ASSESSING IMPACTS OF INDUSTRIAL EFFLUENTS ON THE WATER QUALITY OF WETLAND ECOSYSTEMS

CASE STUDY G.M SUGAR FACTORY, NJERU MUNICIPALITY, BUIKWE DISTRICT

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DECLARATION

I **Wasswa Hussein** hereby declare that this report is my original work. It has never been submitted to any university or any higher institution of learning for any academic award. Thus, I accept to be responsible for everything contained in it.

Signature……. Date 27/11/2016.

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APPROVAL

This is to acknowledge that the work entitled "**assessing Impacts of industrial effluents on water quality of wetland ecosystems .A case study: G.M Sugar Factory Njeru Municipality, Buikwe district**" has been done by Wasswa Hussein under my close supervision and is now ready for submission to the Faculty of Natural Resource and Environmental Science.

Signature ..... Date 27/06/2016

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DEDICATION

I dedicate this report to father Mr. Siraj who has sacrificed everything to ensure my academic success, my mum Madam Faridha and my brothers and sisters. I also dedicate it to my close friend Nakabiri Ziadah as a sign of appreciation for her unending efforts and support for my wellbeing. Thank you for giving me such a moral foundation on which I have managed to come this far. May the good Almighty Allah reward you abundantly

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LIST OF ACRYONMS

BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
NDP	National Development Plan
EMA	Environmental Management Authority
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
IPCC	Intergovernmental Penal on Climate Change
LVEMP	Lake Victoria Environmental Management Programme
MWE	Ministry of Water and Environment
NEMA	National Environment Management Authority
NGO	Non-Government Organization
SPSS	Statistical Package for Social Scientist
UBOS	Uganda Bureau of Statistics
UNEP	United Nations Environmental Programme
WHO	World Health Organization
DO	Dissolved Oxygen
NIO	National and International Organizations
UNCHS	United Nations Conference on Human Settlement
TSS	Total Suspended Solids
TRI	Toxics Release Inventory
MCLG	Maximum contaminant Level Goals
VEC	Village Environment Committees
GPS	Global Positioning System

ABSTRACT

The study assessed the impacts of industrial effluents on water quality of wetland ecosystems, A case study: G.M Sugar Factory Njeru Municipality, Njeru division Buikwe district was assessed so that preventive measures may be taken. The streams pass through Njeru wetlands that is being degraded thus increasing the degree of pollution into Lake Victoria and Victoria Nile. This is through emissions of toxic gases in the atmosphere, discharge of industrial effluents in the nearby wetland hence affecting the provisional, supportive and regulatory functions of the wetland around the factory. This is also mostly done through too much particles of bagasse from the factory and the too much dust from the turning Lorries which transport sugar cane from the plantation fields.

In depth review of literature of various scholars, environmental agencies' reports and publication as well as browsing through internet was done with aim of achieving of the objectives of the study. The literature shows that industrial effluents from the factories affect negatively nearby by wetlands and streams if the regulatory measures are not put into consideration.

The study basically dwelled on both qualitative and quantitative data. Captured data was analyzed and processed in EXCELL, SPSS and STATA.

It was found that there is a high degree of pollution in the streams and wetlands and recommendations on reduction of pollution in the streams were made. Sources of water pollution include effluents from G.M Sugar factory.

Key words: industrialization, wetland, streams, ecosystems services, effluents, water quality

CHAPTER ONE:

1.0 INTRODUCTION

1.1 Background and Context

This report presents an analysis of the status and assessing the impacts of industrial effluents on water quality of wetland ecosystems , A case study of G.M Sugar Factory in Njeru Municipality Buikwe district. .

Water, a natural resource, is one of the most common and unusual substance. The effect of water on almost everything in our environment is far more consequential than might be imagined. Water is called "the universal solvent" because of its extraordinary ability to dissolve more substances in greater quantity than any other liquid. The salinity of world's oceans is a direct result of water's ability to dissolve rock materials as water flows over land to the sea.

If the amount of waste increases beyond the limit of homeostasis of this system, then the problem of biological significance arises. Under such conditions, water becomes unfit for use. The contribution of chemical industry is evident range of marketable products like cosmetics, plastics, drugs, synthetic, fibres, paints, cleaning agents etc. Most of these chemicals ultimately find their way into fresh water resources via sewage. Some of them find their way into food chain, crippling the natural biotic organisms to extinction. Still others cause general pollution of water, which then becomes unfit for human use. Unrestrained release of heavy metals via discharge of industrial effluents, sewage and agro-chemicals into the water resources has not only rendered unusable but also has adversely affected the ground water & aquatic life. (Orient J Chem. 2013)

The availability and quality of water always have played an important role in determining the quality of life. Water quality is closely linked to water use and to the state of economic development (Chennakrishnan *et al.*, 2008). Ground and surface waters can be contaminated by several sources. In urban areas, the careless disposal of industrial effluents and other wastes may

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