



**BUSITEMA
UNIVERSITY**
Pursuing Excellence

**FACULTY OF ENGINEERING
DEPARTMENT OF MINING AND WATER RESOURCES ENGINEERING
FINAL YEAR PROJECT**

**DESIGN AND CONSTRUCTION OF A GRAVITY FLOW DRIP IRRIGATION RAINWATER
HARVESTING SYSTEM AT BUKADE HILL (BUSITEMA UNIVERSITY)**

BY

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ABSTRACT

This paper begins with an overview of the different irrigation types, benefits of irrigation, different pipes used in irrigation systems, rainwater harvesting. Busitema University faces vast number of water challenges such as; operating on one strained water source, unstable power supply, frequent pump breakdowns, low capacity yield and poorly managed rainwater harvesting systems. Since water can be collected and stored during the rainy season when the irrigation demands are low and be used in a dry season when there are high irrigation water demands and it can be stored for a long period then, there is a need to design a rain water harvesting system from Bukade hill Busitema University and to design a gravity flow irrigation system for the Busitema University farm. The paper includes designing of rainwater harvesting system and irrigation system. A control experiment was carried out to compare the different results and an economic analysis was performed to evaluate the viability of the project. Results of the different specific objectives were obtained as shown in Chapter four

DECLARATION

We, OKIROR IVAN ERIC and LUMALA RONALD here by certify and confirm that the information we have written in this project is a result of our own effort, research and has not been submitted before to any university or institution of higher learning for any academic award.

OKIROR IVAN ERIC

Signature..... Date.....

LUMALA RONALD

Signature..... Date.....

APPROVAL

This final year project on design and construction of a gravity flow drip irrigation rainwater harvesting systems under the supervision of;

Main Supervisor

Name: Mr. Maseruka Bendicto

Signature.....Date.....

ACKNOWLEDGEMENT

We thank the Almighty God for the far that He has brought us, the gift of life, knowledge, protection and his provision to us during and throughout the writing of this project.

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Lastly, we thank all those who were involved directly or indirectly during our project.

May the good Lord reward you all!

LIST OF ACCRONYMS

DRWH- Domestic rainwater harvesting

IDF- Intensity duration flow

MDG- Millennium Development Goals

PVC- Polyvinyl Chloride

SSA- Sub Saharan Africa

SDG- Sustainable Development Goals

PE- Polyethylene

EU-Emission uniformity

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