

FACULTY OF NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES

BACHELOR OF SCIENCE IN NATURAL RESOURCE ECONOMICS

ASSESSING THE DRIVERS AND IMPACTS OF WETLAND DEGRADATION: A CASE OF MYOMA WETLAND, IN KAKUMIRO DISTRICT.

BY

KANYUNYUZI JANE

BU/UG/2018/4116

SUPERVISOR: MADAM ARIANGO ESTHER

A research proposal submitted to the Faculty of Natural Resources and Environmental Sciences in the partial fulfillment of the requirements for the award of the degree of Bachelor of Science in Natural Resource Economics of Busitema University.

DECLARATION

I **KANYUNYUZI JANE**, declare that this research report submitted to the Faculty of Natural Resources and Environmental Sciences is my original work and to the best of my knowledge, it has not been submitted by any other person to any institution for any academic qualification.

SIGNATURE...../...../...../...../

KANYUNYUZI JANE

APPROVAL

This is to certify that this research report titled "Assessing the drivers and impacts of wetland degradation, a case of Myoma wetland, in Kakumiro district" is the original work for **KANYUNYUZI JANE** and it has been done under my supervision.

Avante Signature

MADAM ARIANGO ESTHER

DEDICATION

This work goes out to everyone who supported me in their own special way especially my parents; Mr. Kisembo Joseph (RIP), Mrs. Mbabazi Violet and my siblings;Fatia, Iryn, Norah, Dorah, kendel, friends and course mates who were with me throughout this journey.

ACKNOWLEDGEMENT

First I would like to thank the Almighty God who has provided and enabled me to go through all the challenges during this research and struggles throughout my studies.

I would like to take this humble opportunity to thank my dear supervisor Madam Ariango Esther for her advice, guidance and encouragement in the successful development of this research report not forgetting the tireless effort of the entire academic staff (both teaching and non-teaching) for smoothening my stay throughout the course.

I would like to thank my family and relatives, especially my dad Mr. Kisembo Joseph (RIP), my mum Mbabazi Violet for the financial assistance, the parental care given to me and the love they showed to me during my studies that enabled me to complete successfully and my siblings for their support, encouragement and prayers.

I would also want to appreciate my fellow course mates for they have each played a vital role in my success. They have both directly and indirectly influenced my academic prosperity, may the Almighty God reward you abundantly and may we keep the fire burning even after campus.

LIST OF ACRONYMS

NEMA-National Environmental Management Authority

MWE- Ministry of Water and Environment

US- United States

DLG- District local Government NGO-Non Governmental Organization KDLG- Kakumiro District Local Government DNRO- District Natural Resource Officer DWAP-District Wetland Action Plan

TABLE OF CONTENTS

DECLARATION	2
APPROVAL	
DEDICATION	
ACKNOWLEDGEMENT	5
LIST OF ACRONYMS	5
LIST OF TABLES	
LIST OF FIGURES	
ABSTRUCT	
CHAPTER ONE	
1.1 INTRODUCTION	
1.2 Background of the study	
1.3 Problem statement	
1.4 Significance of the study	14
1.5 Objectives of the study	14
1.5.1General objective	14
1.5.2 Specific objectives.	
1.6 Research questions	
1.7 Conceptual framework	
Chapter two: Literature review	
2.1 Introduction	
2.2 Factors leading to wetland degradation	
2.3 Impacts of wetland degradation	
2.3.1 Effects of wetland degradation on the environment	
2.3.2 Effects of wetland degradation on the community	

2.4 Measures, solutions and strategies to reduce wetland degradation	19
CHAPTER THREE: MATERIALS AND METHODS	
3.1 Overview	
3.2 Study area	
3.3 Research design	
3.4 Study / targeted population	
3.5 Sampling size and sampling procedures	
3.5.1 Sample Size	
3.5.2 Sampling technique and procedures	
3.6 Data types and collection methods	
3.6.1 Data types	
3.6.2 Data collection methods	
3.7 Ethical considerations	
3.8 Data analysis	
CHAPTER FOUR: RESULTS	
4.1. Introduction	
4.2. Demographic characteristics of respondents	
4.2.1 Sex of respondents	
4.2.2. Age of respondents	
4.2.3 Education level of respondents	
4.2.4. Marrital status of respondents	
4.2.5. Occupation of respondents	
4.2.6. Presence of activities carried out in or around Myoma wetland	
4.3. Drivers leading to the degradation of Myoma wetland	
4.3.1 Activities carried out in or around the wetland	

4.3.2. Benefits obtained from the activities carried out in or around the wetland	32
4.3.3 Rate of wetland degradation	34
4.3.4. Causes of wetland degradation	34
4.3.5 Presence of sensitization about wetland degradation	36
4.3.6. Sensitization about wetland degradation	36
4.4. Impacts resulting from the degradation of Myoma wetland	38
4.4.1. Change in the wetland	38
4.4.2. Impacts of wetland degradation	39
4.5. Strategies carried out to curb wetland degradation	40
4.5.1. Presence of government interventions to stop the degradation of Myoma wetla	nd 40
4.5.2. Government interventions to stop wetland degradation.	41
4.5.3. Other mitigation measures / interventions to reduce or stop wetland degradatio	n 41
CHAPTER FIVE: DISCUSION OF RESULTS	44
5.1. INTRODUCTION	44
5.2. Causes of Myoma wetland degradation	44
5.2. Impacts of the degradation of Myoma wetland	45
5.3. Strategies carried out to curb wetland degradation	46
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS	47
6.1. Introduction	47
6.2. Conclusions	47
6.3. Recommendations	47
6.4. Areas of further research	48
Appendix 1:Questionaire	51
Appendix 2: Field photographs	56

LIST OF TABLES

Table 1 Activities carried in or around the wetland	31
Table 2 Sensitization about wetland degradation	. 36
Table 3 Government interventions to stop wetland degradation	41

LIST OF FIGURES

Figure 1Conceptual framework	16
Figure 2: A map showing Myoma wetland and the proposed study area	22
Figure 3 sex of respondents	
Figure 4 Age of respondents	27
Figure 5 Education level of respondents	
Figure 6 Marital status of respondents	29
Figure 7 Occupation of respondents	30
Figure 8 Presence of activities carried out in or around Myoma wetland	30
Figure 9 Benefits obtained from the activities carried in or around Myoma wetland .	33
Figure 10 Rate of wetland degradation	34
Figure 11 Causes of wetland degradation	35
Figure 12 Presence of sensitization about wetland degradation	36
Figure 13 Changes in the wetland due to wetland degradation	38
Figure 14 Impacts of wetland degradation	39
Figure 15 Presence of government intervention to stop the degradation of Myoma w	etland
	40
Figure 16 Other interventions or measures to stop wetland degradation	42
Figure 17 maize and sugar cane growing in Myoma wetland	57
Figure 18 Rice growing in Myoma wetland	58
Figure 19 Construction of Kakumiro - Igayaza-Hioma road through the wetland	59

ABSTRUCT

The major purpose of this study was to assess the drivers and impacts of wetland degradation; a case of Myoma wetland in Kakumiro district. The study was guided by three objectives namely: to identify the drivers of the degradation of Myoma wetland, Kakumiro district, to find out the impacts of the degradation of the wetland ecosystem and to the livelihoods of the people around Myoma wetland, Kakumiro district and to identify the existing and potential intervention measures of controlling wetland degradation in Myoma wetland, Kakumiro district. The study adopted a descriptive research design and it relied mostly on primary data that was collected using questionnaires and interviews. The study generated both qualitative and quantitative data. The quantitative data was analyzed by tabulating and computing percentages while qualitative data was analyzed by coding and establishing common themes that emerged in the process of interacting with participants.

It was found out that that major driver of wetland degradation was carrying out agriculture and this was because of the fertile soils within and around the wetland that supports crop growth which has further attracted many people in the wetland. It was also found out that poverty, pollution and dumping of wastes have also accelerated wetland degradation .These have resulted in to loss of biodiversity due to the clearance of vegetation, outbreak of floods, drought thus poor crop growth, destruction of property and spread of diseases. It was also found out that wetland degradation is not beneficial but instead has more negative effects to the community around Myoma wetland since much of the land has been taken up by the activities carried out within the wetland that alter its natural setup.

The findings show that the government has efforts to reduce wetland degradation through sensitization and law enforcement by arresting and fining of encroachers. However, it has not been sufficient enough because of corruption among the enforcers and also of resistance from the encroachers that have continued to degrade the wetland despite of the penalties put up.

CHAPTER ONE

1.1 INTRODUCTION

This chapter covers the background of the study, problem statement, the general objective, specific objectives, research questions, significance of the study and the conceptual frame work.

1.2 Background of the study

A wetland is an ecosystem that depends on constant or recurrent and shallow inundation at near surface of the substrate (U.S National Academy of Sciences, 2017). According to Ramsar Convention on Wetlands (1971), wetlands are defined as "areas of marsh, static or flowing, fresh, blackish or salt, including areas of marine water and a depth of which at low tide does not exceed six meters". Most wetlands are characterized by hydric soils which carry physical and chemical indications of repeated and prolonged saturation at or near the surface but these vary in detail depending on the period of flooding, depth of water, altitude, fertility of the surrounding soil and other environmental factors (William, 1995).

Worldwide, wetlands are valuable ecosystems that occupy about 6% of the Earth's land surface whereby 2% is lakes, 30% bogs, 26% fens, 20% swamps and 15% floodplains (Ramsar Convention on Wetlands, 1971). However, since 1900, the world has lost 50% of its wetlands and as a result, access to fresh water has become a challenge, carbon storage has reduced and fresh water species have declined by 76% between 1970 and 2010 (Davidson, 2014).

In Uganda, wetlands are taken to be among the most productive ecosystems important for human survival. They are a source of water for domestic use, fish, raw materials for production, biodiversity conservation and water purification (Aryamanya, 2009). In 1994, Uganda's wetland coverage was 15.6%, by 2008, it had declined to 10.9% and due to agriculture expansion, industrialization and urbanization, and the wetland coverage in the country currently stands at 8.9% (MWE, 2019). In Kakumiro district, wetlands are estimated to cover 34%. However, since 2014, they have been greatly encroached on and degraded largely by sand miners, crop farmers and the growing urban centers (NEMA, 2019).

1.3 Problem statement

According to Businge (2017), due to increasing population pressure on the natural environment, wetland degradation is becoming a severe problem across the country. Kakumiro district has the

References

Al-mahfadi, A. S., & Dakki, M. (2016). Causes and Effects of wetland degradation in yemen. October 2019, 7. https://doi.org/www.lioab.org

Nayana, (2013). Wetland Degradation and Ecological Restoration. 2013, 2. https://doi.org/http.//dx.doi.org/10.1155/2013/52632

Businge, Z., District, K., Government, L., Madrigal, V., & Barrio, I. C. (2017). Drivers of wetland degradation in Western Uganda and Iceland and how they are addressed in current policies. https://doi.org/http;//www.unulrt.is/static/fellows/document/businga2017

Committee, B., Isbn, C., Pdf, T., Press, N. A., Press, N. A., Academy, N., Academy, N., & Press, N. A. (1995). wetland ;Characteristicsand boundaries. https://doi.org/www.national.acaemies.org

KatereggaD. and MageziA. (2005) 'The effects of wetland degradation on the socio economic welfare of Rubaga division'.

MWE (2019) 'Preparation of Nkusi Catchment Management Plan Preparation of Nkusi Catchment Management Plan', (August).

D r Joshua Zake, Executive Director, E. A. (2019). Wetland 's Contributions to Climate Change Regulation ! Is this a Missed Opportunity for Uganda ? (Vol. 2017). https://doi.org/ed@enavlert.org

Dr.Aryamanya Mugisha Henry. (2009). Enhancing Wetlands ' Contribution to Growth , Employment and Poverty. https://doi.org/www.unpei.org

- Environment and Natural Resource Unit. (2012). Uganda Country Environmental Analysis (CEA) (Issue April).
- Gebresllassie, H., Gashaw, T., & Mehari, A. (2014). Wetland Degradation in Ethiopia : Causes, Consequences and Remedies. 4(11), 40–49. https://doi.org/www.iiste.org
- Gideon, O. J., & Bernard, B. (2018). Effects of Human Wetland Encroachment on the Degradatio, (Vol. 6, Issue 6). https://doi.org/10.13189/eer.2018.060606

- Henninger, NorbertLandsberg, F. at el. (2009). Mapping a Better Future How Spatial Analysis Can Benefi t Wetlands and Reduce Poverty in Uganda. www.wri.org
- Henry Muganwa Kajura. (1995). National policy for the conservation and management of wetland resources.
- NEMA,(2000). State of environment report for Uganda. National Environment Management Authority
- NEMA. (2011). wetland for forests (Issue February). https://doi.org/Haryamanya@nemaug.org
- Clark, (2012). Wetlands : Why should I care ? How wetlands are essential to our future. https://doi.org/www.ramser.org/sites-countries/the-ramser-sites

Ramsar convention on wetlands. (1971). 1, 2. https://doi.org/www.ramsar.org

- Sharon, C. (2005). Effects of wetland degradation on the hydrological regime of a quaternary catchment. (Issue September) [Internationl Water Management Institute]. http://www.csir.co.za/rhp/stayeofriver/state of crocsabieolif o1/info-wetland.html
- United States Environment Protection Agency Office of Water. (n.d.). National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution. 204.
- Wood, A., Halsema, G. E. Van, & Interactions, W. R. (2008). Scoping agriculture wetland interactions. https://doi.org/@fao.org