

# **Livelihood Strategies and the Conservation of Shea Butter Tree**

**Case Study: Lira Palwo Sub County, Agago District**



**A Postgraduate Dissertation  
Presented to the Faculty of Agriculture  
in Partial Fulfillment of the Requirements  
for the Award of  
Master of Science Agro Ecology**

**Uganda Martyrs University**

**OKOT John Amos**

**2013-M152-20017**

**July 2016**

## **DEDICATION**

The research work undertaken by me for the award of Master of Science Agro Ecology of Uganda Martyrs University has been dedicated to my family members who have supported me during the study of this course. May the Almighty God Bless You ALL!

## **ACKNOWLEDGEMENT**

I honestly thank my family members for the support spiritually, financially and socially they gave me during this research work I undertook leading to an award of Master of Science Agro Ecology of Uganda Martyrs University. I love you so much.

I am particularly thankful to my supervisor Mr. Gelvan Kisolo Lule, for his constructive comments that greatly shaped this dissertation. I would also like to appreciate the advice and support given by colleagues at Uganda Martyrs University. May the Almighty God Bless them All!

## TABLE OF CONTENTS

DECLARATION .....	i
APPROVAL .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
ACRONYMS .....	viii
EXECUTIVE SUMMERY .....	ix
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Introduction.....	1
1.2 Background .....	1
1.3 Statement of the Problem.....	3
1.4 General Objective .....	4
1.4.1 Specific Objectives of the study .....	4
1.5 Research Questions .....	5
1.6 Conceptual Framework.....	6
1.7 Significance of the Study .....	7
1.8 Justification of the Study .....	8
1.9 Scope of the Study .....	8
1.10 Operational Definitions.....	9
1.11 Chapter Summary .....	11
CHAPTER TWO .....	13
LITERATURE REVIEW .....	13
2.1 Introduction.....	13
2.2 Shea Butter Processing and Livelihood of the Rural Community.....	13
2.2.1 History and Distribution of the Shea tree .....	13
2.2.2 Shea butter Extraction.....	14

2.2.3 Utilization of Shea butter .....	15
2.2.4 Marketing of Shea nut.....	16
2.3 Conservation of Shea Butter Trees .....	17
2.4 The Concept of Sustainable Rural Livelihoods .....	17
2.5 Traditional Knowledge on the Management and Conservation of Trees .....	20
2. 6 Vulnerability Context.....	21
2.7 Livelihood strategies .....	22
2.8 Chapter Summary .....	23
CHAPTER THREE .....	24
RESEARCH METHODOLOGY.....	24
3.0 Introduction.....	24
3.1 Research Design.....	24
3.2 Geographical Area of Study.....	24
3.3 Target Population.....	25
3.4 Data Collection Methods and Instruments.....	25
3.5.1 Interviews.....	25
3.5.2 Focus Group Discussion .....	25
3.5.3 Observation .....	25
3.6 Ethical Considerations .....	26
3.7 Conclusion .....	27
CHAPTER FOUR.....	28
PRESENTATIONS AND DISCUSSION OF THE FINDINGS.....	28
4.1 Introduction.....	28
4.2 The influence of existing structures and processes in transforming vulnerability context of communities into sustainable livelihood strategies in Palwo Sub County .....	30
4.2.1 Political leadership.....	30
4.2.2 Security status .....	33

4.2.3 Health system.....	34
4.2.4 Cultural norms and community belief .....	35
4.4.5 Family system .....	37
4.2.6 Legal processes .....	40
4.2.7 Education systems.....	41
4.2.8 Land ownership processes .....	43
4.2.9 Usages and Management of Shea Butter Tree .....	44
4.3 The roles played by different actors in influencing communities to select the livelihood strategies in Palwo Sub County. ....	47
4.4 The conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context .....	51
CHAPTER FIVE .....	55
CONCLUSIONS AND RECOMMENDATIONS .....	55
5.1 Conclusions.....	55
5.2 Recommendations.....	56
REFERENCES .....	58
APPENDICES: .....	69
APPENDIX I: INTERVIEW GUIDE.....	69
APPENDIX II: OBSERVATION GUIDE .....	70

## ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CSO	Civil Society Organization
DFID	Department for international development
FAO	Food and Agriculture Organization of the United Nations
FAO	Food and Agriculture organization
FFLS	Farmer Field and Life School Approach
FFS	Farmer Field School
FLS	Farmer Life School
GBV	Gender-Based Violence
GRATIS	the Ghana Regional Appropriate Technology Industrial Services
HIV	Human Immunodeficiency Virus
IASC	Inter-Agency Standing Committee
IDP	Internally Displaced Persons
JFFLS	Junior Farmer Field and Life School
NEMA	National Environmental Authority
NGO	Non-Governmental Organization
NTFPs	Non timber forest products
OVC	Orphaned and Vulnerable Children
PHC	Populations of Humanitarian Concern
SBT	Shea Butter Trees
SEAGA	Socio-Economic and Gender Analysis
UBOS	Uganda Bureau of Statistics
UPDF	Uganda People's Defense Forces
UNAIDS	Joint United Nations Programme for
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
WFP	World Food Programme
WHO	World Health Organization

## EXECUTIVE SUMMERY

This study sought to examine the influence of livelihood strategies towards the conservation of Shea butter tree in Lira Palwo, Agago District. The influence of the changes in livelihood strategies seemed to have a big impact on the conservation of Shea Butter Trees. This trend left one wondering how the transformed livelihood strategy among the population has affected sustainable utilization of SBT. The objectives included; to find out the influence of existing structures and processes in transforming vulnerability context of communities into sustainable livelihood strategies, the different roles played by actors in influencing communities to select the livelihood strategies and the conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context in Lira Palwo Sub County.

This research study used several methods to deal with the research problem. Across sectional qualitative approach was used in this study. In this study qualitative approach involved the use and collection of a variety of empirical materials by in-depth interview and focus group discussions. In order to explore the research questions and to elicit in-depth information on the livelihood strategies towards the conservation of Shea butter trees, this study was informed by primary and secondary sources. This study collected primary data and secondary sources data using methodological/tools of interviews, observations and documentary analysis. Approaches to the presentation and analysis of data were also discussed. Ethical issues relating to this study were presented and discussed.

The conservation of natural resources was a contribution of every stakeholder in the community including the cultural leaders, the government and the community at large, but due to the high rate of urbanization, commercialization of agriculture, education and cultural integrations, as well as political differences, the culture of togetherness has died, hence affecting the survival of Shea butter and other natural resources in the area. Government, traders, agricultural extension workers, environmentalist and forestry regulatory authorities, were cited not to play their role in the conservation of Shea butter.

Using the findings, the study recommends the need to support the community to develop consensus on the required natural resources to be left alive even if it's a personal property to survive the natural resources.



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Introduction

This study sought to examine the influence of livelihood strategies towards the conservation of Shea butter tree in Lira Palwo, Agago District. Livelihood strategies among the population in Lira Palwo were studied in this research with an aim of examining their influence towards the conservation of Shea butter tree in the region. In building the background to the study, the researcher adopted the broader-narrow approach development as suggested by Mugenda and Mugenda (1999). This chapter presented: Background to the study, Statement of the problem, Objectives of the study, Research Questions, Conceptual framework, Scope of the study as well as the Significance of the study.

#### 1.2 Background

Agriculture plays a vital role for economic growth and sustainable development. In Uganda, about 31 million people an equivalent to 85% of the total population live in rural areas of which 73.3% are engaged in subsistence agriculture (UBOS 2009). Most of the agriculture is characterized by small land holdings with a few isolated commercial holdings (Musiime *et al.*, 2005). In addition to supporting livelihoods, agriculture sector contributes to the national revenue. In 2009 the sector provided about 70% of the employment in the country and contributed to 90 percent of the total export (UBOS, 2010). Thus, Ugandan, agriculture is an important sector of notable relevance in economic development and growth. Presently, Shea nut tree has gained importance as an economic crop because of the heavy demand for its butter, both locally and internationally, following increasing international interest in Shea butter as a cocoa butter equivalent in confectioneries, pharmaceutical and cosmetic industries (Adebayo *et al.*, 2015). Shea butter is a useful cocoa butter substitute because it has a similar melting point (32–45°C) and high amounts of di-stearin (30%) and some stearo-palmitine (6.5%) which makes it blend with cocoa butter without altering flow properties. The high proportion of un-saponifiable matter, consisting of 60–70% triterpene alcohols, gives Shea butter creams good penetrative properties that are particularly useful in cosmetics (Daramola *et al.*, 2007). Shea nut products are used domestically and exported especially to Europe. Presently, Shea is exported to France, Great Britain, the Netherlands, Denmark, North

America and Japan (Carney, *et al*, 2007). In these countries it is processed in a wide range of food products including chocolate and it is also becoming more popular in the cosmetic industry (Schreckenber, 2004). Shea butter has lately assumed an unprecedented height in international trade more so because the western world has recognized the considerable health and beauty enhancing benefits of Shea butter. Shea nut and butter are value added products with outstanding export growth potentials, especially for African Countries.

Shea tree mostly occurs in 19 countries across the African continent, namely: Benin, Ghana, Chad, Burkina Faso, Cameroon, Central African Republic, Ethiopia, Guinea Bissau, Cote D'Ivoire, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zaire, and Guinea (FA, 2014). The Shea fruit pulp has been confirmed to be generally very nutritious containing large quantities of protein and minerals and the butter is highly medicinal. The fruits when ripen play a key dietary role to farmers at the beginning of the cropping season (Wiesman, *et al*, 2003). The Shea tree has a lot of end-use applications. These include: valuable butter for cooking, cosmetics and skincare, pharmaceutical and medicinal. The butter is extracted from the seed which may have up to 50% oil content .The process involves crushing and milling the Shea nuts before kneading with water and skimming the surface to collect the oil. The refined Shea butter is used as a substitute for margarine and cocoa butter in the food industries. Destruction of the Shea tree is prohibited in most parts of West Africa because of the nut and butter which provide a valuable source of food, medicine and income for the people (Adebayo *et al*, 2015).

In Uganda, Shea trees grow wild as perennials in the districts of Lira, Gulu, Amuru, Agago, Pader, Kitgum, Katakwi, Abim, Kotido, Soroti, Kumi, Amuria, Dokolo, Kaberamaido, Arua, Adjumani, Nebbi, Yumbe, Moyo, Koboko and Nakasongola (Okullo, 2004). These districts comprised the Shea parkland. According to Bagnoud *et al*. (1968), parkland is a regular, systematic and ordered presence of trees within fields. Parkland also results from a long evolutionary process during which an association between natural elements (trees and shrubs conserved, maintained and enhanced because of their utility) and crops grow within a regularly exploited space. Parklands include fields in which different types of crops (cereals, cotton and peanut) are cultivated over several years punctuated by fallows (when active cultivation is stopped on parcels of land in order to restore soil fertility). In most cases, the length of the fallow period (3-4 to 25-30 years) is unique to each farmer, depending upon the land he/she possesses, the needs of his/her households and the way he/she manages his/her

land (Kelly *et al.*, 2004). The major uses of the plant to local communities and industries include consumption of fleshy pulp locally like mango, the fruit when very ripe can be eaten raw; trunk, bark, cortex, roots and leaves are used in preparation of herbal remedies; trunk makes excellent charcoal and is also useful as building material (Ayanda, *et al.*, 2014). In addition butter is extracted from the kernel. The butter is also locally used in traditional medicines and cosmetics, chocolates, candle and pastries as cocoa butter substitute. It is also used in pharmaceuticals and cosmetics because it is naturally rich in Vitamins A, E, and F. Furthermore, Shea butter is widely utilized for domestic purposes such as cooking, skin moisturizer, edible products (Alander, 2004). Traditionally, Shea butter are used as cream for dressing hair, protecting skin from extreme weather and sun, relieving rheumatic and joint pains, healing wounds/swelling/bruising, and massaging pregnant women and children. It is also used in treatments of eczema, rashes, burns, ulcers and dermatitis. However, despite the economic and environmental benefits of the tree, evidence from the National Biomass Study Technical Report, (2009) and NEMA, (2014) revealed that the population of this tree species has reduced. This leaves one wondering whether the livelihood strategies among the population contributed to the reduction in the population of the Shea butter trees in Lira Palwo. It's against this background that this study will be conducted with an aim of examining the influence of livelihood strategies towards the conservation of Shea butter trees in Lira Palwo, Agago District.

### **1.3 Statement of the Problem**

A study conducted by Edgar, (2014) revealed that 350 tons of Shea butter was produced from Lira Palwo in Acholi sub region, Uganda and a total sum of Shs700m was paid to the farmers and the suppliers that deal in Shea butter products. This meant that the SBT has economically empowered the community living in this region due to access to employment and incomes. However, despite the economic and environmental benefits of the tree, the population of this tree species seems to be reducing from what Becker and Starz, (2003) reported and the National Biomass Study Technical Report (2009). It was reported that in 2005, Shea trees occupied on average 15% of the woodlands in North and North-east Uganda which was approximately 66,483 ha and now this species covers a total area of 22,389 ha (NEMA, 2014).

The 20 year conflict in Northern Uganda forced over 1.5 million people to live in protected villages and camps (UN OCHA, 2004). In these camps people heavily depended on the SBT

for energy, building materials, medicines and craft items such as baskets, ropes and mats. Over the years, there has been the breakdown of traditional systems in the Shea parkland areas of Northern Uganda and the taboos that were once valued by the local community are now facing erosion due to competing economic needs. Other actors like traders have caused the cutting down of the trees for charcoal production which may eventually lead to environmental degradation, and loss of vegetative cover. Non-replacement or domestication of the Shea trees may lead to its extinction in the nearest future since these actors don't seem to have a common platform to manage the SBT (Adokorach, 2010).

The reported decline of the tree by Becker and Starz (2003), National Biomass Study (2009) and NEMA (2014) is suspected to be a result of heavy dependence on the SBT by the local community, increased local economic actors, and breakdown of traditional values and lack of deliberate efforts among the actors to manage the sustainability of the tree. These factors have affected the Livelihoods of the community within Lira Palwo. The influence of the changes in livelihood strategies seemed to have a big impact on the conservation of Shea Butter Trees. This trend left one wondering how the transformed livelihood strategy among the population has affected sustainable utilization of SBT.

#### **1.4 General Objective**

The general objective of this study was to evaluate the livelihood strategies of the actors towards the conservation of Shea Butter Trees in Lira Palwo, Agago District.

##### **1.4.1 Specific Objectives of the study**

The specific research objectives were developed as highlighted below;

- i. To study the influence of existing structures and processes in transforming vulnerability context of communities into sustainable livelihood strategies in Palwo Sub County.
- ii. To evaluate the different roles played by actors in influencing communities to select the livelihood strategies in Lira Palwo Sub County.
- iii. To find out the conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context.

## **1.5 Research Questions**

The specific research questions were developed as highlighted below;

- i. Who are the actors involved in the conservation of Shea butter trees?
- ii. What are the livelihood outcomes of the strategies used by communities in the exploitation of Shea butter trees?
- iii. Who were the actors involved in the utilization of Shea butter trees and what their influence in the conservation of the trees was.

## 1.6 Conceptual Framework

The conceptual framework explains the key concepts and variables used in this study and how they were linked and interrelated in providing the final outcome of the study. Based on the literature review in chapter 2, a conceptual framework was constructed as shown in Figure 1.0 below;

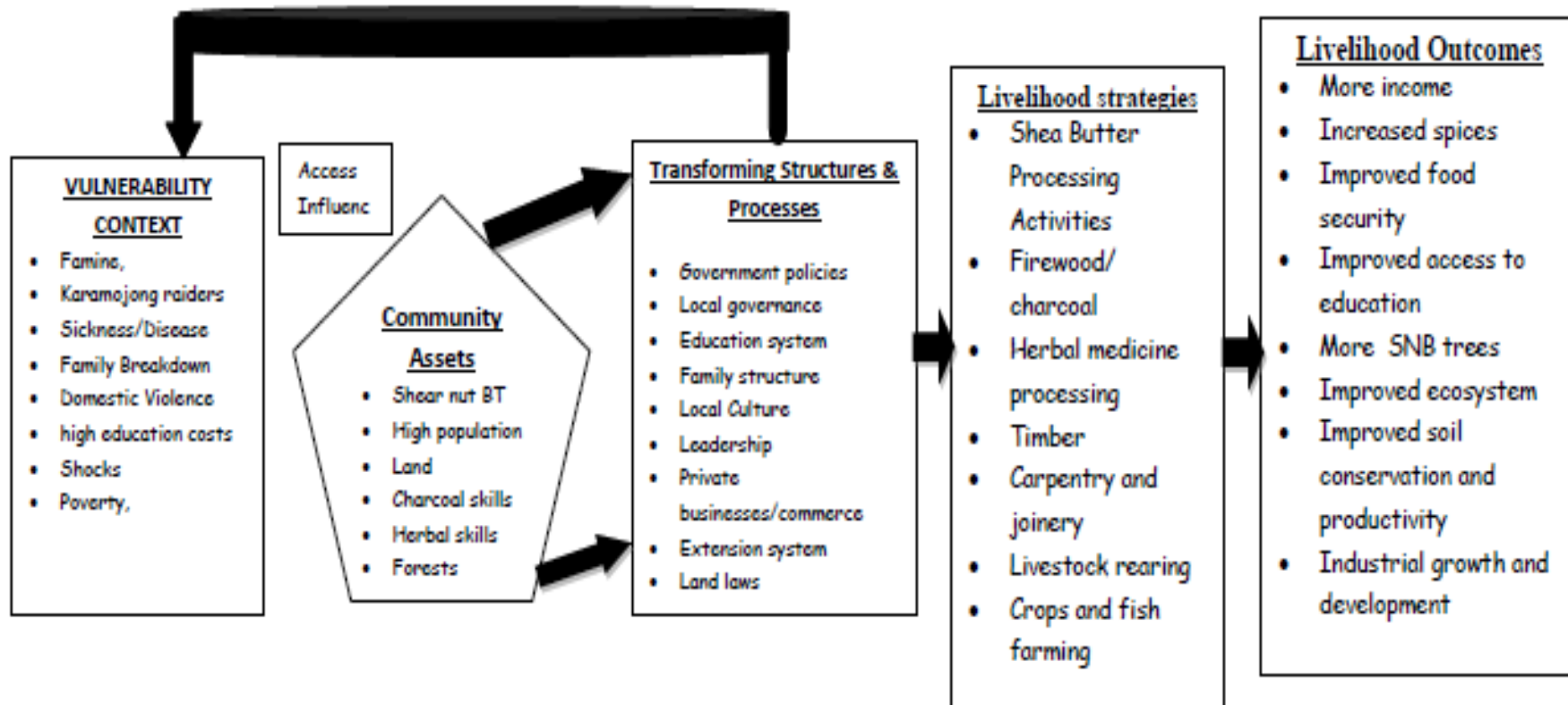


Figure 1.0: conceptual framework (Adapted from DFID, 2015)

As conceptualized from the conceptual model above, every geographical area had its background characteristics be it socio-cultural, economic or environmental factors which gives rise to their livelihood assets (Asset Pentagon), which were grouped as physical, financial, natural, human and socio-cultural capitals which were possessed by rural people (Carney, 1998; Ellis, 2000; Rakodi and Lloyd- Jones, 2002). The level of assets “in stock” determines the degree to which people can improve their well-being either directly or indirectly (Rakodi and Lloyd-Jones, 2002). Bebbington (1999) argues that “a person’s assets, such as land, are not merely means with which he makes a living: it also gives meaning to that person’s world. Assets are not simply resources that people use in building livelihoods: they are “tools” that give them capability to be and to act. Assets should not be understood only as things that allow survival, adaptation and poverty alleviation; they are also the basis of agents of power to act and to reproduce, challenge or change the rules that govern the control, use and transformation of resources”. In the case of Lira Palwo, they possess natural capital (Shea Parkland region), socio-cultural capital (Music, dance, folklore, friends and family), human capital (health/physique/fitness, knowledge and skills) and physical capital (access roads though poor in outlook) as posited similarly by Lister (2004). Changing climatic patterns (long dry season) and seasonality of the agricultural production makes them vulnerable (Ellis, 2000; Cahn, 2006). However, captioned within the public and private domains (policies, institutions and processes), the Uganda Wildlife Division and SNV (Netherlands Development Organization) have brought in interventions (establishment of the Eco village project and funds for baseline studies respectively) which is impacting positively on their livelihood activities (farming, fishing, tour guiding, performance of cultural dances and sale of handicraft to enhance the souvenir trade) enabling them to attain their livelihood outcomes of more income, reduced vulnerability and more sustainable use of natural resources.

### **1.7 Significance of the Study**

This study was significant to the following parties as highlighted below;

**Academia:** This study provided a reference tool to the students and other scholars who intend to widen their knowledge in the study “The Influence of Livelihood Strategies towards the Conservation of Shea Butter Trees”. The study may be a basis of reference since it will focus on the identification of the different actors and how they influence the conservation of Shea

butter trees, identify the strategies used by different actors in the utilization of Shea butter trees and determine the outcomes of the different strategies used by communities in the exploitation of the Shea butter trees.

**Community in Lira Palwo, Agago District:** Findings from this study informed the community of Lira Palwo in Agago District that conservation of SBT is critical to their economic and environmental empowerment hence the need to conserve these trees if they are to secure a bright future for the generations to come of their children.

**Government:** The study may help the Government of Uganda understand the relevance of conserving Shea butter trees towards the economic growth of the economy. This will in the long run help to diversify the nation's economy through maximizing the exploitation of the vast Shea resources to increase the nation's foreign exchange earnings from other sources rather than the traditional cash crops like coffee and Cotton.

### **1.8 Justification of the Study**

Shea nut tree has gained importance as an economic crop because of the heavy demand for its butter, both locally and internationally, following increasing international interest in Shea butter as a cocoa butter equivalent in confectioneries, pharmaceutical and cosmetic industries. However, despite the economic and environmental benefits of the tree, evidence National Biomass Study Technical Report (2009) and (NEMA, 2014) revealed that the coverage of the SBT species reduced from 66,483 ha in 2005 to 22,389 in 2014. This trend leaves one wondering whether the livelihood strategies among the population contributed to the reduction in the population of the Shea butter trees in Lira Palwo hence justifying the need to conduct this study.

### **1.9 Scope of the Study**

The study encompassed the content, geographical and time scope.

#### **Content Scope**

The study focused on the livelihood framework that comprised of the capabilities, tangible and intangible resources (assets), activities (or livelihood strategies), and the access to these, mediated by social relations and institutions, which individuals or households draw upon to



gain a living. This framework was studied with an aim of examining its influence on conservation of SBT.

### **Geographical Scope**

The study was confined to Lira Palwo, Agago District. This study was conducted there because evidence from the Biomass Study Technical Report (2009) and (NEMA, 2014) revealed that the coverage of the SBT species reduced from 66,483 ha in 2005 to 22,389 in 2014 which left the researcher wondering whether the livelihood strategies among the population contributed to the reduction in the population of the Shea butter trees in Lira Palwo, Agago District.

### **Time Scope**

The research process was confined to a ten-year period between 2005 and 2016. This period had been carefully selected by the researcher since evidence from the Biomass Study Technical Report (2009) and (NEMA, 2014) revealed that the coverage of the SBT species had reduced in Lira Palwo, Agago District. Information provided for these financial years was used as a basis to conduct and complete this current research study successfully.

### **1.10 Operational Definitions**

Below are definitions of concepts that were explored to achieve the objectives of this study. These concepts were selected and explored because the researcher deemed them fit to be relevant to the purpose and objectives of this study. The concepts are defined below

**Shea tree (Vitellariaparadoxa):** is a fruit tree indigenous to the semi-arid and sub-humid savannas of sub-Saharan Africa.

**Shea Butter:** refers to a fatty substance obtained from the nuts of the Shea tree, used in cosmetic skin preparations and food.

**Livelihood:** The term comprises of the capabilities, assets (including both material and social resources) and activities required for a means of living. Livelihood according can also be viewed as a means of support or subsistence; adequate stocks and flows of food and cash to meet basic needs.

**Livelihood assets** refer to resources that people control or have access to and which serve as the basis of household livelihoods (human, social, natural, physical and financial assets). Knowing more about the assets of vulnerable individuals is central to identifying appropriate measures and strategies to improve their situation and reduce their vulnerability.

**Livelihood Strategies:** refers to the ways and means of individual engaging in particular economic activities, organized in a particular way to produce their livelihood outcomes or meet their needs, wants and aspirations. This study considered livelihood strategies as all activities engaged in by the different actors to enable them secure their livelihood outcomes such as food security, clothing, paying for children education, financing their health needs, acquiring domestic wares such as cooking utilities among others.

**Sustainable Livelihood:** The term ‘sustainable livelihoods’, then, refers to this framework, but also to a concept, and to a set of principles for international development (Farrington 2001). A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. Also livelihoods of individuals or households are said to be sustainable when they are resilient in the face of external shocks and stresses; are not dependent upon external support (or if they are, this support itself should be economically and institutionally sustainable); maintain the long term productivity of resources; and do not undermine the livelihoods of, or compromise the livelihood options open to, others

**Sustainable Livelihood Framework:** SL frameworks represent “analytical structures for coming to grips with the complexity of livelihoods, understanding influences on poverty and identifying where interventions can best be made” (Farrington et al. 1999).

**Livelihood Outcomes** are the achievements or outputs of Livelihood Strategies. In other words they are the objectives or purposes which are sought for by individual or household in their livelihood strategies. In broader prospective, common livelihood outcomes include more income, improved well-being, reduced vulnerability and more sustainable use of natural resources. It therefore means that the households should pursue a broad range of livelihood strategies based on their assets (physical, financial, human, social and natural capital) in order to obtain the livelihood outcome they wish to achieve.

**Poverty:** There continues to be much debate about how poverty should be defined, but it is increasingly accepted that poverty is not just a lack of material necessities, assets and income.

The notion of poverty has been broadened to include a deprivation in capabilities, voice and power that contribute towards a lack of well-being. Poverty is general scarcity, dearth, or the state of one who lacks a certain amount of material possessions or money Ricardo (2008). It is a multifaceted concept, which includes social, economic, and political elements. Poverty may be defined as either absolute or relative.

**GBV** is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (gender) differences between males and females. GBV occurs at an individual level, in a relationship and at household level, at community level and in the society. It perpetuates the stereotyping of gender roles that denies human dignity of the individual and hinders human development Hazare, 2003, pp22, 59; by affecting human health, self-esteem and livelihoods. It is considered a violation of human rights protected by international human rights treaties Chu *et al.*, 2009.

**Vulnerability:** refers to the external environment in which people pursue their livelihoods and their exposure (risk) to the negative effects of the external environment, as well as external shocks and trends of seasonality

**Vulnerability context** refers to the external environment in which people live. It includes unpredictable events that can undermine livelihoods and cause households to fall into poverty. Conflicts, forced evictions and displacement, idiosyncratic shocks such as illness, including HIV, or health consequences due to GBV, loss or theft of land and productive resources, and the social and cultural institutions are all elements comprising the vulnerability context.

## **1.11 Chapter Summary**

This chapter introduced the research topic by describing the background of the study and the problem statement was later discussed in the subsequent section. The purpose of the study was discussed, which concerns the presentation and assessment of the influence of livelihood strategies on the conservation of SBT. To examine these relationships empirically, a conceptual framework was adopted from DFID (Sustainable Livelihoods Framework, 2015) which links livelihood strategies to the conservation of SBT. The three research questions were developed to address the relationships among the constructs. This chapter also discussed the practical significance of the study. The next chapter discussed the theoretical framework

that guided this study and it was based on the literature from various authors in line with the study objectives.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter reviewed the relevant literature from various studies in relation to the research objectives. This section was theoretically review the Sustainable Livelihood Framework as and acted as a guiding principle for the conservation of SBT. Subsequent sections was present literature on the identification of the different actors and how they influence the conservation of Shea butter trees, strategies used by different actors in the utilization of Shea butter trees and last but not least, outcomes of the different strategies used by communities in the exploitation of the Shea butter trees.

#### 2.2 Shea Butter Processing and Livelihood of the Rural Community

This section discussed the history and distribution of the Shea tree, Shea butter extraction, utilization and marketing, the concept of sustainable rural livelihoods.

##### 2.2.1 History and Distribution of the Shea tree

The Shea tree, formerly *Butryospermumparadoxum*, is now called *Vitellariaparadoxa*. Many vernacular names are used for *Vitellaria*, which is a reflection of its extensive range of occurrence –nearly 5000 km from Senegal (West) to Uganda (East) across the African continent. The nomenclature history and synonymy of the Shea tree followed a very tortuous evolution since the oldest specimen was first collected by Mungo Park on May 26, 1797 before eventually arriving at the name *Vitellaria* with subspecies *paradoxa* and *nilotica*. The Shea tree grows naturally in the wild in the dry savannah belt of West Africa from Senegal in the west to Sudan in the east, and onto the foot hills of the Ethiopian highlands. It occurs in 19 countries across the African continent. These include: Benin, Ghana, Chad, Burkina Faso, Cameroon, Central African Republic, Ethiopia, Guinea Bissau, Cote d' Ivoire, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo, Uganda, Zaire and Guinea. In Uganda, Shea trees grow wild as perennials in the districts of Lira, Gulu, Amuru, Agago, Pader, Kitgum, Katakwi, Abim, Kotido, Soroti, Kumi, Amuria, Dokolo, Kaberamaido, Arua, Adjumani, Nebbi, Yumbe, Moyo, Koboko and Nakasongola (Okullo, 2004). These districts comprised the Shea parkland. According to Bagnoud *et al.* (1968), parkland is a regular, systematic and ordered

presence of trees within fields. Parkland also results from a long evolutionary process during which an association between natural elements (trees and shrubs conserved, maintained and enhanced because of their utility) and crops grow within a regularly exploited space. Parklands include fields in which different types of crops (cereals, cotton and peanut) are cultivated over several years punctuated by fallows (when active cultivation is stopped on parcels of land in order to restore soil fertility). In most cases, the length of the fallow period (3-4 to 25-30 years) is unique to each farmer, depending upon the land he/she possesses, the needs of his/her households and the way he/she manages his/her land (Kelly *et al.*, 2004).

### **2.2.2 Shea butter Extraction**

The fresh fruits collected should be processed within 12 to 30 days to avoid germination. The steps involved in the processing of fresh fruits to obtain the dry kernel (usually called Shea nut) are as follows: de-pulping, sun-drying and cracking of the nuts, para-boiling, Shea butter is extracted from the dry Shea nut primarily by individuals on a small scale using a traditional method that varies slightly in detail and has been described by Irvine's study (cited by Yidana, 1994). The method generally consists of the following steps: crushing of the nuts, roasting the pieces in a hot pan, milling the pieces, kneading the milled mass in water to extract the crude fat and boiling the crude extract to obtain purified Shea butter.

The dry Shea nut are crushed by placing one or two nuts at a time on a hard surface such as flat stone or concrete floor and hitting them once or twice with a specially prepared wooden pestle 100kg of Shea nut can be crushed in this way by adult person per man-day. Roasting the pieces after crushing is effected by placing them on clay pots (specially prepared Swiss ovens) and heating until the kernels shine with oil, turn brown and begin to split. Well dried nuts require heating for 40-60 minutes with regular stirring to prevent broken kernels from charring. The account by Irvine's study (cited by Yidana, 1994) shows that the kernels may be roasted before crushing. The roasted pieces are milled by machine. The milled mass is added to cold or hot water in calabashes or pots and kneaded until it is too thick to work. More water is added and the kneading continues until grey-coloured spongy dough or a curd-like crude fat is obtained. This is then added a little at a time to large pots filled with cold water and the dough thoroughly worked with the fingers until the fat rises to the surface of the water. This crude butter is removed and washed. It is refined by boiling in pots of hot water for about 2 hours while stirring only the top part of the boiling mixture. The melted fat floats on the surface and is gradually removed into calabashes or other containers. The

bottom mixture contains impurities and therefore is not added to the good quality fat removed from the surface. This liquid fat removed is stirred in calabashes until it solidifies. The color of the fat obtained is an indication of quality and efficiency of the method of preparation. A good quality fat is cream-coloured or pale yellow in color and is preferred by users.

Machines have now been made to speed up the major steps involved and to make the process less laborious. The Ghana Regional Appropriate Technology Industrial Services (GRATIS) in collaboration with the ITTU at Tamale (Ghana) has developed and is marketing these machines. They comprise of a crusher, a miller and a kneader with a boiling drum attached. The machines have a capacity of extracting butter from 3000kg of Shea nut per day. However, only about 30% of the fat content of nuts is extracted. This is the same value as in traditional extraction methods (Dalziel, 1937) but the faster extraction by these methods is of significant advantage. Hydraulic presses developed such as the Bridge press are capable of extracting up to 90% of the fat contained in the nuts (Adomako & Frimpong, 1985). Use of hydraulic press has increased the efficiency and quantity of the Shea butter from the available Shea nut.

### **2.2.3 Utilization of Shea butter**

The seed kernel (often incorrectly called 'nut') contains a vegetable fat known as Shea butter. High quality Shea butter is consumed throughout West and East Africa as cooking fat. Refined fat has been marketed as margarine and baking fat. It is used for pastries and confectionery because it makes the dough pliable. Many cosmetic products, especially moisturizers, lotions and lipsticks, have Shea butter as a base because of its high unsaponifiable matter content imparts excellent moisturizing characteristics. The Shea butter has been used as a moisturizer to treat dry cracked skin, as massage oil for colds and sore muscles, and host of minor skin problems. It is also used by midwives on new-born babies to moisturize their skin and also as a protection against diaper rash (Lovett & Haq, 2000). It is used to relieve inflammation of the nostrils. Low-quality Shea butter, often mixed with other oils, is a base material for soap. It is especially suitable for making candles because of its high melting point. Shea butter is a suitable base for tropical medicine. Its application relieves rheumatic and joint pains and heals wounds, swellings, dermatitis, bruises and other skin problems. The tree is considered to be sacred by many tribes. The oil is placed in ritual shrines and used for anointing. Shea butter is given externally and internally to horses to treat sores and galls. The black sticky residue, left after oil extraction, is used to fill cracks in walls

and as a waterproofing material (Bonkougou, 1987). Internationally Shea butter has become important because of its therapeutic properties for the skin. It can act as a mild ultra-violet barrier, protecting skin from the sun. It has regenerative and anti-wrinkle properties (hence the name 'the fountain of youth') and it is used in bath, beauty and body care products such as soaps, creams and lotion. It also has a wide application for the pharmaceutical industry, such as suppositories. The growth rate of use of Shea butter in just the US market has been estimated at over 25 per cent per annum and continues to grow (Lovett & Haq, 2000). Estimate for consumption have been given as high as 150g a day for a Mali family of seven (Fleury, 1981), though this may vary according to availability. The oil has also been found to be effective in protecting cowpea and groundnut from infestation by the beetle *Callosobruchus maculatus*, at doses as low as 0.5 mg/kg (Fleury, 1981).

The commercial uses of Shea butter include being used as cocoa butter substitute and in margarines or other fat spreads (Fleury, 1981). The biggest growing market in Shea butter use is in the formulation of base creams both in the pharmaceutical and cosmetic industry (Fleury, 1981 & Abbiw, 1990; cited in Lovett & Haq, 2000). Addaquay (2004) reports that crude Shea butter, processed in the region, is sold as food oil and also as skin cream.

#### **2.2.4 Marketing of Shea nut**

Marketing of Shea and its products is done both domestically and internationally. There are conflicting reports on the quantities sold both in the local and international markets. For example, Lovett (2004) suggests that domestic markets consume about 55% of the total Shea kernel and Shea butter produced, while 45% is exported. Other estimates show that over 75% of all kernels and Shea butter produced in Sub Saharan Africa (SSA) is consumed within Africa. Important local markets include Accra, Abidjan, Abuja, Dakar, Bamako, Ouagadougou, Lomé, Cotonou, Lagos, Ibadan, Onitsha, Kano, Nouakchott, Banjul, Niamey and Conakry etc. Empirical observations indicate that, in some countries like Cameroon, the Democratic Republic of Congo, Central African Republic all the butter produced is consumed locally. It is estimated that in 2007, six major companies in the international market in the European Union and the USA bought 60% of the nuts and half of the butter produced. Four major players control the refining of Shea in the world market. They are, in order of capacity, Aarhus United in Denmark, Fuji Oil in Japan, Karlsham AB in Sweden and Loders Croklaan in Holland (Addaquay, 2004).



### **2.3 Conservation of Shea Butter Trees**

Shea tree (*Vitellaria paradoxa*) is a fruit tree indigenous to the semi-arid and sub-humid savannas of sub-Saharan Africa. The tree is highly valued throughout the region for its numerous and diverse products/services (Hall *et al.*, 1996; Diallo and Abibou, 2002; Okullo, 2004). Long ago, farmers in the Shea parkland preserved this valuable resource by nurturing Shea and other valuable trees in their farming system (Bonkougou, 2004). Conservation of valuable tree species used to be taken care of by farmers through integrating with annual crops. This practice worked well in traditional societies in northern Uganda (Masters, 2006). However, the civil war that broke out in 1986 in the region forced people into Internally Displaced Persons (IDPs) camps. These camps have very low levels of economic activity (Ogenga, 2000). The displacement resulted into communities engaging in small-scale agriculture and retail businesses near camps, while others encroached on the natural environment by cutting important tree species like Shea trees for charcoal (Ferris *et al.*, 2004).

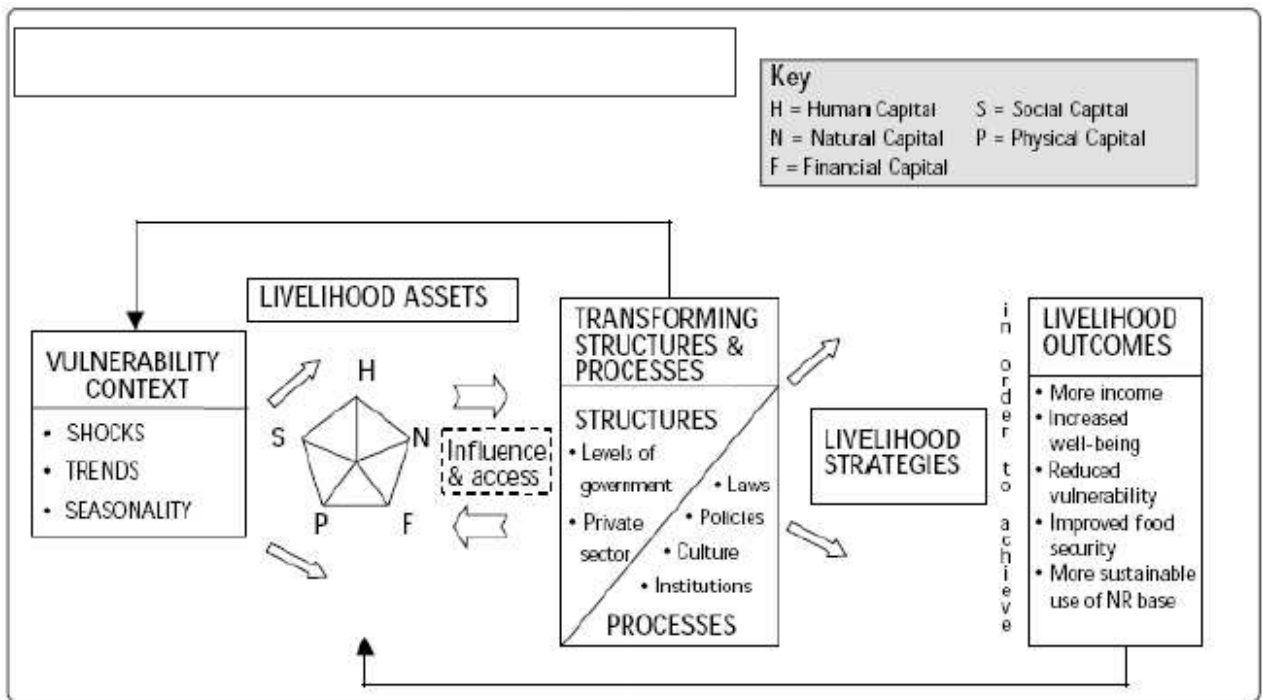
Results from various studies indicate that Shea tree products are highly valued as source of edible oil that is also sold in local markets for income, edible fruits and building materials. Conservation of Shea trees has been unfortunately hampered by insecurity and internal displacement of the local population is especially for Northern Uganda. Most Shea trees were cut for charcoal that was sold to meet peoples' basic needs. Pruning, lopping, weeding, intercropping Shea with other shade tolerant crops, tending and protection against fire are the major methods of Shea tree management and conservation being practiced by the local people.

### **2.4 The Concept of Sustainable Rural Livelihoods**

The concept of 'livelihood' has gained scholarly attention in the past three decades. It has been found by many to be a people-centered concept that aims at addressing poverty related issues (Kaag, 2002). Livelihoods comprise the capabilities, assets and activities (including material and social resources) that are required for a means of living. A livelihood is sustainable when it can cope with and recover from the shocks and stresses and maintains or enhances its capabilities and assets now and in the future, while not undermining the natural resource base (Carney, 1998; Kaag, 2002). This is the adopted definition of DFID Sustainable Livelihoods Approach (Carney, 1998). Kaag (2002) adds to the definition by stressing that

livelihood as an approach to development concentrates on the actions and strategies of people in making a living under adverse conditions. Ellis and Freeman (2002) define the concept of livelihoods to encompass the wider context of governance, institutions and enabling environment for poverty alleviation. They argue that an 'Institutional Context' for rural livelihoods is important because it helps to track the effects of expansion or contraction of opportunities that permit the poor to build their own pathways out of poverty.

Ellis and Freeman (2002) in a study of rural livelihoods and poverty reduction in four African countries noted the interlocking nature of livelihoods in rural areas. In this study, they surmise that livestock could be substituted for land or small businesses and vice versa; that non-farming come could be used to build up herds, etc. They therefore identified the five interlocking areas as household size, livestock, education, area owned, and tools. Broadening the base of the interlocking nature of livelihoods, the DFID livelihoods concept focuses on assets also referred to as capital, upon which individuals draw on to build their livelihoods. These are natural capital, human capital, social capital, financial capital and physical capital. This is represented diagrammatically in the shape of a pentagon with each asset occupying one pointed edge (Carney, 1998). DFID also goes on to construct an elaborate framework for sustainable livelihoods which links these capital assets to structures, processes and strategies that affect livelihood outcomes. This framework is however, set in a 'vulnerability context' consisting of trends, shocks and culture (Carney, 1998). The overall conceptual framework is illustrated in figure 2.



**Figure.2. Source: DFID (1999) Sustainable Livelihoods Guidance Sheet.**

However, several critics of the DFID sustainable livelihoods framework which presents the main factors that affect people’s livelihoods, and typical relationships between them. It can be used in both planning new development activities and assessing the contribution to livelihood sustainability made by existing activities. In particular, the framework provides a checklist of important issues and sketches out the way this link to each other draws attention to core influences and processes; and emphasizes the multiple interactions between the various factors which affect livelihoods. The framework is centered on people. It does not work in a linear manner and does not try to present a model of reality. Its aim is to help stakeholders with different perspectives to engage in structured and coherent debate about the many factors that affect livelihoods, their relative importance and the way in which they interact. This, in turn, should help in the identification of appropriate entry points for support of livelihoods in particular and livelihoods framework in general. Kaag (2002) in their paper ‘Poverty is Bad, Ways Forward in Livelihood Research’ outlines several important points upon which criticisms have been based. He contested that many of the existing livelihood studies focus too narrowly on the actions and strategies of a group of people and take insufficiently into account the context of structural constraints such as power inequalities in which these people have to make a living.

One of the consequences therefore, is that a positive image of poverty is created. Furthermore Kaag stated that this is dangerous because it diminishes the urge to address the structural causes of poverty which include unequal power relations and unequal access to productive resources.

Secondly, the livelihood approach is criticized that in as much as it focuses on poor people's actions and strategies, it overemphasizes this to the detriment of studying the relationships that exist and should exist between poor people and the broader society. The third and most important criticism stems from the fact that most livelihood research is clouded in schemes, tools, definitions and frameworks. These, however, cannot adequately capture the complex dynamics of the livelihood systems. In the end therefore, livelihood research is used as a rigid frame to be put over the social reality of researchers. They conclude therefore, that this is detrimental to an approach which claims to be people-centered, dynamic and sensitive to diversity.

Basing on this criticism, I would conclude the sustainable livelihoods framework is an effort to conceptualize livelihoods in a holistic way, capturing the many complexities of livelihoods, and the constraints and opportunities that they are subjected to. These constraints and opportunities are shaped by numerous factors, ranging from global or national level trends and structures over which individuals have no control, and may not even be aware of local norms and institutions and, finally, the assets to which the households or individual has direct access. For now, we will use the household as a unit of analysis, but as we will discuss in later units, it is important to recognize that not all individuals within a household have equal decision-making power, or benefit equally from household assets or income.

## **2.5 Traditional Knowledge on the Management and Conservation of Trees**

According to Barrow (1996), local people in dry lands have seldom been consulted about which tree species they consider valuable and why, yet technical interventions should be based on tree species that are locally acceptable and useful. Before planning for sustainable use and management of natural resources, resource managers and other stakeholders need to know the availability of the resources. The starting point to all this, however, is the knowledge that indigenous people already possess (Jarvis et al., 2000). Such knowledge is dynamic as it changes over time with a particular ethnic group and varies among groups. In

sub-Saharan Africa, nearly all decisions affecting the ecological integrity of a landscape are made at the local level, by local indigenous people.

According to de Saint Sauveur (1999), higher profitability from tree resources to the primary producers has directly led to the management decisions which promote regeneration of the species by local farmers. This is always done through protection of young Shea trees when clearing land for cultivation. The management and conservation of Shea resources in Uganda can be classified into identification of desired qualities, propagation, tending, protection and ownership. Improvement of the species by the protection of productive individual trees on farmland is based on locally favored criteria such as sweetness of fruit, total harvestable yield, tree health and reduced competition with annual crops (Lovett and Haq, 2000; Maranz and Wiesman, 2003).

## **2. 6 Vulnerability Context**

There are many global studies devoted to deforestation, in particular the determinants of deforestation. According to FAO (2001), over 1,200 articles on tropical deforestation have been published since 1980, of which 825 contain findings related to deforestation processes. Kaimonowitch *et al.* (1998) reviewed over 150 quantitative models dealing with the causes of tropical deforestation. They found that many modeling results should be interpreted with caution because of poor data quality and methodological weaknesses. Household-level models that link to farmer characteristics include Pichón (1997), Munòz (1992), Jones *et al.* (1995), Holden *et al.* (1997), Godoy *et al.* (1996), Godoy *et al.* (1997), Godoy (1997), and Foster *et al.* (1997); Cooke *et al.* (2008); Emtage *et al.* (2004); Scherr (1995). Studies that have dealt with adeforestation determinants in tropical countries include, among others, Schelhas (1997); Owubah *et al.* (2001); Guthiga, (2008); Guthiga *et al.* (2008); Mekonnen (2000) and Gebreegziabher *et al.* (2010). Owubah *et al.* (2001) and more recently Gebreegziabher *et al.* (2010) use a logistic regression model to analyze the determinants of household tree planting and explored the most important tree attributes or purpose(s) that enhance the propensity to plant trees. Both find land right security and education to be important determinants for planting trees. However, Owubah *et al.* (2001) find that the number of farmers engaged in sustainable forestry practices is small. In the study of forest conservation in this thesis we use a similar model to analyze the engagement of the local population in forest conservation practices, which can provide useful insights for improving the relevant policies. Studies in this field in Burkina Faso are limited to Compaore (1997),

Yelkouni (2004), Nguiguiri (1999) and Sambore (2001). Compaore (1997) shows that neither the age of the head of the household nor the proximity of the household can help to explain the degradation of the Ziga protected forest. On the other hand Yelkouni (2004) find indications that the older the farmer, the less likely his/her participation in community works. In addition, the author notes that the degradation of the forest is largely related to the expansion of agricultural and grazing land. Nguiguiri (1999) note that the current adoption of the participatory approach is based on the global political context dominated by democracy, sustainable development and the defeat of centralized models of development. According to Sambore (2001), the surrounding population of the protected forest area of Tissé could be better involved in conservation if they are better trained and granted more decentralized management of these resources.

## **2.7 Livelihood strategies**

Despite the fact that Non timber forest products (NTFPs) like Shea butter in developing countries are often used as supplemental food, a source of income, or traditional medicine, few studies have examined their role in these societies or key factors determining their demand. Such knowledge is needed to assess the importance and the dynamic uses of these products which, in turn, are essential inputs for tropical forest management policy. Most of the studies concerning NTFPs in Burkina Faso, Uganda and other countries are ethno botanic studies (Guinko, 1984 and 1985; Bognounou, 1987, 1988; Kéré, 1998) providing detailed information about the rural population's use of, and reliance upon, NTFPs. Previous studies have investigated the factors that determine the demand of NTFPs (Angelsen and Kaimowitz, 1999; Mamo *et al.*, 2007; Coulibalylingani *et al.* 2009). In Burkina Faso, Coulibaly-lingani *et al.* (2009) used a logistic regression model to investigate determinants of access to forest products in southern Burkina Faso and found that individual characteristics such as age, ethnicity, and occupation, sources of income, gender, household size and education level were statistically significant. Several studies show that some NTFPs, especially Shea butter and soubala, are subject to permanent marketing and generate substantial revenues for those involved in the trade (Lamien *et al.*, 1996; Pasgo, 1990; Lamien and Vognan, 2001). Moreover, Lamien *et al.* (1996) and Ouédraogo, (2002) point out the essential role of women in the harvesting, transformation and transactions of NTFPs in the markets.

This study aimed to evaluate the livelihood strategies of the actors towards the conservation of Shea Butter Trees in Lira Palwo, Agago District. In particular, the study focused on the

importance of Shea butter use and the change in use related to economic and demographic characteristics of the household. The results of this study may provide a basis for tree management within the parkland system and conservation policy in accordance with several studies (Anderson, 1990; Nepstad and Scharzman, 1992). These studies argue that forest management that includes consideration of NTFPs can reconcile economic, cultural and ecological values inherent in a tropical forest. Effective conservation and management of NTFPs has also been shown to improve rural economies and the welfare of indigenous people who rely on NTFPs for subsistence and cash income (Hall *et al.*, 1993; Belem *et al.*, 2007; Kristensen *et al.* 2003; Mamo *et al.*, 2007; Shackleton *et al.*, 2007 and Taïta, 2003)

## **2.8 Chapter Summary**

The chapter discussed concepts in line with Shea Butter Processing and Livelihood of the Rural Community, the Sustainable Rural Livelihoods Framework and the Traditional Knowledge on the Management and Conservation of Indigenous Trees in line with the study objectives. Findings from the review revealed that the influence of the change in livelihood strategies have a big impact on the conservation of Shea Butter Trees. This trend had left one wondering how the transformed livelihood strategies among the population could enhance sustainable utilization of SBT thus creating a research gap and the need to conduct this study. The next chapter discussed the methodology that was used.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter explained the methods that were used in this study to deal with the research problem. The chapter focused on the research design, study population; sample size and sample selection, data collection tools and methods and data processing and analysis.

#### **3.1 Research Design**

A research design was the overall plan or strategy for conducting the research (Oso and Onen, 2008). According to Kothari (2008, p. 31) “a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.” The research design was the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data.

Across sectional qualitative approach was used in this study as it had been clearly noted by Kothari (2008) that qualitative researchers deploy a wide range of interconnected methods endeavoring always to obtain a clear perception of the subject matter. In this study qualitative approach involved the use and collection of a variety of empirical materials by in-depth interview and focus group discussions. This approach allowed the researcher to identify recurring practices and meaning in individual’s activities. Since qualitative methods focus primarily on what people tell the researcher they do, enabling the researcher to understand what is going on its great strength in this study is that it can illuminate issues and suggest possible explanations. The process is essentially a search for meaning (Gilham, 2000).

#### **3.2 Geographical Area of Study**

This study was carried out in Lira Palwo, Agago District in Northern Uganda. Lira Palwo is situated 447 Km and 360 Km North of Kampala respectively (UDIH, 2006). Lira Palwo lies between latitudes 2<sup>0</sup>50 N and 2<sup>0</sup>00 N and longitude 33<sup>0</sup>10 E and 33<sup>0</sup>00 E (UDIH, 2006).



### **3.3 Target Population**

In the qualitative approach the study, considered both the farmers of Shea butter trees and all those in the community but with a clear knowledge of Shea butter trees.

### **3.4 Data Collection Methods and Instruments**

In order to explore the research questions and to elicit in-depth information on the livelihood strategies towards the conservation of Shea butter trees, this study was informed by primary and secondary sources, which was collected by an empirical study. Primary data was gathered through interviews, focus group discussions and observation while secondary data was collected from sources such as library, by reading texts, journals and by Internet.

#### **3.5.1 Interviews**

Interviews are a person-to-person verbal communication in which one person (or a group of person) asks the other questions intended to elicit information or opinions (Oso and Onen, 2008). Respondent's views were recorded.

#### **3.5.2 Focus Group Discussion**

Focus groups are group discussions which were arranged to examine a specific set of topics (Kitzinger 2005). For the purposes of this study, FGDs were conducted with two categories of both female and male groups aged 18-30 and 31-65 years. Each discussion group of about 8-10 persons were held separately and their views recorded to assess the livelihood strategies towards conservation of Shea butter trees in the study area (Krueger, 1988).

#### **3.5.3 Observation**

Interviews alone were not enough. As Beattie (1964), explains: "unless the anthropologist takes part in the culture ...he can never really hope to see it as its members see it". Only by at least some participation in community life or organization activities can researchers extensively understand peoples' perceptions.

In addition to interview, the observation method was used to collect information by way of investigator's own observation. The information obtained was related to what is happening and was not complicated by either past behavior or future intention or attitude of the respondents. In this current research, observation was conducted using observation schedule

and aimed to collect data related to livelihood strategies towards the conservation of Shea butter trees.

Observation method was found necessary for this study because it helped the researcher to collect data on issues and topics that might be uncomfortable to informants to be disclosed and help to notice unusual aspects. Observation was also used to clarify inconsistencies that arise between what respondents say and what they do or are actually happening in Lira Palwo, Agago District. In addition, it allowed the researcher to obtain data describing physical environment of the task.

### **3.6 Ethical Considerations**

Despite the high value of knowledge which was gained through research, knowledge cannot be pursued at the expense of human dignity (Oso and Onen, 2008). Thus, the issues of ethics were very important in any research undertaking. The major ethical issues of concern for this study was privacy and confidentiality, informed consent, anonymity and researcher's responsibility, especially during key informant interviews, while during focus group discussions, the group comprised of 8 members who were knowledgeable about Shea butter trees and others had spices in their farmyards.

With regard to privacy and confidentiality, the participants had the right to keep from the public certain information about themselves and that all data to be collected were used for purposes of the study. The researcher endeavored to observe this important factor. There was also the factor of informed consent. It is important that the researcher gets the participants' consent before he could proceed with his study. It is important that the participants decide on their own and voluntarily to participate in the study. To ensure voluntary participation in the study, the researcher provided the respondents with information on:

- The purpose of the study
- The expected duration of participation and the procedures to be followed
- Any benefit to the subject or participant
- Any unforeseen risk or discomfort to the respondents
- The extent of privacy and confidentiality.

These would encourage wide-ranging participation. Apart from that all participants were assured of their right to remain anonymous. Finally the researcher strived to be as sensitive as possible to human dignity as per human rights as enshrined in various national and international conventions and documents.

### **3.7 Conclusion**

This chapter presented the methodologies, which were used in this study. It provided the research design and described the study settings. It also discussed qualitative methodology, study population and sampling procedures and data collection methods. This study collected primary data and secondary sources data using methodological/tools of interviews, observations and documentary analysis. The study used triangulation method to ensure validity and reliability of data. Approaches to the presentation and analysis of data were also discussed. Finally, ethical issues relating to this study were presented and discussed.

## CHAPTER FOUR

### PRESENTATIONS AND DISCUSSION OF THE FINDINGS

#### 4.1 Introduction

This chapter presents and discusses the results from the study which was conducted in the qualitative study and literature review of various relevant documents. The presentation of discussion of results in this chapter is done following the study objectives, which were.-

1. To study the influence of existing structures and processes in transforming vulnerability context of communities into sustainable livelihood strategies in Lira Palwo Sub County.
2. To evaluate the different roles played by actors in influencing communities to select and cope with the livelihood strategies in Lira Palwo Sub County.
3. To find out the conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context.

In summary the following were the findings presented after carrying out the survey on livelihood strategies on conservation of Shea butter tree in Lira Palwo Sub County;

During the survey, the main vulnerabilities noticed were family break down and domestic violence that came majorly as a result of alcoholism and poverty which is rampant in the community hence some men tend to leave their responsibilities to their wives and it brings quarrels in the home. Also other vulnerabilities that were identified high education costs where many children were not going to schools because they could not afford the expenses. Those who could afford were very few and were struggling looking for money from natural resources and sales of crops. Malaria outbreak was also noted as one of the vulnerabilities that people were struggling to solve. To the lesser extent the Karamojong raiders were also noted as a hindrance to food security by instilling fear in the life of people and demotivating communities from stocking dry rations.

The existing structures were; private businesses/commerce, family structure, local government and Traditional culture. There was existence of small private businesses inform of petty traders. Charcoal burning and selling was found in the area also observed which was run through stores operated by big buyers. Furthermore some participants admitted to own some of these charcoal stores. Extended families and nuclear families were identified in Lira Palwo Sub County where each of these families subscribes to a specific clan that it belongs to

and is answerable to their specific clan leadership. This tradition has always enabled easy environmental accountability where SBT has been able to survive thereby conserved. It was also observed that there were local government structures which were indicated by the existence of local council leaders such as local councils one, two, three and five. These are in charge in governing the affairs of the community through drafting by-laws, keeping law and order, settle disputes in the community. Local culture was identified in form of local cultural leaders for instance “**Rwot kweri**” who are in charge of village group cultivations said by one of the participants in the interview carried out in Lira Palwo Sub County

The existing processes or system found in Lira Palwo Sub County during the survey includes; education system, government policies, land laws, agricultural extension system and leadership. Also government funded primary and secondary schools running i.e. Universal Primary Education and Universal Secondary Education were found to be in Lira Palwo Sub County for example Lira Palwo P7 School, Biwang P.7 School, Obolokome P.7 School, Lacek P.7 School, Lanyirinyiri P.7 School, Abone P.7 School and Lira Palwo Senior Secondary School. These primary schools are located in the four parishes of Lira Palwo Sub County they have only one secondary school in the sub county. During the group discussions, it was emphasized that there is limited influence by government on environmental related policies in the area as most of the elected leaders such as local council leaders rarely attend to the community in time of solving such a related problems, lack of implementation of land laws has lead to much pending land conflicts, this conflict partly is brought about by urbanization, globalization and lack of knowledge about existence of land laws, this has reduced on the farm production as stated by one of the key informant in the discussion sessions. It was found out that the leadership process is bureaucratic were there is high up to lower level system both in the formal leaders and informal leadership structures. No leadership level can be bypassed which delays implementation of some decisions.

The livelihood strategies that the people of the area are involved in are crop cultivation such as; simsim, ground nuts, sorghum, millet, maize, cassava, and cotton. Also some people keep livestock such as goats, cattle, and poultry. Charcoal burning is regarded as petty trade. Shea butter processing activities, firewood, herbal medicine processing, carpentry, timber processing and joinery are all livelihood strategies linked to Shea butter tree. During the group discussion it was emphasized that charcoal burning is influenced by private businesses such as charcoal stores in Lira Palwo Sub County owned by big charcoal buyers who collect

from different charcoal makers in the villages, these tend to store the charcoal in one location and when they have collected enough to fill a lorry then they transport to central business towns such as Kampala, Jinja, Wakiso, etc. This information was revealed by the big charcoal buyers who stated that they transport the charcoal to towns where there are better prices ranging from 60,000 to 120,000 per a bag. While as in the local community they buy at a rate of 12,000 to 18,000 per a bag. The community members claimed that one of the things that encourages them to carry out charcoal burning is the existence of ready market provided by the big charcoal buyers who own charcoal stores in the area, they also do not incur any transport costs, there is also high price tag to charcoal quality coming from Shea butter tree because the price tends to go up to 18,000/=.

## **4.2 The influence of existing structures and processes in transforming vulnerability context of communities into sustainable livelihood strategies in Palwo Sub County**

### **4.2.1 Political leadership**

Group discussions held with the elderly, the youth and a mix all indicated that the current political leadership style in Lira Palwo Sub County only encourages pleasing citizens inform of political talk and making promises, without guidance for corrective behavior. Particularly one of the participants in the elderly group claimed that during the last February 2016 general election, leaders were more concerned about the number of votes they would fetch from the community, restraining the people from destroying the natural resources for fear of incurring a political loss. One critical area that leaders need to play a vital role is guidance of community in managing the vulnerability context in which they are. For example climate change, manifesting in form of prolonged drought, delayed rainfall, heavy floods have not received due attention from the political leadership.

One of the community members confirmed it and said sometimes it rains heavily for days with floods destroying crops and houses. And when the dry season comes it becomes too dry causing wild fires which may accidentally burn up people's houses and produce in the gardens. The people most times tend to look up to the government and other stakeholders for rescue which for this case either comes late or never at all, this influences the people to resort to natural resources by carrying out charcoal burning.

An elderly man further stated that the erratic rainfall and prolonged drought during the dry season, clearly indicates that climate change has a major implications for Iira Palwo Sub County's ability to produce food for its population.

Many studies have addressed, observed and projected changes in land cover and land use as a result of climate change (e.g., Backlund *et al.* 2008, Harsch *et al.* 2009, Iverson *et al.* 2008, Shafer *et al.* 2001, White *et al.* 2010). Shea butter trees as other vegetative plants provide land cover as the observed biophysical cover of the Earth's surface (e.g., oak-hickory forest, grassland).

Looking at it from the national perspective, leaders have also failed to be exemplary in managing natural resources where they have gone ahead to appropriate big acreages of forest land, in favor for large scale arable farms cleared down existing natural resources such as the Shea butter trees for example forest reserve in Agago ranch. This kind of leadership with selfish mentality has affected and influenced the choice of livelihood strategies in the communities. The respondents reported that communities where leaders own big chunks of land, there is high practices of Timber cutting, and bush clearing in favor for big agriculture based activities that do not favor, the conservation of natural resources including SBT.

During FGD, one of the civil servants stated that the government policy that does not allow government workers in active politics, necessary politicization, political processes, and leaders highlighting group divisions are major causes of less seriousness in the implementation and enforcements of policy which in turn has led to a non-development in many communities.

People in politics often fear the idea of empowering villagers who will be able to think on their own and vote. For example the Uganda Forestry Policy (2001) has failed in the area due to fear of leaders to lose power. This policy offers the needed guide and identifies the various categories of stakeholders that will contribute to the development of forestry in Uganda as well as natural resources such as SBT.

During the FGD with the youth, one successful charcoal trader said that some people who get themselves addressed as the head of a village are afraid of losing power as villagers become united and self-reliant and do not remain dependent on him and stop calling him "chairman or Hon" (head). While one councilor also stated that if you become tough on the policy the voters threaten not to vote you in power again hence many leaders shy away from

emphasizing on implementation of these environmental policies. Outside vested interests within leaders were cited by participants in the youth FGD as part of the reasons that do not allow the villagers to unite which would have strengthened their voices to make leaders accountable for SBT conservation. These interests were enumerated by one of the area councilors as national political parties, economic interest, and religious beliefs. This is also supported by Hazare (2003) and UNHCR, (2003) who related these interests to affiliation to different political parties, castes, and status etc. The youth in the FGD also reported during the study that, some local leaders encourage economic activities that support the destruction of natural resources. Such leaders vest much of their interested in the projects such as charcoal and wood work from Shea butter tree, hence degrading the conservation practices in the community.

This implies that when such interest override leaders and community power structures, most grassroots-level communities, particularly in rural areas, experience extreme deprivation, oppression, and discrimination for a long time. Irrespective of political structures, democratic or otherwise, the current social, economic, and political arrangements are commonly advantageous to local elites and feudal leaders. Existing government bureaucracies often tend to please, or comply with the requirements of these leaders. Hence, any change that aims to alter the current status quo is likely to be resisted by some elements within these grassroots-level communities. This political practices influence the vulnerable community to adapt the livelihood strategies that will impact on the Shea butter trees and the environment at large negatively. In a similar vein, Uvin (2004) states that human rights values/principles focus on social structures, loci of power, rule of law, empowerment, and structural change in favor of the poorest and most deprived. Thus, to be true to their values and principles, social workers need to politically engage with local communities. However in the case of Lira Palwo sub county social workers are far from being true to such involvement. Technical policy and ordinances that could help in the environmental conservation are enacted by political leadership but fail at implementation because of lack of collaboration with the technical staff thus affecting the conservation of Shea butter trees.

The FGD among the local leaders indicated that there is too much mingling of political activities that take people's time especially the youth even when it is not time for elections. These forces have pushed many energetic persons to urban centers to look for quick money and as a results of urbanization, leaving the elderly non energetic in rural areas struggling



with life, who eventually divert on their dependence on the existing natural resources, through charcoal making, woodwork and bricks making that require firewood as well for baking the bricks.

Generally, political interaction has a big influence on the livelihood strategies such as failure of rule of law has motivated land grabbing, poor environmental conservation and lack of guidance to handle climate change vulnerability. This has deprived the existence of rule of law in Lira Palwo Sub County. Breakdown of knowledge system; de-motivated extension staff cannot provide knowledge to the community members about environmental conservation strategies and advantages. Lack of appropriate guidance in the area has endangered the Shea butter tree species.

#### **4.2.2 Security status**

It was reported by one of the community elders during an interview that previously the people of Lira Palwo were cattle keepers but were deprived of their traditional livelihood due to raids on their cattle and livestock when the security status of the area became weakened. The community members explained that during the insurgencies in northern Uganda, the Karamajong got access to guns and raided the people of their livestock. The livelihood had to shift to crop growing and even the previous places which were not under crops cultivation the community had to encroach on those marginal lands, hence disturbing the Shea nuts tree plantation. Nevertheless residence of the sub county expressed that with the intervention of Uganda Peoples' Defence Forces (UPDF) disarmaments, people have started restocking, giving natural resources including SBT to rejuvenate again on the animals grazing. The disarmament exercise was undertaken by UPDF third division which reduced the number of illegal guns from an estimated 29,000 guns to 700 (The Daily Monitor, 2010).

Legal protection from the UPDF disarmament program restored confidence and hope to the community members to develop sustainable livelihood like animals rearing that does not compromise the conservation of Shea butter tree, because this livelihood practice promotes agro forestry farming system.

All in all, the presence of peace has enabled people to rear animals hence leading to promotion of shear butter trees conservation. There has been reemergence of marginal lands which is giving more advantages to the conservation of shear butter trees.

### 4.2.3 Health system

During the survey it was observed while we were visiting both of the health centres in Lira Palwo Sub County, these are health center II and III. One of the health workers stated that these health centres were always crowded with people suffering from malaria. But of the three health centers found in Lira Palwo Sub County one was not functional. One of the health workers claimed that they were facing challenges of shortage of drugs and other patients who are required to have food supplements hardly get them because they cannot afford them.

It was reported by one of the health workers in the FGD that diseases like hepatitis B, and HIV/AIDS were reported in the area, there were no help inform of treatment being given to those who are infected. A VHT member said;

*“HIV/AIDS patients have to move for about 30km to look for the ARVs and other medications which they cannot afford because of poverty.”*

This forces them to look for the next best alternative to find money to support them. When asked how they will get the money to settle the hospital bills one woman testified that she would send her son to sell her dried Shea nuts to the nearby market, may be from that she will get some money.

Therefore, vulnerabilities such as sickness have left the people in Lira Palwo Sub County to depend on the shear butter trees as their survivor. One of the elderly men (Okech Phillips) in the area said:

*“.....the quickest money for emergency can be got from shear trees products which can be sold...”*

Health centers, and family structures have helped the local communities to get some assistance to restore their health and with that they go back to get survival from their normal livelihood activities.

According to the focus group discussion carried out, it was indicated that the presence of health centres has been able to provide health services such as drugs and other health related products but at a very minimal level. A VHT from Wimunu village in Lanyinyiri Parish, Lira Palwo Sub County said that,

*“These poor health services has affected the level of health among the community members who have been involved in other livelihood strategies such as crop growing, animal rearing; but due to the health defects, they tend to be forced to look for the quickest means to get money to cater for their health and lives in terms of buying food and other basic needs”.*

This has influenced the livelihood strategy of the people of Lira Palwo sub county in cutting down of SBT for charcoal burning, and for firewood for selling hence endangering the conservation of SBT and the ecosystems.

#### **4.2.4 Cultural norms and community belief**

Results from the FGD carried out among the elders of the community indicated that there is a value community attached to the tree (Shea and butter). The community attaches the high value to nature as one elderly man emphasized:

*“Culturally it used to be a sin /taboo, which would lead to massive punishments from the leaders (traditional chiefs), either by punishing or fining whoever cuts the Shea butter tree unnecessarily”*

According to the same discussion group, necessary cutting of Shea trees is restricted to pruning or thinning for purpose of conserving others, removing the one that fell down due to storms. In so doing, it would boost conservation of the tree and influence the livelihood strategies of community members by restricting choices that would encourage cutting SBT down and few or none would cut it.

An elderly man during the individual interview said that culturally in northern Uganda, Shea butter is used for smearing bodies of newly born babies and pregnant mothers. And in some areas, Shea butter is kept for social needs such as gifts for births and weddings, or dowries. Such uses can provide incentives for conservation of Shea tree species in the area while at the same time enhancing economic growth said by. He further stated that smearing new born babies and the pregnant mothers is a long time practice with Shea butter oil.

As to how it helps in conservation the elderly man had this to say:

*“Traditionally, farmers do not cut all trees at the time of land clearing for agricultural production. They usually preserve valuable species such as Shea tree and nurture them in the*

*crop fields. Shea trees easily regenerate naturally and are not traditionally planted but are spared during clearing of land for agricultural production.”*

This concurs with Obua (2002), that the decision to conserve or plant a certain species of tree is dictated by the beliefs and myths of the community about such species. Much as the importance of traditional practices as a basis for conservation of biodiversity is gradually gaining universal recognition (Berkes *et al.* 2000; Colding and Folke 2001; Kajembe *et al.* 2003; Mgumia and Oba 2003; Moller *et al.* 2004; Saj *et al.* 2006) it was also reported that, cultural values in the area are diminishing due to cultural integration brought about by globalization and urbanization. Perhaps this is also because of the little attention that the community members and leaders of Lira Palwo Sub County are putting on the cultural values and beliefs on the conservation of shear butter trees.

According to the interviews carried out with the elders in Lira Palwo- they claim that there are supernatural powers in Shea butter trees and that if cut they would lead to annoyance of the ancestral spirits, and it would lead to natural calamities such as earthquakes, prolonged drought, heavy rains and many others such as infertility, famine and death. One of the respondents during the interviews revealed that it's the responsibility of the traditional chief “**Rwot Kweri**” to fine and punish those who are found falling apart the community norms. And in conditions where there are natural calamities, the traditional chief is required to perform ritual with the use of Shea oil, which strategies have a clear link in influencing livelihood strategies. An elder in the area claimed that there are routine periodic rituals carried out especially in the month of May and August when there are such calamities befalling people. The existence of this belief has contributed to the Shea butter tree conservation in the area effectively.

It was pointed out by one of the elderly women during the FGD that the presence of religious people in the area, the belief is dying out and very few community members are left carrying out such rituals and beliefs which has left the Shea trees vulnerable to cutting down. People of other religions never hesitate to cut down Shea nut trees because of the lack of this cultural belief.

Traditional conservation practices are accorded in formal natural resource conservation which Colding *et al.* (2003) related to failure to appreciate the ‘immense conservation capital’ in traditional systems. An inherent feature of traditional conservation is the central role of

cultural and traditional practices (Hongmao *et al.* 2002). Cultural practices include a set of social behaviors and responsibilities that are important to a community of people (Arnett 2007). It was observed from the survey that there are no written bi-laws which legally support the Shea nut butter tree conservation. What is referred to as a bi-law is just a belief on Shea butter trees.

According to the above findings supported by earlier authors where the cultural related to the tree are strong even the likelihood of people's livelihood strategies to conserve the tree are high. The case is where the community values the tree for baby upbringing they do not cut it for charcoal but prune for regeneration and make their living out of farming and cattle keeping.

#### **4.4.5 Family system**

Basing on the survey carried out, half of the people interviewed emphasized that there is existence of high rates of family breakdown and domestic violence that has left many families unstable socially, economically and emotionally. One of the culprits of this weakened family position is the transfer of conservation knowledge and values via the family structure. The children do not have quality time to hear observe or be mentored into practices of traditional SBT conservation. When asked about how important families were in teaching them about SBT conservation practices, a group of youth had this to say:

*“...we are of a different generation. Knowledge transfer on shear butter tree conservation through folk songs, storytelling was an act of old generation. With television, radio, internet, and social network we have our other ways of accessing knowledge. We don't have the time to sit with the elders at the evening fire points to get such knowledge.”*

According to the FGD with the youth, it was indicated that the youth do not know the value of Shea butter trees, they will not have the fear of it being a sin and taboo to cut them down and yet they are the biggest population, this has endangered SBT survivor.

One of the women in the FGD reported that some women especially those left alone carry out the bulk of agricultural production, they cannot freely use the produce they obtain but have to ask for permission from their husbands who sometime disagree. Such disagreements over the use of financial resources most often lead to family tensions and domestic violence as men

reassert their authority within the households. GBV negatively influences human assets of both perpetrators (mainly men) and survivors (mainly women) of violence) gender inequalities may as well push the persons affected by GBV into a downward spiral of poverty, preventing them from living a healthy and dignified life. Negative impacts of GBV are particularly devastating on women and girls.

This woman further stated that the survivors are left so vulnerable to the point that they look for survivals in natural resources and Shea butter tree since is in the area are targeted in form of firewood and charcoal. Hence these women and children tend to put too much focus on the Shea butter trees which has led to its extinction.

It was reported by a counselor through an interview that girls are forced out of school because of defilement, rape and or constant sexual harassment, Others cannot build skills required for future survival because they are forced by families into early marriages or commercial sex as a way of gaining food, income and school fees, among others. This was confirmed by a young girl (her age was estimated to be at 14 years) carrying a child on her back and they said that she was the mother of the child.

During a focus group discussion among the women, majority of them confessed that their movements were restricted by their husbands as well as their involvement in community civic education and trainings, including agricultural extension services or farmer field and life adult schools, psycho-social forms of violence hinder their access to information and better farming practices. This was identified as one of the core vulnerability factors to such village women. The result showed that agricultural programmes that target farmers may fail to achieve its objectives if women who carry out the majority of farming activities, are not involved. Therefore this has affected the livelihood strategies of women, who tend to resort to selling charcoal got from the Shea nut trees.

The claims from two leaders and three elders during the FGD indicated that fatal GBV outcomes had resulted into labour shortages and declines in productivity this was pointed out by one man who confessed he lost a wife who committed suicide after getting involved in quarrelling with her co wife. And such cases are common in the area. The declining productivity, in turn, leads to declines in income through both decreases in the household's own production and through declines in off-farm income and remittances, which leads to increased food insecurity and malnutrition. This therefore has triggered people' level of

reliance on charcoal burning which has not contributed to natural resource and environmental conservation of Shea Nut Butter trees.

It's argued that conservation activities in developing countries must integrate gender awareness into their practices. Sodhi *et al.* (2010) in their article "Empowering women facilitates conservation" identify that women are exceptionally needed in conservation for three reasons: "women are better at communicating with women regarding environmental issues, women may be more adept at identifying female related issues in conservation thereby bringing fresh angles to solving environmental problems, and women can provide leadership and serve as role models for younger female conservation professionals." Similarly, Agarwal (2009) determined that women's participation in forest management decisions led to better conservation outcomes. This was not a case in Lira Palwo Sub County because GBV, Family Breakdown and alcoholism has grown and is growing rapidly in many families and extended family clan methods that used to help in mitigating such vices, due to the long encampment had broken such structure down. This therefore has made many women and children vulnerable and has pushed them to look for survivor from Shea nut tree or other natural resources of that kind.

Traditional norms and knowledge needs to be transmitted from generation to next one if cultural conservation practices are to be sustained. Mafu (2004) reported that transmission of cultural practices from generation to generation is usually through folklore in an oral manner. However, there is lack of clarity in understanding the relationships between cultural practices, traditional practices and folklore. According to Ben-Amos (1971) and Kuruk (1999), folklore includes all the un-codified practices of different communities and consists of legends, sayings, words, poetry, riddles, songs, dances, plays and all works that portray the culture of a community.

The findings clearly indicated that the process of population growth in Lira Palwo Sub County appears to be growing faster; this has been reported by one of the respondents during mixed focus group discussion when the participants were asked about the average number of members in their families. And they said it was about 7-9 members in a family. And one elder stated that this has doubled compared to the last previous 10 years which was about 4-5 members in average per family.

According to Buyinza, (2015), extensive degradation of plantations occurs mainly in areas where charcoal burning is mainly practiced. The combination of human population growth, overstocking and invasion by agricultural has resulted into over utilization and irreversible damage of Nakasongola Shea butter tree parklands. There has been regular bush fires and burning of charcoal due to high human population growth. Charcoal burning is the biggest threat to Shea conservation in Nakasongola District.

The existence of family structure that encourages extended family structure, early marriages, and polygamy that do not have any deliberate plan to regulate population growth, implies that there is limited influence on the livelihood strategies whatsoever that help to check the population growth in the area in order to save and conserve Shea butter trees.

With different family structures come family breakdowns which affects women and children who are deprived of financial support and land for farming. These are forced into livelihood strategies that endanger SBT for example charcoal burning or firewood selling. In absence of stable families, the young generation does not have enough opportunity to learn about the cultural values attached to the resource hence they easily decide to destroy the trees without any sentimental attachment.

#### **4.2.6 Legal processes**

According to the observation carried out in the communities of Lira Palwo Sub County, it was found out that the community members have less knowledge of existing land laws. And the responsible stakeholders such as government are not there to educate or explain these laws to them leaving these people on their own. Not even the local government ordinance is formed by local council.

One of the key participants in the FGD stated that there is lack of government policies to protect the natural resources which clearly indicated that there is ignorance about the policy framework to guide, protect and help community members in carrying out economic activities that can lead to less exhaustion of natural resources such as Shea trees as their last resort for carpentry and joinery, firewood for charcoal burning which leads to high depletion of Shea trees. For example there is a forestry policy (2001) NEMA act (2014), and wetland management policy (1995) all of which the entire community including the sub county leaders couldn't explain.



Due to lack of knowledge of the existing policies, the community members of Lira Palwo Sub County livelihood strategies have not been influenced in any way by any policies related to environmental and ecosystem conservation hence people tend to look for the cheapest way of earning a living which includes cutting down Shea butter trees for charcoal burning and firewood as it is illustrated in the picture below.



*Figure 3: Picture of Shea butter trees that have been cut down for charcoal making*

#### **4.2.7 Education systems**

Most of the respondents during FGD said that education in Lira Palwo is too expensive today due to the commercialization of the education system. The existing government schools have poor education system which is too theoretical and therefore irrelevant, blaming it on the lack of technical and practical training in schools: some of these gave examples that we have very many quality private schools in the neighboring districts and sub counties but need money for one's child to attend such a good school.

During focus group discussion and observation, it was noticed that there were signs of abject poverty in the area which cannot allow them to sponsor their children to good school hence they resort to quicker means of looking for money from existing natural resources such as products from Shea butter tree. The fact that many youth may fail to complete school they will not have professional skills, their livelihood strategies will tend to depend on cheap labour activities such as brick making and charcoal burning which puts a heavy burden on Shea butter tree to provide wood for charcoal and for burning bricks since its one of the existing natural resources around, this affects the conservation of the SBT.

Furthermore, a retired teacher found in the community during focus group discussion argued that “the curriculum is sometimes designed in a way that these children who go out cannot practically put into practice agriculture and environmental conservation skills learnt from class.

The retired teacher further stated that the existing education system was an influence to the livelihood strategies of households. This has eventually forced many persons in the community to depend on natural resources including Shea butter trees. It was reported by many participants during mixed FGD that the introduction of UPE and USE and their relevance has not been felt in Lira Palwo Sub County. They also emphasized that many households are transporting their children to long distances to acquire quality education. This is going at a cost and exerting pressure on Shea butter trees and other natural resources for charcoal and fire woods gathering.

Education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal and non-formal education is indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviours consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated into all disciplines, and should employ formal and non-formal methods and effective means of communication (CMEC), keeping in mind that, Education for Sustainable Development: improve basic education, reorient existing education to address sustainable development, develop public understanding, awareness, and training (McKeown, 2002).

According to one of the elders in the FGD, he stated that the education system has not done much to bring the knowledge of conservation of Shea butter tree hence many people look at

Shea butter tree in a perspective of wood and charcoal burning as materials, this has negatively influenced the livelihood strategies in the conservation of Shea butter trees.

This implies that there will be a lot of school dropout, many youth will not be innovative and their livelihood strategies will be limited to the existing natural resources hence Shea butter trees will not be conserved because it will be a victim to firewood and charcoal supplies for sale so that these youth can earn some income to meet their day to day demands.

#### **4.2.8 Land ownership processes**

It was reported by one community elder that most of the areas in Lira Palwo Sub County do not have land titles and most of it is communally owned. Implying no one has any single right to claim ownership as an individual person. This process of land ownership has limited the community members' ability to carry out large commercial farming which could bring in large profits from farming. Therefore to supplement their income they resort to natural resources in search of firewood and charcoal for sale.

According to the interviews carried out with the local leaders, it was reported that the existence of communal ownership of the land system has left women out on land ownership and yet they are the most active in tilling the land compared to men. This therefore has forced women to embark on the natural resources for this case Shea butter trees for firewood and charcoal. These livelihood strategies do not encourage SBT conservation.

The local leaders also reported during FGD and face to face interview that there is too much land related conflicts and disputes, this came as a result of the return of the people from the two decade LRA civil war encampment and the increment of the population as well as internal migration and commercialization of land, this traditional land ownership system tends to force the women to look for survival in a natural resources and many have adopted charcoal burning, wood and bricks making. Most people in this area are agro-pastoralists and are heavily dependent on subsistence mixed annual cropping and livestock production for their livelihoods. But in an event were land conflicts is so rampant, they are deprived of the rightful use of the land hence the vulnerable people are forced to encroach on natural resources such as, swampy areas and in the forest reserves consequently it affects the conservation of Shea butter tree.

One of the elders who were interviewed emphasized that the management of tree resources in the study area is driven by customary land tenure. Land ownership is regulated by local customs through clan affiliation. Land and tree resources are owned by families or households by superintendence of clans through which rules on land tenure are enacted. Although most of the Shea tree belt has experienced a large increase in human population, there are considerable areas under fallow in the northern farming system (Adebua *et al.* 2002). Land fallow periods are variable and are based on human population size, with short fallows ranging between 1 and 5 years (Byakagaba *et al.* 2011). Long fallows may range between 5 and 10 or as long as 10–20 years (Okia *et al.* 2005; Byakagaba *et al.* 2011). With long fallowing system which is 10-20 years, conservation of shear butter trees would be favored. But for the case of Lira Palwo Sub County, only short fallowing system are available which does not enhance the SBT conservation because people do crop cultivation regularly in the same piece of land and in the due process cut Shea butter trees to favor their crop growing.

Both elders and local leaders during FGD confirmed that communal land ownership allows shifting cultivation which gives time to bush fallowing that most times lasts from four to five years, however little is known by the community members of Lira Palwo Sub County about the land laws and its ownership because both the local and central government authorities are not creating awareness about land laws.

This implies that the lack of land titles brings about land conflicts and encroachment to forest reserve areas and this land ownership style leaves women vulnerable to suffering hence this has influenced their livelihood strategies. Leaving them to rely on the existing natural resources such as Shea butter trees for their survival by carrying out activities like charcoal trade.

#### **4.2.9 Usages and Management of Shea Butter Tree**

Based on the survey results carried out among household women, one of the women indicated that they use Shea butter for oil, medicinal purposes, for food, as smearing oil, sale to earn some income which is sold in form of oil and raw Shea nut. They also indicated that their husbands get building materials for example fox pole which is got from a dry Shea butter tree, tool handles for axes and hoes from the Shea nut trees especially their branches.

And it was observed that all these benefits the community members get from the Shea nut trees are acquired locally without any improved technologies.

According to some school pupils of Biwang Primary School in Lira Palwo Sub County, they acknowledged the advantages of Shea trees to be of help in rainfall formation, act as wind breakers, provide shade to the crops and cools the surrounding environment.

According to Colding and Folke (1997), there is relatively high diversity of uses of Shea trees recorded in the Northern and West Nile farming systems compared to the Teso farming system may be the result of differences in knowledge of taboos and cultural rituals between the farming systems. Natural resources that are often used are usually protected by indigenous communities through co-evolutionary processes that involve taboos and cultural rituals. Hence, ethnic groups in the northern and West Nile farming systems probably still retain more intimate knowledge and relationship with Shea trees compared to those in the Teso farming system. It is also generally accepted that frequent exposure to the natural environment is a major avenue for acquiring knowledge of traditional uses (Pilgrim 2006).

Regarding the traditional management practices, there were strong similarities with those that are practiced elsewhere in the Shea belt of Africa (Boffa 1999; Boffa *et al.* 2000; Djossa *et al.* 2008; Hall *et al.* 1996; Lovett and Haq 2000; Maranz *et al.* 2003; Masters 2002). Undesirable trees are cut down while selected trees are spared during weeding. Pollarding and pruning are popular in the study sites but they are considered to be ‘subconscious’ management practices (Lovett and Haq 2000), as they are usually undertaken with different intentions. Pollarding, for example, may be done to obtain branches for conversion to charcoal which is sold to cater for immediate financial needs. Whereas fruit yields depend on the maturity of the tree age, vigor and health (absence of infestation with mistletoes) are important considerations for Shea tree selection in West Africa (Lovett and Haq 2000; Maranz *et al.* 2003), only nut/oil yield, pulp taste, prolific fruiting and size of nuts influenced Shea tree selection in West Africa. While the Shea oil production is clearly the central focus of Shea tree selection in West Africa, Shea trees are viewed much more as important components of agro forestry production systems (Boffa *et al.* 2000). Subsequently, Shea tree uses as well as the economic contribution to livelihood strategies of the local people are very important in the conservation of Shea trees.

This study also shows that the utilization of the Shea tree and its products in Uganda is not different from that reported elsewhere in Africa. While there are references to the medicinal and cultural uses of the Shea tree, such as in the making of funeral beds, pregnancies, births and weddings (Goreja 2004), the use of Shea oil in war rituals that is reported here has only previously been reported in Uganda (Sturges 2008). The use of Shea tree products for commercial purposes was not as prominent as it is in West Africa where Shea butter is marketed internationally through organized groups under fair trade arrangements (Francois *et al.* 2009; Greig 2006). The sale of Shea oil in Uganda is at subsistence level in the local market (Ferris *et al.* 2004). This is probably because of the informal nature of Shea oil trade in Uganda where the market sector is entirely traditional and commercial consumption levels are minimal (Ferris *et al.* 2004). The low commercialization of Shea tree products, especially Shea oil, is probably due to the increase and availability of alternative oil for cooking, e.g. sunflower, simsim and palm oil as well as modern skin care products that are more vigorously advertised on the local market.

Use of the Shea tree for firewood, charcoal, poles and domestic tools was mentioned. This is in contrast to widespread cutting of Shea trees in the area (Okumu-Alya 2009) and its use for charcoal or firewood as reported by Ferris *et al.* (2004). Shea tree wood is highly preferred over wood from most savannah trees for tool handles and poles mainly due to its durability and resistance to termites (Hemsley 1968; Okia *et al.* 2005).

With regard to ecological service roles (Bayala *et al.* 2006; Traore *et al.* 2002) confirmed the importance of Shea trees in soil conservation, soil fertility, wind control and shade. Shea trees are known to play important roles in microclimate modification, nutrient cycling and soil fertility, especially in crop gardens of the parkland agro forestry systems. The shallow root system of Shea trees also stabilizes soil structure against soil erosion and acts as a wind break (Hall *et al.* 1996).

According to the report by elders and councilors during mixed FGD, they stated that the low commercialization, industry processing and improved technology in adding value to Shea butter products in Lira Palwo Sub County is affecting its conservation. Private businesses such as charcoal selling instead have been resorted to as alternative livelihood strategies and the government, private entities, NGOs and leaders are not helping or influencing the community of Lira Palwo by providing programs on the value addition and commercial benefits of Shea butter, also weak enforcement and implementation of existing policies such

as forest policy (2001), they are failing to provide alternative sources of income to vulnerable communities for example rearing of small ruminant animals and poultry keeping. This therefore makes people have a narrow use of Shea butter tree hence they don't put much emphasis on its conservation.

In conclusion therefore, the following process and structures have been found to have a negative connotation on the conservation of Shea butter tree in Lira Palwo Sub County; process of political leadership, the process of security status, structure of family system breakdown, process of globalization and climate change, process of external influences on conservation of SBT, structures and processes of education system, process of land ownership and process of population growth. This is because the government has not put in much attention in implementation and supporting of these structures and processes.

There was one positive process being practiced to conserve SBT that is use of cultural norms and beliefs which are characterized by believing that Shea butter tree has some spiritual attachment hence a sin or a taboo to cut them. This has protected the Shea butter trees from unnecessary cutting down.

### **4.3 The roles played by different actors in influencing communities to select the livelihood strategies in Palwo Sub County.**

In an attempt to find out from the authorities of Lira Palwo Sub County if there any actors who are involved in influencing the community in the conservation of Shea butter trees, they mentioned the following;

1. Environmental bodies (NEMA)
2. Agriculture extension workers
3. Traders
4. Charcoal producers

#### **4.3.1 Environmental Bodies (NEMA)**

Based on the results from the study, the role played by NEMA and NFA cannot be traced from the community since they were not aware of them, on conserving the environment and natural resources.

Forests are a critical source of ecosystem services, which underpin the livelihoods as well as the having impacts on the sensitivity and adaptive capacities of many economic sectors at

local, national, regional and global scales (Russell *et al.* 2013). Continued forest degradation and loss in Uganda have a significant negative impact on people's livelihoods and the provision of ecosystem services.

In 1993, the Government of Uganda initiated a process of devolving forest management authority of central forest reserves to district governments. The high rate of deforestation and the global paradigm shift on forest management following the Rio Declaration, which Uganda ratified, were cited as the major reasons for these governance reforms in the forest sector (Banana *et al.* 2007; Turyahabwe *et al.* 2007). To implement the new framework of managing forests, a new forest policy was formulated in 2001 to develop an integrated forest sector that could achieve sustainable increases in the economic, social and environmental benefits from forests and trees for all the people of Uganda, especially the poor and vulnerable. It recognized conservation, sustainable development and institutional reforms, such as collaborative forest management, as critical in forest management, however much efforts have been put on planting new trees, in bulk ignoring single standing trees like Shea butter which has greatly influenced the livelihood strategies of community members.

According to the elders and youth participants in the FGD, they indicated that there was no existence of environmental bodies such as NEMA or NFA in Lira Palwo Sub County. We made an effort to reach the focal person in the district level who gave us the following reasons; they are understaffed, lack funds and facilitation to reach the sub county or parish level and because of that they wait for any specific sponsored program where the central government does not even come, therefore there is lack of environmental conservation information or any sort of guidance rendered to the community members. This has not influenced the community selection of livelihood strategies in Shea butter tree conservation levels.

It was reported by one of the charcoal traders during the interview that the NFA agents are only concerned about whether these charcoal dealers are paying taxes and so long that dealers have the trading license they don't care of what type of trees (Shea butter trees) are used for the charcoal making and the vulnerable community never tends to have any option to resist since they are poor. This has promoted charcoal burning which has negatively influenced the conservation of Shea butter tree.



### **4.3.2 Agricultural Extension Workers**

According to the community members who were interviewed in Lira Palwo Sub County, they said that extension workers that normally come to their village put much emphasis on modern farming practices by promoting both large scale and small scale farming practices, they hardly talk about the management of Shea butter trees. However observation also proves that the existence of extension workers in the community could be seen on some few gardens along the road side which are planted according to modern agricultural practices (i.e. row planting among others). When we talked to the extension workers they said that they follow the NAADS program and only reach out to selected enterprises by particular communities or groups which those programs are paid for and they are restricted according to the work plans.

According to Abdu-Raheem and Worth (2013), human welfare relies primarily on the diversity of biological resources, its sustainable use and the equitable distribution of its derivable benefits. All too often, the way we organize, control, and govern developmental processes pays little heed to this reality, thereby subjecting biodiversity and the associated ecosystem services to degradation, to a degree that jeopardizes the welfare of the most poor. Changing the status quo for the better is not only achievable, but of paramount importance for the success of this generation and that of the generations to come.

The youth during the FGD stated that the presence of the extension workers in Lira Palwo Sub County was not much of relevance to environmental conservation. Therefore this indicated that the extension workers do not have direct influence on the community's livelihood strategies in the conservation of natural resources including Shea butter trees.

### **4.3.3 Traders**

It was highlighted by one of the charcoal traders during FGD that the high increase of trade in Lira Palwo Sub County, has brought about a number of traders for timber, charcoal, firewood, among others. It was further reported that some traders dealing in these products do not care of the kind of trees cut to produce them. This has greatly influenced the community to look for any option to produce what the trader's need, which is for this case Shea butter trees are mostly preferred. This was revealed during the interactions with the leaders of the area, who reported that, some traders, have established stores in the area from which they collect charcoal and transport it to town centres where they sell at higher prices. It was also

revealed that charcoal from Shea butter trees is on high demand in the towns of Kampala, Wakiso, Jinja, due to its good burning quality which produces less smoke and ash.

The existence of these traders directly influences the livelihood strategies with negative outcome on natural resources although in a short run the households benefit from the quick money earned from this trade.

#### **4.3.4 Charcoal producers**

It was revealed by one of the charcoal producers during FGD that the number of people engaged in charcoal making has doubled with some people take it as their sole and only work, while others doing it as part time work. They mostly concentrate in charcoal work during the time when crop growing is over which is during dry season around 'November-April'. Some get the trees from their clan communal land while others buy it at cost ranging between 5000 and 20000/= then they cut it down for making charcoal. Among the charcoal producers there are others who have specialized in working for small commission by buying from the small producers then selling it to big buyers who then transport it to outside markets.

According to one of the elders during mixed FGD, there is no link between these producers and the conservation authority hence every work is left to whoever can have the ability to produce it. Communal land owners either do not have any link with authority or any form of association that could help to regulate the process leading to the theory of tragedy of the commons (Hardins, 1968). This theory explains an economic problem in which every individual tries to reap the greatest benefit from a given resource. As the demand for the resource overwhelms the supply, every individual who consumes an additional unit directly harms others who can no longer enjoy the benefits. Generally, the resource of interest is easily available to all individuals; the tragedy of the commons occurs when individuals neglect the well-being of society in the pursuit of personal gain. This income generated from charcoal business was also found to be above the minimum wage paid to most of the government and private sectors employees, hence attracting more people to engage in charcoal making. Charcoal making requires neither formal education nor large capital investment although it is time consuming and labour intensive (CHAPOSA 2002). In Lira Palwo Sub County, most of the charcoal makers have no formal education said Mzee OKIDI Mika Larubi. The required labour is usually drawn from household members or other producers collaborating for specific tasks in the production process. While men carry out

most of the masculine production activities such as tree felling, cross-cutting and kiln building, women participate in breaking the kiln after carbonization and in recovering and bagging the charcoal.

According to one of the Youth leaders during face to face interview, there was both push and pull factors on charcoal producers which has been influenced by various vulnerability factors and yet none of the stakeholders or government agencies have tried to change such livelihood styles, hence this has encouraged exhaustion of Shea butter trees in Lira Palwo Sub County.

One of the community members during mixed FGD stated that cultural leaders have enhanced livelihood strategies which have lead to Shea butter tree conservation because they enhance the enforcement of cultural norms which favor Shea butter trees conservation.

There are little efforts impacted by the local government leaders such as LCs 1-5. Many of these fear to intervene and implement existing policies and laws of not cutting down trees because they still want to be voted into office.

As far as this study goes the actors who have been listed above are not influencing the livelihood strategies in the conservation of SBT in Lira Palwo Sub County.

#### **4.4 The conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context**

It has been noted that the outcomes of the livelihood strategies that image as key activities in the relationship to the conservation of Shea butter trees are crops cultivation, livestock rearing and charcoal business. This either affects SBT conservation positively or negatively while you consider them either in both long and short term periods.

##### **4.4.1 Crop cultivation**

Crop cultivation has emerged as one of the livelihood strategies outcomes that people have adopted. This has been promoted due to cultural practices that favour agricultural activities, government NAADS policies and family structure bondage which provide labour for agricultural practices, further more through improved security brought by UPDF disarmament programs on Karamojong raiders and communal land ownership structure that has provided land as a key factor for crop production.

According to one of the elders during FGD stated that one of the livelihood strategies that the people of Lira Palwo Sub County are involved in crop cultivation such as; growing of simsim, ground nuts, sorghum, millet, maize, cassava, and cotton. This activity has both positive and negative effects which affects Shea butter tree conservation. When land is cleared off the bushes and trees for cultivation the Shea butter trees are also victims while the presence of these trees help in rainfall formation and provision of shade for the crops that encourages mixed farming. As a result of conserving Shea butter, it leads to improved soil fertility, improved health and income, he further highlighted that, the conservation can boost food security, as all crops planted would yield to their expectations, and the general ecosystems, which would later lead to industrial growth and development in the areas, as there would be enough resources to produce Shea oil.

It was further indicated by elders during FGD that Shea nut trees are most vulnerable at the time of clearing land for carrying out cultivation which puts them at the mercy of the farmers whereby they have the choice to cut them down or leave them as shade for their crops. But if proper knowledge of natural resource; Shea butter tree conservation in particular is taught to the community members then the livelihood strategy can be positive at conservation of SBT, this is so because the people will be occupied with crop growing other than charcoal burning.

Crop cultivation as an outcome brings about food security, more income to the people in a short run and it reduces vulnerability of famine and poverty, while in a long run the benefit that accrues due to the conservation of SBT will be lost, such benefits such as improved soil conservation, improved ecosystem and industrial growth. This implies that in the long run there will be more vulnerability complex to the community and they will suffer the consequences like famine, poverty and diseases, among others.

#### **4.4.2 Live stock rearing**

According to one of the community elders during mixed FGD stated that some people do carry out livestock rearing such as goats, cattle, and poultry. Due to the restoration of peace by the UPDF from the Karamojong raiders the community members of Lira Palwo are restocking livestock in the households which positively influences the conservation of Shea butter trees. The conservation of Shea butter trees in the areas if taken further can lead to afforestation of Shea trees, this is vital in environmental conservations. With this type of

livelihood strategy Shea butter trees are less vulnerable due to the fact that cattle rearing do not require too much bush clearing however it supports agro forestry farming system. Therefore when livestock rearing is being carried out in Lira Palwo Sub County, SBT can be conserved due to the fact that there is an alternative livelihood strategy other than charcoal burning which does not conserve Shea butter trees.

Restoration of Livestock rearing is one of the livelihood strategies outcomes that as a result of existing security structures and processes that brought peace in the area. It is benefiting in a way that the vulnerability context for example reduced famine, reduced poverty and reduced sicknesses and diseases. This has also contributed positively in the conservation of SBT and ecosystem of the area.

#### **4.4.3 Charcoal business**

During the focused group discussion, one of the participants emphasized that charcoal burning is influenced by private businesses such as charcoal stores in Lira Palwo Sub County owned by big charcoal buyers who collect from different charcoal makers in the villages until there is enough to fill a lorry then they transport to central business towns such as Kampala, Jinja, Wakiso, etc. Due to this booming business in the area most of the Shea nuts tree will be depleted or extinct from the area if no intervention comes forth.



*Figure4: Picture showing sacks of ready charcoal on display for sale*

One of the participants during mixed FGD also stated that most charcoal producers prefer using Shea butter trees because of its advantages such as producing less smoke and ash,

hence its charcoal is easily sold off at the market. This therefore indicated that Shea butter tree cannot be conserved with charcoal burning as a livelihood strategy present in Lira Palwo Sub County.

Charcoal business as one of the livelihood strategies outcomes has in a short run enabled the community members to mitigate some of the vulnerabilities such as famine, poverty, provide school fees, sicknesses and diseases. While as in the long run it will degrade the area and leave the ecosystem exposed to any calamities such as climate change adverse effects and eventually the vulnerability of the community through charcoal making would have been promoted.

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

The study found out that the actors who are; NEMA/NFA and agricultural extension workers are doing apparently nothing in influencing the vulnerability context of the community in improving or changing the livelihood strategies in line with conserving Shea butter trees.

While charcoal traders being one of the actors in the study influenced the livelihood strategies in the conservation of Shea butter tree negatively and if such a trend is not checked then it may result into extinction of Shea butter tree.

Due to the extended family structure and population growth found at Lira Palwo Sub County, there has been influence of carrying out livelihood strategies that are able to support this type of families for example charcoal burning. Due to the extra expense incurred in supporting these families in form of daily food, school fees, medical facilitation plus all other related family expenses there has been more need to encroach on the natural resources such as Shea nut trees.

However cultural practices and the custodian of this culture are doing it single handedly in the enforcement of those norms and by-laws, the cultural leaders in their endeavors have recorded a positive influence in the conservation of Shea butter tree in Lira Palwo Sub County.

Initially the conservation of natural resources was a contribution of every stakeholder in the community including the cultural leaders, the government and the community at large, but due to the high rate of urbanization, weak education system and cultural integrations, as well as political intervention, the culture of togetherness has died, and everyone is doing the way he looks at things, hence affecting the survival of Shea butter and other natural resources in the area.

Poverty, famine, disease, shock, family break downs, trends were reported to be key in influencing the livelihood strategies of households and general livelihood strategies of community members. It was reported that the presence of poverty among others has left many households depending on the existing natural resources in search for quick survival, in form of money and sources of food. Many have adopted charcoal burning and other wood works in the areas.

Finally the study highlighted that, if Shea butter is given priority and conserved, it could lead to increased income to the households as mature trees produce Shea nuts which are sources of Shea oil, improved ecosystem and improved food security.

## **5.2 Recommendations**

### **The study generated the following recommendations**

1. With the extended family structure and population growth. The study recommends encouraging of family planning such as uses of condoms, contraceptive pills, and any other ways so as to control the high rate of population growth in the area.
2. On the fact that the present government environment regulatory authorities such as NEMA/NFA and agricultural extension workers doing nothing. The study recommends that these authorities need to work towards protecting and conserving Shea butter trees in Lira Palwo Sub County.
3. The existence of charcoal traders who use charcoal trade as the only source of living, the government needs to come in to sensitize the community on the relevancy of some natural resources like Shea butter and create alternative income generating activities such as fish farming, goat rearing, tailoring.
4. The study also recommends the government to introduce other alternative energy sources to replace charcoal such as biogas and solar power. With these sources present, conservation of Shea butter trees shall prevail.
5. The study found out that cultural leaders do not have support in carrying out Shea butter tree conservation. This study therefore recommends the need to reinforce the cultural leaders in the conservation of Shea butter trees.
6. It was indicated that the existing land laws were not being implemented and the community members were not aware of any laws. The study therefore recommends



that the government should develop and implement the existing policies and laws related to natural resource conservation.

7. The Shea butter production in Lira Palwo Sub County is still being done tradition thereby getting small profits yet if there was a processing industry the returns would be higher. Therefore we recommend the government to encourage investors to come in and build Shea butter processing plants in the area.

## REFERENCES

- A.G. Hopkins (Ed.) **2002**, *Globalization in world history*, Pimlico, London
- Abdu-Raheem, K.A and S.H.Worth. **2013**, *Food security and biodiversity conservation in the context of sustainable agriculture: The role of agricultural extension. South African Journal of Agricultural Extension* 41:1–17.)
- Adams, W. M., & Hulme, D. **2001**. *If community conservation is the answer in Africa, what is the question? Oryx*, 35(3), 193–200.
- Ade H. Freeman, Ellis F., Allison E. **2002**. *Livelihoods and Rural Poverty Reduction in Kenya*.
- Adebayo et al. **2015** *BMC Complementary and Alternative Medicine* 15:159 DOI 10.1186/s12906-015-0669-5
- Adebua, A., Odwee, J. A. O., Okurut, F. N., & Obong, J. B. O. **2002**. *Household efforts in poverty alleviation in northern Uganda with respect to agriculture under structural adjustment program: The case of Arua district. Poverty policy perspectives: NURRU*
- Adger WN, Agrawala S, Mirza MMQ, Conde C, O'Brien KL, Pulhin J, Pulwarty R, Smit B and Takahashi K. **2007**. *Climate change 2007: Impacts, adaptation, and vulnerability. In Parry ML, Canziani OF, Palutikof JP, van der Linden PJ and Hanson CE, eds. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK:*
- Adokorach J **2010**. *The Influence of Internally Displaced Persons" Settlements on the abundance, diversity and conservation of Indigenous Tree Resources in the Shea parklands of Northern Uganda. BSc ETB, Dissertation, Makerere University*
- Agarwal, B **2009**. *Gender and Forest Conservation: The Impact of Women's Participation in Community Forest Governance. Ecological Economics* 68(11): 2785–2799.

- Agea, J.G., Obua, J., Kaboggoza, J. R. S and Waiswa, D. **2007**. *Diversity of indigenous trees adaptive management. Ecological Applications*, 10(5), 1251–1262.
- Alander, J. **2004**. *Shea butter – a multifunctional ingredient for food and cosmetics*. *Lipid Technology*, 16(9): 202–205
- ALCODE. **2007**. *North Uganda Shea project: Internal control manual*. Lira: ALCODE.
- Alcorn, J. B. **1993**. *Indigenous peoples and conservation. Conservation Biology*, 7(2), 424–426.
- Alexander, I. **1998**. *The effects of tillage and cover crops on some chemical properties of an oxisol and summer crop yields in southwestern Paraná, Brazil. Advances in GeoEcology*31: 1239-1246. *and the United States*
- Angelsen, Arild; Kaimowitz, David. **1999**. *"Rethinking the causes of deforestation : lessons from economic models"*. The World Bank research observer. -- Vol. 14, no. 1
- Anthwala, A., Guptab, N., Sharmac, A., Anthwald, S., & Kima, K.-H. **2010**. *Conserving biodiversity through traditional beliefs in sacred groves in Uttarakhand Himalaya, India. Resources, Conservation and Recycling*, 54(11), 962–971.
- Arnett, J. J. **2007**. *Adolescence and emerging adulthood: A cultural approach*. Upper Saddle River, New Jersey: Prentice Hall.
- Backlund, P., A. Janetos, D. Schimel, J. Hatfield, K. Boote, **2008**. *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States*. Final Report—Synthesis and Assessment Product
- Bagnoud, N. **1992**. *Socio-economic analysis of the role of trees and productivity in shea parks and néré the Mali-South area*. Chair of Forestry Policy and economy.
- Ballick, M. J. and Paul, C. L. **1996**. *Plants, People and Culture: The Science of Ethnobotany*.

- Banana AY, Buyinza M, Luoga E and Ongugo P. **2010**. *Emerging local economic and social dynamics shaping East African forested landscapes*. In Mery G, Katila P, Alfaro RI, Kanninen M, Labovikov M and Varjo J, eds. *Forests and Society: Responding to Global*
- Banana AY, Vogt ND, Bahati J and Gombya Ssembajjwe W. **2007**. *Decentralised governance and ecological health: Why local institutions fail to moderate deforestation in Mpigi district*
- Barrow, E. G. C, **1996**. *The Dry lands of Africa, Local Participation in tree management*.
- Bassett, T.J. & Crummey, D. (eds) **2003**. *African savannas: global narratives and local*
- Basu A, Blodgett C, Müller N and Soezer A. **2013**. *Nationally Appropriate Mitigation Action Study on Sustainable Charcoal in Uganda. Perspectives Climate Change and UNDP MDG*
- Bayala, J., Balesdent, J., Marol, C., Zapata, F., Teklehaimanot, Z., & Ouedraogo, S. **2006**. *Relative contribution of trees and crops to soil carbon content in a parkland system in Burkina Faso using variations in natural  $^{13}\text{C}$  abundance. Nutrient Cycling in Agroecosystems*, 76(2–3), 193–201.
- Bebbington A. **1999**. *A framework for analyzing peasant viability, rural livelihoods and poverty in the Andes*
- Bebbington, A. **1999** ‘Organisations and intensifications: small farmer federations, rural livelihoods and agricultural technology in the Andes and Amazonia.’ *World Development* vol. 24 (7): 1161-1178
- Becker, M., & Statz, J. **2003**. *Marketing of parkland products*. In Z. Teklehaimanot (Eds.), *Improved management of Agroforestry Parkland Systems in Sub-Saharan Africa* (pp. 142-151) *EU/INCO project Contract IC18-CT98-0261, Final Report, University of Wales, Bangor, UK*

- Ben-Amos, Dan **1971** *“Toward a definition of folklore in context”*. Journal of American Folklore 84, 331, 3–15.
- Berkes, F., Colding, J., & Folke, C. **2000**. *Rediscovery of traditional ecological knowledge as*
- Boffa, J. M. **2001** *Agroforestry parklands in sub-Saharan Africa*
- Bonkougou, E. **1987**. *Monopgraph of the Shea butter tree (Vitallariaparadoxa) IRBET /*
- Bonkougou, E. G. **2002**. *The Shea tree (Vitellariaparadoxa) and the African Sheaparklands. In: International Workshop on Processing and Marketing of Shea Products in Africa,*
- Bunce, R.G.H. & Shaw, M.W. **1973**. *A standardized procedure for ecological survey. Journal*
- Buyinza Joell and Okullo John Bosco Lamoris **2015** *Threats to Conservation of Vitellaria paradoxa subsp. nilotica (Shea Butter) Tree in Nakasongola district, Central Uganda Cambridge University Press. 717–43. Carbon. (<http://mdgcarbonfacility.org/>)*
- Byakagaba P, Eilu G, Okullo JBL, Tumwebaze SB, Mwavu EN **2011**. *Population structure and regeneration status of Vitellaria paradoxa (C.F.Gaertn.) under different land management regimes in Uganda. Agric. J. 6(1):14-22. <http://dx.doi.org/10.3923>*
- Carney (ed.), **1998** *Natural Resources Advisers annual conference takes Sustainable Livelihoods as its theme and later publishes contributory papers: Sustainable Rural Livelihoods: What Contribution Can We Make?*
- Carole Rakodi, Tony Lloyd-Jones **2002**. *Urban Livelihoods: A People-centred Approach to Reducing Poverty*
- CHAPOPSA. **2002**. *Charcoal potential in Southern Africa. INCO\_DEV: International cooperation with developing countries (1998-2002).*
- Chu, W. C. K., Tsui, M., & Yan, M. **2009**. *Social work as a moral and political practice. CNRST, Ouagadougous Burkina Faso.*

- Colding, J., and C. Folke. **1997**. *The relations among threatened species, their protection, and taboos*. *Conservation Ecology* [online]1(1): 6. Available from the Internet. URL: <http://www.consecol.org/vol1/iss1/art6/>
- Committee on Economic, Social and Cultural Rights. **1998**. *General comment No. 9: The domestic application of the Covenant*. Geneva, Switzerland: Author. IASC, 2005.
- Coulibaly-Lingani, P. P. Savadogo, M. Tigabu, and P. C. Oden **2011**. “Factors influencing people’s participation in the forest management program in Burkina Faso, West Africa,” *Forest Policy and Economics*, vol. 13, no. 4, pp. 292–302.
- D. Held, A.G. McGrew, D. Goldblatt, G. Perraton **1999** *Global transformations politics*,
- Dalziel, J. M. **1937**. *The useful plants of West tropical Africa*. English, Book edition
- De Saint-Sauveur, A. **1999**. *The Shea Project: An Economic Assessment*. Montpellier: Drivers of Change. *IUFRO World Series, Vol. 25*. Vienna: IUFRO. 315–35. *economics and culture* Polity Press, Cambridge
- Diallo, I. and Abibou Gaye. **2002**. *Strategies for the conservation and improvement of the shea butter tree (Vitellaria paradoxa Syn. Butyrospermum parkii)*, ISRA/CNRF, Senegal
- Djossa, B.A., Fahr, J., Wiegand, T., Ayihouénou, B.E., Kalko, E.K.V., & B.A. Sinsin. **2008**. *Land use impact on Vitellaria paradoxa C.F. Gaerten. stand structure and distribution patterns: a comparison of Biosphere Reserve of Pendjari in Atacora district in Benin*. *Agroforestry Syst.* 72: 205–220.
- Elias M. and Carney J., **2007** *African Shea butter: a feminized subsidy from nature*. *Africa* 77 (1)
- Emtage, N.F. **2004**, *An Investigation of the Social and Economic Factors Affecting the Development of Small-scale Forestry in Leyte Province, the Philippines*, PhD thesis, School

Evans, T.P., and Kelly, H. **2004**, ‘*Multi-scale Analysis of a Household Level Agent-Based Model of Landcover Change*,’ *Environmental Management*, 72(1–2), 57–72

FAO **2002**. *Trees Outside Forests: Towards Better Awareness*. FAO. Rome.

Farrington, J., Carney, D., Ashley, C. and Turton, C. **1999**. ‘*Sustainable livelihoods in practice: early application of concepts in rural areas*’, *Natural Resources Perspectives* 42. London: Overseas Development Institute.

Ferris, R.S.B, Collinson, C., Wanda, K., Jagwe, J. and Wright, P. **2004**. *Evaluating the marketing opportunities for shea nut and shea nut processed products in Uganda*. ASARECA/ IITA Monograph 5. Ibandan, Nigeria. 1-54 pp

Forest Policy, **2001**. *Ministry of Water, Lands and Environment, The Republic of Uganda, of Environmental Management* **1: 239–258**.

Fowler, J. & Cohen, L. **1998**. *Statistics for Ornithologists*. BTO Guide 22. *British Trust for G. Hardins, 1968, Tragedy of the commons*

Gebreegiabher Z, Mekonnen A, Kassie M, Köhlin G **2010** *Household tree planting in Tigray, northern Ethiopia: tree species, purposes, and determinants*. Working papers in Economics 432, University of Gothenburg, Department of Economics

Ghai Y. **2001**. *Human rights and social development: Toward democratization and social*

Goreja. W.G. **2004**. *Shea Butter: The Nourishing Properties of Africa's Best-Kept Natural Beauty*. Amazing Herbs Press. New York, NY

Guinko, S. **1984**. *Végétation de la Haute Volta*. Dissertation, Université de Bordeaux III.

Guthiga, P., Mburu, J., Holm-Mueller, K., **2008**. ‘*Factors Influencing Local Communities’ satisfaction levels with different forest management approaches of Kakamega Forest, Kenya*. *Environmental Management* 41, 696–706.

- Hall, J.B., Aebischer, D.P., Tomlinson, H.F, Osein Amaning, E. and Hindle, J.R. **1996**. *Vitellaria paradoxa; A Monograph. School of Agricultural and Forest Science Publication*
- Harsch, M.A., Hulme, P.E., McGlone, M.S., and Duncan, R.P. **2009**. *Are treelines advancing? A global meta-analysis of treeline response to climate warming*. Ecology Letters 12:1040–1049, doi:10.1111/j.1461-0248.2009.01355.x.
- Hazare A. **2003**. *My village-my sacred land. Ralegan Siddhi, India: Ralegan Siddhi Pariwar. Initiatives Publishers Ltd, Nairobi International Social Work 52, 287-298.*
- Hemsley J. H. **1968**. *Flora of tropical East Africa. Crown Agents for Overseas Governments and Administrations, London*. pp. 47-50. Sapotaceae . In: Milne E, Polhill RM (eds)
- Hongmao, L., Zaifu, X., Youkai, X., & Jinxiu, W. **2002**. *Practice of conserving plant diversity through traditional beliefs: A case study in Xishuangbanna, southwest China*. Biodiversity and Conservation, 11, 705–713. *in the traditional cotton-millet farming system: the case of Adwari sub county, Lira district, Uganda*. African Journal of Ecology, 45: 39-43. AIDS, Rome, pp. 28-29.
- Izumi, K. (ed.), **2006**. *The land and property rights of women and orphans in the context of HIV and AIDS. Case studies from Zimbabwe, FAO and The Global Coalition on Women and justice. Kampala. knowledge of environmental change. James Currey, Oxford of Uganda. Scientific Research and Essay 2(10):434–45 Ornithology, Thetford, UK. proceedings, Dakar, Senegal, pg 651-657 PROPAGE, 61 pp.*
- Kaag, M., van Berkel, R., Brons, J., de Bruijn, M., van Dijk, H., de Haan, L., Nootboom, G. and Zoomers, A. **2002**: *Ways forward in livelihood research, in: Globalization and development. Themes and concepts in current research*
- Kajembe, G.C., Monela, G.C. and Mvena, Z.S.K. **2003**. *Making Community-Based Forest Management Work: A Case Study From Duru-Haitemba Village Forest Reserve, Babati, Tanzania. In: Policies and Governance Structures in Woodlands of Southern*



- Africa*. The Centre for International Forestry Research (CIFOR), Jakarta, Indonesia. pp. 16-27.
- Kitzinger, J **2005** *Focus Group Research: using group dynamics to explore perceptions, experiences and understandings*
- Klopper, R. R., Gautier, L., Smith, G. F., Spichiger, R. & Chatelain, C. **2006**. *Inventory of the African flora: a world first for the forgotten continent*. S. Afr. J. Sci., 102:185–186.
- Koh LP, Sodhi NS **2010**. *Conserving Southeast Asia's imperiled biodiversity-scientific, management, and policy challenges*. Biodivers Conserv
- Kothari, C. R. **2008**. *Research Methodology, Methods and Techniques* (2<sup>nd</sup> ed., pp. 109-110). New Delhi: New Age Inter- national (P) Limited.
- Krueger, R. A. **1988**: *Focus Groups: A Practical Guide for Applied Research*, SAGE Publications, Inc. Newbury Park: California, U.S.A.
- Lamien, N., Sidibé, A. & Bayala, J. **1996**. *Use and commercialization of non-timber forest products in western Burkina Faso*. In R.R.B. Leakey, A.B. Temu, M. Melnyk & P. Vantomme, eds. *Domestication and Commercialization of Non-Timber Forest Products in Agroforestry Systems*, p. 51–64. Non-wood Forest Products No. 9. Rome, FAO.
- Lawry, S.W. **1989**. *Tenure policy and natural resource management in Sahelian West Africa*. Draft paper, Jan. 1989. Madison, USA, Land Tenure Center, University of Wisconsin Madison. 22 pp.
- Lovett, P.N. and Haq, N. 2000. Diversity of the shea nut tree (*Vitellaria paradoxa* Gaertn C.F) in Ghana. *Genetic Resources and Crop Evolution*.
- Lovett, P.N., Yidana, J.A. and Masters, E.T. **2005**. *Tangible benefits encourage sustainable agro forestry parklands: management of the shea tree, Vitellaria paradoxa, in SubSaharan Africa's Forests, Trees and Livelihood*.

- Mamo, G., Sjaastad, E., & Vedeld, P. **2007**. *Economic dependence on forest resources: A case from Dendi District, Ethiopia. Forest Policy and Economics*, 9 (8), 916–927
- Maranz, S. & Wiesman, Z. **2003**. *Evidence for indigenous selection and distribution of the shea tree, Vitellaria paradoxa, and its potential significance to prevailing parkland savanna tree patterns in sub-Saharan Africa north of the equator*. Version of Record online: DOI: 10.1046/j.1365-2699.2003.00892.x
- Marie A. Boyle **2016**. *Community Nutrition in Action: An Entrepreneurial Approach*. Cengage Learning
- Masters, E. **1999**. *The shea resource; Over view of research and development across Africa*.
- Mgumia FH & Oba AG **2003**. *Potential role of sacred groves in biodiversity conservation in Tanzania. Environmental conservation* 30(3): 259–265.
- Ministry of Natural Resources **1995** *National Policy for the Conservation and Management of Wetland Resources*
- Mugenda, O.M. and Mugenda, A.G. **1999** *Research Methods: Quantitative and Qualitative Approaches*. Acts Press, Nairobi.
- Musiime, E., Keizire, B. & Muwanga, M. **2005**. *Organic Agriculture in Uganda. The need for a coherent policy framework, ACODE Policy Research Series No. 11. Advocates Coalition for Development and Environment, Kampala*
- Ndoye O., Awono A., Schreckenber K. and Leakey R. **2004**. *Commercialising indigenous fruit for poverty alleviation. Policy briefing for governments in the African humid tropics. ODI, London. 2pp Number: 8, University of Wales, Bango of Natural and Rural Systems Management, The University of Queensland, Brisbane*.
- Ogenga Otunnu, **2002**. *Northern Uganda: Causes and consequences of the war in Acholiland. York University (Toronto) press*.

Okiror P, Agea JG, Okia CA, Okullo JBL **2012**. *On-Farm Management of Vitellaria paradoxa C. F. Gaertn. In Amuria District, Eastern Uganda*. Int. J. For. Res. <http://dx.doi.org/10.1155/2012/768946>

Okullo, J.B.L. **2004**. *Vitellaria paradoxa: Population structure and reproductive characteristics in Uganda. PhD Thesis, University of Wales Bangor, UK*. 303pp.

Okumu-Alya, F. **2009**. *The regional dimensions of the war in northern Uganda*. Pretoria: Institute for Security Studies.

Oso, W. & Onen, D. **2008**. *General guide to writing research proposal and report: A and book for beginners (2<sup>nd</sup> ed.)*. Kampala: Makerere university printery.

Owubah, K., LeMaster, D.C., Bowker, J.M., Lee, J.G., **2001**. *Forest tenure systems and sustainable forest management: the case of Ghana*. Forest Ecology and Management 149, 253–264.

P. K. R. Nair ,**1993** *An Introduction to Agroforestry*. Springer Science & Business Media Publications, Working Paper No. 12. Kampala.

Risdel Kasasira **12<sup>th</sup> July, 2010** *Army registers success in Karamoja*. *The daily Monitor*  
Rosalyn McKeown, Victor Nolet **2002** *Schooling for Sustainable Development in Canada Scientific American Library*. A division of HPHLP New York. UNHCR, 2003, p. 7.

Ruth Lister **2004** *Poverty*. Polity - Political Science

The Daily Monitor, **2010**. *Army registers success in Karamoja*

Turyahabwe N and Banana AY. **2007**. *An overview of history and development of forest policy and legislation in Uganda*. International Forestry Review 10(4):641–56.

Sabates, Ricardo **2008**. *"The Impact of Lifelong Learning on Poverty Reduction"*. IFLL Public Value Paper 1. Latimer Trend, Plymouth, UK: 5–6. ISBN 978 1 86201 3797.

Uganda Bureau of Statistics, **2009** *UBOS Annual Report*

Uganda Bureau of Statistics, **2010** *UBOS Annual Report*

UN OCHA, **2004**. *Humanitarian Appeal 2004*

Uvin P. **2004**. *Human rights and development. Bloomfield, CT: Kumarian Press.*

Yidana, JA **1994**. *Studies in the shea tree. Reports, Cocoa Research Institute of Ghana.* p. 10.

## **APPENDICES:**

### **APPENDIX I: INTERVIEW GUIDE**

1. What is the influence of the existing structures and processes below in transforming vulnerability context of communities into sustainable livelihood strategies in Palwo Sub County?

- a) Political leadership
- b) Security status
- c) Health system
- d) Cultural norms and community belief
- e) Family system
- f) Legal processes
- g) Education systems
- h) Land ownership processes
- i) Usages and Management of Shea Butter Tree

2. What are the roles played by different actors below in influencing communities to select the livelihood strategies in Palwo Sub County?

- a) Environmental bodies (NEMA)
- b) Agriculture extension workers
- c) Traders
- d) Charcoal producers

3. What are the conservation outcomes of Shea butter trees resulting from the different livelihood strategies transformed from the vulnerability context?

- a) Crop cultivation
- b) Live stock rearing
- c) Charcoal business

## APPENDIX II: OBSERVATION GUIDE

<b>ITEMS</b>	<b>STATE</b>	<b>GENERAL REMARK</b>
Environment		
Charcoal stores		
Community Schools		
Deforestation		
Health centres		
Road network		
Water system		
Types of crops grown		
Types of animals reared		
Leadership		