



**BUSITEMA
UNIVERSITY**
Pursuing Excellence

FACULTY OF ENGINEERING

DEPARTMENT OF AGRICULTURAL MECHANIZATION AND IRRIGATION
ENGINEERING

DESIGN AND FABRICATION OF AN ENGINE POWERED FORAGE HARVESTING
MACHINE.

DESIGN PROJECT FINAL YEAR.

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A final year project submitted to the Department of Agricultural Mechanization and Irrigation Engineering as a partial fulfillment of the requirements for the award of a Bachelor of Sciences degree in Agricultural Mechanization and Irrigation Engineering

DECEMBER 2022

DECLARATION

I Mpango Alex, Arimpa Fortunate and Benjamin Okeyoh declare that all the material portrayed in this project proposal report is original and has never been submitted in for award of any Degree, certificate, or diploma to any university or institution of higher learning.

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APPROVAL.

This is to certify that the project proposal under the title "DESIGN AND FABRICATION OF AN ENGINE POWERED FORAGE HARVESTING MACHINE." has been done under my guidance and supervision and is now ready for examination.

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DEDICATION.

This project proposal is dedicated to first and foremost the team that developed the proposal that is Okeyoh Benjamin, Mpango Alex and Arimpa Fortunate. Without leaving out our beloved family members in appreciation for their selfless care and parental support provided to enable us achieve greater success. It is with their support that we have managed to attain this level.

ACKNOWLEDGMENT

We extend sincere gratitude to the department of Agricultural Mechanization and Irrigation inclusive of all the lecturers we have interacted with for the knowledge and skills they have impacted unto us. Great appreciation to our supervisor **Mr. Ashabahebwa Ambrose** for the technical guidance and support he rendered to us through this design project. With a humble heart sincerely thank the Agricultural Mechanization (**AMI**) **class 2018** for their tireless support and morale boosting. Lastly, to **our beloved parents** who have always wished for us good without doubt through this academic journey.

ABSTRACT

This study will highlight generally the design and fabrication of an engine powered forage harvesting machine. Currently most livestock farmers in Uganda use the manual methods for forage harvesting i.e., harvesting forage manually using pangas and sickles. This method is associated with drudgery, time consuming and expensive as it requires several people to meet the labor demand. There are machines available in the other developed countries but due to their high costs, they are not affordable for the local farmers. Thus, need to develop an affordable machine for the local farmers that satisfies their needs from locally available material. The effective development of this machine reduces on the fully dependence of human labor, increasing the harvested forage output due to increased efficiency of the forage harvester machine.

Key words: Design and fabrication, forage harvesting, locally available materials.

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List of acronyms

AMI.....	Agricultural Mechanization and Irrigation
MAAIF.....	Ministry of Agriculture, Animal industry and Fisheries
FAO.....	Food and Agricultural Organization
GDP.....	Gross Domestic Product
SDGs.....	Sustainable Development Goals
UPE.....	Universal Primary Education
USE.....	Universal Secondary Education
USD.....	United States Dollar

CHAPTER ONE

1. 1.0 INTRODUCTION

This chapter consists of the background, problem statement, and justification, objectives of the study, significance of the study and scope of the project.

2. 1.2 BACKGROUND.

Economic growth is proposed to be one of the primary and fundamental objectives of developing countries. For most of the developing countries, the agriculture sector is generally observed as an engine for growth. Theoretically and empirically there is consensus that a change in agriculture has more chances to change an economy's overall output(Matandare & Makepe, 2021). Agriculture which consists of crop and animal production contributes to the economy through providing important levels of employment especially providing the main source of income in rural areas where average GDP per capita is typically below than that of urban areas The practice of either crop or animal production activities influences the other through its effects to the ecosystem as shown in *figure 1*. In recent years, there has been increased pressure placed on the agricultural sector in order to increase food production rates to meet the change in food demand while also providing increasing quantities of fiber and fuel. This pressure has risen from a growing human population, economic development and the nutrition transition.(Antonopoulos et al., 2021).

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