 2.1 % and community leaders in the area 6.2%. This implies that data was sought and documented from viable respondents, as these provided relevant and first hand information about illegal use of wild life resources from the park which made the study succeed.

4.2 Forms of illegal use of wild life resources

Table 4.4 Showing various forms of illegal use of wild life resources in the park.

FORMS OF ILLEGAL USE OF WILD LIFE RESOURCES	F	%
Poaching or un permitted hunting of animals in the park for food hides and skins	18	18.8
Un restricted logging and tree cutting for timber, firewood and charcoal	38	39.6
Illegal animal grazing in the park, such animals like cattle, goats and sheep	32	33.3
Illegal extraction of medicinal plant materials for example Pygeum/Prunus Africana (<i>Omumba</i>) locally known for treatment of prostatic hyperplasia or cancer and several chest infections.	02	2.1
Encroachment on the park with intent of getting extended land for farming and settlement. Plot adjustment is usually reported on the edges of the park.	06	6.2
TOTAL	96	100

Source: primary data 2023

From the table 4.3 above, information regarding various forms of illegal use of wild life was sought and documented. Overall, it was maintained that un restricted logging and tree cutting is the leading form of illegal *use* of wild life in the park as shown by 39.6%. Respondents revealed that most of the tree species in the park are usually cut and used as firewood or to obtain charcoal by the persons neighboring the park. Needless to mention is that the timber harvesters (loggers) were reported to be killing away some animals from the park for food while camping in the forest of Bwindi. It was further indicated that this has long standing effects as it leads to depletion of various tree species, animals and also alters the habitable conditions of the park. It was also reported that due to this, many animals tend to ran away from the park to seek for favorable places.

4.3 Causes of illegal use of wild life resources.

Table 4.4 Shows identified causes of illegal use of wild life resources in the park.

The second leading form of illegal wild life resource use was that sometimes, the local people neighboring the park practice un permitted grazing of animals in the park especially goats, cattle and sheep as shown by 33.3%. Un permitted grazing is usually un controlled, hence this results into overgrazing, in most cases causing destruction of the vegetation cover as the animals eat away most of the plant species. Other respondents (18.8%) reported that poaching or un authorized hunting of animals in the park for food hides and skins is another serious form of illegal use of wild life resources. It was maintained that some people who are living in the edges of Bwindi Impenetrable Forest, usually practice hunting in the area including in the park using arrows and bows to kill some animals for food and some skins. Through questionnaires respondents indicated that some of the animals which are usually killed include the wild pigs and rabbits. It was further revealed that some of the locals even encroach on the park for firewood and wild food like honey, berries and mushrooms. In this context, they kill most of the animal species and also tamper with some vegetation cover.

CAUSES OF ILLEGAL USE OF WILD LIFE RESOURCES	F	%
Poorly protected parks that can easily be accessed backed by a large population of wild life resources which are eaten by man.	13	13.5
High rate of industrial evolution, and the need for raw materials.	02	2.1
Unfair Uganda wild Life policy on compensation of people affected by animals which escape from the park, attacking homes and agricultural fields.	11	11.4
High human population, leading to increased need for land for settlement	17	17.8
High population of livestock, prompting park neighbors to graze from the park	12	12.5
The increased need for more land to enhance agricultural activities and increase in land use transformation.	04	4.1
Increased need for hunting activities by forest dwellers and residents of park like rangers, wardens who also illegally kill some animals for food and medicine	02	2.0
Elevation, tree cover, and terrain ruggedness	19	19.6
The high number of funded community projects (ICDPs)	16	17.0
TOTAL	96	100

Source: Field data 2023

From the study carried out, it was found out that elevation of the park, coupled with the tree cover and the rugged nature of the area has taken the lead in causing illegal use of wild life resources as indicated by (19.6%). It was disclosed that the area covered by the park exhibits a true picture of a tropical rain forest and is covered with trees and shrubs, on a U-shaped elevation together with rugged hills of a conical shape that allow those neighboring the park to enter and encroach on flora and fauna without being easily noticed by the wardens and rangers.

Other respondents 17.8% mentioned high human population as the second leading cause. It was indicated that this lead to increased need for land for settlement, subsequently prompting people to encroach on park land. Apart from settlement, others (17.0%) mentioned the high number of funded community projects (ICDPs) as another cause of illegal use of wild life resources, although there were some proportion of respondents 13.5% who maintained that poorly protected parks that can easily be accessed, backed by a large population of wild life resources which are

Additionally, statistics indicated that encroachment on the park with intent of getting extended land for farming and settlement is also another yet identified form of illegal entry into the park area as represented with 6.2%. to most respondents, it was noted that although this is not so common, plot adjustment is usually reported on the edges of the park and this has serious effects on flora and fauna (plants and animals) in the park.

Only 2.1% of the total respondents disclosed that illegal extraction of medicinal plant materials for example *Pygeum/Prunus Africana (Omumba)* traditionally known for treatment of prostatic hyperplasia or prostate cancer (in its advanced stages), diabetes and several chest infections, is another form of illegal use of wild life resources. Such tree species were reported to be rare and extinct in the forest and the park in particular due to illegal extraction. Most of the respondents who were interviewed revealed that the locals penetrate into the park in the late evening and early mornings to extract medicine on these tree species by peeling off their stems which makes these species dry and extinct.

eaten by man have also escalated illegal encroachment on wild life resources. For example it was indicated that the park is not properly fenced and as a result, some animal species tend to escape to neighboring areas from where they are killed and some eaten by man. Needless to say, respondents revealed through interviews that people neighboring the park usually enter illegally to harvest wild food like mushrooms, bee honey and berries and also to illegally hunt some animals which can be eaten.

No wonder, 12.5% of the respondents cited high population of livestock as yet another cause. It was indicated that the number of goats, cattle and sheep in the areas surrounding the park have increased, yet the available land for grazing remains quite very low. Apparently, people near the park have resorted to grazing animals in the park, a factor which in turn escalate illegal exploitation of wild life resources available therein.

From the other information gathered especially from game rangers and park wardens through interviews, 11.4% of the respondents reported unfair Uganda wild Life Authority policy on compensation of people affected by animals which escape from the park as another cause of illegal exploitation or use of wild life resources. The policy provides for indirect compensation of damages caused by wild animals by relying heavily on giving out licenses to locals to exploit natural resources through hunting or collecting fuel wood, some timber, mushroom, honey and fodder among others. This type of compensation scheme, also known as the "settlement of rights" to use natural resources, appears to be more indirect and not appreciated by the communities near protected areas but also have long standing effects on usage of wild life resources. This implies that-indeed the lesser benefits derived from the legitimate use of natural resources influence the continuous illegal activities in the national park.

Also, it was revealed that the increased need for more land to enhance agricultural activities backed up by an increase in land use transformation has seriously caused illegal use of wild life resources as shown by 4.1% in the table above. Through interviews with respondents, it was clearly indicated that the locals near the park usually extend the boundaries of their pieces of land to expand their agricultural plots so as to obtain more extensive agricultural land, and this has caused several problems related to park encroachment together with wild life resources.

Apart from this, the wardens and game rangers indicated that high rate of industrial revolution (2.1 %) although to a negligible level, has created the need for raw materials, and resultantly

exerting pressure on wild life resources. It was reported that most of the park area is usually encroached on with need to obtain timber and wood fuel for both local and national industries.

Increased need for hunting activities by forest dwellers and controllers of the park like rangers, wardens who also illegally kill some animals for food and medicine was also cited as another cause. It was highlighted that although the wardens and park rangers are charged with the duty of controlling the park area, they at times kill some animals and harvest some of the plant species for food and also with intent to get some medicines. Interesting to note among the game rangers was that the Batwa- a class of very short people who were reported to live in the forested area of Bwindi, also carries out un permitted hunting in the park. The study revealed that these carry out hunting not only in the forest, but also go as far as within the park, thereby causing illegal exploitation of most of wild life forms.

4.4 Effects of illegal use of wild life resources.

Table 4.5 Showing the effects of illegal use of wild life resources in the park.

EFFECTS OF ILLEGAL USE OF WILD LIFE RESOURCES	F	%
Reduced and or extinction of most of the wild life species both flora and fauna	19	20
Loss of biodiversity and natural beauty, resultantly causing a decline in tourism	04	4.1
Increased number of people living in the edges of the park.	01	1.0
Wide spread diseases especially transmitted from wild animals to livestock and humans involved in park activities.	19	19.7
Increased bush meat on the village market which tend to reduce on meat quality	26	27.0
Unauthorized gating into the park	14	14.6
Pollution of the park, causing death of some animals	13	13.6
TOTAL	96	100

Source: Field data 2023

From the data that was collected, the most leading effect of illegal use of wild life resources was revealed to be increased bush meat on the village market which tend to reduce on the quality of meat as already indicated by 27.0% in the table 4.5 above. The second most leading effect was noted to be reduced and or extinction of most of the wild *life* species both flora and fauna in the park as indicated with 20%. It was reported through interviews that most of the plants and

endangered animal species in Bwindi Impenetrable forest National Park have been extinct, and reduced due to continuous hunting and illegal extraction of medicinal plant materials for example *Pygeum/Prunus Africana* (*Omumba*) locally known for treatment of prostatic hyperplasia or cancer and several other chest infections.

However, 19.7% of the respondents mentioned wide spread diseases especially transmitted from wild animals to livestock and humans involved in park activities as another great effect although 14.6% revealed that unauthorized gating into the park is also another significant effect but this was not over emphasized. Another key effect disclosed was pollution of the park 13.6%, usually by encroachers who come in the park with intent to harvest some wild food like honey, mushrooms and end up dumping some solid waste in the park especially polythene bags and other non bio degradable items that cannot easily decompose, which are in turn eaten by wild animals causing death of some animals. This implies that animal life becomes at risk with solid waste disposal in the park.

Additionally, loss of biodiversity and natural beauty, resultantly causing a decline in tourism, was also indicated in this study as another effect represented with 4.1% but 1.0% of the respondents insisted that the end result of continued exploitation of wild life resources leads to increased number of people living in the edges of the park and such a population is a threat to animal life, as it can itself breed over exploitation of minor animal species. In an interview with one park warden he said; *"....for the mean time, we are likely not to see any trees in the park just in a few years to come, for the increasing population together with establishment of household near the park has largely encouraged illegal activities in the park, such as firewood collection and charcoal burning. Worst is that some kill our precious animals and consume them"*

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION 5.0

Introduction

This chapter presents the detailed discussion of findings in relation to theory and literature "Siew. According to Bryman, 2012 theory enables how social phenomena can be **under5A** and the research findings can be interpreted. The discussions also include the latent content, some parts of the findings as it was earlier mentioned that the content analysis focused on both the manifest, which was presented in the findings and the latent which will look at hidden leanings of the respondents and participants and draws some conclusions from what is 147,3 their responses. The discussions in this section are presented in the order of the research questions and objectives, just as the way in which the findings were presented. The discussions only highlights on interesting parts of the findings that include unexpected responses as well as *unusual aspects of the responses that needs to be discussed.*

5.1 Discussion.

5.1.1 Forms of illegal use of wildlife resources.

From the findings, one of the identified forms of illegal use of wild life resources is un restricted logging or tree cutting for timber, firewood and charcoal. The study found out that logging activity was most frequently concentrated deep in the forest of Bwindi and it even went as far as

the Bwindi national park where trees are illegally cut for timber, charcoal burning and firewood and all these have devastating effect on life forms in the park both flora and fauna. It is unfortunate that the loggers end up penetrating deeper into the park area in search of bush meat. This therefore clearly imply that logging in protected areas tend to result in growing illegal human access to national parks for acquisition of food for loggers camping in the forest. Similar forms were reported in a survey by Wilfred and Mac Coll (2014), and Meijaard (2005) which showed that presence of illegal logging was identifiable from cut tree stumps, which were most numerous at East Ugalla. This however also fits the Uganda Wild Life offence records, which showed that the majority of arrests at Bwindi Impenetrable Forest National Park were for illegal *logging (36% of arrests during 2009-2013)*

Another significant form as per the findings is poaching or un permitted hunting of animals and extraction of other wild life species in the park for food, medicine, hides and skins such as from small antelope species. Needless to mention was the illegal extraction of medicinal plant materials

from the park *especially* by people who stay near it. It was noted for example that tree species like *Pygeum/Prunus Africana* (*Omumba*) locally known for treatment of prostatic hyperplasia or cancer and several other chest infections, is usually harvested illegally causing its serious extinction. Another example that was also derived from the interviews was that the Batwa ~I., hunt animals, fish from the rivers within the park and also harvest wild yams and honey. This implies that poaching or hunting is yet another form of illegal use of wild life resources. In an interview with one local leader in the area he revealed "*our local people here usually enter the park without proper authorization to peel off parts of plants with intent to get medicine, we ea,*

*/orget to mention that Omumba can rarely be seen in the park area". The same not³ ; reflected in the study by Rao et al (2000), Corlett (2007) which indicated that hunting of wildlife in Southeast Asia occurs for thousands of years *mainly* for nutritional and economic reasons, but wildlife meat is not just a source of food but has become an important income source due to the increasing regional demand for wildlife products backed by an illegal market such as traditional **medicine, pets trophies and decoration.***

In another similar case, Jerozolismski Perez (2003) had highlighted that illegal hunters in lake Mburo national park mostly target the lesser mouse deer and the Eurasian pigs as meat sources for locals and markets, while the common water monitor is hunted not just for its meat but specifically for common value of its skin in the leather trade and its fat for traditional medicine. Bennet *et al* (2010) *also* indicated that even if these species are classified of least concern, by the IUCN, hunters often use unselective traps to catch these animals since snaring requires less effort and time than active hunting. Hence, even if hunting activities are not directly targeting the endangered species present in the park area such as the mountain gorillas, chimpanzees, monkeys, African green broadbill, cream-banded swallowtail. black and white colobus. +4

tailed monkeys, vervets and the giant forest hog but trapping can have serious effects on their **persistence, eventually causing shifts in faunal species composition.**

Another theme that was derived from the findings *was* that illegal animal grazing in the park, such animals like cattle, goats and sheep are another form of illegal use of wild life resources. *It* was reported that people neighboring the park, usually smuggle in their cattle sheep and goats so as to be able to get greener pastures. Animals through grazing eat away various types of vegetation, leading to extinction of several plant cover. This implies that *illegal* animal grazing in

the parks in a way affects vegetation and partly facilitates illegal hunting during grazing. Other human forms of illegal use of wild life resources that were noted among respondents as per {L findings were encroachment on the park with intent of getting extended land for farming and settlement together with plot adjustment that is usually reported on the edges of the park. This kind of external/human invasion tends to also make several animals ran away from the park. These findings al so relates with what Rich et al (2 0 16) and Moris *et al* (20 1 9) found out in their studies that wild animals are prone *to* avoid areas disturbed by humans. Human disturbances like livestock grazing and settlement cause noise in the park, degrade habitats and this has multiple effects on medium and large sized mammal distribution. Also according to Karanth *et al* (2011) and Soofi *et al* (20 18) livestock causes wide spread change in plant structure and adversely impacts wild ungulates via trophic competitions. Haris *et al.*, (2019) and Laurence (2008) also indicated that livestock grazing also facilitates forest accessibility for illegal hunting activities, thus exerting detrimental effects on the mammals and their survival, multiplication and **movement at large**.

5.1.2 Causes of illegal use of wildlife resources in Bwindi Impenetrable forest National P4}L One major cause of illegal use of wild life resources as per the findings from this study was that high human population tends *to* lead *to* increased need for more land for settlement It «4

reported that due to this, local people tend to encroach on the park with need to create more habitable plots. Following this is that the park encroachers end up tampering with some wild life Tesources both flora and fauna. This is in line with IUCN, world park congress (2003) sure that indicated that demographic and social changes place more people in direct contact with wildlife and that as human population grows, settlements expand into and around protected areas as well as in urban and sub-urban areas. The survey came up with an example of Africa, wher ~ highlighted that human population has led to encroachment into wildlife habitats and its components, construction of species into marginal habitat patches and direct competition with **local communities**.

Another cause cited in the study was the increased need for more land *to* enhance agricultural activities and increase in land use transformation. This driving force is very much associated with the previous one and population increase has forced people in the communities around the park and Bwindi Impenetrable Forest to largely resort to forest and park encroachment, seeking

for more fertile arable land. Vijayani and Pati (2002) in their study had highlighted that the Vans formation of forested areas and other vegetative regions like savannah and other ecosystems to agrarian areas or urban areas agglomerates were consequences of the increasing demand for land, food production energy and raw materials. In Uganda, especially in many areas with abundant wildlife such as queen Elizabeth national park, Murchison *falls* NP, lake Mburo national park, Kidepo valley national parks, illegal use of park resources are intensified by land Use through fragmentation and the development of small scale farming. Also, in the Asian s4 of Gujarat, on the periphery of Gir national park and sanctuary, intense and escalating illegal traction of resources were escalated by human invasion of the park, carrying out **far4**

Increased need for hunting activities by forest dwellers and residents of park like rangers, wardens was also another cause of illegal use of wild resources. It was maintained that some of the park rangers and wardens also illegally kill some animals for food and medicine. The fact behind this is that the wardens and rangers spend more time in the park and forest area and are **Sien** less time to move and procure meat elsewhere, rather to kill some small mammals 4 4 park that can be eaten. Comparing this with a survey done by Haris et al., (2019) it is clear that since *the* first time humans set foot on this planet, they have always hunted for food. Furthermore some of the earliest archeological paintings and cave paintings reveal the dependence of pre-historic man on depending on wildlife for food. *To* date, men still go into game reserves and national parks to hunt for food and coupled with the ever increasing human population and environment needs, people continue to engage even more in illegal activities in national parks which has led to endangerment and extinction several species of flora and fauna. *The* continued growth of human population means the need for more and more food that makes it difficult for

some species of animals and plants to survive or regenerate in national parks. What makes the matter worse is that it is now done by big business that engage in the activities on a very **expensive scale**.

Findings also came up with high rate of industrial revolution and the need for raw materials as yet another cause. It was disclosed that industries are increasing in the areas and Districts around the park and these emerge with an urgent need for **foe!** such as firewood, and also as raw materials for the manufacturing industries especially those that use timber like carpentry workshops and the art craft industry. This indicates that pressure is usually put on the forests to

extract raw materials to serve the ever increasing local and national industries. Comparing this with a study done by Mac Coll (2014), animals and plant species in national parks in particular are sources used to produce several raw materials for manufacture of products such as clothes, body creams and lipsticks among other artifacts. To him some of the materials like skins extracted from animals especially leopards, lions, also have very high economic values and some people use them for decoration or to signify their power and superiority. Consequently, more resources are extracted from national parks illegally to fulfill the market demands for animal **products like fur, skins bones teeth and fins just to mention a few.**

In another case, another finding that was noted is the Unfair Uganda wild Life policy on compensation of people affected by animals which escape from the park, attacking homes and agricultural fields. In their compensation policy, it was indicated the system is based on in4~# methods where the person whose property is affected by animals is allowed rights to use some of the park items as a settlement. Such compensation packages include for example provision for fire wood collection. Sekher, (1 998) had also highlighted that in Asia, indirect compensation of damages caused by wildlife rely on giving out licenses to exploit natural resources through Ourism, hunting, timber, mushroom, fodder among others. This type of compensation **schen** also known *as* the "settlement of rights" to use natural resources, appears to be more indirect and not appreciated by the communities near protected areas. Indeed, the less benefits derived from the legitimate use of natural resources influence the continuous illegal activities in national parks **and the negative attitudes and perceptions of rural residents.**

Also poorly protected parks that can easily be accessed backed by a large population of wild life resources which are eaten by man was itself registered as another cause of illegal *wild* life resource exploitation. This is however worsened by elevation, tree cover, and terrain ruggedness together with the high number of funded community projects in the area. Regarding elevation, wardens disclosed that Bwindi Impenetrable National Park is covering 32,092 hectares, and is one of the largest areas in East Africa which still has Afromontane lowland forest extending to well +;+47, 44 montane forest belt sitting oo conical hills. Located on the ea stem edge of the Albertine Rift Valley and believed to be a Pleistocene refugium, and the property is a biodiversity hotspot with possibly the greatest number of tree species for its altitude in East Africa. It is also host to a rich fauna including a number of endemic butterflies and one of the richest mammalian assemblages in Africa. It is also a home t 41., half of the world's mountain gorilla population, and the property represents a conservation frontli

isolated forest of outstanding biological richness surrounded by an agricultural landscape supporting one of the highest rural population densities in tropical Africa. Community benefits arising from the mountain gorilla and other ecotourism may be the only hope for the future conservation of this unique site p, ;

was clearly reported by respondents that the park is not properly fenced, consisting of loose fences. The Park boundary was clearly indicated is delineated with planted trees and concrete pillars Parkers along areas where rivers do not form the boundary. This seems to be a clear boundary line ,] has mostly tried to stop encroachment by the local communities, although with increasing population, agricultural encroachment remains a potential threat. However it was further revealed that community participation programmes have been initiated and therefore enabling the neighboring communities to derive various benefits from ecotourism and regulated plant resource use which significantly contributes

(O improving their livelihoods. Wardens clearly revealed that Bwindi forest park shares a common on4

With the small (e. 900 ha) protected Sarambwe forest in DRC, into which the gorillas and other S , enter at times. This provides an opportunity for local population to penetrate into the park and kill some animal species. It is thus a clear indication that the park is not properly protected.

Mishra et al, (2003) relation to these findings revealed that many authors recognize that when native prey is abundant, together with a cheap human access to the park, wild predators and humans consume in preference to livestock and impoverishment of prey population and is the major cause of carnivores shifting their diet to livestock, and humans to wild food. This is clearly due to the ease of capture and limited escape abilities of animals. He further added that the elevation of a place and plant cover may provide good opportunities for animal capture in an invisible environment. It is thus clear the locals in the area have therefore extensively engaged in *illegal activities*.

High population of livestock, prompting park neighbors to graze illegally from the park was also cited as another cause. It was reported that an increase in livestock in the area such as cattle, goats and sheep has in turn bred the need for more pastures to feed the growing number of animals, thus the farmers tend to redirect to the forest area and the park. Mishra et al (1997) also highlighted that the growing densities in livestock population can create an overlap in illegal grazing in the protected areas. The competition of livestock and wild herbivores for forage results in overgrazing and decline or local extinction in world herbivores population. His view was that in India, domestic animals outnumber wild wildlife sanctuaries and most of the protected areas and he ascertained that livestock graze in 75% of wildlife sanctuaries and 39% of

protected areas. Under these circumstances, the increase in population of livestock becomes an important cause to the increase in illegal grazing in national parks.

5.1.3 The effects of illegal use of wildlife resources.

One of the themes that came out from the study on the effects of illegal use of wild life resources is pollution of the park which end up causing death of some animals. It was revealed that in the process of carrying out illegal exploitation of park resources, the intruders end up dumping non biodegradable items in the park like polythene bags which cannot easily decompose. These at times are eaten by animals, posing lifelong risks and death. This indicates that illegal use of wild life resources usually result in loss of life of several animal species. In comparison, MilnerGulland and Rawcliffe (2007), Noss et al. (2000) also had it that illegal exploitation of natural resources presents a significant threat to protected areas (PAs) across Africa in central/west Africa, for example, illegal bush meat hunting has reached a crisis level and the wild life population cannot support sustainable off-take levels and the species.

Another finding on the effects was reduced and or extinction of most of the wild life species both flora and fauna. It was reported that the illegal use of wild life resources have led to serious extinction of several endangered species. Bwindi is reported to have one of the richest fauna! communities in East Africa. It was revealed there are an estimated 120 mammal species in the park, of which 10 are primates, and more than 45 are small mammals. These include Elephants, duikers, golden cats, bush pigs, giant forest hogs, baboons, black-fronted Duiker, yellow-backed duiker, clawless otter, side-striped jackal, civet, numerous bats and rodents although these are rarely seen. The park is a sanctuary for colobus monkeys, chimpanzees, and many birds.

As already indicated, the types of birds include hornbills and turacos. Butterflies also exist as well as many endangered species, including the mountain gorilla. It was indicated Bwindi Park is also known for its exceptional biodiversity, with more than 160 species of trees and over 100 species of ferns. There are African brown mahogany tree species in Bwindi Impenetrable Forest and within the park, Ceiba trees, Cecropia trees, Pygeum, Ebony tree species, among others. It was unfortunate some of these plants and animals are being extinct due to illegal exploitation. This agrees with Rawcliffe (2007) who revealed that since the 17th century, excessive illegal extraction of resources from national parks is recorded as the third notorious cause of animal and

plant extinction. Also The world wildlife fund (WWF) in 2001 reported that illegal hunting activity in protected areas is responsible for 23% of animal and plant extinction. Many humans are forcing animals and plants into extinction by over consuming them or even selling for economic gains. To Rawcliffe, overhunting is the cause of the extinction of giant lemur's elephants, birds in Madagascar, Waldron's red colobus monkeys in Ghana, Moas in New Zealand, Alagoas curassow in north- eastern Brazil and giant Kangaroos in Australia. This implies that illegal use of wild life resources also affects the interconnectedness of the ecosystem. Illegal use of wild life resources in national parks not only affect plants and animals but also affect the entire Biosphere. Consequently, it affects the interconnections of the ecosystem since the living organisms need each other together with their natural habit to survive.

In other words, illegal activities like hunting disturb the natural order and since every ecosystem is unique and different, thus the removal of a living creature from their natural environment results in an unbalanced ecosystem. The dire consequences are the possibilities of overpopulation due to the incapability to keep one population at their natural levels or extinction due to lack of food. Needless to say it affects the food chain with reference to how illegal use of resources in national parks affects the interconnectedness of the ecosystem. This means other species of animals, trees, and plants are equally affected. As previously discussed, it causes either an increase or decrease of specific population within a habitat. When this happens, it directly impacts the natural habitat in that it gets rid of natural predation and population growth which in turn disrupts the food chain. Park encroachment also calls for endangerment to the general wildlife population and their habitats. Way into the forests or other wild areas, intruders destroy the natural environments and add carbon footprints by emitting carbon dioxide from the vehicles. The campsites set up upon arrival at the illegal desired locations also commonly lead to lots of littering. The smoke emitted from the campfires also negatively affects both wildlife and their natural environments.

In terms of tradition and culture people use natural resources illegally to observe their tradition and culture and for various beliefs in the contemporary world. These are communities and tribes that still practice these activities. For instance, some ethnic groups living next to the oceans and national parks hunt turtles and use them to make soup which is believed is used to make them stronger. As a result, some species turtles are verge of extinction in Vietnam because of this

superstitious practice. In Africa, the Masai tribe hunts lion as a rite of passage to gain recognition for their bravery. Various ethnic groups across the world also involve in such practices by killing **orangutans, Gibbons monkeys and whales on the basis of different traditional and religious** beliefs correctively, these practices have increases cases of people illegal practices of hunting **resulting in endangerment animal and some plant species.**

5.2 Conclusion

It can be concluded that *the* illegal use of wildlife is a threat to biodiversity by causing negative biological, ecological, economic and social impacts and also acting as a primary threat to maintaining national parks. Illegal use of wildlife at Bwindi Impenetrable forest National Park is a pressing biodiversity conservation and protected area management challenge. An Integrated Conservation and Development Program (ICDP) *was* established in Bwindi in 1994 to ad4#g local community livelihoods, whilst dissuading illegal activity and associated impacts on the protected area. The Bwindi Mgahinga Trust (BMCT) and Uganda Wildlife Authority ((U and other development organizations have been implementing ICDP initiatives that involve funding and implementing community livelihood projects around Bwindi over the past 25 years but these projects are premised on the fact that improving local people livelihoods, a factor that will reduce local pressure on the park's resources and illegal activities as well. However, all the above interventions initiated by the government in order to increase community's willingness to involve in conservation have actually increased the rate of illegal wildlife use at Bwindi **impenetrable forest national park.**

5.3 Recommendations

From the findings, it was revealed that the park is not properly fenced, which encourages local **people to encroach on its items. It was also noted that due to lack of a strong fence, wild animals** tend to escape, attacking peoples homes and gardens. It is therefore recommended that **par** officials like wardens and rangers should advise the Uganda Wildlife Authority and government to install a strong fence in order to *limit* intruders from accessing it. This can *also* help reduce the **problem of animals escaping from the park.**

People should also be sensitized on the importance of national park preservation. However this **calls for community dialogue sessions and these should be too urgent because illegal exploitation** of wild life resources is causing serious extinction of a variety of species both flora and fauna.

It was also noted that the batwa who live in the forest areas around Bwindi have taken the lead in illegal hunting in the park, causing serious extinction of several animal species like wild pigs. To stop this habit, the government should ensure the Batwa relocated in other places.

5.4 Areas for further research

The researcher's task was to examine the factors responsible for the continued illegal use of wildlife resources at Bwindi Impenetrable Forest National Park. Maintaining the same topic, several studies can be done on other parks countrywide in order to know the various factors that facilitate continued illegal use of wild life resources.

REFERENCES

- Cortner HJ and Moote MA (1999). *The Politics of Ecosystem Management*. Island Press. Washington DC.
- Grant CC (2005) (Ed.) *Elephant effects on biodiversity*. An assessment of current knowledge and understanding as a basis for elephant management in SANParks. Seien14[**Report 03/2005. South African National Parks.**
- Hall-Martin AJ (1992). *Distribution and status of the African elephant *Loxodonta africana* in South Africa, 1652-1992*. **Koedoe 35 : 65-88.**
- Hall-Martin AJ and Novellie P. (1996). *Review of the Management Policy of the Kruger National Park*: Discussion Document for the facilitation of participation in the review process. **Typescript. Skukuza, National Parks Board.**
- Hanks J (2006). *A troubled past*. **Africa Geographic 14 (3) : 34-35.**
- Hanks J (2006b). *Rumbles in the jungle*. **Africa Geographic 14 (3):6064.**
- Holling CS (1978). *Adaptive environmental assessment and management*. John Wiley. **London.**
- Keeney RL (1992). *Value-focused thinking: A pathway to creative decision making* **Harvard University Press. Cambridge.**
- Kerley GIH and Landman M. (2006). *The impacts of elephants on biodiversity in the Eastern Cape Subtropical Thickets*. *South African Journal of Science* 102: 3 95- 402.
- Mabunda D (2005). *Report on the Elephant Management Strategy* Report to the Minister: Environmental Affairs and Tourism on Developing Elephant Management Plans for National Parks with Recommendations on the process to be followed. South African National Parks. **Pretoria.**
- Meffe GK, Nielson LA, Knight RL and Schenbomn DA (2002). *Ecosystem management Adaptive community-based conservation*. **Island Press. Washington.**

Naiman RJ and Rogers KH (1997). *Large animals and the maintenance of system level characteristics in river corridors*. **BioScience** 47 (8): 521-529.

Noss RF (1990). *Indicators for monitoring biodiversity: a hierarchical approach*. **Conservation Biology** 4 : 355-364.

Owen-Smith N, Kerley GIH., Page B, Slotow R and van Aarde RJ (2006). *A scientific Perspective on the management of elephants in the Kruger National Park and elsewhere*, **South African Journal of Science** 102 : 389-394.

Owen-Smith RN (1988). *Megaherbivores. The influence of very large body size on ecology* **Cambridge University Press. Cambridge.**

Pienaar U De V (1983). *Management by intervention: the pragmatic/economic option*. In:

Owen-Smith RN (Ed) *Management of large mammals in African conservation areas*. Haum. Pretoria. Pp 23-26. 8. Ostfeld RS, Pickett ST A, Shachak M and Likens GE (1997). (Eds) *Enhancing the ecological basis of conservation: Heterogeneity, ecosystem function and biodiversity*. **Chapman and Hall. New York.**

Rogers K and Bestbier R (1997). *Development of a protocol for the definition of the state of riverine systems in South Africa*. Department of Environmental Affairs and Tourism. **Pretoria.**

Rogers KH (2005). *Outcomes of the Science Workshop, Luiperdsdoo, March 2005. Elephant and biodiversity: A synthesis of current understanding of the role and management of elephant in savanna ecosystems.*

SANParks (2005). *The Great Elephant Indaba: Finding an African Solution to an African Problem*. **South African National Parks. Pretoria.**

alters CJ (1986). *Adaptive Management of Renewable Resources*. **MacMillan Press, York.**

WESSA (2004). *Newsletter for the Lowveld Region of WESSA*. Vol. 3/2004.

QUESTIONNAIRE FOR HEADS OF HOUSEHOLDS.

DEAR SIR/MADAM.

/am Muhumuza Ambrose, a student of Kabale University carrying out a study to Investigate and analyze factors responsible for the continued illegal use of wildlife resources at Bwindi

impenetrable forest national park as a case study. Your response is being sought in this questionnaire and the information given will be purely for academic purposes and will be treated with utmost confidentiality.

Thank you for your cooperation.

SECTION A

A) PERSONAL/ DEMOGRAAPHIC DATA (please tick where applicable)

1. Gender: Male *Female* Others

- ## 2. Age

- ### I. Below 20 years

11. 21- 30years

111. 31- 40 years

- 1V. 40-- 50 years

- v. 51--60 years

- VI. Above 60 years

3. Which of the following best describe your role.

Tourism officer

Game warden

Game ranger

Community conservationist Ex-

poacher

Other. Please specify

4 a) Have you ever visited Bwindi Impenetrable forest National park before?

Yes

No

b) If yes, how many times have you visited the park?

I. Twice

II. 3 times

III. More than three times

IV. Always

5. Why do you think people are getting into the park?

To eraze covs. sheep and goas[] To get
land for digging To hunt animals for
food To collect timber and firewood

Others specify :

SECTION B

6. Do you use wild life resources from the park?

Yes

No

☐

7. List some of the things (plants, food and animals) that you usually get from the park.

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

8. Apart from collecting some food and medicine, what else force people around to go to the park.

.....
.....

9. Where do you/they pass to enter the park.

.....

10. Do your colleagues who go to the park usually request for permission to access the park?

Yes

No

11. If not, how do you/they access the park?

.....

12. What do you think force people to go to the park without permission?

... ..

.....

13. What do you think are the effects of people going in Bwindi impenetrable forest national park and taking away some resources?

.....

.....

Thank you for your response

APPENDIX II:
INTERVIEW GUIDE FOR GAME WARDENS, AREA LEADERS.
COMMUNITY CONSERVATIONIST, GAME RANGERS.

I. *Can you please tell me your position and a little bit background on how you came to {43 about Bwindi impenetrable forest national park?*

2. Do you think there is illegal use of resources at Bwind impenetrable forest national park? If yes, what are the forms of illegal of illegal use wildlife resources at BINP?

3. What is the most serious form of illegal use wildlife resources at Bwind impenetrable forest national? And why?

4. Why do you think the form of illegal use wildlife resources mentioned in (3) is the most serious?

5. What do you think are the underlying causes of illegal use of wildlife resources at Being impenetrable forest national park.

6. Specify one serious cause of illegal use of wildlife resources at Bwindi impenetrable forest national park.

7. What do you think is needed to be done from policy perspective to address the root cause of illegal use of wildlife resources at Bwindi impenetrable forest national park.

8 Do you think illegal use of wi Id! ifo resources has an effect on the environment? ff yes

What are the effects of illegal use of wildlife resources at Bwindi impenetrable forest national park?

9. What do you think is needed to reduce the prevalence or stop the effects caused by illegal use of wildlife resources at Bwindi impenetrable forest national park?

IO How has the illegal use of wildlife resources affected your work?

Thank you for your active participation.