

BUSITEMA UNIVERSITY

**FACULTY OF NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES
DEPARTMENT OF NATURAL RESOURCE ECONOMICS**

**COMMUNITY PERCEPTION ON THE IMPACTS OF THE TRAGEDY OF
COMMONS TOWARDS FISHERIES RESOURCES AT NAMASAGALI FISHING
VILLAGES**

BY

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DECLARATION

I **OJOK DENIS**, declare that this research report submitted to the Faculty of Natural Resource 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 the award of a degree in Bachelor of Science in Natural Resource Economics.

Signature.....

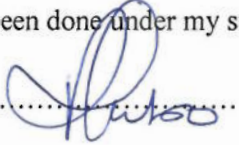
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APPROVAL

This is to certify that this research report Titled “**Community Perception on Impacts of the Tragedy of Commons Towards Fisheries Resources at Namasagali Fishing Villages**” is the original work for OJOK DENIS and it has been done under my supervision.

Signature.....

DATE.....30 / 06 / 2017

MS GIMBO REBBECA

SUPERVISOR

DEDICATION

I would like to dedicate this research report to kaitezi Lydia and my Brothers such as Leo Odongo, Kenneth, Daniel and my sisters; Christine and Sarah for their great support towards my studies.

I would also like to dedicate this report to my dear ones particularly Odyek Walter, Ogwang Edward, relatives and friends who have been giving me all sorts of support be it advices, finances, and material support that I wanted from them and my God bless them abundantly.

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By God's grace things that seemed impossible to me, I was able to accomplish them easily therefore Glory to God.

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LIST OF ACRONYMS/ABBREVIATIONS

NEMA	National Environmental Management Organization
NGO	Non-Governmental Organization
NAFIRI	National fisheries resource research organization
BMU	Beach management unit
OECD	Organization of Economic Corporation and development
DFO	District Fisheries Officer
BMC	Beach Management Committee category,
FEW	Fisheries Extension Workers,
FC	Fishing Crews.
BO	Boat Owners
BM&R	Boat Makers and Repairers
FP	Fish Processors
FM	Fish Mongers
GM&R	Gear Makers and Repairers
FAO	Food and Agricultural Organization
FEO	Fisheries Extension Officer
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
LVFO	Lake Victoria Fisheries Organization
BMU	Beach Management Unit
BMCs	Beach Management Committees
DFR	Department of Fisheries Resources

IFMP	Implementation of Fisheries Management Plan
LC	Local Council
FISH	Fisheries Investment for Sustainable Harvest

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ABSTRACT

The study examined the perceived impacts of the tragedy of the commons on the fisheries resource, the case study of Namasagali Sub-County

The fisheries resource of the sub-county is from Victoria Nile which has its way through Namasagali sub-county and from which fishing activity takes place in a number of landing sites/fishing villages including: Kalama, Kakindu, Kadungu, Kasanga, Namasagali and Malugulia landing sites

The study used qualitative approach to collect data, analyze and present it. The methods of data collection used were interviews, questionnaires and field observations. The data was collected from a sample of eighty-one respondents, which include 70 males and 11 females. Data was analyzed using Excel and SPSS 16, which facilitated the drawing of pie charts, bar graphs and tables used to analyze the relationships between different variables.

Findings from the study indicate that men dominate the fishing activity shown by 86.4%, compared to 13.6% for the women. fishing was found to be main occupation and major income source here.

The finding from the study indicated that most people have been in the fishing activity from 1-5 years and most of the believe that their activity is being regulated shown be 93% and these regulations have been found to be having some problems such lower catch, conflict, stealing of legal gears.

The study has also shown that there is general reduction in the fish stock manifested by reduction in the current harvest for instance in the previous 5 years majority of the people were harvesting over 10kgs unlike now days where majority is harvesting between 0-5kgs only

Basing on these results, it is noticed that fishing activities such fishing, smoking, boat landing, transporting and selling fish and fish products poses dangers on the environment and they include: deforestation, coastal modification, species facing threat of extinction and others and the known measures to address these problems includes afforestation, re-afforestation, cutting mature trees only among others.

In conclusion the low restriction on the entry and exploitation of the fish resources has resulted into massive reduction in the fish stock reveal by the high reduction in the current harvest compared to the harvest in the previous 5 years This also confirms the fact that when the fish resources are openly accessed it causes what is called the tragedy of commons and its effects as each fishermen aims at maximizing his personal catch and this brings about the use of bad fishing methods of fishing such as using kokota, casts netting which catches even the immature fish that then result into low catch by all the fishermen.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter provides information on the background of this study, the problem statement, main objective and specific objectives of this study. It also encompasses the abstract of this research report and the conceptual framework.

1.1 Background of the study

The term Tragedy of the Commons was first described by Garrett Hardin in 1968 who affirmed that "the inherent logic of the commons remorselessly generates tragedy". This tragedy is a dilemma arising from the situation in which individuals, driven independently by the power of their own self-interests, ultimately deplete a shared limited resource without considering future sustainability of the same resource (Dietz et al., 2003). In fact, they even forget that their livelihood depends on the sustainability of the resources in question and this fuels more tragedy. The word tragedy refers to the depletion of the limited resources while commons stands for inclusive ownership suggesting the absence of private ownership and property rights of the resource in question (Hillman, 2002), (Ogello, Obiero, & Munguti, 2013)

The fisheries sector in Uganda is one of the sectors that constitute the Ministry of Agriculture, Animal Industry and Fisheries [MAAIF] and it comprises of lake fishery and aquaculture sub-sectors. According to [MAAIF 2003]

Fishery is an entity engaged in raising or harvesting fish which is determined by some authority to be a fishery. According to the FAO, a fishery is typically defined in terms of the "people involved, species or type of fish, area of water or seabed, method of fishing, class of boats, and purpose of the activities or a combination of the foregoing features".

Uganda has 20 percent of its surface areas as water. This comprises five major lakes (Victoria, Albert, Kyoga, Edward and George and about 160 minor lakes, rivers and wetlands). These water bodies, if well managed, have an estimated production potential of over 800,000 tons of fish although the current catch is estimated at 430,000 tones (MAAIF).

Although Uganda has more than 350 fish species, the Nile perch (*Lates niloticus*) and Tilapia (*Oreochromis niloticus*) remain the most important, making up 46% and 38% of the total respectively. The sector depends on natural water bodies which account for about 18% of Uganda's total surface area. In 2007 the total amount of fish catch was 374,300 metric tons, an increase from 367,200 metric tons in 2006. Lake Victoria - the largest tropical lake and second largest freshwater lake in the world contributed 60% of the annual fish catch (221,300 metric tons) while other lakes such as Kyoga and Albert contribute 16% (60,000 MT) and 15% (56,500 MT) respectively. (MAAIF)

REFERENCES

- Bland S.R.J [1995]; Common property and poverty, Fisheries Co-management in Malawi; Bulletin No. 30; Lilongwe, Malawi.
- Chirwa W.C. (1996), Fishing rights, Ecology and Conservation along southern Lake Malawi, 1920-1964.
- Dunn, I.G. [1989]; Fisheries Management Study in the Queen Elizabeth National Park. Mission Report for EEC Project No. 4100.037.42.44, Conservation of Natural Resources. Rome: AGRICONSULTING, 35p.
- FAO [1993]; Fisheries management in the south-east arm of Lake Malawi, the Upper Shire river and Lake Malombe, with particular reference to the fisheries on chambo (*Oreochromis* spp., CIFA Technical Paper No 21, FAO, Rome
- FAO. *Annuaire statistique des pêches*, Rome, Vol. 54 à 78.
- FAO [2000]; *The State of the World Fisheries and Aquaculture*, part 1, Rome
- GLOBEFISH, 1995. Research Programme. Trade regulations and trends in the fish trade in the USA, the European Union and Japan. Vol. 32. 75p.
- Hardin, G. [1968]; Tragedy of the commons, *science* Vol.162:1243-48.
- Jentoft, S. [1989]; Fisheries co-management: Delegating Government Responsibility to Fishermen's Organizations. *Marine Policy* 1989, pp. 137- 154.
- Julius Francis and Elin Torell [2004]; Human dimensions of coastal management in the western Indian Ocean region, Vol. 47, issues 7-8, Pg 299-307.
- Kakooza T [2002]; *Research- an introduction to research methodology*, Kampala, Uganda
- Larsen, E., Kolding, J. (2003); *Major dilemmas in the sustainable utilization of SADC freshwater fisheries*
- Litosseliti, L. [2003]; *Using Focus Groups in Research*. London & New York: Continuum.
- LVEMP [2002]; *Community participation in Fisheries Management; Background information*. Impact multimedia, Entebbe, Uganda.
- LVFO [2001]; *Strategic Vision for Lake Victoria (1999-2015)*, Jinja, Uganda.

MAAIF [2003]; Guidelines for BMUs in Uganda. Department of fisheries Resources, Entebbe, Uganda.

McWhinnie, S. (2007). *The Tragedy of the Commons in International Fisheries : An Empirical Examination*
Stephanie McWhinnie *The Tragedy of the Commons in International Fisheries : An Empirical Examination*.

Njifonjou, O., & Njock, J. C. (n.d.). *African Fisheries : Major Trends and Diagnostic of the 20 th Century*, (237).

No Title. (2009), (May).

Odongkara, K., Ntambi, B., & Khisa, G. (2006). *CONTRIBUTION OF LAKE VICTORIA FISHERIES TO ECONOMIC GROWTH , POVERTY REDUCTION AND DEVELOPMENT Literature Review and Data Implementation of a Fisheries Management Plan National Fisheries Resources Research Institute*.

Ogello, E. O., Obiero, K., & Munguti, J. M. (2013). *LAKE VICTORIA AND THE COMMON PROPERTY DEBATE : IS THE TRAGEDY OF THE COMMONS A THREAT TO ITS FUTURE ?*, 7(2), 101–126.

State, T., & Fisheries, W. (2014). *The State of World Fisheries and Aquaculture 2014*.

Uganda. (n.d.).

Westaway, E., Barratt, C., & Seeley, J. (n.d.). *Educational attainment and literacy in ugandan fishing communities : Access for All ?*, 8(2), 73–97.