INDIGENOUS KNOWLEDGE AND THE CONSERVATION OF NATURAL VEGETATION AMONG THE LUGBARA OF UGANDA: 1850-2023

BY

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DECLARATION

I, Afimani Ajionzi Moses, hereby declare that this is my original work, and has never been submitted in this or any other institution for an award.

Sign.....

Date.....11/04/2025.....

APPROVAL

This work was done under my guidance and supervision as the University supervisor.

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ABSTRACT

Natural vegetation is a key component of the environment. While human beings strive for the best quality life, every physical development infringes on the natural vegetation. This study was an investigation of the role of indigenous knowledge in the natural vegetation conservation among the Lugbara people. It was based on the Island Biogeographic theory to conceptualise indigenous knowledge in natural vegetation conservation. The study objectives included; to explore the concepts of indigenous knowledge and natural vegetation; examine the practices used in conserving natural vegetation and explore the contribution of indigenous knowledge in conserving natural vegetation among the Lugbara. The qualitative methodology and Historical design were employed. Respondents' opinions and perceptions were gathered through interviews, focus group discussions and documentary analysis alongside field observations. A total of 35 respondents were interviewed and 3 focus group discussions conducted. The study established that the Lugbara perceive Indigenous Knowledge as God/god given and passed down by their fore fathers. Destruction of natural vegetation attracted the wrath of the spirits and punishment from elders. This led to the existing islands of vegetation and isolated important tree species. In conclusion, despite the influence of modern science and Christianity, indigenous knowledge remains indispensable. There may be some parts that are not very relevant today but discarding the entire indigenous knowledge will be risky. The study therefore recommends a reconsideration of indigenous knowledge to save mother earth from total depletion of natural vegetation. Indigenous knowledge should be integrated with modern scientific knowledge as the most sustainable way of conserving natural vegetation.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction

This is a study on the use of indigenous knowledge in the natural vegetation conservation among the Lugbara people of Uganda. It brings to mind how nature dictates the way humanity adapts to the environment. While in cold environments like Iceland, houses could be built with thick, mud walls covered with grass (Milek, 2006), in hot climatic zones, such as Africa, people have built using soils and forest products. In order to save natural vegetation for construction and medicinal purposes, traditional societies branded some places and natural vegetation sacred. This is because much of traditional societies' existence was controlled by mythologies, cosmology, theology or ethics related to earth, nature and land. "Sacred" denotes deep respect and being 'set aside' for spiritual or religious purposes (Verschuuren et al., 2010:1). This study therefore, set to investigate the contribution of indigenous knowledge in conserving natural vegetation with regard to its benefits among the Lugbara of Uganda.

Chapter one focuses on the introduction and background to the study. It contains the statement of the problem, specific objectives and research questions.

1.1 Background of the Study

The study background is divided into: historical, conceptual, theoretical and contextual perspectives.

1.1.1 Historical Background

Indigenous knowledge is specific to a society. To understand the indigenous knowledge systems of a people and specifically in environmental management and natural vegetation conservation, it is important to explore the history of the society.

1.1.1a Lugbara Origin and Migration

The history and origin of the Lugbara is traced from the present day Bari land in the modern day Rejaf-Juba region in South Sudan (Alidri, 2016: 1, Shiroya, 1981: 125). The Lugbara live on the Nile- Congo watershed where it forms the international boundary between Uganda and the Democratic Republic of Congo. The Lugbara oral tradition observes that during the migration, the Moru –Madi settled around mountains Liru, Wati and Luku. Today the Lugbara occupy the districts of Arua, Maracha, Terego, Yumbe and parts of Zombo District. The main Lugbara clans include: Aringa, Ayivu, Maracha, Terego and Vurra (Alidri, 2016:3).

The Lugbara trace their origin to two hero ancestors, Zaki and ‘Banyale. The first group to arrive in the West Nile region was the Moru- Madi under the leadership of Zaki who moved directly from Rejaf-Juba to Mount Liru. This group broke away from the Bari in the South Sudan. A second group who broke away from the Bari under Goloko came through Mount Midigo which is located in the present day Aringa (Shiroya, 1981:126). This group formed the Aringa clan. At Mount Liru there was a dispersal which took place with a group moving west into present day Congo to form the Logo, Kaliko and Avukaya; while another group moved south into present day Maracha, settling around Ole’ba, Ro’bu and Tara. A second dispersal took place at A’ba in the present day Democratic Republic of Congo where a group migrated back into Uganda forming the Ayivu clan.

Similarly, another group migrated from A'ba to Aru in the Congo and entered Uganda to form the Vurra clan.

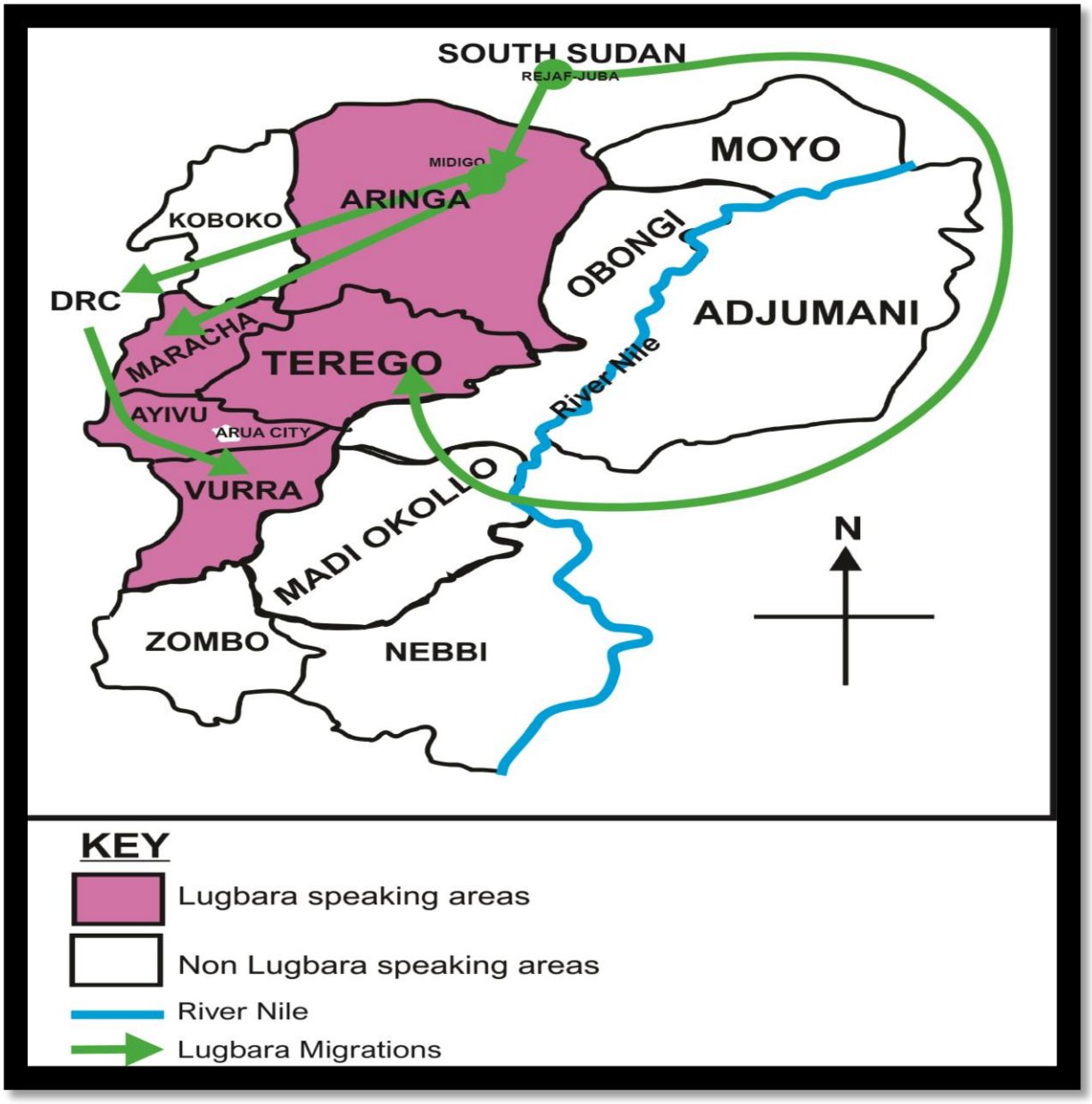
The second group of the Lugbara called the Terego, trace their ancestry to 'Banyale (Dribidu), their hero ancestor. According to the Terego tradition, 'Banyale is believed to have crossed the Nile from Acholi land. 'Banyale left his father Utere in Acholi land, crossing the River Nile at Rhino Camp in the company of his nephew Raule (a son to Banyale's sister who got married in Lango) and settled on Mountain Wati. On crossing the Nile, Banyale saw smoke rising on Mount Wati and proceeded to the mountain. Up on reaching Mountain Wati, he sent his nephew to investigate the source of the smoke. When he returned, Raule reported that there was a leper living on the mountain. 'Banyale then sent the nephew on a second visit to deliver some Buffalo meat to the leper. On the third visit, 'Banyale visited the leper who was called *Ofunyaru* (Lugbara word for leper). Ofunyaru, had been excommunicated from Maracha due to her dreaded leprosy disease. Among the Lugbara, lepers were often excommunicated. Banyale, using local herb called *Ojoo* (a herbal bulb species), treated and healed Ofunyaru of her leprosy. He later fell in love with Ofunyaru and begot with her a son called Angundru who became father to the Terego clan.

The term Terego is derived from the Luo word *Tegot* meaning "at the foot of the Mountain". This word arises from the fact that in the Lugbara speech, the words end with vowels a,e,i,o,u, transforming the word "Te" to "Tere" and "Got" to "Go" giving the name Terego. The names of the Lugbara people are given according to the circumstances under which the child was born, for instance Abiria is a child born during famine *(Abiri)* while Asea means born in the bush *(Ase)*. Some names describe the kind of father or mother, for example *A'diru* or *Ombaa* means a violent

father; yet some names are given just after important personalities in the family. The Lugbara migrations and settlements took place between 16th to 19th centuries (Shiroya, 1981).

Because of their early migrations and settlements around the mountains and hills, the Lugbara developed their own Indigenous Knowledge on the value of natural vegetation. They treasured the natural vegetation as the source of their medicine and home for their gods/spirits. This was a result of traditional wisdom (in Lugbara: *Ondoa a'bini*), used to solve life's challenges, which, as Alidri (2016:1) posits, was based on established cultural beliefs, norms, values, customs and practices passed from generation to generation. 'Banyale used such indigenous knowledge to treat and heal Ofunyaru who later became his wife (Shiroya, 1981). Indigenous knowledge (Lugbara: *Ondoa akuniri*) was spontaneously developed from interactions with the environment through trials while traditional knowledge (*ondoa a'biniri*) was knowledge passed from generation to generation. There is only a thin line between the two because the two kinds of knowledge were manifested in the same practices. The Lugbara first settled in mountainous areas before spreading to other places through increase in population and sub-migrations as shown in the map below.

Figure 1:Figure 1. MAP SHOWING LUGBARA MIGRATIONS AND SETTLEMENTS



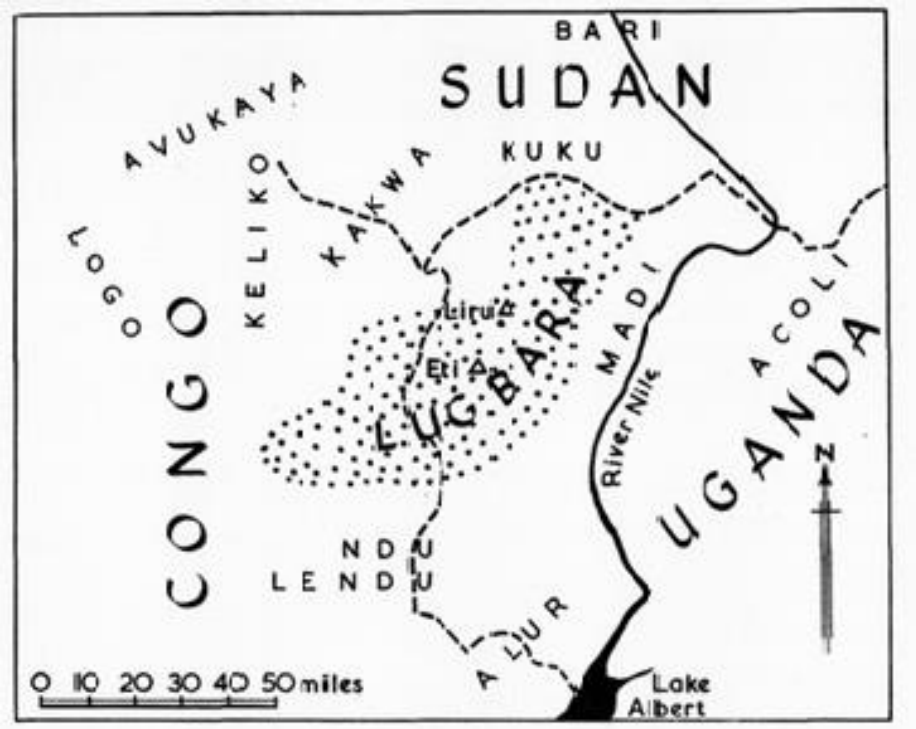
Source: Researcher's construct

1.1.1b The Lugbara People

The Lugbara society comprises about 60 clans whose members have agnatic relations, claiming historical origin to a common ancestry, Jaki and 'Banyale (Dribidu) (Middleton, 1992, Alidri, 2018:189). Shiroya (1981) refers to the Lugbara as a Sudanic speaking people who are classified as members of the Moru-Madi that belong to the Western Sudanic group, classified by Greenberg's

linguistic classification as the Chari-Nile group. They are closely related to the Kaliko, Avukaya and Logo people in the present day Democratic Republic of Congo. The Lugbara are bordered in the East by the Madi, in the West by Lugbara and the Logo in the Democratic Republic of Congo; North and North West by the Kakwa and South by the Alur. They are settled in the area described as the Nile-Congo watershed in the present-day North-Western Uganda; also known as West Nile (Shiroya, 1981: 125) as illustrated in the map below.

Figure 2:Figure 2: The territory of the Lugbara and the neighbouring ethnic groups



Source: Modified from Alidri, A. (2021).

Alidri (2016) observed that before the arrival of the Lugbara in 1600s the first inhabitants of the West Nile region were the Lendu and Kebu, who claim to have immigrated from the Middle East through Egypt and Sudan into the present day Uganda and Democratic Republic of Congo. They are now found in the present day Zombo District in Uganda. Evidence to prove this claim is the

existence of names of places that bear Kebu words, for instance, Kuluva (a place located in the present Vurra county, now Arua District) derived from the Kebu word *Kuluruva* which means "the enemies have arrived". Other names are *Enzeva* from Kenjeva meaning "day has broken", *Ringili* from Oringili meaning "tie it properly" and *Awindiri* from Awu-endiri meaning "we come closer" (Alidri, 2016:1; Alidri, 2024 *In* Daily Monitor, June 30, 2024). All these places have at least some hills.

1.2 Conceptual background

The main concepts unpacked in this study are: Lugbara indigenous knowledge, natural vegetation and conservation. The vegetation considered in this study is basically the natural one.

The concept of Indigenous Knowledge can be traced from the Latin *indigenus* which is in itself derived from an older term *indigena* which means "native". It is a combination of the words *indu* (within) and *gignere* (to beget) (Oxford Dictionary)

The term indigenous knowledge has witnessed acceptance and rejections, therefore attracting a number of definitions. Esiobu (2019) defines indigenous knowledge as the socially accepted understanding of a subject, which offers an individual or a group the ability to use it to attain a specific goal. He states that indigenous knowledge results from empirical inquiry that solves the problem at hand. Alidri (2016) considers indigenous knowledge as "established cultural norms, values, beliefs, customs, and practices passed through generations" (Alidri, 2016: 1).

When exploring indigenous knowledge, this study considered the knowledge and experiences accumulated by the local people over a long period in relation to their environment to understand the society's indigenous knowledge (Sciences & Lanka, 2015:6). Such is the knowledge that the

Lugbara developed over time about natural vegetation which has resulted in the conservation of thickets and patches of forests and isolated trees in various areas in the community.

The modern society may question the relevance of indigenous knowledge in natural vegetation resource conservation but according to Alidri (2016:1), research clearly demonstrates that "indigenous resource management methods were still a valuable means of managing resources". In this regard, the Lugbara society traditionally used myths and superstitions as their methods to discourage young people from destroying the natural vegetation.

With the time-tested experience, the society is able to discern the benefits and dangers of various plants, animals and several other objects in the natural vegetation. This is regarded as indigenous knowledge. But indigenous knowledge has also been defined by different scholars from their own perspectives. To Johnson (1992) *In* World Bank, (1998), Indigenous Knowledge is a body of knowledge built up by a group of people through generations of living in close contact with nature. Indigenous knowledge can also be defined as the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area (Gernier, 1998:12). Warren (1991) *In* Gope et al., 2017, opines that indigenous knowledge is the knowledge used by local people to make a living in a particular environment (Gope et al., 2017:2). In the view of Tabuti and Damne, indigenous knowledge is knowledge that local communities accumulate over generations and use it to exploit, manage and conserve environment (Tabuti & Damme, 2012:1). These definitions delineate that; indigenous knowledge is individual society based and therefore, it varies from one society to another. It is not a product

of imitation or formal learning but a gradual development. It is knowledge developed over time as a result of the conditions and challenges the society that it seeks to overcome.

In this work, therefore, indigenous knowledge is regarded as the knowledge gained by the Lugbara society as a result of their lived experiences in interacting with the environment and a result of the application of wisdom over a period of time to achieve set goals. With reference to the natural vegetation conservation, this definition illuminates clearly the fact that the Lugbara valued and conserved natural vegetation in various locations within the society based on their locally developed knowledge with the aim of solving problems at hand. Even in the face of the current environmental pressures, the society has maintained thickets (Lugbara: *Oce*) as sources of medicine, the abode for their gods (*Adroa*), spirits (*Ori*) and the habitat for the wild life. This has been very much dependent on the society's understanding of their vegetative environment.

Natural vegetation and environment are inseparable. The written history of environment is not a very old discipline and so is the history about natural vegetation conservation. Clearer records of environmental history started appearing in the 1970s (Mcneill, 1980:4). Since then, much focus has turned to environmental protection owing to the threat the society has found itself in due to poor environmental management. Therefore, in discussing about environmental protection, the principal focus is made on natural vegetation.

Natural vegetation can be loosely defined as a system of largely spontaneously growing plants. However, not all growing plants form natural vegetation, for instance, a sown corn field or a flower bed in a garden does not constitute natural vegetation. But the weeds surrounding such plants do

form natural vegetation. A pine plantation will become natural vegetation “after some years of spontaneous growth of the pine trees and the subsequent development of undergrowth” (van der Maarel, Eddy & Franklin, Janet. 2013:1). The boundary of stands of natural vegetation in the field is based on the uniformity and distinctiveness. Distinctiveness implies discontinuity with surrounding natural vegetation. This is sometimes very obviously “environmentally determined” (van der Maarel, Eddy & Franklin, Janet. 2013:2).The missionary and colonial period witnessed a substantial damage to natural vegetation. Many missionary and colonial establishments like churches, schools, health centres and administrative units were positioned in forest lands and hills which to the Whites were idle lands. Kuluva Hospital in Arua District, for example, is in hills that used to be a place to obtain herbal medicine by the original inhabitants, the Kebu. It should be understood that the missionaries and colonialists aimed to obtain cheap forest resources for construction in these areas that is why they targeted these places. Besides, missionaries regarded as evil and demonic places the sacred thickets and trees that the indigenous communities revered and conserved and so the European missionaries set out to destroy such natural vegetation (Alidri, 2016).

The pressure on natural vegetation is on a steady progress. A recent study in Uganda reveals that in 1990, Uganda had 4.9 million hectares of forests, but by 2015 this had reduced to 1.9 million hectares (Uganda Bureau of Statistics, 2020). According to John Go’do, in Lugbara land, there used to be many areas covered by thickets such as Arua Hill, Laura, the whole of Riki among others, but today only a few patches of these can be found. These are mainly places where cultural influence is still strong for example, Saka in Pajulu, and Agira in Dadamu both in Ayivu; Adroyi in Aya (Vurra) and another in Midigo - Aringa. Such a state of affairs, therefore, made it more

necessary to carry out this study in order to unearth how indigenous knowledge contributed to the natural vegetation conservation when there is a general decrease in natural vegetation.

Natural vegetation has been defined as an assemblage of plants of one to many species growing in areas of different sizes (Mueller-Dombois & Ellenberg, 1974:6). Box and Fujiwara (2013) believe that natural vegetation is the aggregate of all the plants growing in an area. It consists of various plant forms, sizes and shapes (Box & Fujiwara, 2013:2). Based on these thoughts, this study concerns itself with the collections of plants which have been maintained as natural growths such as thickets, forests and isolated trees that have been culturally guarded from destruction among the Lugbara because they have special values to the community. Since humans have a symbiotic relationship with environment, natural vegetation conservation became inevitable to the Lugbara communities.

Natural vegetation according to this study is therefore all the plant species that have grown spontaneously in the environment.

The term conservation is derived from the root verb "conserve" which, from the Oxford Dictionary means to protect (something, especially something of environmental or cultural importance) from harm or destruction. In the opinion of Hutton & Leader-williams (2014:8), conservation means actions that directly enhance chances of habitat and species persisting in the wild. In such consideration, the actions of conservation may involve attaching spiritual significance to certain tree or grass species so as to prevent them being destroyed by humans.

Natural vegetation conservation according to this study refers to actions, beliefs and practices that protect plants separately or collectively from being destroyed. It is the practice of allowing the natural vegetation to thrive in their original state and habitats by maintaining a natural balance within the ecosystem.

1.3 Theoretical Background

A theory, according to (Stewart et al., 2011:8) is a presupposition against the framework of analysis that they provide. It is important to measure a study of this nature against a theory that supports it. Natural vegetation conservation, being an aspect of environmental conservation is based on environmental protection theories such as the diversity begets diversity, intermediate hypothesis and island biogeographic theories.

The idea of natural vegetation conservation started receiving much attention in the 1980s when Harris (1984) and Hunter (1990) wrote on the importance of maintaining the shrinking old forests. Before this, the focus was wildlife rather than biodiversity (Thomas, 1979). These ideas have been developed into the "Diversity begets diversity" theory which states that having a diversity of environmental conditions will provide habitat for a diverse array of species. This implies that if we have pieces of land covered with a variety of forests, it will provide habitat for a variety of species than any one piece would do alone (Mitchell et al., 2006:7). Mitchell et al., (2006) refer to this habitat as a "reserve" whose objective is to fully protect existing habitats and populations from direct human modification. This theory has been found plausible for a variety of reasons. While Swenson (2012) posits that diverse plant species use resources more efficiently and support higher primary productivity levels, Emilio and Houghton (2007) think the various species that form diversity support a range of ecosystems by maintaining its own pest control and promoting soil

fertility. However, the diversity theory has its flaws. The benefits of increasing diversity to conserve other natural vegetation may be environment specific as it may lead to introduction of invasive species that end up harming the original species (Simberloff et al., 2013). To Gasparatos & Willis, (2015) citing Klaus and Scholes (2007), there is a conflict in terms of goals. As diversity conservation seeks to keep the land from disturbances, agriculture and development will seek to remove the diverse species. With its strong criticisms, this theory could not therefore, fully apply in this study because the focus of the study was to promote natural vegetation conservation locally and beyond.

The intermediate disturbance hypothesis is another natural vegetation conservation hypothesis to consider. This hypothesis predicts that local species diversity is maximized at an intermediate level of disturbance. It further emphasizes that disturbance creates an environment in which some species such as light-demanding pioneer trees can establish and persist, adding to overall species diversity (Bongers et al., 2009:2). For intermediate disturbance hypothesis, if an ecosystem has moderate levels of disturbance, species diversity will be higher. From this, it can be noted that periodic disturbances such as wild fire or controlled logging can prevent competitive dominance and promote coexistence of various plant species. Although this hypothesis has been disputed by Fox (2012), who claims that empirical evidence rarely confirms the diversity-disturbance relationship, Sheil and Burslem, in "Defining and defending Connell's intermediate disturbance hypothesis: a response to Fox" (Sheil & Burslem, 2013:1) defend the hypothesis on grounds that Fox's ideas of empirical nature of evidence appear flawed.

The intermediate disturbance hypothesis can connect with the natural vegetation conservation practice among the Lugbara to the extent that whereas the community protects certain natural vegetation areas from logging and other human activities, such areas may not survive dry season wild fires. At the end, however, the species of plants will naturally and basically continue to survive. In any case, more species find the opportunities to grow after fires. This theory too could not quite well serve the purpose of this study because the model among the Lugbara does not promote deliberate intermediate disturbance but rather perpetually keep some islands of natural vegetation from damage. The study therefore adopted the Island biogeographic theory which is explained later in the theoretical framework of the study.

1.4 Contextual background

Indigenous Knowledge in natural vegetation conservation is studied within the context of the Lugbara society. The ideas and practices of natural vegetation conservation among the Lugbara are embedded in the customs values beliefs and practices of the society as seen in Alingulu (Terego), Adroyi (in Vurra) and Aria (in Ayivu) that are known to have survived for many generations amidst the surrounding human influence.

The knowledge of environmental conservation in general and natural vegetation conservation in particular among the Lugbara is inherent in their cultural belief, practices, values and customs. This knowledge evolved as a result of the search for solutions to the economic and social problems of the society. People needed to construct durable shelters and find treatment to various ailments. In such desperate efforts, the people discovered the usefulness of natural vegetations as contained in some plants in healing diseases. For instance, when ‘Banyale, met the leper woman, Ofunyaru; who had been an outcast for her leprosy, he made use of some plants to treat her and the two later

got married (Shiroya, 1981). The Lugbara discovered both poisonous and medicinal plants and how to treat and poison using plants. Snake bites, food poisons or any other poisonous concoctions consumed have since then found their cure by use of particular plants and plant products. This necessitated the protection of these plants in their natural habitats.

It should be made clear that the Lugbara have a strong adherence to following traditional religions and culture. In order to ensure that fields that have medicinal plants are not tampered with, certain areas were attached spiritual values; they were declared to be the abode of the gods (*adro).* Indeed, for such social recognition and value, if a person tampered with trees from such natural vegetation, he/she would be struck by the gods for lack of respect and fall ill or die if the clan elders or the village priest (‘*ba ori owipiri*) did not intervene in time.

The knowledge of medicinal herbs was transmitted from adults to children from generation to generation through oral tradition and oral history. Usually, the father or the clan elders-(‘*Ba’wara*) would identify a young man who exhibits an intelligent, and sociable character; who is curious to learn and preserve clan history- *adi* and would teach him the indigenous knowledge in herbal medicine, showing him various herbal plant types for treating different health conditions and diseases, as well as where and how to obtain medicinal herbs from areas considered to be sacred, the abode of the gods-*adro.* This way, the Lugbara conserved natural vegetation in patches and forests and in some cases as isolated trees, some of which still stand to date, in spite of the pressure on natural vegetation and land. However, with the introduction of modern and western education, indigenous knowledge in natural vegetation conservation among the Lugbara is slowly being eroded. This has led to the disappearance of forests and thickets of natural vegetation and some

plant species in places like Arua and Awindiri which are hills where the first Lugbara groups that migrated from Congo settled. Yet, in some areas like Adroyi and Midigo, dense natural vegetation still exist despite the population and land use pressure. This is the gist of this study. It calls for re-digging into the role of indigenous knowledge in conserving natural vegetation among the Lugbara of Uganda.

1.5 Statement of the Problem

Globally, development has put the natural environment under threat and has led to the disappearance of natural vegetation with human geo-engineering causing air and water pollution and various ecological risks (Li, 2020:5). However, a lot of effort is being made to restore and conserve the environmental resources for sustainable use now and for posterity. A number of protocols have been signed and summits held on environmental protection. Among these protocols were the Stockholm Declaration (1972), Rio Declaration (1992) and the Kyoto Protocol (1998). More recent protocols on protection of environment have been held, such as the United Nations Framework Convention on Climate Change (UNFCC)'s 24th Conference of Parties codenamed COP24 meeting of 2018 in Poland which aimed at agreeing on the modes of implementing the 2015 Paris agreement on reducing greenhouse gas emissions. Others were the Kigali agreement (2016), COP25 (2019) of Madrid, COP28 (2023) of Dubai and the Non-Aligned Movement (NAM), (2024) Summit of Kampala which, among other issues, discussed ways to address climate change. At the national level, National Environmental Management Authority (NEMA) and National Forest Authority (NFA) in Uganda, operating up to lower local government levels, have been mandated to regulate the management of the environment with specific focus on natural vegetation and water bodies.

Despite all the environmental conservation efforts, the situation continues to deteriorate with many trees and shrubs threatened with extinction through "wanton destruction" (Byabashaija et al., 2004:1) even when alternative energy and architectural solutions exist. It is intriguing that in areas where the environmental watch body's influence is minimal, and the clan elders are playing their custodial role over the resources in the surrounding, natural vegetation seems to be thriving. A case in point is the Kayapo Indians of Brazil and the Shinyanga of Tanzania who have used their own knowledge to grow islands of forests based on their indigenous knowledge of the benefits of natural vegetation (Gadgil et al., 1993; Malunguja et al., 2021:3). The indigenous Lugbara had their own ways of protecting the natural vegetation based on their indigenous beliefs and social values and practices. Among the Lugbara, rain making oracles performed their rituals under specific trees and places which would never be destroyed. Middleton (1978:4) notes that, "Rainmakers can communicate with Divine Spirits when in their rain groves, places of divine power outside the realm of ordinary men, or when in the remote bushland" (sic). Where this was deep rooted, such areas have maintained beautiful natural tree covers with a variety of species.

Several studies have been done on indigenous knowledge in relation to benefits of plants and land use (Kibonde, 2020; Singh, 2001; Zurayk et al., 2001), but there is limited study on the role of indigenous knowledge in conserving natural vegetation. In answering the question of how indigenous knowledge was used in the natural vegetation conservation among the Lugbara, the study investigated the contribution of indigenous knowledge in natural vegetation conservation among the Lugbara people.

1.6 General Objective

The purpose of the study was to understand the role of the Lugbara Indigenous Knowledge in natural vegetation conservation.

1.6.1 Specific Objectives

1. To explore the Lugbara concept of Indigenous Knowledge in the natural vegetation conservation.
2. To examine the practices used by the Lugbara in the natural vegetation conservation.
3. To explore the contribution of Lugbara indigenous practices in natural vegetation conservation.

1.7 Research Questions

1. What is the Lugbara concept of indigenous knowledge in the natural vegetation conservation?
2. What are the practices used by the Lugbara in conserving natural vegetation?
3. What is the contribution of the Lugbara indigenous practices to the natural vegetation conservation?

1.8 Scope of the Study

The scope of the study, in the view of Simon & Goes, (2013:1) refers to the parameters under which the research will be operating. In other words the scope tells how far the research will go. The scope of the study included time scope, geographical scope and content scope.

1.8.1 Content Scope

This is a historical study of the Lugbara indigenous knowledge in conserving natural vegetation. This is because indigenous knowledge is passed over time and generations and is fading out. This

study is therefore limited to exploring the Lugbara indigenous knowledge in conserving natural vegetation from a historical perspective. It explored the Lugbara concept of indigenous knowledge and practices in conserving natural vegetation alongside the contribution of such knowledge in the natural vegetation conservation. This is because indigenous knowledge is gradually getting weakened and slowly on the verge of disappearance despite its historical importance.

1.8.2 Time Scope

This study covered the period 1850 to 2023. The period 1850 was chosen because following their settlement, the Lugbara ethnic community and their form of indigenous knowledge emerged in 1850 through the process of "Lugbarisation", was influenced by colonialism (1914-1962) and independent state (1962-2023). The society got experiences with the environment and therefore developed beliefs, values, customs and practices to use, protect and conserve the natural vegetation (Shiroya, 1981 & Alidri, 2016:1). The period 2023 was chosen because there have been significant changes across the Lugbara land with some areas maintaining dense natural vegetations while others are covered by secondary natural vegetations and yet some areas have severely lost their natural vegetation cover. This gave the study the motivation to undertake a critical inquiry into the issues behind the natural vegetation which has survived intact or with minimal disturbance in particular places in Lugbara land.

1.8.3 Geographical Scope

This study was undertaken among the Lugbara people of Uganda, particularly in the West Nile sub –region occupying the districts of Arua, Arua City, Maracha, Terego, and Yumbe which double as the Lugbara clans. This covers the area bordered by the Alur in the south to the border with present day South Sudan in the North; Madi in the east and the Democratic Republic of Congo in the West. These clans still have some thickets of natural vegetation standing despite the massive

destruction and disappearance of natural natural vegetation. Furthermore, indigenous knowledge has to be studied and preserved in the context of a specific society and culture because each clan in the society has something unique compared to others although they may share most of the other characteristics.

1.9 Justification of the Study

Since the Justification of a study concerns the academic, practical and scholarly benefits a research will offer (Olayinka & Olamide, 2020) and explains the potential values of the research, this study helps to document and conserve indigenous knowledge in natural vegetation conservation which are all under threat of modernisation and development.

This study was in line with the provisions of Sections 57 and 60 of the National Environment Act (2019) which provide for restoration of forests and conservation of biological diversity. It also followed the recommendations of Alidri (2016) on the use of indigenous knowledge to conserve environmental resources and goal 15 of the Sustainable Development Goals (SDGs) that focuses on sustainable management of forests and combating biodiversity loss. Whereas Alidri carried out an extensive study about traditional wisdom in environmental management, the findings do not so much reflect on the use of locally developed knowledge in conserving natural vegetation. Wisdom is observed to deal more with discernment than gradual and systematic development of new knowledge. Equally, the Environment Act and the SDGs are not specific in how indigenous knowledge can be used to conserve natural vegetation. This study was therefore necessary because it sought to elicit the role of Lugbara indigenous knowledge in conserving the natural vegetation. It aimed to use its findings to provide alternative ways of conserving the natural vegetation to

natural vegetation conservationists. It further targeted to document indigenous knowledge which is threatened with extinction in the face of modernisation.

1.10 Significance of the Study

As the rationale for the study, this lays bare the contribution the research will make in terms of knowledge and application. With there being no clearly documented work on the contribution of indigenous knowledge in natural vegetation conservation, it was hoped the findings of this study would offer a useful source of information on the application of indigenous knowledge in natural vegetation conservation.

It was envisaged that once the findings of this study would be disseminated, the local community would appreciate the value of their traditional practices in maintaining natural vegetation and be able to perpetuate it.

In addition to the above, it was thought that environmentalists could use the knowledge generated from this research as alternative ways of conserving natural vegetation. The common practice has been to use law enforcement to conserve natural vegetation. But this study aimed to show that indigenous conservation knowledge is a hassle-free yet effective means of conserving natural vegetation.

This research was envisaged to provide future researchers with similar interests with dependable literature to back up their studies. The new insights in the study will be kept in the knowledge repository for other researchers to refer to when conducting related research.

1.11 Limitations and delimitations of the study

1.11.1 Limitations

From the onset of this study, it was envisaged that there would be limitations - factors that are beyond the researcher's control and were likely to hamper data collection and compromise the quality of results as discussed below:

The study was faced with the challenge of the number of chosen respondents (study population). It is significant to understand that genuine data for this kind of research could be obtained from persons who are at least above sixty years of age. Unfortunately, such people are not only hard to find due to low life expectancy but also many of those that exist are not as good at oral history and oral tradition as expected. A great deal of the elderly persons thought to possess indigenous knowledge of natural vegetation continues to struggle with dementia.

Inadequate documentation of the Lugbara indigenous knowledge on natural vegetation limited triangulation efforts in a bid to obtain reliable data. In fact, the books about Lugbara consulted such as the ones published by Middleton (1978) and Shiroya (1981) did not have any special reflections on natural vegetation at all. This could be attributed to the fact that the Lugbara population is small and easily ignored by researchers and global actors and so not much literature exists about the society – at least not about the indigenous knowledge and natural vegetation. Most of the available literature deals with religion and culture of the Lugbara people.

There appeared to be biases in giving information. The tendency of individuals to exalt themselves or their own clans and talk down others was quite evident. For instance in a trial interview with

Omar, a respondent in Bura village near Mountain Wati in Terego, he gave a clean account of his clan, portraying it as an accommodative, generous and conservative of cultural sites like the *Langa* (shades under which councils used to be held), but accused the Omoo clan where most of their leaders have come from as being a selfish clan that has dominated the Omugo cultural and political affairs. He also accused the Omoo who have raised many of their local leaders of championing the destruction of some of their long honoured trees. This was what led to another narrative from Omoo side to check the facts.

It was discovered that not every respondent was willing to divulge information with ease since it concerns their traditions. Indeed a number of respondents declined appointments for interviews or on many occasions appeared to conceal certain information about certain crucial issues. For instance, one elder in Ajia, known to be a good oral traditionalist declined several appointments by giving excuses and changing schedules until the researcher gave up on him. A lot of time was therefore required to build confidence in such respondents to finally accept to be interviewed in order to get full information, although gaps in some cases were noted to continue to exist. Sometimes the respondents were genuinely too busy in various activities and this affected interviews in distant places where it was not possible to spend more than a day in those places. This presented a challenge considering that the time for the study was limited.

1.11.2 Delimitations

As one sets out to conduct research, there is need to be aware of the possible limitations. Therefore, in order to ensure the objectives of the research are achieved, the means of overcoming the possible challenges need to be designed (Theofanidis & Fountouki, 2018).

In order to contain the challenge of weak memory among the elderly respondents, focus group discussions were used. This helped individuals to build on one another's knowledge. This was clearly observed in a focus group discussion in Asevu village of Tilevu Parish in Vurra sub- County where Mr. O'du, a member of Lugbara *Kari* continued to be reminded by Mr. Ejua, another elder.

In certain cases, observations were used to collect data. In this, the researcher observed some of the trees such as Mahogany (*Lugbara: Mario*), and others like *Laru* and *Odoloo* the respondents mentioned as having being conserved from the past as the indigenous knowledge practices and used the observations to do triangulations and draw conclusions. A few of the thickets could also be seen. This to some extent reduced impact of the challenge of inadequate literature and the inadequate numbers of the elderly which would impede triangulation. It also confirmed some of the claims of the respondents.

The anticipated limitation of biases was handled by the researcher sieving the information thoroughly and corroborating many sources so as to come up with the most reliable data. Where one respondent made claims against another person or group of people, another interview was conducted with the group against which the claim was made to draw meaningful conclusions as was the case between the Bura and Omoo in Terego.

In certain cases it was observed that some respondents were trying to conceal information due to its sensitivity with regard to cultural issues. In such cases the researcher restored confidence in the respondents by reassuring them of the purpose of the research, its significance to them and how he would safeguard the data from leakage to unauthorised persons. It was such sensitivity that made

Baba John Godo, the minister of culture in Lugbara *Kari* to ask several questions including the home village of the researcher before he could divulge any information to the researcher. This helped to give confidence to such informants to speak without mincing words.

1.12 Theoretical Framework

Theories are important in the reconstruction of the past (Adjepong, A. 2013: 1). Similarly, theories are important elements in every research work, irrespective of the field in which they are carried out (Adjepong, A. 2013: 2). A theory may be defined as a well substantiated explanation of some aspect of the natural world (Adjepong, A. 2013: 1). Adjepong, A. (2013), further notes that "Theories may be put into two broad categories, namely philosophical and scientific. Theories whose subject matter consists not in empirical data, but rather in ideas are in the realm of philosophical theories. In scientific usage, the term theory is reserved for explanations of phenomena which meet some basic requirements about the kinds of empirical observations made, the methods of classification used, and the consistency of the theory in its application among members of the class to which it pertains. These requirements vary across different scientific fields of knowledge, but in general, scientific theories are expected to be functional and simple to be used to effectively to address the given class of phenomena. Scientific theories are constructed from elementary theorems that consist in empirical data about observable phenomena world (Adjepong, A. 2013: 1). To this effect, the Island Biogeographic theory, which is not fully scientific was found more plausible to explain the Indigenous Knowledge system of the Lugbara in the conservation of natural vegetation.

1.12a Historical Reconstruction Theory

Scholars who believe theories are applicable in historical reconstruction stress that in the universe of events and processes, there exist certain regularities, certain patterns, generated by the causal

linkages which bind the system together. Whereas, there are changes from one generation to another and many material objects have changed, and human beings have also been continuously evolving, certain universal patterns and human characteristics have hardly undergone changes that are sharp enough to obscure their relative stability in the course of the universal motion. Historians analyse major changes in the human experience over time. They explain why change occurs and what impact it has, and they also examine the ways in which those changes link the past to the present (Adjepong, A. 2013: 8). It is this linkage of the past to the present that makes the historical reconstruction theory to become relevant in reconstructing the Lugbara indigenous knowledge in conserving natural vegetations.

The study into indigenous knowledge (Lugbara: *ondoa akuniri*) and natural vegetation conservation among the Lugbara people is based on the historical Reconstructionist (contextualist) theory which aims at reconstructing the past using historical approaches and sources. It aims at reconstructing the Lugbara indigenous knowledge (Lugbara: *ondoa akuniri*) in natural vegetation conservation, especially the contemporary existing patches at a time when this kind of natural vegetation is under threat of extinction through human activities. The idea here is that history is still history regardless of the objective and forensic research into the sources, the reconstruction of the past as it actually happened. There should be freedom of the whole process from ideological contamination and linguistic manipulations (Munslow, 2006).

1.12b The Island Biogeographic Theory

There are a number of theories about natural vegetation conservation including “Diversity begets diversity” theory and the intermediate disturbance hypothesis. However, this study adopts the Island Biogeographic theory to explain the nature of natural vegetation conservation practices that

existed among the Lugbara. There are patches of forests and thickets (Lugbara: *oce*) conserved in Lugbara land, based on indigenous knowledge and practices which can best be explained using the island biogeographic theory. The Island Biogeographic theory, first proposed by Wilson and Simberloff (1976), states that, the size and isolation of habitat islands, especially forests influence the rate of extinction of species diversities. There are higher extinction rates of species on smaller islands than large ones. The theory suggests the preservation of large or several connected areas (islands). The theory adds that "Critical population sizes must differ between species, as must the area necessary to support a large enough population to be relatively immune to fast extinction" (Simberloff & Abele, 2007:3). Such a theory to a great extent accounts for the consistent conservation of patches of small forests and thickets among the Lugbara, although the main motive here appears to be to protect some specific natural vegetations from extinction. The theory, however has been challenged by Hubbell, (2001) on the grounds that the theory assumes a state of equilibrium between colonization and extinction rates which may not always true. But this theory resonates well with the fact that "several islands" serves as a means of conserving species in a situation where it is not possible to conserve large, extensive areas for the same. The island biogeographic theory therefore helped the study to focus on areas with such forests, thickets and some isolated trees to understand how they have survived all the development waves and what purpose they serve the community. This theory in the Lugbara context implies that whereas with influence of development it is impossible to maintain vegetation everywhere moreover many modern societies do not appreciate the value of vegetation, the Lugbara have employed their Indigenous Knowledge to conserve highly treasured vegetation in isolated areas such as Saka, Alingulu, Adroyi and Agira.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, existing literature related to indigenous knowledge (Lugbara: *ondoa akuniri*) in natural vegetation conservation was reviewed. The review focused on the strengths and gaps in the previous studies in the area of theory, methodology, year and area of study, discipline and findings. The purpose was to gain a foundation on the knowledge about the topic, credit previous scholars on the topic and identify similarities and differences between existing research related to the topic and the work under study. It also helped to identify gaps in former studies, close some of the gaps and open new questions for further studies in related areas. This review was based on the specific objectives of this study.

2.1 The concept of Indigenous Knowledge and Natural Vegetation Conservation

To better understand the idea of conceptualisations of indigenous knowledge (Lugbara: *ondoa akuniri*) about natural vegetation, it is paramount to unpack the parent words; concept and conceptualization. A concept, according to Collins English Dictionary (2019), is an idea of something formed mentally by combining its characteristics. It is also known as a construct. According to (Sequeira, 2014:1) Conceptualisation, is breaking and converting (research) ideas into common understanding to develop an agreement among the users. The use of conceptualisations here clearly specified what we mean and what we do not mean. In this study, the concepts and conceptualisations of indigenous knowledge and natural vegetation were elucidated. This forms the basis to understand the concepts of Indigenous Knowledge and Conservation of vegetation.

The term “indigenous” is derived from the Latin *indigenus* which also derives from an older term *indigena* which means “native”. It was formed by combining the words *indu* which means “within” and *gignere* (meaning to beget) (Oxford Dictionary). The term is also traced from another Latin word *indigene* which is used to refer to a plant or animal that originates in a certain area. Indigenous therefore means originating or occurring naturally in a particular place.

Indigenous Knowledge is knowledge developed from, and a product of experience. Experience in the long run leads to discernment between what is useful and dangerous. It is knowledge that develops from efforts to master the environment for survival of the communities (Ezeanya-esiobu, 2019). As people who had settled initially around mountains, the Lugbara had to begin making efforts to master their environment for survival. It took wisdom (*Lugbara: ondoa*) to make such discernments. Such wisdom which constituted local (indigenous) knowledge (Lugbara: *ondoa akuniri*), was repetitively and progressively used to solve the society’s life challenges, and it was developed through “socio-environmental experience” (Alidri, 2016:1). This eventually developed into a knowledge system, herein termed indigenous knowledge. Among the Lugbara, the natural vegetation was the place to communicate with the gods (*Lugbara: adro*) (Middleton & Middleton, 2019:3) and so it was highly conserved in particular places for religious purposes. Wisdom helped the society to know that the best place to communicate with the gods was the bush. This would imply that whoever got indigenous knowledge had the same kind of wisdom, but not all knowledgeable people are wise. Some people got their knowledge from transfer of knowledge rather than developing it through the individual’s own wisdom.

Indigenous knowledge is that which was mostly orally transmitted; gained by experience, observations and participating in simulations, trial and error (Grey, 2016:3). In indigenous knowledge, the young learn from the elders through observations, oral instructions, respecting places considered abode for the spirits. Trials come with costs but the indigenous society valued respect of elders so much that risks for the good of the community were taken by the young without question.

It is spiritually inclined and views the whole world with its components as interrelated (Ezeanya-esiobu, 2019:8). The Bambara village in Niger, for example, considered the Tamarind tree the residence of their spirits (Verschuuren et al., 2010:41). The young learnt how to conduct themselves towards these trees from the elders and through observation and experience. It was a similar belief that made the Lugbara girls to conduct themselves carefully towards the Kigelia Africana (*Lugbara: Odoloo*) tree though in a different context.

Indigenous knowledge about natural vegetation was that kind of knowledge which identified the most useful trees form those that had limited uses. The kind of natural vegetation of interest in most cases was a place with many trees in thickets, forests and others isolated that served varied purposes. These forests, thickets or big trees were at times near water bodies, caves, hills and springs. These, according to Verschuuren et al., (2010) were areas considered sacred and thus not to be tampered with. The Mahogany was one such tree that grew undisturbed in valleys. It was the habitat for wild animals which were occasionally hunted for their meat and rare birds like crested cranes and storks, which were not to be killed. In these forests and thickets grew trees that were medicine for various ailments such as intestinal worms and fevers. Whereas Verschuuren et al.,

(2010) considers sacred vegetations only as places of spiritual importance, among the Lugbara these places were homes for conserved wild life as well.

This kind of knowledge is what made natural vegetation in the form of trees be regarded in some societies as companions for human beings. Besides providing shade during harsh weather and habitat for wild animals that were hunted, natural vegetation was to be treated as friends. For instance, the native American elders used to say that if you don't take care of plants, talk to them and relate to them, they get lonely and go away (World Bank, 1998:4). This kind of understanding made the elders to protect these "friends" from careless destruction. Some trees like Saka in Ayivu have survived because of such relationships. They are not just ordinary but wisdom shades. That is why cultural matters of the local community and contentious issues there were settled only at Saka.

It is knowledge that understood natural vegetation as a source of herbal medicine. Specific trees and lilies have for ages been used for treating various ailments ranging from poison to intestinal worms, skin infections and fevers. Few knowledgeable people, mostly elders knew these plants (Kibonde, 2020). These herbalists prescribed herbal medicine for the various ailments "based on the presumption of the medicinal properties of various plants, roots and herbs" (Ezeanya-esiobu, 2019:74). With human activities like agriculture and construction of roads and houses, if some of the places for obtaining these herbs are now not protected, the herbs may become extinct. In order to safeguard natural vegetation that had such herbs, sometimes the society was cautioned that huge sacred snakes which, if one saw or met, would be a bad omen, lived in them. Indeed, as Joseph Osei puts it, "since the society believed so much in superstition and it was also a taboo to talk about such elements, no one, other than a few respected elderly persons would go to such places because no one wanted to attract the wrath of the gods in form of epidemics, drought and

misfortunes" (Joseph, 1995:3). This way no knowledgeable person tampered with such natural vegetation areas. Today even when science has regarded indigenous knowledge as inferior knowledge, the impact of that knowledge is still felt in the society through herbal medicine whose efficacy in treatment of many ailments cannot be doubted.

Natural vegetation that consisted of tree clusters, among the Lugbara, like many other African societies was the place where the gods lived. It would only be a disturbance of the gods to destroy their homes which could earn one punishment (Kibonde, 2020). Mark Ikeke, citing *Creation in African Thought (n.d)* states that trees and forests were of special significance to Africans. The Ngombe refer to God as "the everlasting one of the forest, the one who began the forest" (Ikeke, 2013:3). Such communities continue to conserve some natural vegetation areas, particularly forests to maintain a dwelling for the gods. Despite the heavy influence of Christianity, in difficult situations like illnesses, many people still look to this god of the forest for immediate answers because their answers are immediate unlike the Christian and Muslim Gods who wait until the end of life to punish or reward (Joseph, 1995:3).

This study therefore regards indigenous knowledge as locally developed knowledge of a society that develops from the society's interaction with the environment and the need to solve its social and economic challenges.

2.2 The Practices used in Natural Vegetation Conservation

As noted earlier, the knowledge about any phenomena in the indigenous communities was the result of accumulation of experiences (Alidri, 2016, Kibonde, 2020). These experiences made the society to value natural vegetation so much that it taught societies to become wise enough to

employ simple looking yet strategic practices to protect some natural resources to avert extinction. Since humans by nature are curious, in order to communicate the message of conservation, some societies used superstition and other wise sayings to deter the young from unnecessary curiosity with some plant resources in the environment. Superstition is an "irrational belief in the supernatural that is associated with good or bad luck" (Mandal, 2018:2). Mandal highlights three important things about superstitions: women are more superstitious than men; belief in superstition decreases with increase in education and age level and superstition is not affected so much by religion. These elements resonate well with the Lugbara traditional practices. Among the Lugbara, for example, if one sets out on a mission and soon he/she stumbles the toe, it predicted good or bad luck in the mission depending on whether the stumble was on the left or right. For one person a stumble on the left toe would mean bud luck but for another it would mean good luck and vice versa. In another superstition, if a person was traveling through forests, he was supposed to look ahead only and not talk about the trees. If they did so, it was believed a heavy rain with hailstones would wash them. This was probably a way of diverting attention from being curious about trees that might be of herbal use. This probably explains why many of the superstitions about forests applied to women and children, whose convictions in these superstitions prevented them from daring into the special thickets and forests although every member of the society had some kind of superstitions to observe. Superstition, however, has been much disputed and disregarded by the modern society because it has nothing empirical. It appears more of playing with the feeble minds to achieve an end. Mandal, (2018) describes superstition as "irrational" but because superstitions determined the daily lives of the Lugbara a great deal it has saved people from a lot of trouble including vandalism of vegetation.

The use of oral tradition and oral history was the most common means of transmitting messages, which in this context concerned natural vegetation conservation. In the piece, *Indigenous Communication and Indigenous Knowledge,* Mundy and Compton (2018:2) acknowledge that the elders explained "by word of mouth" to the younger generation the knowledge about specific practices and plants and how beneficial they were. Stories showing certain forests as places where the ancestors lived and performed their rituals were told to the young to deter them from destroying those places. Indeed indigenous communication is an important cultural practice and is highly credible (Mundy & Compton, 1995). In places where the relics of stone implements and tools existed in the forests or under certain ancient trees, the elders said it was the place where the spirits of the ancestors worked at night (Verschuuren et al., 2010). This instilled the fear of destroying such special places in young people which in effect kept such forests intact. With modernity communication and Christianity, indigenous knowledge communication and education to the young generation is disappearing or getting weakened at an alarming rate, endangering the survival of much valuable information(Mundy & Compton, 1995:3). Christianity, like Traditional African Religions, teaches about good moral conduct and responsible use of resources given by God. For one to think African ways of conserving vegetation through their Indigenous teachings is bad is simply feeble mindedness.

The use of proverbs, stories and riddles was the other means of communicating indigenous knowledge on natural vegetation conservation. Proverbs, with their hidden meanings leave one trying to apply the message in various ways. As Wienecke (2005) observes in (*The Value of African Taboos for Biodiversity and Sustainable Development Joseph Osei*, 1995:2), "Positive values towards the use of natural resources were inculcated (in traditional African societies) from

generation to generation by means of proverbs, stories, songs, and religious ceremonies or rituals." Since a proverb does not usually touch the subject directly, individuals feared to violate the applied meaning. This made the members to be careful with the objects to which the specific proverbs were applied; of course these objects were usually humans or other environmental elements like trees and forests. Stories, long accounts/ narratives of imaginary or real people and events or phenomena were told by the elderly to the young to both entertain and educate. These stories were either facts or tales but they vividly brought the teaching and knowledge about the subject. Riddles, puzzling questions aimed at solving a challenge too, were meant to communicate issues of significance ranging from personal to environmental implications. Both stories and riddles concerned the society and how it related to its environment. Real or imaginary characters were used in the stories and riddles to represent good or bad interrelationships. Kibonde (2020:2) affirms that conservation of plants should be done by the community using their experiences that have been developed and transmitted over time using "verbal expressions and practices". Unfortunately, these proverbs and riddles are not documented and therefore stored in memory by elders who are dying or are losing memory. Again, in a world dominated by facts and figures stories and riddles are becoming obsolete in communicating messages. A person who can tell stories carries the tradition of the society very well and this is instrumental in natural resource conservation.

There were taboos associated with some forests and thickets. The fear to break taboos greatly saved these natural vegetations. Taboos are regarded as social rules that are not written. They are used to guide and direct human behaviour (Hutton & Leader-williams, 2014:4). Taboos were passed down from ancestors and so they were unquestionable. Breaking of taboos had severe ramifications like striking of epidemics, death and unusual occurrences with individuals and

families or a series of misfortunes, among the family members. This way, no body, knowingly would break a taboo no matter how tempting it would be to tamper with the resource covered by the taboo (Osei,1995). Taboos in indigenous settings permeated all aspects of life – political, social and economic (Hor, n.d.: 3, Osei, 1995:3). Much as the modern society under looks taboos as superstition, their values in morality and resource conservation cannot be underestimated.

In some societies, bye laws were used by the community to ensure natural vegetation conservation. Malunguja et al., (2021:11), reports that the "unrecognition of the Sungusungu in implementing the bye-laws and protecting the communities against the invaders has increased overexploitation of forests". A similar case was in Philippines where the Ifugaos used tribal laws to protect forest resources (International Labour Organisation, February 1995). Traditional laws were not merely mortal, they had divine connotations. Failure to abide by the laws which were in the form of norms would easily attract the wrath of the spirits. This made the members to be careful enough to avoid disobeying the supernatural whose words were believed to be communicated by the elders. The modern society regards byelaws as government directives which can be manipulated but if this was integrated with traditional byelaws, not a word of it would be broken and natural vegetation would be highly conserved.

The association of certain forests with the dwelling of divine or even the dead created both fear and respect for the respective natural vegetations. The traditional African society was so inclined to religion that to raise a hand against the abode of the gods would be an abomination. Some of the forests were said to be habitats for good spirits. But to keep peace with the spirits, the trees needed to be used carefully with specific trees would not being cut at all (Ikeke, 2013:3). At times

these forests were thought to contain evil spirits, especially the spirits of those who died with grudges. One would earn a torment if they disturbed the spirits. Such places were not cultivated (Adogbo, 2000). Women would not collect firewood from the trees. With modern developments, trees are destroyed indiscriminately so long as they fall in areas targeted for development. This, according to oral stories, explains why a huge mahogany killed men who felled it in Anyafio cell in the present day Arua city when they were trying to clear the area for house construction in late 1990s. Such a situation could best be averted only by observing the customs regarding such trees.

2.3 Contribution of Indigenous Knowledge in Natural Vegetation Conservation

Although the modern society has regarded indigenous knowledge with contempt, traditional knowledge – knowledge which developed indigenously still remains a valuable means of conserving resources in the environment (Alidri, 2016) and will continue to be. Whereas modern science considers experimentation as a means of proving the efficacy of any method of resource conservation, the indigenous means did not differ so much in doing the same. Experiments take time and must be simulated to produce similar results before the results can be adopted. Similarly, indigenous practices developed over long periods of time; for instance, the development of herbal medicine required trials before it was established that a particular herb was a medicine for a given disease. The knowledge of herbal medicine was eventually used in the treatment of a wide range of diseases. In Tanzania for example, according to (Kibonde, 2020:2), herbal medicine "served up to 60% of Primary Health care needs". Perhaps with the absence of manufactured medicine then, the human population would have been extinct if the society never developed its own knowledge in medicine.

Indigenous knowledge was used in disaster management. The indigenous communities monitored the climate and other natural systems and established early warning indicators. In Swaziland, for example, floods could be predicted from the heights of birds' nests near the rivers, the position of the sun and the appearance of certain birds predicted the onset of dry season (Ejiogu-Okereke et al, 2019:6; Nakashima et al., 2002:3). In short, in indigenous knowledge, the border between the secular and spiritual is very permeable. It would not be fair to consider one practice purely spiritual and another purely knowledge based. In relation to natural vegetation, such a knowledge was used to teach young ones the right times for finding certain plants and the rest was to keep them growing and maturing. Also certain trees that are known to be preferred habitats for certain birds would not be destroyed without proper reasons. The fact that the ancient indigenous societies did not have calendars to read months and years did not mean they never knew what to do and when. This is what Nakashima et al., (2002) means by "indigenous knowledge includes not only knowledge but also know-how".

Indigenous knowledge about natural vegetation went far beyond the conservation of forest resources. It applied to protection of crops. Ejiogu-Okereke et al, (2019) acknowledge that the use of plant derivatives was common for insect control before the advent of synthetic pesticides. The benefits were overwhelming. They were ecologically friendly, tolerable by all plants and biodegradable (Ejiogu-Okereke, 2019:6). This was indigenous knowledge that necessitated the conservation of such plants whose products had direct bearing on crops for agricultural purposes. Grey (2016) equally maintains that "indigenous knowledge allowed most indigenous communities to achieve environmental equipoise and maintain productive livelihoods" (Grey, 2016:4). To do this, communities set apart areas free from unnecessary disturbance to protect such plants used for

special purposes from extinction. However, with modernity and improved technology, society is neglecting such indigenous knowledge and plants but rapidly destroying the natural vegetation indiscriminately.

The knowledge of the indigenous communities was used in identifying soils for crops as well. The communities knew which soil was best for what kind of crop and in what season. In sub-Saharan Africa, for example, where small scale farmers represent up to 70% of agricultural workforce and 90% of those in fisheries industry use indigenous knowledge, (Nakashima et al., 2002:4), their actions are guided by indigenous knowledge yet their practices have not necessarily made the region worst hit on the planet hit by desertification. The knowledge of soils went deep into knowing what kind of crops and other plants to grow and find from what places. This knowledge limited agricultural losses attributed to poor soils and eventually increased the maintenance and propagation of plants. In the quest to maintain some trees in agricultural lands, this kind of local knowledge would help in identifying the soil and crop friendly trees to keep while opening ways to remove the dispensable ones.

The indigenous knowledge of plants that identified medicinal plants has had a huge bearing on producing modern medicine. In a study on identifying the contribution of indigenous knowledge in bioprospecting for effective conservation strategy , it was found that places that conserved natural vegetation using the indigenous knowledge of their benefits could become commercial fields of pharmaceutical plants (Kumar & Tarui, 2004:6). Dean (1986) shares the same notion. He argues that some afflictions caused by sorcery cannot be treated with western medicine (Jackson & Dean, 2006:3). They require traditional medicine (which is mostly obtained from some plants). This confirms that it is only indigenous knowledge about the potentials of natural vegetation that

can solve some societal problems in spite of the development in technology. A study conducted by Kibonde (2020) that confirms that 15,000 plants are lost every two years, therefore, implies that the earth loses two potential major drug species of plants every year (Kibonde, 2020:2). This is very terrible news considering the kinds and rates of afflictions the world is going through. This therefore makes the revival of indigenous knowledge as a means of conserving natural vegetation more urgent now than ever.

2.4 Conclusion

Considering the literature reviewed, it is clear that we cannot afford to do without indigenous knowledge if we have to save our natural vegetation. There are global natural vegetation conservation efforts running but, if we forget the benefits and ignore the indigenous knowledge practices that have maintained some of the plants to date, we will lose it all. There is enough evidence that efforts have been made in natural vegetation conservation with the main targets being its medicinal, religious and economic values. With population growth and its consequences on natural vegetation such as clearing land for development, modern scientific natural vegetation conservation efforts may be in vain. Reforestation may come with invasive species that end up destroying the indigenous, versatile and long-lasting species. Developers do not mind this. This therefore, necessitates the consideration of indigenous knowledge, with its mythical and practical conservation measures as a means of conserving natural vegetation. The benefits are numerous and the enforcement is sure. Also through indigenous knowledge, forests and thickets and specifically important but isolated trees are maintained in specific places, leaving vast lands for development while enjoying the benefits like herbal medicine and protection of wild life.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Methodology is critical in research because it clearly shows how the researcher makes the knowledge claims (Sequeira, 2014:2). In this chapter the researcher shows the research design, the study population, sample size of the population and method of sample selection as well as the methods of data collection, research procedure and ethical considerations. Data analysis and data presentation procedures too, are explained in this chapter.

3.1 Research Approach

This study adopted the qualitative research approach, an iterative process in which improved understanding to the scientific community is achieved by making new significant distinctions resulting from getting closer to the phenomenon studied (Aspers & Corte, 2019:1). In this work, data was collected in descriptive form by capturing participant's opinions, feelings, experiences, values, practices, beliefs and customs. This approach was preferred because it is culturally specific and contextually rich (Family Health International. et al., 2005:7). It is the most applicable approach where the data cannot be quantified.

3.2 Research Design

A research or study design is the use of evidence based procedures, protocols and guidelines that provide the tools and framework for conducting a research study (Majid, 2018:2). This study used the historical research design to present evidence. Historical research design is a research design in which data is systematically collected, evaluated and used to describe, understand and explain actions or events that occurred sometime in the past (Shafiee, 2015:3). In doing this, the study

explored community opinions, values, customs, beliefs and practices across the historical period as passed through generations by word of mouth and practice astride the pre-colonial, colonial and post-colonial period (1850 to 2023) to explain and draw conclusions on natural vegetation conservation. This was necessary to establish the facts about natural vegetation conservation using indigenous knowledge in the past in order to defend or refute any hypothesis about the same.

3.3 Study Area

This study was conducted in the West Nile Region of Uganda. The study area covers the Lugbara clans: Aringa, Ayivu, Maracha, Terego and Vurra which are located in the West Nile Districts of Yumbe, Arua City, Maracha, Terego and Arua respectively. Since the study was conducted among the Lugbara and the area described is predominantly inhabited by the same society, it became imperative to consider all these clans to conduct the study.

3.4 Target Population

While Polit and Hungler (1999) opine that population is the totality of all subjects that conform to a set of specifications comprising entire group of persons that is of interest to the researcher and to whom the research results can be generalized, Shukla (2020:2) thinks population is the set or group of all units on which the findings of the research will be applied. Convinced by the opinions of these scholars, the researcher considered the Lugbara people as the study population because the findings of this research applied to them.

In a 1948 countrywide census, there were 183,000 Lugbara in Uganda (Middleton, 1992: 1). The 2014 Population and Housing Census Report put the Lugbara population at 1,099,733 which was 3.3% of Uganda's total population of 34,634,650. This shows that the society has a relatively low population compared to others like the Bantu and Luo. Of these, about 604,000 (55%) were under

18 years of age (UBOS, 2014). Since about 55% of the populations were below the age of 18, it suggests that this age bracket got much of their indigenous knowledge though transmission from the elders. However, the 2024 population census puts the Lugbara population at 1,230,384 people. The entire Lugbara population was therefore targeted for the study.

The study population was drawn from five Lugbara clans: Aringa, Ayivu, Maracha, Terego and Vurra. However, the target population was mainly elders of sixty years and above. These were considered because they are people who have lived to accumulate experiences and can tell the stories about the society. A few younger people from the age of 18 years were added to the target population with the view of exploring how they were imparted indigenous knowledge in natural vegetation conservation by the elders. Elders were chosen because of their knowledge and the respect they command in the society in which whatever they said would be carefully considered by the society. Environmental officers were considered for their knowledge on natural vegetation protection, distribution and characteristics in the areas under their jurisdiction. The population thus consisted of both the literate and illiterate persons.

3.4.1 Sampling Techniques

Techniques for sampling are the methods used to select appropriate samples for a study (Bhattacherjee, 2022:1). Purposive and snowball sampling were used to obtain samples. Purposive sampling was used for respondents such as environmental officers who were deliberately chosen based on their knowledge on the subject, while snowball sampling was used to identify the young, elders and opinion leaders because it was thought they best know their colleagues who can give

credible historical information as the required data and could refer the researcher to the most reliable respondents.

3.4.2 Sample Size

The non-statistical method was used to determine the sample size. The non-statistical methods and the saturation where no new information is being got during the study or a point at which additional data do not lead to any new themes/findings (Baker et al., 2017:3) was used to determine the sample size. A sample size being the total number of individuals chosen in the samples from which representative data can be obtained or the part of population that represents it completely, a sample of at least 16 respondents per District was considered for this study because it was believed this number was adequate and could be fairly distributed through the study area to obtain the required data. However, once saturation was attained, it became unnecessary to interview more respondents. More than half (55%) of Uganda's population is under 18 years (State of Population Report, 2022). This means the numbers keep dwindling with increase in age levels. It therefore implies that the number of the elderly (60 and above) was quite small. In spite of the small population of the elderly, more of them were considered for the study because of their presumed knowledge about traditional and indigenous practices. A population sample of 50 elders from villages, 10 opinion leaders mainly of the Lugbara *Kari,* 15 Local Council (LC) leaders, 10 young persons (18-35 years) and 5 District Environment Officers, one from each District was considered. The elders, young people and LCs were chosen from areas where natural vegetation appears more conserved such as Ajia and Arivu in Vurra, eastern parts of Maracha, Ayivu and Terego and northern part of Aringa. However, in the process of data collection, saturation was achieved by the time just over 44% of the sampled population was interviewed. As a result, the researcher could

not proceed to interview all the sampled population for the sake of avoiding repetition and therefore reduced the sample size to 50.

Table of Respondents

S/N	Category of Respondents	Number
1	Elders from the villages	40
2	Local Council 1 chairpersons	15
3	Youths	10
4	District Environment Officers	5
5	Opinion Leaders of Lugbara Kari	10

3.5 Sources of Data

The sources of history are so important in the study of history and writing historical research. It makes us know the past and relate it to the present. Data was obtained through oral tradition, oral history, ethnographic studies, auto-ethnography, review of written documents and official government records. This was broadly divided into two categories; primary and secondary sources.

3.5.1 Primary Sources of Data

In this category, information obtained from the knower or the custodian of the knowledge was considered. History is transmitted to a great extent by word of mouth. The narrators of history called oral traditionalists therefore formed the primary data source. The sources under this category included oral tradition and oral history.

Oral tradition in which verbal testimony is transmitted from one generation to another constituted a key source of information in this study because much of what the society knows about itself is not written down but rather transmitted by word of mouth to the posterity. As one of the most fundamental sources of historical knowledge, oral tradition, takes the form of story, song, or poetry, on any aspect of community's life. In African communities, oral tradition was not simply used as a form of entertainment, it was a means to pass down valuable information concerning the status and rights of individuals (Ari Widyati et al., 2018:2). Therefore, narratives and stories about sacred forests, trees, mountains and hills and outstanding individuals were passed orally by the elderly to the young.

In this study, the researcher obtained data from the respondents through their oral narratives of what they were told by their parents and grand-parents about natural vegetation and used the narratives to make sense of how those practices narrated were a means of conserving natural vegetation.

Oral history on the other hand is defined as any orally transmitted first-person narrative and is often used to describe a collage of spoken accounts about a given historical event (Vansina, J. M. 1985:443). From this definition, it can be established that the oral historian is the knower of the history. It has not necessarily been transmitted to him/her by another person. This source was used because most of the indigenous knowledge on environment among the Lugbara is derived from oral practices and ways of knowing. It is a product of the individual's experiences. In fact, the study found out that most of the elderly mainly those above 80 years were narrating what they practiced in child hood or saw happening in their dwellings.

3.5.2 Secondary Sources

Secondary data sources are information that one source has received from another and stored for further transmission. Here, books, journals and other documents available with environment officers were consulted to corroborate what the oral sources revealed.

The documents available were the history of the Lugbara as documented by colonial and social anthropologists. Among these were, John Middleton (1965) *"The Lugbara of Uganda"*. Case Studies in Cultural Anthropology and O.J.E Shiroya (1981): *"The Lugbara States – Politics, Economics and Warfare in the Eighteenth and Nineteenth Centuries"*, and the National Forestry Authority (NFA) and Tree Planting Act (2003). Written sources were used as an important source of reconstruction of pre-colonial, colonial and modern history.

3.5 Methods of Data Collection

Data was collected through document analysis, interviews, observation and focus group discussions.

Interview, a data collection method where questions are asked to the respondents to find their opinions (Karim, 2019:11) was a key method of collecting data. The questions for the interview were both structured and semi-structured and open ended so as to provoke careful thinking on the respondents' lived experiences.

Focus Group Discussion was used beside interviews. It is a structured discussion with the purpose of stimulating conversation around a specific topic (Karim, 2019:15) In using focus group

discussion, people with similar characteristics and experiences were brought together into small groups of not more than five to discuss a specific topic of interest. To obtain meaningful data, open-ended questions were asked about the respondents' perceptions, attitudes, beliefs, opinion or ideas about the subject. It was found more useful because in it one respondent's response reinforced another's.

Focus Group Discussion was targeted to the elderly in order to get their collective lived memory in indigenous knowledge in natural vegetation conservation. This group was observed to be struggling with dementia. The method proved effective because it was observed to have helped to tickle an individual to remember certain concepts from others' ideas if he/she had forgotten a part or the whole thing. Three focus group discussions, the first in Vurra consisting of three elderly men, the second in Ajia and the third in Terego consisting of four participants made of three men and one woman all aged above 70 were conducted. These elderly persons were chosen because of their age and knowledge of the society's indigenous practices over a long period of time.

Documentary analysis was done by obtaining written records from the office of the environment officer. The documents of interest were those which had information about forests, conservation guidelines and best practices in environmental protection. The most relevant document available was the National Forestry Authority (NFA) and Tree Planting Act (2003). This document was analysed to corroborate data with what was obtained through interviews and focus groups.

Observation was the other method used to collect data. "Observation and participation according to circumstance and the analytic purpose at hand remain the characteristic feature of the

ethnographic approach" (Ryan, 2017:2). In observation, reference was made to participants' perceptions and behavior to understand their knowledge and thoughts about natural vegetation conservation. Observation as well served to compare the real world situation with what the respondents were saying. In this method the researcher gathered data directly from the field about places, behaviours, appearances and interactions by observing physically. Indeed from the observation of some trees and thickets, it could be believed that those natural vegetations had lasted for generations without being destroyed. Observation was helpful to triangulate what the researcher obtained in the interviews and focus group discussions and what was existing on the ground.

Auto-ethnography: In this method, the researcher uses the lived experience as a member of the society (Chang, 2016:29) to corroborate data from respondents, spot places where tradition is highly maintained and explain some phenomena. In this case, the researcher as being a member of the Lugbara society partly used his own experience to describe the society's concepts and practices in conserving natural vegetation.

3.6 Research procedure

The researcher first sought permission from the Dean, Faculty of Education and Humanities to carry out data collection in the field. A written permission helped to introduce the researcher to all persons of interest in the field to avoid suspicion. The researcher then took the letter along during data collection to the local authorities to obtain clearance to collect data in the community. The same letter convinced the Local Council (LC) 1 officials to permit the researcher to conduct field studies in their areas of jurisdiction.

Before conducting interviews, the researcher asked informants to sign consent forms first. Those who were illiterate were explained the consent form until they appeared to have understood and expressed willingness for the interview before proceeding with the interview.

3.7 Data Quality Control

In data quality, the validity and reliability of the data collection instruments in answering the research questions were tested. This was achieved by ensuring that all the questions were logical enough to investigate the problem being studied.

3.8 Validity

The questions that were constructed for data collection were subjected to the supervisors to check for content validity, a "measure of how well the questions represent the possibilities of questions available" (Mohamad et al., 2015:167). To do this, the researcher ensured the questions were logical, coherent and prompting enough to investigate the problem. After critical evaluation by the supervisors some of the questions were rephrased before being cleared to be administered in collection of data.

Triangulation too, was used to test the validity of data. This method in which multiple sources of data are compared to gain a comprehensive understanding of the phenomena (Carter et al., 2014:1), was used to confirm if the data collected was valid. Data obtained from different sources such as key informants and documents as well as ethnography was compared for consistency so as to determine the most reliable information.

3.9 Reliability

In order to ensure that the data collected was similar when the same tool is administered to different respondents the reliability of the tool was tested. This was done through a pretest. Five respondents were considered and interviewed. The result showed that some of the questions did not elicit the expected responses. Such questions were re-worded and repeated with another group. The results were then compared for consistency in order to find out if the instrument could yield consistent results. Once consistency was established, the questions were adopted for final interviews.

Another way to test reliability was the test - retest method. In this, the same questions were administered to the same respondent once again after some time interval to see if the responses given would remain consistent. This was done to one, Jino Ngaminika. A high degree of consistency means that the tool is reliable. When this was first applied, the responses had some obscurity in that the expected information could not come out clearly but when the wordings of the questions were adjusted; the respondent understood the task easily and gave clear responses thus proving higher reliability of the questions.

3.10 Data Analysis and Presentation

This is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense, recap and evaluate data (Saldana, 2011). It reveals to others what has been observed and discovered about the problem under study. Data was analysed using the content analysis and narrative analysis methods.

Content analysis refers to a research method used for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or

patterns (Shannon, 2014:13). This method was thought to be appropriate because the data was described based on the text and observed phenomena.

In narrative analysis the stories told by the informants are analysed (Thuv, 2023:4). Interviewees' stories come with emotions, exaggerations, biases and inconsistencies. Narrative analysis which, in fact begins at the point of the interview therefore helped to sort out the relevant materials from the irrelevant and ambiguous ones.

3.11 Ethical Considerations

Ethics are the norms or standards for conduct that distinguish between right and wrong. It helps to determine the difference between acceptable and unacceptable behavior (Eldred, 2006). In this regard, care was taken to ensure that the research process did not infringe on the freedoms of others nor did it reflect only the opinions of the researcher. Some of the ethical considerations for this study were the following.

Permission was first sought from the Dean, Faculty of Education and Humanities of Gulu University to carry out the research in the field. The written permission was presented to the local authorities where the research was to be conducted to get clearance to collect data in the community as attached in Appendix F.

All potential respondents were informed of the purpose of the study and how the researcher would manage the information they provided. This was indicated in the consent forms that the respondents signed prior to giving information to the researcher. Where the respondents were

illiterate, the consent form was interpreted to them by the data collector to the point that they appeared to have understood it before they signed it.

All the books, journals and periodicals used in the process of the study were credited by citing them in text and references as an acknowledgement of the authors' intellectual property rights.

The information obtained from respondents was kept confidential. In this regard, aggregated information was presented. If a respondent's response was to receive a special treatment due to its sensitivity, then the identity of that individual was concealed. However, the key respondents' information was in many cases tagged to the names of the respondents for emphasis.

The researcher got support to a small extent from research assistants. All research assistants employed to collect data were trained on the acceptable ethical practices before they embarked on data collection. This was followed up closely by the researcher to ensure they did not deviate from the norms.

CHAPTER FOUR

THE CONCEPT OF INDIGENOUS KNOWLEDGE AND NATURAL VEGETATION CONSERVATION AMONG THE LUGBARA

4.1 Introduction

In this chapter, the study investigates what is perceived as indigenous knowledge and natural vegetation conservation among the Lugbara. It clarifies on the kind of natural vegetation that was not to be destroyed and the reasons for doing so. The chapter as well elucidates the way indigenous knowledge was developed among the Lugbara. This was done in order to establish the society's concept of indigenous knowledge and natural vegetation.

4.2 The Lugbara Understanding of Indigenous Knowledge

Indigenous knowledge, according to Baba Ejua and most of the other respondents is called *Ondua Akuniri*, a Lugbara expression that means knowledge from ancestry. It is a kind of knowledge that they got from their fore fathers. They learnt from what their ancestors, grandparents and parents used to do to solve their societal challenges. In some cases some people would built on what the fore parents did, an indication that knowledge keeps developing with experience and time, but with an ultimate aim of solving the society's challenges. This means indigenous knowledge is an outcome of long term experiences with the natural surrounding that are manipulated into solving the society's social and economic challenges. As Alidri (2016) alludes, indigenous knowledge was a product of the experiences of the people. A bitter experience such as an ailment prompted individuals to use their wisdom in finding ways to overcome the challenge. Once this yielded the desired results, it was repeated in solving related challenges. It is this kind of survival effort

through their experiences that (Ezeanya-esiobu, 2019) describes as “efforts of the community to master the environment for survival”.

Akamva, a retired lay reader in Ajia near the trading center claims Indigenous knowledge is a special, spiritually connected knowledge, gained through a relationship with the divine. In it the society claims some of the things they do are revealed to them by the spirits. The Lugbara believe so much in spirits and oracles. The oracles are said to have worked in bush lands to communicate with their gods. In the process the spirits/gods would reveal to them new cosmological knowledge about the different elements of the environment that would be used to solve the challenge for which the spirits were consulted. Akamva adds that knowledge of what is right and wrong is given by God. He cites the Biblical example in which God gave Adam the knowledge about all plants and animals, instructing him to be master of everything. This finding confirms the work of Ezeanya-esiobu, (2019:8) in which he describes indigenous knowledge as a “spiritually inclined knowledge that views the whole world and its components as interrelated”. It also agrees with the work of Middleton, (1978) in which he posits that the Lugbara rain makers communicated with the divine in the remote bush lands.

In another understanding, indigenous knowledge is considered the kind of knowledge that the society gained as a result of observations and trials. In an interview with Baba Noah O’du of Asevu Village in Tilevu Parish of Vurra, he explained that people did not know so much about edible plants. In the process of finding food through gathering, they tried and tasted different fruits and other plant products, some becoming beneficial while others poisonous. Each trial was a learning point. Although many died during these trials, people got to understand a lot from the same. The

harmless plants and plant products were subjected to simulations and other trials with different combinations to eventually come with different foods and other outputs. He gave the example of a wild cassava variety called *Edro Ola* (loosely translated: Rat cassava) which, although they look alike with the currently domesticated cassava, it is a poisonous variety. The same finding came out in the first focus group discussion that was carried out in the same village. It therefore leaves no doubt that indigenous knowledge is developed from within the community through trials, experimentation and "simulations" as confirmed by Grey, (2016:3).

It can therefore, be established that indigenous knowledge, as opposed to any other kind of knowledge is not directly taught or copied from elsewhere but rather developed through spontaneous or desperate and deliberate attempts to solve the society's challenges. There may be similar knowledge practices in different societies, but it does not mean that one society copies from another. It only means societies have similar challenges and use their experiences with the environment to develop means (knowledge) to solve the challenges from different perspectives but end up with similar solutions.

4.3a Lugbara Understanding of Vegetation

The concept of natural vegetation among the Lugbara has environmental, socio-cultural and spiritual connotation. It is a God/god given resource that is to benefit the dead, living and the posterity. Anguzu of Omoo in Terego said *Adroo fe amani afa idiza dria ama aza kozu* (God has given us all plants to meet our needs). What God has given should therefore be used knowing that no one can replace it the same way God gave it to us.

The home of the gods/spirits. According to Ngaminika, Godo and Mafu, it is in big trees (which are part of vegetation) that both primordial and departed human spirits live. They gave the

examples of Aria, a tree in Riki and Dilo respectively. The Lugbara in short see such places as homes of their fore fathers and treat them with the necessary respect.

To the Lugbara, vegetation is medicine. All human and animal medicines are obtained from various plant species. This special perception makes the community to attach special values to different plant varieties.

4.3b Lugbara Understanding of Vegetation Conservation

Vegetation conservation among the Lugbara is closely connected with the purpose the specific kind of natural vegetation serves. For instance, Baba Ejua of Yivu West Village in Tilevu Parish, Vurra (a village that borders Democratic Republic of Congo) explains that natural vegetation conservation meant keeping plants that had medicinal uses from destruction. Many of these plants were found in thickets and forests yet the knowledge of herbal medicine among the Lugbara was kept secret. In order to ensure safety, it became imperative to protect the whole natural vegetation in that place from destruction. *"Ama oni diyi ama atapi yivu"* (We learnt this from our fathers), he said. Since mostly the elderly people knew about the herbal plants, their communication in whatever form to protect the natural vegetations from destruction would not be challenged. The same is agreed to by Kibonde, (2020) and Joseph, (1995).

Natural vegetation conservation was sometimes simply the art of keeping specific natural vegetations as intact habitats for the gods. In fact, among the indigenous Lugbara, natural vegetation conservation was a result of trying to achieve a different end. No one set out to conserve natural vegetation for the sake of having it available but it came about as they were trying to achieve some other end through that natural vegetation. Some trees and thickets were regarded as dwelling places for the spirits and so there was to be no disrespect of whatever kind to the homes

of the divine. This did not in any way relate to the modern forest conservation methods and purposes but achieved so much in conserving natural vegetation. This was understood from the interview with Esu'di Leslie, the LC1 chairman of Yigati cell together with Baba A'bure Gard of the same cell in Pajulu, Komite ward in Arua City. The duo explained that *Saka* is a spiritual tree which no unauthorised person laid hands on or desecrated in any way lest the offender gets afflicted by the spirits. It is based on such a background that, the study showed, some other hundreds of years old trees such as, *Aria* and *Alingulu* (all within Ayivu), *Adroyi* thicket in Vurra and *Dilo* in Yumbe still exist. This agrees with the work of Kibonde, (2020) who claims any person who tampered with the dwelling of the gods would earn punishments in form of illnesses, misfortunes and even death. Mark Ikeke on the other side reports that the Ngombe refer to god as "the everlasting one of the forest" whose home must be respected (Ikeke, 2013:3). To maintain that habitat therefore, the particular natural vegetation was conserved.

4.4 Sources of Knowledge on the Importance of Natural Vegetation

The purpose of this inquiry was to establish how the Lugbara people got to know that certain natural vegetations were particularly very useful and needed to be conserved.

According to the earlier mentioned Baba O'du a respondent who lives in Asevu, a village of Vurra sub-county very close to the border with Democratic Republic of Congo,

> *People used trial and error. In fact many people died in the process of tasting various plants to find food and medicine. It was through such trials that some plants like the fruit yam (pictured below) were discovered to be edible.*

He added that they learnt about some of the plants especially the cassava varieties such as the ordinary now domesticated cassava and a wild variety locally known as *Edro Ola* in Congo forests. O'du further explained that in 1979 when they took refuge to the then Zaire (now Democratic Republic of Congo) during the liberation war in Uganda that removed President Iddi Amin from power, there was severe shortage of food for the refugees that made many to try eating different root tubers and leaves that resulted them in discovering the yam (in picture below). Such plants that were found harmless were eventually domesticated while the poisonous ones were noted with care. Most of the herbal medicines used to treat the various ailments were also discovered through such trials. It was inferred that, it was before the success in trials in medicines that made the Maracha to excommunicate their daughter Ofunyaru when she was a leper. A similar notion was shared by Omar a respondent in Bura village near Mountain Wati in Terego who said that it was due to lack of knowledge about the medicine to treat leprosy that the Maracha excommunicated Ofunyaru. It took 'Banyale who had some knowledge about herbal medicine to use wild bulb lily to treat and heal Ofunyaru of the leprosy (Shiroya, 1981:127). Difficult conditions therefore led to bitter experiences which ultimately resulted into the development of new knowledge.



Plate 1: A yam

Source: Field Photo (2024)

The younger generation, in discussions with them, said they got to know about natural vegetation and the necessity of careful conduct towards certain trees and places through observing the elders. Others said they were told about some plants that had medicinal values and were cautioned against destroying them. Some trees were supposed to be kept intact at all times because of their spiritual significance. This way, the young learnt to treat all similar trees as such. This is similar to the way the Bambara conducted themselves towards the Tamarind tree in Niger (Verschuuren et al., 2010). Such is the essence of oral tradition in transmitting the history of the society.

The knowledge was obtained through stories and tales. Parents and elders at the evening fire place told various stories to teach the young about the society. Some of the stories were about monsters that lived in natural vegetation such as forests and thickets. This is what Mundy & Compton, (1995:3) refer to as folk media and instruction in indigenous communication. According to the stories gathered in the focus group discussion in Asevu village, some of the old stories revealed that certain individuals and characters had been eaten or tortured by forest monsters or they just

disappeared into these natural vegetations when they entered the forests, cut or climbed certain trees. These stories created fear in the children such that they never risked their lives into these "dangerous" natural vegetations thus saving the natural vegetation from careless destruction. These were the kinds of oral instructions in form of stories in indigenous societies Verschuuren et al., (2010) equally talks about that detered the young from careless damage to natural vegetation.

Sometimes knowledge was obtained during visits of relatives and friends. With low human population then, homes were scattered far apart. Wherever people lived they did creative things to help solve their own challenges in more tailored ways. Adriyo, a respondent in Yivu West village of Vurra near Congo border said it was not easy to visit a brother in Congo (since the community is settled astride the Uganda-DRC border). There were scavenging animals and deadly snakes. People killed strangers without any sympathy. Yet there were moments one would need to see his relative elsewhere. In such movements, men always carried bow and arrows for defense. In fact one would constantly be alert, looking in all directions as he travelled. But the visits were useful. Through the visits one would learn about specific trees and their uses as practiced in those homes and villages ranging from medicine to defense. This confirms what Ezeanya-esiobu, (2019:8) refers to when he says indigenous knowledge is obtained from observation and imitation. To explain this further, the respondent said, he learnt to use the extracts from the roots of a tree locally known as *Nyazaka* to bind the arrow head to the handle permanently from his hunting peers in Congo. Thickets near homesteads, he added were used to take cover in case of enemy invasion. One would run to take cover in the thicket but face outwards quickly to watch the movement of the enemy. This could be experienced or learnt from others. This taught men to avoid clearing all

the thickets near homesteads but rather cut trees for wood and poles from quite a distant from home.

The interaction between people and the natural vegetation within their environment resulted into the natural vegetation conservation. The *Mili* tree leaves, in Aringa, for example were found to be suitable for making descent covering of the body for women. Morphat Mafu who lives near Yumbe town also a progressive apiary farmer says the leaves of *Mili* were soft with broad surfaces, easy to knit together on a string to wrap around the waist. The same tree was found to have soft wood, suitable for making fire. In this practice, two pieces of the wood would strongly be rubbed together to produce fire. Such beneficial practices resulted into self-discipline from destroying this tree species. Some trees were kept for fruits while others that rarely shed off all their leaves were maintained for shade. If, therefore, such trees grew in one's homestead or gardens, they would be handled with care to avoid losing them. Such a practice strengthened the relationship between humans and natural vegetation. This is why it is said in a World Bank report that the Native Americans treated trees as friends. They said if you don't talk to trees, they get annoyed and go away (World Bank, 1998:4). This kind of relationship led to keeping some trees intact for so long that it would appear the trees grew bigger on compounds than when they were in the bush.

Children got the knowledge of conservation through teaching by adults. Parents and grandparents knew their children well. A brilliant child would be identified and always carried around during the routine search for herbs, hunting and gathering and cultivation by the elder. In this process, the child would be taught to know about various trees and other plants with their uses. This is why in their study, Mundy & Compton, (1995:5) underscore the importance of verbal communication

about natural vegetation to children. This kind of knowledge remained with the child up to adulthood as they kept adding more through experience and trials. Indigenous knowledge on natural vegetation conservation therefore got perpetuated by this means.

4.5 Conclusion

The Lugbara Indigenous knowledge was that knowledge which spontaneously developed from their interactions with their environment in the bid to solve the social and economic challenges they found themselves in. Whatever came to be discovered among the Lugbara was transmitted to the posterity through oral tradition, oral history and religiously. This is why among the Lugbara, particularly the elderly, it is common to hear expressions like *"ma abi kini andra mani"* (my grandfather told me) which implies much of the knowledge was transmitted through oral tradition. Such is the knowledge the Lugbara people use to protect their natural vegetation from human pressures.

To the Lugbara, vegetation is the abode of the gods, the source of medicine, food, the habitat of wildlife that is source of meat. In short vegetation is the embodiment of the entire life systems of the Lugbara people.

The society therefore perceives natural vegetation conservation as the practice of allowing the natural plants to thrive in their original state and habitats by maintaining a natural balance within the ecosystem.

CHAPTER FIVE

THE INDIGENOUS KNOWLEDGE PRACTICES IN NATURAL VEGETATION CONSERVATION AMONG THE LUGBARA

5.1 Introduction

In this chapter the researcher discusses the ways in which the Lugbara used their indigenous knowledge to conserve natural vegetation. These practices which were both spiritual and physical influenced the conducts of the society towards natural vegetation. Every practice directly or indirectly contributed to the natural vegetation conservation.

5.2 Ways to Keep Natural Vegetation from Destruction

The chief custodians of knowledge about the usefulness of natural vegetation are the elders. In order to cut or make other use of certain trees like the Mahogany (*Lugbara: Mario*) one had to consult the elders. The elders were the ones who knew which trees to cut, which forest to hunt in at a particular time, etc. This implies that to cut a tree or go hunting in an area, one had to seek the consent of the elders first. They were the ones to guide where the hunters were free or forbidden to kill animals. As noted, some thickets were considered sacred and so the wild life there was regarded with similar notion. As Ikeke, (2013:3) agrees, hunters rarely carried out hunting in some forests If an individual acted stubbornly, he/she would suffer mysterious ailments. Sometimes it resulted into misfortunes that afflicted the whole family. Once this was realized, the offender would be brought before the clan elders and only specific rituals after sacrifices of appeasement would save him or her. In an interview with Ngaminika Jino in Pajulu village of Dadamu in Ayivu, he narrated a story of a man known as A'yoma Simon who cut a tree that grew over a section of a stream where men used to bath to burn bricks. The man was tormented by the spirits with an un

diagnosable illness to near death. It was only when he slaughtered a goat for atonement that the illness left him. This confirms the finding of Camacho et al (2016) who argues that "Indigenous forestry [and environment] knowledge systems largely encompass local technologies, innovations, know-how, skills, practices and beliefs uniting local people to conserve forest [and environmental] resources and their cultural values". These have developed over thousands of years of direct human contact with the environment (Camacho, L. D., et. al. 2016:5). In a study done among the Lugbara by John Middleton, such a situation required *"rua edeza"* (purification) to rid the person of the afflictions suffered as a result of offending the *Adroa* (god) (Middleton John, 1979:5), a ritual which only the elders performed. The role of elders in determining what, where and when to exploit natural vegetation resources was therefore very instrumental in natural vegetation conservation among the Lugbara.

The religious practice of associating natural vegetation with spirits was a means by which the society saved natural vegetation from being destroyed. In an effort to keep peace with the spirits, people had to conduct themselves carefully towards a particular kind of natural vegetation. Ikeke, (2013) too agrees with this. This was regardless of whether there was a known custodian or not. In Aya, around Adroyi, for example, it was established that the thicket has survived destruction because it is believed to be the home of the gods and spirits. Similar cases were found to exist in places like Saka, Agira, Alingulu, among several others. The strict adherence to religion by the society therefore helped to spiritualise lots of natural vegetation and consequently save them from reckless destruction.

The practice of using herbal medicine to treat diseases yielded in keeping the natural vegetation that provided medicine. Big trees such as Mahogany (Lugbara: *Mario*) which is used for treating stomach ailments and Mondea Whitei (Lugbara: *Katimba*) for treating tooth ache and others like *Pilopilo, Kanza, Nda, Roko onyofi* were not very common but they existed in specific places. Such kind of plants used in the treatment of a variety of ailments such as abdominal illnesses, sinusitis (*Lugbara: Ako*), swellings, fevers, poison and sorcery as confirmed in similar findings elsewhere by Kumar & Tarui, (2004:4; Barnes-Dean, 1986; Tabuti & Van Damme, 2012:31) were jealously guarded. The knowledge of medicinal plants among the Lugbara was kept secret. It was a source of income for those who mastered the medicines. Secondly if herbal plants were known to everybody, it could lead to misuse of medicine. According to Godo, the traditional herbalist would charge from chickens to several herds of cattle depending on the complication of the illness. Accordingly, it was from such application of knowledge about herbal medicine that 'Banyale used some lilies (Lugbara: *Ojo*) to heal Ofunyaru of her leprosy before the two got married. The understanding of natural vegetation as medicine and continued use of herbal medicine has thus saved lots of natural vegetation from destruction.

Oral communication of the knowledge about natural vegetation was another practice to keep some natural vegetation from destruction among the Lugbara. Oral messages from the elders were not taken lightly. Kibonde (2020:2) posits that conservation must be done using the community's experiences and verbal expressions. Nearly all the respondents interviewed in groups and individually revealed that the message was told by elders to the young. These oral messages were given during garden work, hunting, herding cattle, gathering poles for construction and at evening fire places. Where cultivation was done, trees that made good hoe handle, poles for construction

or had medicinal values were not supposed to be cut. Akamva of Ajia mentioned trees such as *Inzuo, Inzu* and *Payi* as typical of those not cut during cultivation. But to guard against curiosity, these trees were covered with myths. This finding resonates well with the findings of Tabuti & Van Damme, (2012:31) in which they observe that indigenous knowledge spans the domains of medicine, livestock keeping, crop and tree management, food processing, natural resource and environmental conservation and building technology. In short, every aspect of life among the Lugbara was an opportunity to communicate and practice their indigenous knowledge.

In some cases the community used byelaws to guard against destruction of trees. Natural vegetation (tree shades) that were reserved to be seats for handling cultural and social issues were protected using community's own laws. These places called the council seat (Lugbara: *Langaa*) also served as court (Lugbara: *Makata*) premises. In the words of Omar in Omoo village of Aiivu subcounty in Terego, *such a person who tampered with the langaa was taken to be canned publicly or to do public works like clearing the road at Owaffa.* Owaffa was the county headquarters where the seat of the county chief (*Lugbara: Opi*) was found. The Lugbara, like the Ifugaos of Phillipines, had unwritten guidelines to guard against indiscriminate felling of trees (International Labour Organisation, February 1995). Malunguja et al., (2021:139) too shares the same idea in which he notes that the Sungusungu used byelaws to protect the forests from overexploitation. This too confirms that the use of community's own laws was very useful in natural vegetation conservation. The development of community byelaws, according to the National Environment and Tree planting Act (2019) is guided by the District Environment and Natural resource committees (The National Environment Act, 2019, Section 28 (e)). The observance of the community guidelines among the Lugbara therefore saved a great deal of natural vegetation from destruction.

The Lugbara used superstition as a practical way of conserving the natural vegetation. In Ajia, it was said, no one was supposed to point at or talk about mountain Luku or forests when they were travelling. If one did so, it was believed, he or she would be washed by heavy rains, sometimes with hail stones. It must be remembered that the first Lugbara settled on mountains like Liru, Wati and Luku. The mountain is where the knowledge about natural vegetation was developed. Such kind of superstition could be aimed at warding off any undue interests in trees of value growing on these mountains. Another superstition said if one walked through a thicket (*Oce*) in the evening, a piece of log locally known as *Pati aliku* would follow and beat him/her up. A non-superstitious person could interpret this as an attempt to prevent people from going stealthily in the forest/thicket to cut or destroy specific herbal trees or consider it a means of avoiding accidents and attacks by wild animals in the dark. But with high respect attached to superstitions, no questions were asked about the authenticities of those beliefs. The practice of Superstitions, according to Tabuti & Van Damme, (2012:31), helped the local communities conserve natural vegetation from wanton destruction. This can as well be observed among the Lugbara society.

Taboos relating to natural vegetation were another practice used to prevent misuse, depletion or destruction of community owned resources. Breaking of taboos in traditional societies would result into a curse on the individual (Joseph, 1995). In Aringa, for example, Mafu Morphat explained that it was forbidden to date or engage in sex at *Dilo*, a sacred tree. If a disrespectful couple did the contrary, they would remain stuck in themselves in the act of sex. Whereas Alidri (2016) believes that beneficial practices like conservation of resources were the results traditional wisdom, this study found out that some natural vegetation conservation practices were not

necessarily a result of wisdom. They were a product of the fear to break taboos. Breaking taboos was associated with misfortunes to the individual, his/her lineage or to the entire clan. No one wanted to be responsible for such occurrences. Therefore, whatever the taboo barred the individual from tampering with, either for their personal benefits or sheer negligence; it would be obeyed without question. In this case one didn't need to understand any concepts but only save themselves from such embarrassing punishments from the gods.

5.3 The motivation to keep natural vegetation from destruction

The purpose here was to find out the driving force in the society to value natural vegetation as such. To do this, the respondents were asked what specifically motivated the indigenous Lugbara to conserve natural vegetation.

One of the first responses to this inquiry was that there was an intrinsic motivation developed from individuals' knowledge of the significance of natural vegetation to themselves. Among the Lugbara, there was no specific community sensitization in form of meetings on matters concerning natural vegetation. Everybody grew up knowing that all their lives depended on natural vegetation around them while some of the learning was got from the elders and some through observations. The young people saw the elderly making various uses of all kinds of natural vegetation and they themselves enjoyed fruits and playing in trees. This made them to think of keeping away from some kinds of natural vegetation or keep them by themselves. It therefore means that the motivation to conserve natural vegetation was, internally developed but also learned from adults through oral tradition and observation. This confirms the fact that indigenous knowledge was passed from the elders to the young (Mundy & Compton, 1995:5). Not all self-developed desire to keep away from natural vegetation was for positive reasons, sometimes it was for the fear of the

perceived repercussions of tampering with some plant species. This quite clearly explains why the belief in the myth that if a girl passed or sat under a Kigelia Africana (pictured below), her breasts would grow long like the fruits of the tree was not challenged.

Among the Lugbara, for example, there is a myth that barred girls from passing or sitting under the Tropical sausage tree (Kigelia Africana) locally known as *Odoloo* tree because it was believed if they did so, their breasts would elongate like the fruits of the tree. However, a deeper scientific outlook shows this tree is not only a good source of wood fuel but a great medicinal plant. According to Halder, (2017:3), the fruit of this plant is used for the treatment of skin conditions like fungal infections, boils, psoriasis and eczema. It is also effective in treating Dysentery, ringworm, tape worm, postpartum haemorrhage, Malaria, diabetes and pneumonia. This implies that the myth was a hidden way of protecting this tree from unnecessary damage. Besides, it is observable that the swinging fruits of this tree are so huge and heavy that when they break and fall on a person, they can cause serious injuries to the individual, which would also be a good reason to keep away from the tree. Girls in a quest to gather firewood would most easily be tempted to get exposed to this kind of danger.



Plate 2: *Kigelia Africana Tree (Odoloo)*

Source: Field photo (2024)

The need to have trees for birds to perch and attract wild animals promoted natural vegetation conservation. Besides appearing and singing lovely, some birds had special purposes to man. These were mainly nocturnal birds. Abure Gard, an elder in Yigati explained that there were trees within homesteads where messenger birds perched to bring important messages. He said if the kind of kite locally known as *Ariloko* perched to sing in the night, it was bringing a message of death of a close relative. The same was with the Owl, locally called *Emaa*. This would make every

family member alarmed and alert, ready to act when a human informer appeared the next day with a confirmation of the message of the funeral. Patil, (1980:6) argues that trees provide a habitat and canopy for birds. The need to receive these "messengers" makes the Lugbara keep some trees around their homesteads.

5.4 Kinds of Natural Vegetation that was mainly Conserved and their Locations

The purpose of this inquiry was to establish if there were specific kinds of trees that were most protected from destruction and where they were mostly found. The responses reflected that not every kind of tree or plant received the same kind of attention. Natural vegetation was conserved according to their significance to the community.

Medicinal plants were the most valued kind of natural vegetation. Plants for medicinal/herbal purposes were of a great variety. This kind of natural vegetation spread in various places with some appearing as common weeds such as the bitter shrubs like *Embereku and Itiroo* for treating fevers; *Okumaria (*English: Touch-me-not) and *Ebi'daa* for treating wounds. Others like the bark of mangoes and Mahogany, *Pilopilo, Kanza and Ndaa* treated a wide spectrum of diseases. *Pilopilo,* according to Mafu was mostly used by the Aringa but other herbal plants existed everywhere else. He added that most of the herbal plants were easy to obtain around homesteads. However, the herbs used to treat sorcery were kept as secret as sorcery itself. Sometimes the herbalists went to obtain the herbs from forests. They made sure they did not go to nearby forests even if what they needed could be found there. The purpose was to keep the locals ignorant and earn their trust when the illness was treated. This is why Tabuti & Van Damme, (2012:31), citing Tabuti *et al., (2009)* argues that "local communities have the knowledge to promote natural

regeneration of plant species around the homestead by sparing or protecting these plant species". Places where these herbal plants grew in plenty were conserved.

The next category of conserved natural vegetation was big isolated trees and forests/thickets that stood to mark some important places. These trees were found at homesteads, at the borders of one clan and another and the border of one's land with another. They were trees with long lifespan, some lasting for hundreds of years as Baba Ejua of Asevu confirmed. The examples mentioned of such trees were Mahogany (*Mario*), *Laru, Dumi and Payi.* They majorly functioned as the modern day mark stones for identifying specific places. In Tilevu, Vurra subcounty, for example, according to Ejua, a forest locally known as *Oce ambu* was known to mark the border between Uganda and Democratic Republic of Congo (DRC). This kind of knowledge of the use of natural vegetation that the Lugbara developed as an indigenous knowledge is confirmed to have worked elsewhere. In a study by Byabashaija et al., (2004:2) he states, "every society has a large body of technical knowledge based on careful observation and use of its resources". To date it can be observed that the *Laru* tree is planted or conserved in garden/land borders or inside the fields for its durability as to mark the fields.

There were natural vegetations that the society conserved as dwellings for the spirits. No specific trees were meant for this purpose. So long as the community attached the spiritual value to the natural vegetation, no one tampered with it anyhow. In many cases, however, these were found to be trees under which a deceased grandparent may have lived or mostly rested after work. Since the Lugbara believe the dead continue to exist in spirit among the living, the former resting places for the dead are considered the home of their spirits. It is believed the spirits of the dead could

sometimes speak and be heard by the living in special circumstances. Many times thickets developed around such trees. The community therefore regarded such natural vegetations with such high esteem and fear that women and children were not supposed to draw too close to them. These forests were known to inhabit both primordial and malignant spirits. Primordial spirits were the spirits created by God. They were usually good. The malignant spirits on the other hand were the spirits of people who died under bad circumstances such as being beaten to death for theft, accidents or died during child birth. They were known to be bellicose, often revengeful. It is such spirits that tormented people who tampered with their habitats such as the case with A'yoma as in the interview with Ngaminika in Odravu (Ayivu). In short, the trees, plants and animals found in the forest were believed to be infused with spirits (Ikeke, 2013:2) and therefore not tampered with.

Some natural vegetation that the Lugbara were eager to conserve were plants that produced edible fruits for birds, animals and humans. Being hunters, the Lugbara desired to attract birds and wild animals around. One thing that would bring the wild life within reach of humans was fruits. Humans too need the fruits. It can be observed that to date, most Lugbara homes maintain some kind of fruit tree such as Mangoes, guavas, Jack fruits and Avocadoes. Although most of these are recently domesticated fruits trees, they depict the timeless value the Lugbara have attached to conservation of fruit trees. Common fruit trees conserved in the wild included but were not limited to *Isisi*, *Komura* (Shea nut), *Odu* and *Elipa* (Custard apple); *Logbo*, *Icuki* and *Iti* (Tamarind). In Aya Abindi, a place in Riki ward (Ayivu) which the researcher visited, there are plenty of *Icuki* plants even when most old trees in the area have been cut for charcoal and wood fuel. This practice among the Lugbara relates to that of the Bambara in Niger who would never cut the Tamarind tree (Verschuuren et al., 2010:41). The Tamarind itself is known to be effective against intestinal

worms and rich in body cleansing properties (Indigenous Knowledge Practice in Philippines.pdf, n.d.). Fruit trees are known to constitute a significant part of food in rural communities; that is why the Lugbara valued them. The fruits are consumed seasonally thereby supporting human health and nutrition throughout the year as each kind of fruit has its season. The same has been confirmed in southern Africa in a study done by Laverdière & Mateke, (2003).

5.5 Responsibility for Natural Vegetation Conservation

The motive here was to find out whether there were specific individuals or groups charged with the responsibility of ensuring safety of natural vegetation among the Lugbara.

Whereas the Lugbara are a single ethnic group, the responsibility for the safety of natural vegetation varied from place to place. This too, has been observed in many parts of Uganda (Tabuti & Damme, 2012). In Aringa, for example, Mafu said the chief custodian of the *Moo* tree was known as Totoro. The Moo tree was considered a sacred tree and so Totoro was more of a priest whose role was to mediate between men and *Moo*. Only those who got the approval of Totoro could have anything to do with the *Moo*. This ensured the survival of that tree for long. In majority of the places visited in the research area, the safety of natural vegetation was said to be the general responsibility of elders. It was them who ensured that no one burned natural vegetation during short dry spell apart from the one during the longest dry season in the region (November to March). This was the month when all crops had been harvested. In fact it was a period for resting and hunting. Although the indigenous society did not have names for the months of the year, they knew that there were seasons and that there was only one long dry season. There was a shorter dry spell of mostly for two weeks to one month around June. But because this was within the crop season, there was supposed to be no bush burning in it. It was also considered a time for wild animals to

multiply and grow so that general hunting was reserved for the long dry season. Any person who dared to burn bushes would risk burning crops too. Whether anyone burned crops intentionally or not, he would suffer from a condition that caused stomach swelling. The skin would turn reddish and begin to peel off – a disease known in Lugbara as *Aci Adra*. This made people to remain cautious about setting wild fires thus saving natural vegetation.

In some cases the responsibility to conserve natural vegetation was said to belong to everyone. During a focus group discussion in Ajia in Vurra, it was agreed that everyone knew the benefits of natural vegetation that is why they were all responsible in one way or another in conserving it. Tabuti & Damme, (2012) alludes to the same fact that natural vegetation conservation is the entire community's responsibility. The *O'baliko* for example, according to Asiandu, was known for its dry seed pods being used as utensils for scooping and cutting mingled bread locally known as *enyasa.* Shea nut tree (*Komara*), which is still plenty in that area, the members said was conserved for its oil which served a variety of purposes including cooking, massaging and hair care while the oil residue is used for the treatment of scabies and wounds. Some trees like *Inzu, Anyunziri* and *Payi* (all names in Lugbara ti) were conserved for their durability as construction poles; hoe handles and handles for bows. This did not rule out the vast knowledge on medicinal plants (Kibonde, 2020). With this kind of knowledge learnt from elders or through experience, no body needed any individual effort in ensuring conservation of trees. It was simply a common knowledge that permeated the whole populace.

5.6 Conclusion

Whether there were individuals responsible for protection of certain trees or it was a general community affair, everyone benefited from the conserved natural vegetation. To concur with this, Ejiogu-Okereke, observes, "indigenous communities did not need sermonizing from global

agencies and external interventions to appreciate the importance of effective and efficient natural resource management" (Ejiogu-Okereke, 2019:4). It should be known that among the Lugbara it was unheard of to do service for pay. In any case if an individual or group worked for another, the only appreciation was food or drink that was served for the individual or group. In this case, conservation of the natural vegetation was done with the community, but not the individual in mind. It can therefore be established that the Lugbara were such good friends of natural vegetation that they employed various means ranging from oral warnings to spiritual attachments and physical punishments to safeguard particularly important kinds of natural vegetation from destruction. Much as there were some elders responsible for specific trees and places such as *Totoro* who was responsible for the *Moo* tree in Aringa, every member of the society grew up knowing the significance of natural vegetation. With some plants being medicines; others for construction while others good shades, everybody understood the significance of conserving at least some kind of plants. This gave self-motivation and bestowed responsibility on everyone to conserve natural vegetation.

CHAPTER SIX

CONTRIBUTION OF INDIGENOUS KNOWLEDGE TO NATURAL VEGETATION CONSERVATION

6.1 Introduction

The main concern of this chapter was to find the ways in which the Lugbara indigenous knowledge supported the natural vegetation conservation. However, it was found to be necessary to first establish the factors that made natural vegetation such as big trees, thickets and some forests to survive in Lugbara land despite the pressure of population growth and development.

6.2 Secrets behind the Survival of Natural Vegetation despite the Pressure of Development and Population Increase

The consideration of natural vegetation as the dwelling places of spirits and divine beings supported the natural vegetation conservation. A number of responses showed that there still exist natural vegetation like thickets and some big old isolated trees in spite of the pressure of population for this reason. These residences were not to be tampered with since doing so amounted to destroying the abode of the gods. Such an action would not go unpunished by the spirits. Thickets were residences for the gods *(Adro)*, spirits *(Orindi)* and the living-dead, present and posterity. In an interview with John Go'do, the minister of culture in Lugbara *Kari* (Lugbara chiefdom), he said some of the trees and forests were believed to be habitats for some huge snakes that constantly lurked around. Coming into contact with such a monstrous snake spelt a bad omen for the individual. These snakes were usually considered to be the spirits of the ancestors lurking around. These places were therefore, kept sacred. Everyone feared to go to those places where it was possible to see these ominous snakes. This confirms the work of Verschuuren et al., 2010:41 in

which they attest that some places were regarded as sacred that is why they maintained their natural natural vegetation from damage. Similar findings were made by Grey, (2016:4) and Ikeke, (2013:3). Thick forests like the one pictured below exist in many places in the study area and indeed some of them are just too scary to go into. However, some of the snakes may just be mythical ways of keeping curious people off vegetation that is associated with herbal medicine since it cannot be guaranteed that there will always be scary snakes around.



Plate 3: *A section of an undisturbed thicket in Adroyi in Aya Parish in Vurra Arua District*

Source: Field Photo (2024)

Some kinds of natural vegetation were conserved as shades. Nearly every homestead and community meeting place such as markets and drinking joints have good shades The importance of shades needs no explanation. Both humans and animals need tree shades whether in rain or sun

shine. This was a result of experience. Asked why they valued shades so much as to keep some trees this purpose, Ngaminika, an elder in Awiaa cell in Dadamu, Ayivu challenged the researcher, "*If you have built a house will you stay in it all day long? During the day you need to sit under a tree shade. Do you need someone to teach you this one? Must someone come and tell you, you see, don't destroy this tree, it will give you shade and fruits?* This kind of knowledge explains why in a paper on food security presented in a seminar in Zimbabwe in 2003, Mateke and Lavadiere observe that "Africans are very familiar with wild fruits" (Laverdière & Mateke, 2003:8). It thus becomes unsurprising that they can keep trees that not only provide shades but also fruits. The *Langaa* (council) used to sit to deliberate issues concerning the community under big tree shades. Such shades are not to be tampered with till now in places like Saka. In an attempt to keep shades the Lugbara ended up conserving lots of natural vegetation.

The Lugbara knowledge of natural vegetation as a source of herbal medicine resulted in much vegetation conservation. It was for example, gathered from the respondents that in the thickets existed many herbal plants. Those who had this knowledge were few but found at least in every small clan. This finding agrees with that of Kibonde, (2020:4) who states that "people were highly knowledgeable about traditional fundamentals of medicinal plants". The knowledge of herbal medicine was kept secret from the public. Although most people knew at least some herbal medicine, there were those who were more experienced and therefore, expert in it. To obtain the herbs, the herbalist would not enter straight into the forest/thicket, he would move in meanders to avoid being easily followed by a curious person. Once they cut, plucked the leaves or uprooted the herbal plant, they tried to conceal the place by clearing the other fallen leaves or covering the hole where the roots were dug from with soil and grass. The herbalists therefore contributed to a great

extent in preventing natural vegetations which were the sources of these medicines from being carelessly exploited through emphasising on the sacredness of the places or threatening young people that they would meet snakes or other beasts in the forest. Herbs were used to treat various diseases ranging from fevers, skin infections to terminal illnesses, poison and sorcery. This is why Barnes-Dean (1986) argues that some diseases such as those that are a result of sorcery cannot be treated with western medicine. The natural vegetation conservations that are sources of such herbal medicines thus becomes inevitable in the Lugbara community.

The Lugbara communities conserved some natural vegetation as sites for some economic and social activities. In Riki, a place found in the eastern part of Ayivu, there is a huge old tree that stands to date. Asked what made this tree to survive to date, Go'do said,

> *My grandfather used to do his black smith work here. He made arrows, panga knives (machetes), axes and an assortment of tools and utensils of different sizes and shapes. The people believe that my grand-father's spirit lives here; in fact those days our parents say they could meet him occasionally here*.

Blacksmithing was an important economic activity among the Lugbara and therefore, trees around the area for the raw material for blacksmith work turned to be factory sites and thus got automatic safety. Another blacksmithing site was said to be at the foot of Anyamgbiri hill in Oduluba, Dadamu (Ayivu). A similar shade that has become a thicket now was seen in Yivu West village in Vurra. That one was said to have been a *Diro,*(a place where a local brew called *Kwete* used to be sold). Another massive tree that used to be a market called *Anyufiereni* was also seen in Pajulu cell in Dadamu, Ayivu. Any attempt to cut that kind of tree meant undermining the society's heritage which could provoke the living dead to torment the destroyer's family through sicknesses

and deaths. Should it become necessary to cut a branch of such trees, the key elders must be consulted first. Such a value still emphasises sacredness which is clearly articulated by Verschuuren et al., (2010:4). It was observed that some of these tree shades have now turned to be used by the community as meeting venues, polling stations and immunization centres.

The people kept some natural vegetation, especially a few big trees as places for handling important social and cultural issues. In Yigati cell in western suburb of Arua city center, there is a very huge *Laru* tree which the elders and the Local Council (LC1) chairman of the cell said has always been a place where cultural matters are handled. It is called *Saka*, a Lugbara word loosely translated "not valuable". It means it is a place where the community is barred from doing things that are not of value to the whole community. Accordingly no boy and girl should attempt to pass or stop under the tree for a date, no individual's parties and celebrations and any other occasion not in the interest of the elders is allowed under this tree. Anyone who undermines this rule would get afflictions which can only be warded off by rituals performed by the elders with animal sacrifices. To confirm this, Isu'di, the Local Council (LC) 1 chairman of Yigati cell where the tree is located cited the case of a woman who bought a vehicle and held a thanksgiving party under the tree without the elders' consent. This vehicle started getting involved in accidents immediately on its first business trip until the woman lost it. The same tree, according to the Local Council 1 chairman of the area to date remains the place where any Ayivu who wants to contest for a political position to represent the people of Ayivu will come to consult the elders. *Saka* rarely sheds off its leaves unlike other trees. When it does, it means an elder is going to die. The elders will soon gather under the tree to begin speaking out their wills because it cannot be certain who among them will die. No one lifts a machete against the tree. If a low growing branch is to be pruned, the

elders must first agree and assign a specific person the task to cut off the specific branches. Until recently, in any meeting under *Saka*, chairs were not supposed to be used. Elders would sit on hides while young people sat on the ground. Siting on chairs was considered disrespect to the spirits, the all wise ones that control the area. *Saka* among the Pajulu of Ayivu can therefore, be compared with the Tamarind among the Bambara of Niger (Verschuuren et al., 2010:41). Important cultural meetings have continued to be held under these trees. This kind of importance has left this tree surviving for ages.



Plate 4: *The great Saka tree*

Source: Field Photo (2024)

The significance attached to some natural vegetations as border markers has supported conservation. Certain natural vegetations were kept to locate places. Nearly all the elders interviewed agreed that some trees like *Laru* and *Mario* (Mahogany) which have very long life span would be used to locate the borders of a clan, one's home or the location or the borders of one's land. This is a true local resource management skill as opined by Ejiogu-Okereke, (2019:3) It should be understood that the whole area used to be covered by a variety of trees and other plants but then these specific varieties known for long life were conserved as sign posts. These trees are therefore, very important resources for the clan. The dry branches of such trees can be used as fire wood; others are turned into poles used in construction. There are also tree species kept for fiber, wild fruit, shoots and berries. The understanding that trees mark border points therefore contributed to natural vegetation conservation.

The fact that the Lugbara used some elements associated with some kinds of trees as a means to control weather resulted in natural vegetation conservation. Among the Lugbara the idea of *Etufe* was widespread. *Etufe* is a ritual in which a village ritualist would cause the sun to shine for long or the rain to fall. It is said there were some smooth stones which the village priest would keep in his house or under a certain tree depending on how he wanted the weather to be. Like the practice, the tree in question was also called *Otuke, Otufe* or *Etufe* in Aringa, Terego and Ayivu/Vurra dialects respectively to describe its function. The word *"Otu"* or *"Etu"* stands for Sun while *"fe"* means tree thus the *"Sun tree"*. There was no specific kind of tree for this purpose so long as it could serve the purpose. When the priest took and covered the stones under this particular tree with a special clay pot, the rains would cease to fall. This is what John Middleton means by the "rainmakers communicating with the divine spirits in remote bush land" Middleton (1978:4). Once

the priest brought these items to his house, the rains would return without any delay. To destroy this tree therefore amounted to breaking a cycle which would be difficult if not impossible to control. The result would be either terribly heavy rains or a long dry spell for the society. The practice of *etufe* was beneficial to the Lugbara in that it helped them to switch between planting and harvesting periods with limited challenges since rain was mostly needed for planting and dryness for harvesting but also it helped in conserving particular trees. It would seem this practice was peculiar to the Lugbara because it was not possible to obtain related literature regarding it. It was therefore the desire to maintain a conducive weather that contributed to the conservation of some of the trees, thickets and forests. To date some of what used to be *Etufe* trees have lived on as in the old picture below.



Plate 5: A tree for performing the "Etufe" ritual in Odravu in Ayivi,

Source: Abaku, (2023) unpublished

The maintenance of a territory for the spirit world and maintain good relations with them gave rise to natural vegetation conservation. Even if it was not one's wish, the fact that the gods lived in some places made people to have respect for the trees in that area to the point of not laying a hand on them. Since the society's whole existence was thought to be hinged on spirituality, everyone did their best to not annoy the spirits/gods or else the malevolent spirits would descend on them badly. This finding too agrees with that of (Ikeke, 2013) in which he describes god who lives in trees as the beginner of creation; and that of Verschuuren et al., (2010) where the Tamarind is supposed to be kept safe because it is the dwelling of the gods.

6.3 Measures used by the Community to Enforce Natural Vegetation Conservation

The purpose of this inquiry was to understand how the indigenous community used to ensure that members followed the requirements to safeguard the natural vegetations from destruction. Because it was found that the community employed various means such as the use of byelaws, taboos, superstitions and stories to protect natural vegetation, it became necessary to investigate how these strategies were enforced to achieve the desired results.

In most cases, it was established that there were oral guidelines that every member heard and kept in their minds about safety of natural vegetation. Training every child to grow up respecting the elders ensured that no one acted outside elders' instructions. Among the Lugbara a lot of respect is paid to elderly people. A case was observed in an interview with A'bure Gard where Isu'di, although he is the LCI chairman, sat on a stool when we were talking to the elder. A young Lugbara man will stand still to give way when an elder is passing. In a meeting a young person will not speak unless they are told to do so. Therefore whatever was communicated by an elderly person was obeyed without question. The instilling of such discipline made enforcement of elders'

guidelines seamless. The Lugbara did not have any organized set of written rules or laws governing the natural vegetation conservation but there were standard procedures in dealing with natural vegetation of different kinds as guided by the elders. This explains why no specific literature about natural vegetation among the Lugbara could be obtained even in the local government headquarters. Every member of the society grew up knowing from experience and the words of elders that the destruction of certain trees or unauthorised access to some thickets and forests was forbidden. The young, as disciplined people saw what the elders did with plants and emulated them. Young women learnt how to conduct themselves towards certain natural vegetations such as the Kigelia Africana tree and some thickets from the elderly women. The respect the young paid to the elderly and emulated them was replicated in their careful conduct towards vegetation.

Children and sometimes women were not allowed to question elders when they were told to avoid tampering with certain natural vegetation. In fact it was considered indiscipline for a child to question an adult, more especially the elderly. Whereas the modern society would call it curiosity and cleverness, among the Lugbara a child would easily earn a curse for asking challenging or embarrassing questions to an elder directly. In a deeper probe into why women would also not challenge men about keeping certain natural vegetations since they were not children, Anguzu, an elder in Terego said "*a woman is under a man, she has no authority to challenge a man. They are not supposed to ask questions in community except very old women who had great knowledge of the traditions of the clan"*. This kind of unquestionable respect meant that when the children and women were instructed to not cut or tamper in any way with a kind of natural vegetation, they would obey without any question, thus contributing to the safety of the natural vegetation.

The strict observance of taboos was another thing that ensured some natural vegetation were not destroyed. Some examples of taboos concerning trees were:

- A girl is not supposed to pass or sit under a Kigelia Africana tree. It was believed if one did so; her breasts would grow long like the fruit of the tree. Which woman would love to have breasts as long as that?
- If a girl climbs a tree, when she mingled bread, the bread would turn watery. Of course no girl would want to be responsible for such an embarrassment that could make people refuse to eat the food she cooks.

With girls mostly at the forefront of using wood fuel, many of the taboos targeted them perhaps with the motive of preventing them from destroying the medicinal and fruit plants or trees used for purposes like construction and fencing. Since taboos were unquestionable but fully embedded in the belief system of the society, it became a useful tool for saving natural vegetations. The views of Hor, n.d., and Joseph Osei *In* (*The Value of African Taboos for Biodiversity and Sustainable Development Joseph Osei*, n.d.: 42) that taboos guide the existence of African societies, from this context can therefore be confirmed as a true finding.

The living and the spiritual world had close relationship. When men condemned an act, the spirits could easily enforce the punishment. The religious knowledge and practice of invokining punishment from the spirits for desecration of particular trees and thickets created fear of tampering with the natural vegetations. In Aringa, for example, it was said if a boy and a girl played sex under *Dilo*, a big tree that used to be near the town, their sexual organs would get stuck in each other until the clan head came to perform cleansing rituals that involved the sprinkling of the blood of chicken on the couple and around. In Ayivu at Saka, it was forbidden for a boy and a

girl to date or pass under the tree while dating or else, upon marriage they would never get a child. In the same place, even if one merely pruned the branches of Saka without consulting the responsible elders, he received severe punishment from the spirits. Therefore when Verschuuren et al., (2010:41) writes about certain places being considered sacred as a means of conserving natural vegetation, the applicability among the Lugbara is undoubted. As a tree under which important community decisions were made and vows taken, any wrong doing under the tree would have severe ramifications on the individual. Elsewhere it is said the Santhal people, when taking a vow in marriage, do it in front of a tree (Gope et al., 2017:891). It is the same practice that has kept the particular trees of community meetings surviving for long among the Lugbara.

In some cases, individuals who destroyed trees at places for community gatherings would be punished by humans. These were trees under which clan meetings, councils (*Langaa*) and court cases were convened. In Terego, for instance, both Omar and Anguzu, said they would report such a person to the clan chief known as *Boroa* who would either order a public canning with several strokes or subject the offender to public works such as digging the road or cleaning the wells. This was traditional law, which, though not written down, was observed by the community. Much as this is a relatively recent history, it contributed much in averting careless destruction of trees. This finding concurs with that of Gope et al., (2017:893) where they conclude that indigenous practices like the traditional laws have a special value in conservation of trees. Such practice of direct corporal punishment to people who tampered with vegetation of community benefit deterred potential vandals.

There was a strict observance of myths as another measure to conserve natural vegetation. In order to deter people from accessing the secrets of the thickets and forests, some myths were attached to entering the forests. The myths mainly targeted young people and women who were believed to be lose with secrets. According to Mafu, a respondent in Aringa, for instance, it was told and believed if a child entered the forest alone, they would meet a short wondering man there and once they saw that man, they would never grow tall. For women, there was a myth which said if a girl or woman crossed over a certain plant, they would always get miscarriages whenever they got pregnant. Myths are both beliefs and practices. The believer acts in obedience. It is the practice of following the myth that saves the resource (vegetation in this case) to which the myth is attributed from unauthorised damage. Myths instilled a lot of fear for the forests and thickets in women and children. This cultural belief was very strong and unchallenged. This is why Senanayake observes that the ecological conditions and traditional institutions that help to sustain the community promote a situation of constructive rather than destructive dependence of modern development as evidenced in the taboos, myths, rules and regulations that form part of the culture (Sciences & Lanka, 2015:4). The Lugbara adherence to these myths therefore saved a lot of natural vegetation from destruction.

The local stories and folklores told by the elders and retold by the young ones to their peers passed messages that instilled fear for carelessness with natural vegetation. Many of the stories were fiery tales showing that some monsters ravaged through the forests. The stories spelt to the children that it was dangerous to venture into the forest. Such children grew up with the fear of forests. In any case, they would only go into forests in the company of the elders. The fear helped to control the curiosity and extravagance these young people would have towards trees, in effect it saved these

natural vegetations from indiscriminate destruction. In *The Value of African Taboos for Biodiversity and Sustainable Development Joseph Osei*, (n.d.: 42) affirms that indigenous societies in Africa communicated the messages of conservation through stories, proverbs and riddles. Mundy & Compton, (1995:5) expresses a similar notion showing the protection of natural vegetation by use of local stories. The practice of the lessons in the stories connected with vegetation helped the Lugbara to keep aloof from forbidden vegetation.

The value attached to agriculture was another means to conserve natural vegetation. The main occupation of the Lugbara people is farming. They grow a variety of crops mainly for subsistence and keep some animals like goats and cattle. Cattle and goats are mainly kept to pay bride price. However, in the events of making sacrifices and smaller payments, goats and sheep are preferred. The animal diseases were treated with some herbs. The sap of *Lejuma* tree for instance was used to treat swellings behind the ears of calves. There were plants whose sap was used to make pesticides. Such use of the plants for making the poisonous substances saved the specific plants from being carelessly destroyed while at the same time saving the crop from pest damage. This finding was in line with that of Ejiogu-Okereke, (2019:3) and Tabuti & Damme, (2012:31) which indicate that many plant derivatives could be obtained to make pesticides that would be applied in crop fields. On the other side, all human diseases such as Malaria, Cough and sexually transmitted diseases had herbal remedies from at least some kind of natural vegetation (Kibonde, 2020:5). Even complicated and mysterious illnesses such as those that result from sorcery were treated with herbal medicine (Tabuti & Damme, 2012:30, Barnes-Dean, 1986). The value attached to crop growing and animal rearing necessitated keeping safe custody of natural vegetation that provided herbicides and animal feeds for crops and treatment of animal diseases respectively. This led to

sparing use of plants that served as both animal and human medicines as well as pasture and fruits for livestock and humans respectively thus yielding an ultimate contribution to the natural vegetation conservation. In every home, there was at least some basic knowledge of herbal medicine. In this way care was taken when dealing with various trees depending on their types and uses.

There were grasses that were considered special in agriculture. The couch grass for example was known to retain water in the soil for long. Deboru Baifa, an elderly woman in Pajulu cell in Dadamu of Ayivu said many people liked planting cassava in fields where couch grass grew because it was believed the covering of the soil by the grass not only helped to retain water for long byut the cassava in such fields never rotted easily. Another grass in the couch grass family locally known as *Bari je tisi* (English: Bari bartered with cattle) was cherished especially by the Ayivu. The same grass was known for high water retention in soil because it has tiny fibrous root but runs fast to cover soil from direct heating by the sun. This is a demonstration of traditional ecological knowledge which Ejiogu-Okereke, (2019:5) says includes detailed knowledge on fauna, flora and natural occurrences. The knowledge stems from long term associations with ecosystems and differs according to eco-zones. Other valued grasses were the spear grass and reeds used in thatching houses. Through such practices during dry season, some grass areas were protected from indiscriminate burning. A similar argument put forward by another research indicates such kind of ecological knowledge can be used to identify prime areas for collection of planting materials to restore degraded areas or for domestication (Tabuti & Damme, 2012:31). This was another evidence pf the vast knowledge the Lugbara had on the relevance of conserving natural vegetation.

The religious practice of revering spirits helped to conserve natural vegetation. The society maintained the natural vegetation that would host spirits. It was a common belief and knowledge that the gods dwelt in forests, thickets and certain isolated trees. According to John Mbiti (1999) as reviewed by Mbaya *In* Contribution of John S Mbiti to the study of African religions and African theology and philosophy, the ontology of Africans is embodied in saying "Africans are notoriously religious", and each group has its own religious system with a set of beliefs and practices (Mbaya & Cezula, 2020:6). Among the Lugbara, it was made clear by the village elders that the big trees were the homes of the gods. Since religion formed the core of life of everybody in the society, such knowledge emphasized that everyone should desist from destroying the homes of the gods or else they got the wrath of the gods. These messages moved from elders to children and later got rooted and circulated among the children. This meant that if someone wanted to cut certain big trees or thickets, they would first need to consult the elders to know which trees were safe or where it was safe to cut trees. The belief in the spirits residing in specific natural vegetation was used as a means to safeguard that kind of natural vegetation from careless destruction.

The practice of building using the products of natural vegetation contributed in conservation of the same kind of vegetation. Natural vegetation was sometimes classified and maintained according to durability. The level of durability and number of uses of a kind of natural vegetation helped in the conservation of different plant species. In construction, trees like *Lawiri, Payi,* and *Dumi* which have high resistance to water and are not easily eaten by termites were highly treasured and therefore, not supposed to be cut for trivial reasons. In agriculture, some crops were preferred for their short maturation period while others were tolerated for long periods because of the benefits they came with. The shorter maturation varieties were locally known as *A'i pamaa.* Fast maturing crops were grown to save the society from famine as they waited for those that were high yielding

but took long to mature. According to Deboru, there is a sorghum variety locally known as *carakala* whose grain is rather soft but matures in four months. It is, however, prone to weevil destruction. But there was *I'dimini,* a variety that matures in six months; it is hard and resists weevils for long. This helped to provide better food security. The knowledge of different varieties for different periods controlled famine and total scarcity. Women were more knowledgeable in identifying and keeping seed crops than men (Grey, 2016:3). Nakashima et al., (2002:4) equally agrees that the indigenous societies rubbed shoulders with scientists regarding the classification of plant varieties. Akamva of Ajia in Vurra says tree varieties were kept according to their importance. Most durable trees like Mahogany and *Payi* that could be used as poles in house construction, fences, herbal medicine, etc. are also known for not spreading and germinating easily and so one that has grown is jealously guarded. It is such kind of thought that makes Alidri, (2016) to opine that the (traditional) thought aims at solving ecological problems facing human lives to improve societal livelihood and welfare. In the view of Hutton & Leader-williams, (2014:3), there is need for sustainable use, the use of components of biological diversity in a way and at a rate that does not lead to long term decline of biological diversity thereby maintaining its potential to meet the needs and aspirations of present and future generations. This alone makes indigenous knowledge stand out as a reliable means of conserving sustainable, disease and drought resistant crop varieties.

6.4 Indigenous Knowledge of Natural Vegetation and Disaster Detection and Management

Many respondents expressed ignorance of how natural vegetation could point to a looming disaster. However, in one instance at *Saka* in Ayivu the case was different. The A'bure said that tree occasionally sheds off its leaves when other trees of its kind were still leafy. Whenever this happened, the elders knew one of them was going to die. They came together under the tree to

share the clan's history and announce their wills. A similar report was obtained in Terego where Omar said in the clan, if a tree under which clan issues were handled started appearing withered, it would be interpreted as a sign of disaster approaching. However, he was unable to tell whether the society had any means of preventing such a predicted disaster from striking. On such isolated knowledge, Grey, (2016:3) says, *"Some indigenous knowledge will be held by the community as a whole while other teachings will be held by specific individuals".* The commonality between this finding and another elsewhere is that, among the Swazi, disasters like flooding could be detected by the height of birds' nests above waters (Ejiogu-Okereke et al, 2019:6) which is similar to the shedding of leaves and withering of specific trees that were the indicators of looming danger among the Lugbara.

6.5 Conclusion

The discussion in this chapter makes it clear that indigenous knowledge is indispensable in the natural vegetation conservation. Whereas modern scientific knowledge has so much improved natural vegetation conservation, the study shows that indigenous trees are more versatile in use for humans. Many of such trees are highly durable, have high medicinal values and some can help for early warning for bad weather yet they are capable of growing in nearly any environment. Through this knowledge, every plant has some special significance. This makes it more necessary to employ indigenous knowledge in natural vegetation conservation now than ever especially at a time when western religion and science and technology continue to undermine indigenous knowledge.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

In this chapter, the key findings of the study are highlighted based on the objectives of the study. The idea is to give a snapshot of what was found out through the study. The summary therefore, serves as a prelude to the conclusion about the study.

7.2 SUMMARY

The way one conceives an idea or a being to a great extent depends on its significance to the individual. To this effect, the concept of indigenous knowledge on natural vegetation for the Lugbara in many cases varies from individual to individual but may mean a common thing to the whole society since it is knowledge that functions within the spatial boundaries of the society (Ejiogu-Okereke, 2019:2) . The study found out that the Lugbara people consider natural vegetation as source of herbal medicine, a dwelling for their gods, a habitat for their wild game and a hideout in the event of enemy invasion. Some trees were conserved as "factory sites" – places where the local blacksmiths did their works while others were shades in which clan meetings were held. All their dealings with the natural vegetation had the value of the particular kind of natural vegetation in the back of their minds.

In their routine practice using their knowledge of natural vegetation, the Lugbara had a habit of consulting the elders before engaging in practices that would damage specific trees and thickets. These were trees considered to be of religious significance and venues of clan meetings. It was the duty of the elders to communicate the message of the special natural vegetation to the young ones during garden work, hunting and at the evening fire places. As Mundy & Compton, (1995:2) note,

most indigenous knowledge is passed from one to another by word of mouth. There were trees maintained for their fruits (Laverdière & Mateke, 2003:7). Although most trees grew by themselves, once identified, they would not be easily cut for construction or any other purpose. Additionally, because the Lugbara understood the usefulness of trees, they made it a practice to keep specific ones within the borders of their gardens, that of their clans and within homesteads to help one easily identify the location or borders of those places.

There were cases where the society used byelaws as a way of conserving the natural vegetation Malunguja et al., (2021:11). These rules applied to places and trees considered most significant. Any offender faced public punishment for their offences. In certain cases superstitions and taboos were enough to keep natural vegetations from damage. These mysterious beliefs were never challenged by members of the society and so they served as a practical means of conserving the natural vegetation.

Indigenous knowledge of natural vegetation contributed in natural vegetation conservation in several ways. The extraction and use of herbal medicine was one of the principal ways of utilisation of this knowledge. The Lugbara basically depended on herbs to obtain medicine to treat and cure all sorts of health conditions. The same view is shared by Byabashaija et al., (2004:369). Besides herbal medicine, the knowledge was used in disaster detection (Ejiogu-Okereke et al, 2019:5). In special cases, the shedding of leaves of certain revered trees spelt the approach of a misfortune or a disaster. In such cases the behaviour of the tree was monitored closely. Should it begin to act in the unusual way, actions to avert the threatening misfortune or disaster, if possible, would be taken.

Such knowledge of the usefulness of natural vegetation ensured serious conservation so as to not lose the benefits.

In agriculture, natural vegetation conservation knowledge helped in differentiating plant varieties that were long lasting from the short ones. As Nakashima et al., (2002:4) observes, the classificatory prowess of the indigenous people is on a par with that of scientists. Crops like millet, sorghum and beans formed the core of the diet. It was therefore necessary to identify which varieties would withstand extreme weather condition of dryness and heavy rains. This kind of practice helped the society to avert famine. In more recent times, the knowledge has conspicuously been used in making plant derivatives that serve as pesticides. In a few cases some grasses were conserved for their ability to conserve water in the soil for long. In this category were the couch grass and another species of a similar kind locally known as *"Bari je Tisia"*. Such knowledge contributed to natural vegetation conservation according to their importance and time of need.

The study found out that the knowledge of natural vegetation and the understanding of the significance of its conservation permeated every sphere of life of the Lugbara. Agriculture, fishing, medicine, are central in human survival yet of which it is estimated that between 70% to 90% depend on agriculture and fishing with about 80% fulfilling their health needs using local medicines (Nakashima et al., 2002). Whether they used oral messages, superstitions, taboos or force, every effort directly or indirectly was geared towards conservation of the natural vegetation. However, with the increasing population pressure with its attendant encroachment on natural vegetation of all sorts for development, there are now limited patches of conserved natural vegetation. It is only in places that have some degree of indigenous knowledge practices where natural natural vegetation still survive. It is therefore paramount for the modern society to desist from trashing indigenous knowledge in natural vegetation conservation in its entirety since it has

proved its effectiveness in conserving natural vegetation in an era of global warming which is heavily attributed to diminished natural vegetation cover.

7.3 CONCLUSIONS

Every society has its indigenous knowledge. It is this knowledge that makes them overcome the social and economic challenges. No amount of external influence can totally eradicate indigenous knowledge because this knowledge is lived and practiced by the members of the society without a formal teaching. It is transmitted orally, through imitation and following traditional norms and rules.

Natural vegetation is very pivotal to the survival of man. It is even more needed now than before owing to the level of environmental pollution occasioned by carbon emissions from industries and automobiles in addition to the excessive consumption as wood fuel and charcoal. It can be observed that development actors have made tremendous efforts to replenish natural vegetation by planting trees but that has only yielded scanty results. Science has proved that it is the natural trees that have more medicinal potential than the exotic planted trees. Many of the new tree varieties such as the eucalyptus are not as ecofriendly as the indigenous ones. However, in places where indigenous knowledge is practiced in conserving natural vegetation, trees have survived in their natural state. Unfortunately this kind of natural vegetation now exists in isolated patches since the practices have to a great extent been diluted by modernization. This comes at a time when herbal medicine is gaining a new significance due to its limited side effects and efficacy against some diseases such as cancer that have failed to find cure from the modern medicine. This therefore makes it a loud wake up call for all actors to embrace indigenous knowledge to conserve natural vegetation. In most places the custodians of indigenous knowledge are no more. However,

if support is given to those who are still alive, we can revamp indigenous knowledge and see more natural vegetation conserved, disease burden reduced and a healthier population. Therefore, unless urgent attention is paid to enhance indigenous knowledge as a means of natural vegetation conservation, we will lose the battle in natural vegetation conservation.

Whereas it is true that African indigenous practices were not consciously designed to conserve the natural vegetation, the practices themselves have resulted into an incredible levels of natural vegetation conservation. If societies that use their indigenous knowledge to conserve natural vegetation are listened to, understood, supported and indigenous ways widely used to identify, conserve and regenerate crops and other useful plants, the challenges like global warming, famine and desertification that the globe is struggling with would be greatly reduced if not fully eliminated because of the inevitable population expansion and influence of development.

Much as the Lugbara built using the products of natural vegetation and used the same products as wood fuel, there were certain areas that were deliberately kept from being exploited for the above purposes because they carry special religious and social significance. For this reason, such areas have maintained their natural vegetation cover.

Therefore, while it is undeniable that majority of the society has relegated indigenous knowledge and its practices in taboos, stories, tales, medicines and rules as an outdated knowledge, these have never been proved to be bad practices since they have no known harmful effects on humans. Many people cover themselves under western religions, especially Christian fanaticism that is all out to destroy sacred sites. Modern science undermines indigenous knowledge without clear

justifications. A resuscitation of the indigenous practices in natural vegetation conservation will become a game changer like discovering that a rejected stone can become the corner stone of the building called natural vegetation conservation.

7.4 RECOMMENDATIONS

The study recommends that indigenous knowledge must be blended with modern science if the natural vegetation must be saved from extinction. Considering one approach will continue to be challenged by the other until a harmonious approach is used.

7.5 AREAS OF FURTHER STUDIES

The study recommends that future studies should focus on the following areas:

- Traditional religions and the conservation of environment among the Lugbara
- Traditional medicine in the purview of modern science: a historical outlook

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APPENDICES

Appendix A: RESEARCH WORK PLAN

S/N	Activity	Time frame
1	Research concept development and presentation	April – June 2023
2	Proposal writing and defense	July 2023– March 2024
3	Data collection and analysis	March – September 2024
4	Defense of Dissertation	January 2025

Appendix B: RESEARCH BUDGET

S/n	Item	Quantity	Unit	Rate	Amount
1	Personnel				
	a) Research Assistants	5	Persons	300,000	1,250,000
	b) Key Informants	20	Persons	15,000	300,000
2	Training				
	a) Feeding	7	Persons	30,000	210,000
	b) Stationary		Assorted	Lump sum	200,000
	c) Facilitation	1	Person	Lump sum	100,000
3	Travel	1	Person		
	a) Field travels for researcher	1	Person	Lump sum	600,000
	b) Travel and accommodation to meet the supervisor	1	Person	200,000	2,000,000
4	Meetings with research assistants	6	Persons	10,000	300,000
5	Communication	6	Persons	25,000	150,000
	Total				5,110,000

Budget Notes

1. Compensation for research assistants during data collection for transport, feeding and travel expenses
2. Time compensation is only for Key informants such as opinion leaders and technocrats
3. Training is done for one day
4. Researcher’s travel accommodation to meet the supervisor and defend his research is for at least 10 times
5. Refreshments provided in feedback meetings

Appendix C: CONSENT FORM

INDIGENOUS KNOWLEDGE AND NATURAL VEGETATION CONSERVATION AMONG THE LUGBARA OF UGANDA

Consent to Participate in Research

I…… hereby agree to voluntarily participate in this research.

I understand that I will not be coerced into giving answers and can withdraw from the process anytime

I accept data from my interview to be used for the research

I have been clearly told the nature and purpose of the research

I understand that the participation will involve interview that takes time but attracts no financial compensation, nor will I gain any direct individual benefit from it

I agree to be audio recorded during the interview

I have been informed that the information I give will be handled with confidentiality

I understand that I have the freedom to access the recorded audio of my interview within one year from the interview date

Affirmations

Research Participant

……. ……

Signature Date

Researcher

I confirm that the participant read/ was explained the consent form and appeared to have understood before signing

……. …….

Signature of researcher Date

Appendix D: INTERVIEW GUIDE

My name is Afimani Ajionzi Moses; I am a student of Gulu University, carrying out a research on the topic: Indigenous Knowledge and Natural vegetation conservation among the Lugbara of Uganda. I humbly welcome you to this discussion. You have been chosen to participate in the discussion based on your knowledge about the culture and practices of the Lugbara. Your responses will help in providing data towards the findings of the research. However, your participation will not attract any financial or individual benefits. Your information will be treated confidentially. We will spend about one hour in this discussion.

1. The concept of indigenous knowledge and natural vegetation conservation

a) When we speak of indigenous knowledge, what does it mean for you as a Lugbara?
b) What is the understanding of the Lugbara about natural vegetation conservation?
c) How did the Lugbara people get to know about the need to conserve natural vegetation

2. The indigenous practices used in the natural vegetation conservation

a) What things did the community do to ensure that natural vegetation like these forests, thickets and other trees were not destroyed?
b) What specific motivations made them to keep these natural vegetations from destruction?
c) What kinds of natural vegetation were mostly kept safe from being cut and where were these trees found?
d) Is there anybody who is responsible for the safety of these natural vegetations now? If yes, who? What motivates him/her to take care of these trees? If no one, why?

3. Contribution of indigenous knowledge in the natural vegetation conservation

a) What factors have made natural vegetation like thickets, big trees and forests to continue to survive here in spite of population and development pressures?
b) How did the community ensure that members followed the requirements to safeguard the natural vegetations from destruction?
c) In cases of disasters like drought and storms, how did indigenous knowledge about natural vegetation help the society to detect and solve them?

Thank you for your responses.

INTERVIEW GUIDE IN LUGBARA TI

Ma ru Afimani Ajionzi Moses ‘i; ma sukulu la Gulu University a. Ma e’yo eti onda Ondua a’bi ni ‘bani ayu afa ediza pati azini oce pile ama ageyia ‘diyi ma ta mbazu Lugbara ma eselea ri ma dria. Ma a’i mi o’yozu ma be e’yo ‘di ma dria ra. Ma epe mi e’yo ‘di ozizu ‘i mani nile ra kini ini e’yo a’bi Lugbara niri ma dria ra risi. E’yo omviza miveleri ni nga ‘i eci ‘ba azini ‘diyi driri pie fezu e’yo mani ondaleri ma esu ‘i kililiru beni. Kanisi angani mi ofe e’yo mini nzelerisi ajesi ku. Dika e’yo mini eceleri ma ngani eri oyu amve driwala engapi mivuri kokoru ku. Ama nga sawa ‘du e’yo dima alea alu ‘dipi.

1. Ondua a’biniri azini afa ediza ma tambaza
   a) ‘Baka e’yo nze ondua a’biniri ma dria, efini mini Lugbara ruri ngoni?
   b) Mi ece nga mani afa ediza ma tambazuri ma efi Lugbara eyini ngoni yari?
   c) ‘Ba yi andra driorisi oni leta ‘bama mba afa eziza mata ezakokoru ciri geri ngosi ?

2. Geriko o’bi yini ayu pati azini oce eyima ageyiari ma tambazuri

a) E’yo ndra ‘bani ‘ye lezu ani o’bi ma ezaki ani afa ediza eyima ageyiari saaru kuri a’duni ?
b) Afa ava fepi o’biyini afa ediza eyima ageyia ‘diyi ma tambazu ‘diyi a’duni?
c) Afa ediza, tutuni andra ‘bani le ‘bama oga eyi vaa saaru ku ‘diyi ngole ‘diyi, dika pati ‘diyi ‘ba andra tutuni esu pari ngole ‘diyi ma alea?
d) ‘Ba azini afa idiza kile oce azini pati ‘wara ndundu ‘diyi ma agei tepi ni ni ciya? Ka adri ci, a’di ‘i? Eri ava esu oce azini pati ‘wara ‘diyi ma agei tezu a’dusi?

3. Orodri ondua abiniri ayuzu pati azini oce ma ta mbazuri

a) E’yo fepi afa ediza ma kalafe kiri angu ‘dima alea fudrici esu de ‘ba ma kalafe tu ra dika angu ezoza ni afa ‘diyi eza fudriciri a’duni?
b) Geriko andra ‘bani ayu fezu o’bima ezaki ani afa ediza eyima ageyiari saaru kuri a’duni?
c) E’yo rugbu ekile etu kapi ewu ezuri si azini oli akuku rurisi, ‘ba eyi ndra driorisi eyima ondua afa ediza ma tambaza driarisi eyo ‘dileri ma aza kozu geri ngosi?

Awa’difo e’yo omviza mini/emini ‘diyisi.

Appendix E: LIST OF RESPONDENTS

- Lugbara cultural institution leaders 10 (Agofe, Prime minister, the minister for culture, minister for gender, minister for environment)
- The clan elders from different villages (‘Ba ‘wara) both men and women 40 (20men and 20 women)
- Civic leaders (LCs) 15
- Young persons of 18 to 35 years old 10: 5 males and 5 females
- District Environment Officers 5

Appendix F: LETTER OF INTRODUCTION

GULU UNIVERSITY
P.O. BOX 166 GULU
TEL: +256471432922;

OFFICE OF THE DEAN, FACULTY OF EDUCATION AND HUMANITIES

27th March, 2024

TO : WHOM IT MAY CONCERN

This is to introduce to you Mr. Afimani Ajionzi Moses (Reg No. 22/U/1531/MAH/PS) a student pursuing a programme of study leading to award of Master Arts in History, Master of Gulu University.

He is undertaking research on the Topic:

INDEGENOUS KNOWLEDGE AND THE CONSERVATION OF VEGETATION AMONG THE LUGBARA OF UGANDA:1850-2023

Which is in partial fulfilment of the requirements for the award.

Any assistance rendered to him in relation to this research work will be highly appreciated.

GULU UNIVERSITY
27 MAR 2024
FACULTY OF EDUCATION AND HUMANITIES

Yours faithfully,

.....

Dr. Denis Thaddeus Ofoyuru
Dean, Faculty of Education and Humanities

Appendix H: PLAGIARISM CHECK

GULU UNIVERSITY
P.O. Box 166
Gulu, Uganda
Tel: +256-471-32924
Fax: +256 471343095
Emails: ul@gu.ac.ug
URL: www.gu.ac.ug

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PLAGIARISM CHECK

Declaration for Originality Form
This form must be completed and signed for all scholarly work produced.

Name: AFIMANI AJIONZI MOSES

Personal File No.(staff) Reg. (**student**). REG. NO. 22/U/1531/MAH/PS
Faculty/Institute: FACULTY OF EDUCATION AND HUMANITIES, GULU UNIVERSITY
Department: HISTORY
Title and bibliographic description of the work
INDIGENOUS KNOWLEDGE AND THE CONSERVATION OF VEGETATION AMONG THE LUGBARA OF UGANDA: 1850-2023

Declaration.

1. I understand what plagiarism is and I am aware of the University policy on this regard,
2. I declare that this … Dissertation, … (Proposal thesis, essay, assignment, paper, report etc.) is my original work and has not been submitted elsewhere for examination, award of a degree or publication. Where other people's work or my work has been used, this has been properly acknowledged and referenced in accordance with Gulu University requirements,
3. I have not sought or used the services of any professional agency to produce this work,
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own,
5. I understand that any false claim of this work shall result in disciplinary action in accordance with University Policy on Plagiarism.

Signature _____ Date 2nd Oct. 2024

Originality Report

The article/thesis/document titled above have been subjected to plagiarism check and the level was found to be……**11%** (percent) this is classified as:

- ✓ Minor
- ☐ Moderate
- ☐ Serious

Yours sincerely,

Manana N Herbert
Ag. University Librarian

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