

**THE SOCIO ECONOMIC AND ENVIRONMENTAL HEALTH IMPACT OF CHARCOAL BURNING  
ON THE COMMUNITY: A CASE OF OMORO SUB COUNTY, ALEBTONG DISTRICT**

**BY**

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UNIVERSITY**

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## DECLARATION

I **Achola Jacqueline** hereby declare that this research has been through my own efforts and has never been submitted to Busitema University or any other University or institution for the award of a degree or any other qualifications.

Signature:  .....


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## APPROVAL

This is to certify that **Achola Jacqueline** did research and this report is a true representation of the findings. I am therefore, recommending that this report be submitted to the Faculty of Natural Resources and Environmental Sciences of Busitema University.

Signature:  .....

Date: 17<sup>th</sup>/06/2015

**Miss Esther Ariango**

**SUPERVISOR**

## **DEDICATION**

I dedicate this report to Save the Environment in Uganda and the entire family most especially to dad, Mr. Obua Ronald Jimmy; mum, Mrs. Sarah Obua, Solomon, Emmanuel, Elizabeth, Daniel, Chrispus, James and John; my cousin, Mr. Ewach Denis; my aunt, Miss. Hilda and to all my friends especially, Claire, Watela Winnie, Kedi Sharon, Abiyo Annet, Wanyama Eddy, Segawa Frank, Engole John Paul, Otto Ronald Aliro, Opon Isaac, Kyomugasho Sharon, Musabe Master, Namazzi Betty, Lajara Beatrice for their tireless love, care and support to me during this research.

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## ACRONYMS

ARI	Acute Respiratory Infection
C <sub>2</sub> H <sub>2</sub>	Ethane
CH <sub>4</sub>	Methane
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
e.g.	For example
Etc.	And so on
FAO	Food and Agriculture Organization
GTZ	Gesellschaft for Technische Zusammenarbeit
HTE	Heat transfer Efficiency
i.e.	That is to say
IAP	Indoor Air Pollution
LG	Local Government
LRA	Lord's Resistance Army
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NPV	Net Present Value

PICs	Products of Incomplete Combustion
SADC	Southern African Development Community
Shs	Shillings
SPSS	Statistical Packages for Social Sciences
SSA	Sub- Saharan Africa
TaTEDO	Tanzania Traditional Energy Development Organization
US	United States
VOC	Volatile Organic Compound

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## **ABSTRACT**

The study was on assessing the socio economic and environmental health impacts of charcoal burning on the community in Omoro Sub County, Alebtong District. The study was focused on the human health risks of the people due to charcoal burning in this area. The study objectives were to identify the factors driving people into charcoal burning, to assess the effects of charcoal burning and, to assess the benefits derived from charcoal burning.

A cross- sectional study was used which involved use of questionnaires covering seventy five (75) respondents. Data collected was analyzed using excel and SSPS 16; this facilitated the formation of frequency tables.

The study findings indicated that it is mostly poverty (94.7%) and the existence of the tree species known as cheer butter trees (62.7%) that drive most people into charcoal. The study findings also indicated that the community is mostly affected by cough and lung cancer as a result of smoke and dusts at the time of burning wood and packing the charcoal in sacks. It was found out that the burning heats up the body which dries the blood from the body resulting into Pneumonia. The findings also indicated that the majority of the people get school fees for their children from charcoal burning and it was also found out that there is high crop productivity in areas where charcoal has been made.

In conclusion, charcoal burning as one of the economic activities carried out in Omoro Sub County places the health of the people at risk because lung cancer which is found to be as a result of smoke and dusts getting trapped in the lung causes lung cancer in the long run and can spare nobody as it is concentrated in the atmosphere and consumed by anyone though the charcoal burners are at a higher risk. There may also

be extinction of shea butter trees and yet its nuts are used for making oil which is medicinal and most recommended for consumption. Thus, the researcher recommends that the government should find ways of diverting people's mindsets to other economic activities other than charcoal burning.

## **CHAPTER ONE: INTRODUCTION**

### **1.0 Background of the study**

Charcoal is a porous black solid, consisting of an amorphous form of carbon obtained as a residue when wood or other organic matter is heated in the absence of air. It is also known as the dark grey residue consisting of Impure Carbon obtained by removing water (destructive distillation/carbonization) and other volatile constituent from vegetation substance and animal materials (animal charcoal/ dry distillation) (FAO, 2011). Charcoal making process in Uganda is in most cases done on private land and in public lands and it involves wood cutting, kiln preparation, carbonization and finally unloading charcoal from the kiln, while 13, 10 and 14 days are spent for wood cutting, kiln preparation and carbonization respectively; unloading the charcoal kiln takes only about 4 days (Zahabu, 2001). Bio char contain approximately 80% of fixed carbon, 24% of volatile compound, 4% of ash, 0.53% of Nitrogen, and 0.01% of Sulphur while animal charcoal or bone black contain only about 10% Carbon, the remainder being Calcium and Magnesium Phosphate (80%) and Other Inorganic Material originally present in the Bones (Ezzati & Kammen, 2002).

#### **1.0.1 Raw materials for charcoal production**

The major raw material is wood and its by-products such as dust, hard wood, trunks, leaves, etc. The primary source of these is the forest which is invariably natural resources that requires adequate management to prevent environmental degradation.

#### **1.0.2 Types of charcoal**

Charcoal usually occurs in different forms, majorly through the production processes or raw materials used for the carbonization process.

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