# BUSITEMA<sup>(M)</sup> UNIVERSITY

## FACULTY OF NATURAL RESOURCES AND

## **ENVIRONMENTAL SCIENCES**

#### **DEPARTMENT OF NATURAL RESOURCE ECONOMICS**

## FINAL YEAR PROJECT PROPOSAL

## ASSESSING THE TREE COVER CONDITIONS IN KARAMOJA SUB REGION, NAPAK DISTRICT, NGOLERIET SUBCOUNTY, AND NARENGEMORU PARISH.

By

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A DISSERTATION SUBMITTED TO THE FACULTY OF NATURAL RESOURCE AND ENVIRONMENTAL SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCES IN NATURAL RESOURCE ECONOMICS OF BUSITEMA UNIVERSITY

**JULY 2024** 

### DECLARATION

I Moru Jonathan, hereby declare that unless otherwise references quoted, the work

Embodied in this research dissertation is entirely a result of my effort and has never been submitted to any other institution of higher learning for the award of a Bachelor's degree

SIGNATURE.....

DATE.....

#### **APPROVAL**

This is to certify that this research has been submitted with my approval as supervisor.

Signature.....

Date.....

PROF. ISABIRYE MOSES (SUPERVISOR)

#### DEDICATION

I dedicate this thesis to God Almighty for His unlimited grace, consistent love, immeasurable faithfulness, and sparing my life throughout my research. In addition, I dedicate this work to my parents Mr. Lokee Paul and Mrs. Lokol Teresa, my brother Lowal John Vianney, Ms. Lucy Naumo, Alice Sagal, and my beloved friends Abino Deogracious, and Sentongo Oscar, Nambuusi Kevin Theresa, and Nalwoga Hajjarah.

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### LIST OF ACRONYMS

MWN Ministry Of Water and Environment

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- SPSS Statistical Package for Social Scientists
- PAs Protected Areas
- FAO Food and Agricultural Organization
- THF Tropical High Forests
- DEO District Forest Officer
- PFE Permanent Forest Estate
- CFRs Central Forest Reserves
- UN United Nations
- NDLG Napak District Local Government

#### ABSTRACT

This research project was conducted in Ajok moliteny village, Narengemoru parish, Ngoleriet Sub County, Napak district. The data was collected during the month of July 2024. The main objective of the study was to assess the tree cover conditions in Ngoleriet Sub County. The study used a descriptive research design with both qualitative and quantitative approaches. Primary data was collected using structured questionnaires, and personal observation, and secondary data by review of existing literature from journals, District reports and books. Purposive sampling was done to select five key informants and simple random sampling the 50 households located in Ngoleriet Sub County, Narengemoru parish, Ajok moliteny village interviewed in the study. The primary data was coded, cleaned and entered in Microsoft excel and the exported to Statistical Package for Social Scientists (SPSS) for descriptive statistical analysis. Findings showed that the major drivers of tree cover loss in Ngoleriet Sub County were: Poverty and lack of alternative livelihood options, population growth and increased demand for resources, lack of awareness about the importance of trees and weak enforcement of tree cutting regulations.

However due to tree cover loss, there has been an impact on both the environment and the livelihoods of people. It was also found that the local communities around Ngoleriet Sub County are not aware of laws and policies regarding environmental conservation and management. This is due to low levels of education attained as well as low sensitization levels. It is concluded from the study that the major reasons why people cut trees include need for firewood, construction materials, income generation and lack of awareness about the negative impacts.

The recommendations from the study include: Strengthening laws and regulation governing natural resource utilization especially the plant resources, sensitize people on proper use and management of plant resources, the dangers associated with excessive tree cutting; Implement laws and policies regarding environmental conservation and management through increased monitoring and supervision of environmental activities in Ngoleriet sub county by the relevant stakeholders both at the sub county, district and national leve

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#### CHAPTER ONE: INTRODUCTION

#### **1.1 Introduction**

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

#### 1.2 Background of the study

Tree cover plays a critical role in sustaining the health and well-being of ecosystems worldwide. From regulating climate patterns to supporting biodiversity and providing livelihoods for communities, trees are vital components of our natural environment. The expansion of agriculture in Brazil causes the loss of vast swaths of tree cover and woody savannas in the tropics and sub-tropics (Strassburg et al 2017, McNichol et al 2018, and Certis et al 2018). Consequently, the loss of natural ecosystems in the tropics results in land surface that tends to warm faster and disperse heat less effectively than a comparable area of intact woody savanna (Feddema et al 2005, Ban-Weiss et al 2011) However, many regions across the globe, including Africa, have experienced significant tree cover loss due to various drivers such as population growth, agricultural expansion, and unsustainable land-use practices. According to the International Monetary Fund, the East African country has lost over a million hectares of tree cover, nearly a third of the country's total. According to the Food and Agriculture Organization, the rate of tree cover loss in Uganda was 51.1kha per year "between" 2015-2020, Somalia 76.8kha, Cameroon 58.0kha. Tree cover loss in Uganda is mainly attributed to rapid population growth and need for more land for settlement and agriculture, Urbanization, Industrialization and increased demand for solid biomass for fuel. According to the Uganda National Household Survey 2019/2020 shows that 73% and 21% of the households in Uganda use firewood and charcoal for cooking respectively. Tree cover loss has exposed Uganda to a number of hazards which have had significant impacts o the economy according to the World Bank Statistics on climate change. In 2021, Uganda lost 49,000 hectares of tree cover, equivalent to 23.5 million tons of carbon dioxide emission. According to Global Forest Watch, Uganda lost over 23% of its tree cover between 2000 and 2020. Uganda lost 64.3kha of humid, making up 7.9% of its total tree cover loss. This research focuses on assessing the tree cover conditions in Ngoleriet sub-

#### REFERENCES

Chakravarty at el. (2012). Deforestation; causes, effects and control strategies. Global perspective on sustainable forest management.

Cheptoris, H. S. (2016). Uganda's state of forestry. Ministry of water and environment.

Cooper, R. (2018). Current and projected impacts of renewable natural resources degradation on economic. Brighton, UK: Institute of Development Studies.

Diisi, J. (2018). Status of Forestry in Uganda. Masaka: National Forestry Authority.

Dr. Aryamanya-Mugisha, H. (. (2009). Enhancing Forests' Contribution to Growth and employment prosperity. Kampala: UNDP/NEMA/UNEP Poverty Environment Initiative, Uganda

IUCN. (2018). Assessing Iucn's Contribution to Uganda's Forest Landscape Restoration Processes. Kampala, Uganda: IUCN.

Kamugisha-Ruhombe, J. (2007). Forest Law Enforcement and Governance. Kampala, Uganda: GAF Consult Ltd.

NDLG. (2015). District Environmental Action Plan. Napak.

Mugyenyi, M. m. (2005). Balancing Nature Conservation and livelihoods. A legal analysis of the forestry evictions by the National Forestry Authority. Kampala Uganda.

Mutesi, T. M. (2021). Extent and Rate of Deforestation and Forest Degradation (1986–2016) in West Bugwe Central Forest Reserve, Uganda. Hindawi International Journal of Forestry Research, 2.

MWE. (2014). National state of the Environment for Uganda. Kampala Uganda: National Environment Management Authority (NEMA), P.O. Box 22255, Kampala Uganda.

MWE. (2017). Proposed forest reference level for Uganda. Republic of Uganda. Kampala: Ministry Of Water and Environment.

Nabugere, M. F. (2013). National Forest Plan. Kampala: Ministry of Water and Environment, Directorate of Environmental Affairs, P. O. Box 20026 Kampala, Uganda. NEMA. (2014). 11th National State of The Environment Report For Uganda, "Harnessing our environment as infrastructure for sustainable livelihood & development". KAMPALA: NEMA.

Okia, C. A. (2012). Global Perspectives on Sustainable Forest Management. Janeza Trdine 9, 51000 Rijeka, Croatia.

Onesmas Mugyenyi, et al. (2005). Balancing nature conservation and livelihoods.

The Republic of Uganda. (2003). National forestry and tree planting act, 2003. Kampala, Uganda.

Yara, B. (June, 2020). Deforestation in Uganda.