



**BUSITEMA  
UNIVERSITY**  
*Pursuing Excellence*

**FACULTY OF ENGINEERING**  
**DEPARTMENT OF WATER RESOURCES AND  
MINING ENGINEERING**

**WATER RESOURCES ENGINEERING PROGRAMME**

**FINAL YEAR PROJECT REPORT**

**DESIGN AND CONSTRUCTION OF A MOTORCYCLE AND SOLAR POWERED,  
WATER PUMPING, TREATMENT AND IRRIGATION.**

(CASE STUDY: NAMUKOMBE VILLAGE, BUSIA DISTRICT)

BY

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**A final year project report submitted to the Department of Mining and Water resources  
engineering as a partial fulfillment of the requirements for the award of a Bachelor of  
Science in water Resources Engineering**

## ABSTRACT

This paper begins with an overview of the origin, magnitude, geographical distribution and health consequences of consumption of mercury contaminated water around the world and particularly in Namukome village in Busia district.

Access to healthy, safe, and reliable drinking water is often limited amidst people living in developing countries. Water pollution from industrial waste, agricultural chemicals, animal waste, and poor sanitation results in sickness, disease and death. Since developing countries also tend to be poor, its' people need low-cost, easy-to-use and easily accessible water treatment methods. This study is designed to investigate the effectiveness of a motorcycle and solar powered water pumping, treatment and irrigation system for potable water use and taking into consideration a house hold of five people and small field rice irrigation farm. It consists of a water treatment, pumping and irrigation system.

Design of the various parts of the water treatment, pumping and irrigation system was done using the relevant formulas and equations. The overall system is designed to be small and light.

## DECLARATION

I, hereby declare to the best of my knowledge, that this project report is an outcome of my original work and that it has not been presented to any institution of learning for an academic award.

Name: .....

Signature.....

## APPROVAL

This final research report has been submitted to the Faculty of Engineering for examination with approval of my supervisor.

**MAIN SUPERVISOR: MR. MASERUKA S BENDICTO**

Signature.....

Date...../...../.....

## ACKNOWLEDGEMENT

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Lastly, I am grateful to the people of Namukombe village for enabling me access their water source with a lot of ease, to my fellow students and friends in and out of the university for their unseasonal support and to my parents and guardians. May God bless all your endeavors.

## ACRONYMS.

PVC - Polyvinyl Chloride

Rpm	-	Revolutions per minute
CWF	-	Ceramic Water Filter
WHO	-	World health organization
EC	-	Electrocoagulation
UV-		Ultra violet
UNICEF-		United Nations Children's Fund
PPE	-	Personal preventive equipment
NGO	-	Non -government organizations
PEAP	-	Poverty eradication plan
NWSC-		National Water and Sewerage Corporation

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