BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT REPORT

TITLE: A MOBILE APPLICATION FOR LAND AND CROP SUITABILITY MAPPING. CASE STUDY-BUSITEMA SUBCOUNTY.

BY

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A Final Year Project report Submitted to the Department of Computer Engineering in Partial Fulfillment for the Award of Bachelor of Computer Engineering Degree

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DECLARATION.

I FAITH DEBORA NETUGU, declare that this project report is my original work and has never been submitted for any other degree award to any other university or institution of higher learning.

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BU/UP/2015/351

APPROVAL.

This is to certify that the project under the title "Mobile Application for Land and Crop Suitability Mapping" has been done under my supervision and is now ready for examination.

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MR.OCEN GILBERT

Date: 3rd/Sep/2019

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ABSTRACT.

The farming system is changing, that is modern farming is being adopted every day. There are growing pressures related to low crop yields and increasing population. Most people practice farming as their source of income yet they get difficulties in identifying suitable lands for their crops. Farmers plant crops basing on their own knowledge, despite the improvements being adopted by government where every sub county has an agricultural officer there are challenges like time wasting, high costs and delay in information delivery. Modern farming need to integrate with digital systems that make use of current available technologies to help in saving time and associated costs.

LIST OF ACRONYMS.

UCA	Uganda Census Agriculture.
GDP	Gross Domestic Product
PHC	Population and Housing Census.
PY	Potential Yields.
IDE	Integrated development Environment.
GPS	Global positioning system.
NDVI	Normalized Difference Vegetation Index.
OS	Operating system.
XML	Extensible markup language.
PHP	Hypertext preprocessor.
SSMS	SQL server management studio.
ERD	Entity relationship diagram.

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CHAPTER ONE.

INTRODUCTION

1.0 Introduction.

This chapter includes the background, the problem statement, the objectives, the justification and the scope.

1.1 Background.

Uganda is regarded as an agriculture-based economy and a food basket in the Eastern African region, given its ability to produce a variety of foods and in large quantities. It comprises of the food and cash crops production, livestock, forestry and fishing subsectors. These sub-sectors contributed 62, 8, 17 and 13 percent respectively to agricultural Gross Domestic Product (GDP) in 2011/12[1]. Agriculture is considered an important sector that contributed 25.4 and 23 percent to GDP in 2010 and 2014 respectively[2]. According to the Uganda Census Agriculture (UCA) 2008/9, there were approximately 3.95 million small and medium agricultural households with a population of 19.3m persons (60% of the Uganda's population) these produced the bulk (over 95 percent) of the food and cash crops[3][4].

The agriculture sector, which is mainly subsistence, employs the largest proportion of Uganda's work force for persons aged 10 and above[5]. During the Population and Housing Census (PHC) 2014, the agricultural sector accounted for over 70 percent of the total employment making it the dominant economic activity at that time[6]. The sector remains a major employer to date, with 69 percent of the working population engaged in agriculture during 2015. The sector is crucial for general growth of the economy (providing inputs into the industrial sector) and poverty reduction especially among the rural poor for whom it provides employment[1]. However, agriculture being a major activity in the country more land for cultivation is needed and yet the growing population is high demanding for more land for occupation.

The growing population does not depend only on the size or density of the population, but on the ratio of population to available sustainable resources. It also depends on how resources are managed and distributed throughout the population. Growing population is one of the hazards and serious problem, which create a great obstacle in the way of national development[7]. It is estimated that growth in human population affects the global land use pattern available for agriculture[8]. To meet the demand for food with the growing population on the available land, it is suggested that the annual crop production should be increased[9]. However, available secondary data show that crop yields are low despite the availability of productivity enhancing technologies on the market like chemical fertilizer application, improved seeds.

Soil structure and quality is so poor, farmers are forced to use chemical fertilizers to encourage plant growth. These fertilizers, in turn, disrupt the natural makeup of the soil and contribute

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