# BUSITEMA UNIVERSITY FACULTY OF NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES DEPARTMENT OF NATURAL RESOURCE ECONOMICS

THE IMPACTS OF NYABIKU FOREST RESERVE ENCROACHMENT ON THE LIVELIHOODS OF PEOPLE IN THE SURROUNDING COMMUNITIES, MUGARAMA SUBCOUNTY, KIBAALE DISTRICT

## BY KAHWA CHARLES BU/UG/2013/61

RESEARCH REPORT SUBMITTED TO THE
FACULTY OF NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN
NATURAL RESOURCE ECONOMICS OF
BUSITEMA UNIVERSITY

**JUNE 2016** 

#### **DECLARATION**

I hereby declare that the work presented in this research report is original and has not been submitted to any university or any other institution of higher learning for any academic award.

Signature.

Date 30th June 2016

KAHWA CHARLES

## APPROVAL

This is to certify that **KAHWA CHARLES** did research and this report is a true representation of the findings. I therefore recommend that this report be submitted to the Faculty of Natural Resources and Environmental Sciences of Busitema University.

SUPERVISOR	DATE 11/2/2016
HENRY KISU-KISIRA.	
MSC MBA MAECO (LECTURER)	

#### **DEDICATION**

I dedicate this research report to my dear father Mr. Myakamingi Isha, my mother Namukisa Joyce, my lovely aunt Mrs. Namatovu Cate and my lovely daughters Sanyu Charlene Brenda. I also dedicate it to my friends especially Kato Paul and others who tirelessly provided me with financial and moral support just for the purpose of seeing me excel in life.

#### **ACKNOWLEDGEMENT**

I greatly thank the management of Busitema University Namasagali campus especially my supervisor Mr. Kisu-Kisira due to supervision in the execution of duties during the period of research that enabled me to successfully complete the proposal, data collection, data analysis and report writing. I also thank my fellow students especially Kato Paul who assisted me with throughout the whole course, thanks.

My dear father Bikanga Daniel (Myakamingi Isha), lovely mother Mrs. Namukisa Joyce and Aunt Mrs. Namatovu Cate for the courage and support in terms of finance and prayer you offered to me. I can't forget my dear respondents who gave me data during my research field. My God bless you. Finally, I thank my Almighty God who gave me the gift of life, wisdom and courage that made me strong during my whole studies and research. I will always worship and praise you forever and ever AMEN.

#### ACRONYMS/ABBREVIATIONS

CBOs COMMUNITY BASED ORGANIZATIONS

CFM COLLABORATIVE FOREST MANAGEMENT

CFR CENTRAL FOREST RESERVE

CLA COMMUNITY LAND ASSOCIATION

FAO FOOD AND AGRICULTURE ORGANIZATION

FID FOREST INSPECTION DIVISION

KDLG KIBAALE DISTRICT LOCAL GOVERNMENT

LFR LOCAL FOREST RESERVE

MWLE MINISTRY OF WATER, LANDS AND ENVIRONMENT

NEMA NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

NFA NATIONAL FOREST AUTHORITY

NFR NYABIKU FOREST RESERVE

NFR NYABIKU FOREST RESERVE

NFTPA NATIONAL FORESTRY AND TREE PLANTING ACT

NWFP NON-WOOD FOREST PRODUCT

PFE PERMANENT FOREST ESTATE

SFM SUSTAINABLE FOREST MANAGEMENT

SPGS SAWLOG PRODUCTION GRANT SCHEME

THE TROPICAL HIGH FOREST

## TABLE OF CONTENTS

DECLARATION	I.
APPROVAL	П
DEDICATION,	П
ACKNOWLEDGEMENTI	V
ACRONYMS/ABBREVIATIONS	V
TABLE OF CONTENTS	ZΙ
LIST OF TABLES	Ķ
LIST OF FIGURES	Ω
ABSTRACTX	П
CHAPTER ONE: INTRODUCTION	. 1
1.1 Introduction	. 1
1.2 BACKGROUND OF THE STUDY	1
1.3 PROBLEM STATEMENT	2
1.4 OBJECTIVES OF THE STUDY	2
1.4.1 Main Objective	2
1.4.2 Specific objectives	2
1.5. RESEARCH QUESTIONS	3
1.6. CONCEPTUAL FRAMEWORK	3
1.7 SIGNIFICANCE OF THE STUDY	4
CHAPTER TWO: LITERATURE REVIEW	. 5
2.1 Introduction	5
2.2 LIVELIHOOD ACTIVITIES IN THE FOREST RESERVES	5
2.3 Causes of forest reserve encroachment and degradation	6
2.4 IMPACTS OF FOREST RESERVE ENCROACHMENT	8
CHAPTER THREE: METHODOLOGY	10

	3.1 Introduction	10
	3.2 RESEARCH DESIGN	10
	3.3 DESCRIPTION OF THE STUDY AREA	10
	3.4 SAMPLE SIZE AND SAMPLING PROCEDURE	11
	3.4.1 Sample size	11
	3.4.2 Sampling technique and procedure	11
	3.5 DATA TYPES AND DATA COLLECTION METHODS	11
	3.5.1 Questionnaire	11
	3.5.2 Observation	12
	3.6 DATA PROCESSING AND ANALYSIS	12
	3.7 ETHICAL CONSIDERATIONS	12
	3.8 LIMITATIONS OF THE STUDY AND THE POSSIBLE WAY FORWARD	12
C	CHAPTER FOUR: FINDINGS	13
	4.1. Introduction	13
	4.2. ECONOMIC ACTIVITIES IN NYABIKU FOREST RESERVE	13
	4.2.1 Livelihood activities done in Nyabiku Forest Reserve	13
	4.2.2 Relationship between employment level and the economic activity done	14
	4.2.3 Relationship between level of income and the economic activities	14
	4.2.4 Effect of economic activities on Nyabiku Forest Reserve	15
	4.2.5 Relationship between village and response on whether economic activities have	effect
	on Nyabiku forest reserve	16
	4.2.6 The effects of Livelihood activities on Nyabiku Forest Reserve	17
	4.2.7 The extent to which the livelihood activities affect Nyabiku Forest Reserve	18
	4.2.8 Relationship between sex and response to the extent of the effect of livelihood ac	ctivities
	on Nyabiku Forest Reserve	18
	4.2.9 Relationship between education level and the response to the extent of the effect	t of
	livelihood activities on Nyabiku Forest Reserve	19
	4.3 CAUSES OF NYABIKU FOREST RESERVE ENCROACHMENT	20
	4.3.1 Causes of Nyabiku Forest Reserve encroachment	20
	4.3.2 Relationship between causes of encroachment and the age group	20

4.3.3 Relationships between income level and the causes of Nyabiku Forest Reserve	
encroachment	21
4.3.4 Availability of restrictions to reduce on forest encroachment and degradation	22
4.3.5 Restrictions to Nyabiku Forest Reserve	22
4.4 IMPACTS OF NYABIKU FOREST RESERVE ENCROACHMENT	23
4.4.1 Response on the presence of impacts of Nyabiku Forest Reserve encroachment	23
4.4.2 The relationship between location and response on the presence of impacts	24
4.4.3 Relationship between the education level and the respondents response to the presen	се
of impacts of Nyabiku Forest Reserve encroachment	25
4.4.4 Impacts of Nyabiku Forest Reserve encroachment on the environment	26
4.4.5 Impacts of Nyabiku Forest Reserve encroachment on peoples' livelihoods	26
4.4.6 Presence of mitigation measures to the impacts of Nyabiku reserve encroachment	27
4.4.7 Relationship between villages and presence of mitigation measures	27
4.4.8 Mitigation measures employed to reduce impacts of Nyabiku Forest Reserve	
encroachment	<b>2</b> 8
4.4.9 Relationship between employment level and mitigation to the impacts	29
4.4.10 Policy recommendations to Nyabiku Forest Reserve management	29
4.4.11 Peoples knowledge about the laws and policies concerned with Nyabiku Forest	
Reserve management	3.0
4.4.12 Laws and policies known by the respondents	30
CHAPTER FIVE: DISCUSIONS OF FINDINGS	
5.1 Introduction	31
5.2 LLIVELIHOOD ACTIVITIES CARRIED OUT IN NYABIKU FOREST RESERVE	31
5.3 CAUSES FOREST RESERVE ENCROACHMENT BY THE LOCAL COMMUNITIES	33
5.4 IMPACTS OF NYABIKU FOREST RESERVE ENCROACHMENT AND DEGRADATION	35
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS	39
6.1 INTRODUCTION	39
6.2 CONCLUSIONS	39
6.3 RECOMMENDATIONS	39
6.4 AREAS OF FURTHER RESEARCH	40

#### KAHWA CHARLES (2016), Research report ©

REFERENCE	41
APPENDICES	43
APPENDIX I: FORESTED PARTS OF NYABIKU FOREST RESERVE	43
APPENDIX II: QUESTIONNAIRE	44

## LIST OF TABLES

Table 1: Relationship between employment level and economic activity done14
Table 2: Relationship between the level of income and economic activities in NFR
Table 3: Relationship between village and response on whether economic activities have effect on
Nyabiku Forest Reserve
Table 4: The effects of economic activities on Nyabiku Forest Reserve
Table 5: Relationship between sex and response to extent of the effects of livelihood activities on NFR. 19
Table 6: Relationship between education level and the response to the extent of the effect of livelihood
activities on Nyabiku Forest Reserve
Table 7: Relationship between causes of encroachment and the age group20
Table 8: Relationships between income level and the causes of forest reserve encroachment21
Table 9: Restrictions to Nyabiku Forest Reserve
Table 10: The relationship between location and response on the presence of impacts24
Table 11: Relationship between the education level and the respondent's response to the presence of
impacts of Nyabiku Forest Reserve encroachment
Table 13: Presence of mitigation measures to the impacts of Nyabiku Forest Reserve encroachment 27
Table 14: Relationship between location and presence of mitigation measures27
Table 15: Relationship between employment level and mitigation measures

### LIST OF FIGURES

Figure 1: conceptual framework
Figure 2: Map of Kibaale district showing the location of the study area
Figure 3: Economic activities in Nyabiku Forest Reserve
Figure 4: Crop growing Figure 5: Firewood collection Figure 6: Timber harvesting 13
Figure 7: Effect of economic activities on Nyabiku Forest Reserve
Figure 8: Relationship between villages and if livelihood activities have effects on Nyabiku  Forest Reserve
Figure 9: Defforestation Figure 10: Bush burning Figure 11: Water table reduction
Figure 12: The extent to which the livelihood activities affect Nyabiku Forest Reserve
Figure 13: Availability of restrictions to reduce on forest encroachment
Figure 14: Response on the presence of forest reserve encroachment and degradation23
Figure 15: The relationship between location and the respondent's response on the presence of impacts from Nyabiku Forest Reserve encroachment
Figure 16: Relationship between the education level and the respondents' response to the presence of
impacts of Nyabiku Forest Reserve encroachment
Figure 17: Air pollution Figure 18: biodiversity and soil degradation
Figure 19: water quality degradation Figure 20: low soil productivity (yields)26
Figure 21: Relationship between location and presence of mitigation measures28
Figure 22: eucalyptus tree planted in the forest reserve
Figure 23: Peoples knowledge about laws and policies concerned with forest management30

#### ABSTRACT

This research project was conducted on the local communities surrounding Nyabiku Forest Reserve, Mugarama Sub County in Kibaale district during the month of January 2016. The main objective of the study was to assess the impacts Nyabiku forest reserve encroachment on the livelihoods of people in the surrounding communities.

The research project employed both qualitative and quantitative approaches. The data was collected using questionnaires, observation, and existing literature from the journals, websites, reports and books. Data was entered and analyzed using Microsoft Excel, SPSS and STATA respectively to give descriptive and inferential statistics.

Findings showed that the people encroach on the forest reserve in order to fulfill their livelihood needs. This is due to the poverty, limited land and policy failure. However due to encroachment, the forest reserve is degraded due to the livelihood activities. The environment and the livelihood of the people around the forest reserve are impacted on.

There should be sensitization of the masses, gazette and de3macate Nyabiku Forest Reserve, increase man power in environmental protection agencies such as NFA and introduce poverty elevation programmes.

#### **CHAPTER ONE: INTRODUCTION**

#### 1.1 Introduction

This chapter shows the background of the study, the problem statement, general and specific objectives, research questions, conceptual framework and significance of the study.

#### 1.2 Background of the study

The world's forest cover is 31% (WWF, 2016). Many of the worlds' most threatened and endangered animals live in forests, and 1.6 billion people rely on benefits from forests (WWF, 2016). But forests around the world are under threat from deforestation, jeopardizing these benefits. This impacts people's livelihoods and threatens a wide range of plant and animal species. Some 46,000 to 58,000 square miles of forest are lost each year equivalent to 48 football fields every minute (WWF, 2016).

A review of the forestry reports indicated that over a period of 15 years Uganda's forest cover has dropped from 4.9 m hectares in 1990 to 3.6 m in 2005 representing an overall reduction of 27% and a 1.9% depletion rate per annum and this rate is higher compared to other countries in the region with rates below 1% (Auditor general, 2010). The highest encroachment is noted mainly in the lake shore range where there are an estimated number of 150,000 encroachers (Auditor general, 2010)

A census of encroachers by the National Forestry Authority in 2005 found that 313 of 506 central forest reserves (CFRs) were encroached. Encroachment is evident from forest department reports that illegalities including encroachment were not serious problems before the 1960's. Since then, large stretches of erstwhile virgin forests have been cleared mainly for settlement and agriculture. The worst affected forest reserves are south Busoga forest reserve where more than 76% of the reserve has been encroached, Mabira forest reserve and Kibaale forest reserve, and Mt. Elgon forest reserve among others.

Kibaale district has 18 forest reserves. Out of these 15 are natural forests with an area 25,503 hectares and 3 are plantation forests with an area of 37 hectares. Reserves, which accounts for more than 70 percent of the total forest cover in the district. The rapidly increasing population of

#### REFERENCE

African women's network for community management of forests. 2014; The Role of Women in deforestation and Forest' A case study of women's perception. May, 2014. Gbarpolu County, Liberia,

Food and Agriculture Organization of the United Nations. 2013; Forests, Livelihoods and Poverty alleviation: the case of Uganda. Rome.

Gombya-Ssembajjwe and J. Bahati. 2006; Understanding the stability of forest reserve boundaries in the West Mengo region of Uganda. [Online] URL: <a href="http://www.ecologyandsociety.org/yol11/iss1/art38">http://www.ecologyandsociety.org/yol11/iss1/art38</a>.

International Resources Group (IRG) 2006; Uganda biodiversity and tropical forest assessment final report. July 2006. Connecticut Avenue, Washington

Kibaale district local government. 2009; Higher local government statistical abstract. June 2009, Karuguuza, Uganda

Ministry of Water and Environment. 2013; Water and Environment Sector Performance Report 2013. October 2013, Kampala, Uganda

National Environment Management Authority, 2006; Third National Biodiversity Report. Kampala, Uganda

National Environment Management Authority, 2007; State of Environment Report for Uganda 2006/07. Kampala, Uganda 357 pp

National Environment Management Authority, 2010; State of the Environment Report for Uganda 2010. Kampala, Uganda

Office of the auditor general, 2010: Environmental audit report on forestry activities in Uganda. July 2010, Kampala, Uganda.

Republic of Uganda (2010); National development plan 2010/11-2014/15. Entebbe, Uganda.

Sumit Chakravarty, S. K. Ghosh, C. P. Suresh, A. N. Dey and Gopal Shukla (2012); Deforestation: Causes, Effects and Control Strategies. Available from: <a href="http://www.intechopen.com/books/globalperspectives-on-sustainable-forest-management/deforestation-causes-effects-and-control-strategies">http://www.intechopen.com/books/globalperspectives-on-sustainable-forest-management/deforestation-causes-effects-and-control-strategies</a>.

The Republic of Uganda (2015); Second national development plan 2015/16 – 2019/20 (NDP II) - draft. 3rd march 2015Kampala, Uganda.

Uganda Bureau of Statistics. 2012; Uganda Demographic and Health Survey 2011. Kampala, Uganda.

Uganda Bureau of Statistics. 2014; The National Population and Housing Census 2014 – Provisional results. Kampala, Uganda

Uganda Bureau of Statistics. 2016; "The National Population and Housing Census 2014 – main report. Kampala, Uganda