

# FACULTY OF NATURAL RESOURCES AND ENVIONMENTAL SCIENCE DEPARTMENT OF NATURAL RESOURCE ECONOMICS

ASSESSING FACTORS RESPONSIBLE FOR LOW ADOPTION OF IMPROVED FIRE COOK STOVES IN AKERIAU SUB COUNTY, AMURIA DISTRICT.

BY

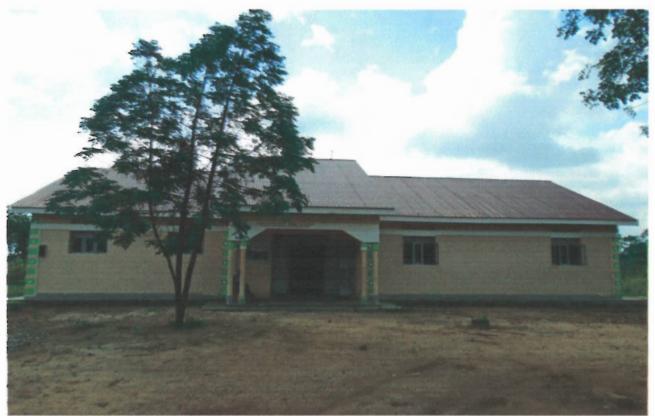
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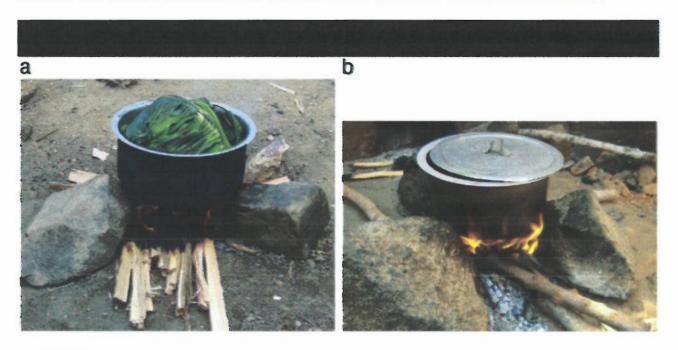


RESEARCH REPORT SUBMITTED TO THE FACULTY OF NATURAL RESOURCE AND ENVIRONMENTAL SCIENCE IN PARTIAL FULFILLMENT OF THE AWARD OF BACHELOR OF SCIENCE DEGREE IN NATURAL RESOURCE ECONOMICS OF BUSITEMA UNIVERSITY

**JUNE 2016** 



AKERIAU SUB COUNTY HEADQUATERS, ORUNGO COUNTY, AMURIA DISTRICT, N.EASTERN (u)



A TRADITIONAL THREE-STONE OPEN FIRE STOVE, A LEADING CAUSE OF RESPIRATORY ILLNESSES

## **DECLARATION**

١	hereb	Y	declare	that	this	report	is	the	original	version	of	my	academic	study
V	hich h	as	s never	been	subn	nitted	els	ewhe	ere.					

Signature Date 8 107 |2016 -

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## APPROVAL

This report conducted in Akeriau Sub County reflects findings of the topic selected and has been approved to be submitted to the Faculty of Natural Resource and Environmental Science for a partial fulfillment of the award of a Bachelor of Science Degree in Natural Resources Economics.

Date 11/7/2016

Henry Kisu-Kisira (Lecturer)

## DEDICATION

I humbly dedicate this study report to all my family members; Esther Caroline Amayo in particular, my parents Mr. and Ms Edoku John Robert, my friends, all my University lecturers most especially Mr. Kisu-Kisira my Supervisor and long time academic mentor.

### **ACKNOWLEDGEMENT**

I would like to acknowledge God's power and love for mankind that has kept me all through my academic journey and success, Glory is to His Name Amen.

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## **ABBREVIATIONS**

ANRS Amhara National Regional State.

ASB Albeit Samaritan Band

CDF Community Development Facilitator

CMFFSHS Construction Manual For the Firewood Saving house hold

Stoves.

COPD Chronic Obstructive Pulmonary Disease

DAO District Agricultural officer
DEO District Environment Officer

DFO District Forest Officer

DNRO District Natural Resource Officer

DPO District Production Officer

EPAE Extended Protection Amendatory Endorsement

FAO Food and Agriculture organization

FAOSTAT Food and Agriculture Organization Statistics.

GACC Gatwick Area Conservation Campaign

GSS General Social Survey

GVEPI Global village energy partnership international.

HHs House holds.

ICS Improved Cook Stoves

IJES International Journal of Energy Science (IJES)

LPG Liquidified Petroleum Gas

MEMD Ministry of Energy and Mineral Development
ONIL Improved Cook stove name developed by ONIL

PM Particulate matter.

PREEEP Renewable Energy and Energy Efficiency Programme.

RESPIRE Randomized Exposure Study of Pollution Indoors and

Respiratory Effects

USD United States Dollar

WDI World Development Indicator

WHO World Health Organization

### ABSTRACT

This study was carried out in Akeriau Sub County, Amuria district of North Eastern Uganda. The main objective of the study was to assess the factors responsible for low adoption of improved fire cook stove technology in Akeriau Sub County. The specific objectives were; to find out the different types of improved fire cook stoves used by house holds in Akeriau Sub County, to establish the different sources of fuel wood materials used for cooking and their impacts to house hold health and the environment in Akeriau Sub County, and to find out the rationale for improved fire cook stoves adoption and family wood lots in food preparation and other cooking related activities.

A descriptive study design was used involving 82 respondents drawn from all different parishes in Akeriau Sub County, the technical sub county and District staffs were also interviewed. Questionnaires were self administered observing the cook stoves types in use, Akeriau sub county five year plan, Amuria district statistical Abstract, and Akeriau Sub county housing census report was sought for more data.

The findings reveal that nearness to cooking materials and their availability dictate on acceptance of a cook stove, in a typical rural setting rather than age, education level, cost, culture, gender, income level as asserted by different scholars. The results further reveal that biomass burning in open fires is a leading cause of indoor air pollution at homes.

The researcher recommends the introduction of a new policy-The Integrated Kitchen Environment Care Policy (TIKECP), establishment of demo sites for demo construction, introduction of cook stove energy law focusing on compulsory use of improved fire stoves and setting up pocket friendly prices.

Akeriau sub county community, all technical and political leadership and the sub-county local government should focus on implementing the recommended policy and other suggested ways.

## CHAPTER ONE: INTRODUCTION

### 1.1 Introduction

According to World Health Organization 2011, three billion people cook and heat their homes using open fires globally and estimates are that nearly two million people die prematurely from illness attributable to indoor air pollution from solid fuel used. In East Africa, the situation is not different, cooking takes place with biomass, on open fires using rudimentary stoves and as a result, donor led programs have promoted improved cook stove technologies over the past 30 years (GVEP 2011).

In Uganda, firewood and agricultural crop residues are used to provide energy for various purposes such as food preparation, brick burning, bakery works, distillation, agro processing and jaggeries. These activities are performed in poorly ventilated structures and incomplete combustion of these fuels results in high indoor concentrations of health damaging pollutants including particulate matter and carbon monoxide (Jetter and Kariher, 2009; Rehfuess, 2006).

## 1.2 Background of the study

Akeriau Sub County lies in Orungo county, Amuria district of Eastern Uganda. It faces a biomass energy crisis marked by an increasing imbalance between the supply and the demand for the fire wood by households, institutions like schools and small scale industries like brick making. One of the most effective strategies to sustainably contribute towards the reduction of this problem is through an extensive dissemination of biomass energy efficient technologies. According to (CMFFSHS- MEMD 2008) improved stoves help the users to have firewood savings of 50-60% when compared to the traditional (open) 3-stone stove.

House holds use the traditional open three stone stove to perform a number of cooking related activities such as food preparation, body warming, routine cultural morning/evening family sittings locally known as etem, roasting of fermented millet/cassava for the preparation of a local drink known as ajon for millet and emeeka for cassava. To make matters worse, distillation of crude waragi into alcohol (emeeka) requires heavy fuel wood that burns to heat the metallic drum to stimulate and sustain distillation process. Drinking of the local

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