BUSITEMA UNIVERSITY

Faculty of Natural Resources and Environmental Sciences

Department of Natural Resource Economics

ECONOMIC VALUE, HEALTH AND ENVIRONMENTAL IMPACTS OF CHARCOAL PRODUCTION AND TRADE IN EASTERN UGANDA

BY

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(BU/UG/2012/133)

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A RESEARCH DISSERTATION REPORT SUBMITTED IN THE PARTIAL FULLFILLMENT OF THE REQUIREMENT OF THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN NATURAL RESOURCE ECONOMICS OF BUSITEMA UNIVERSITY

NAMASALI CAMPUS,

DATE: JUNE

DECLARATION

I SSEMAKULA ISMA hereby declare that this research report is my original work and is a result of my independent commitment and has never been submitted either in the same or different kind to this or any other institution for any academic qualification.

Signed..... Date 25TH/06/2015

SSEMAKULA _ISMA

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APPROVAL

This serves to certify that----SSEMAKULA ISMA---- did research that I had the pleasure to supervise. I confirm that this report is a true representation of the findings in it.

I am therefore recommending that the report be submitted to the Faculty of Natural Resources and Environmental Sciences of Busitema University.

..... **Date** 28th/June/2015...

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DEDICATION

I dedicate this report to my mother, MIS NANKABIRWA AGNES, My guardian MIS KAMSES J.B, MIS LUICE RWOMUSHANA, MIS RECHEAL RWOMUSHANA and my brother MR. NDUGWA FARID for their support and commitments throughout my academics struggle. I also dedicate it to my friends from the different academic institutions I have attended and most especially those from Busitema University and mostly the faculty of Natural Resource Economics.

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ACRONYMS AND ABREVIATION

FAO	Food and Agricultural Organisation
SADC	Southern African Development Community
MWLE	Ministry Of Water, Lands, and Environment
SSA	Sub-Saharan Africa
UG SHS	Ugandan Shillings
GDP	Gross Domestic Product
SEI	Stockholm Environment Institute
UBOS	Uganda Bureau of Statistics
GHG	Green House Gas
WHO	World Health Organisation
MW	Mega Watts
NFP	National Forestry Policy
CFRs	Central Forest Reserves
NFTPA	National Forest and Tree Planting Act
MWE	Ministry of Water and Environment
MEM	Ministry of Environment and Minerals
CHAPOSA	Charcoal Potential in Southern Africa
ESDA	Energy for Sustainable Development Africa
CHLE	Candlelight for Health, Education and Environment
RBG	Royal Botanical Gardens

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ABSTRACT

This study aimed at assessing the socio-economic, health and environmental effects of charcoal production, trade to the community of Kamuli district in Eastern Uganda. The study will contribute to shaping the structure of charcoal production and the trade chain in this area to help the community to adopt sustainable charcoal production techniques. The study covers three levels in the value chain of charcoal trade in the country by looking at the effects righting from the production point, to the sells point and finally the consumption point which points seem to be the major contributors socio-economic and environmental effects of charcoal consumption and trade in the country. Charcoal production is mainly carried out by using carbonizing the logs in the earth kilns while consumption is done using metallic charcoal stoves. Both the methods of charcoal production and consumption are inefficient and therefore there is unsustainable production and consumption of charcoal. At the production point, villages in Minakulu of Nwoya district was studied sampling five sites which were spaced by two kilometers from each other and having then respondents from each site. From Kamuli district, Namasagali was sampled by selecting five sites which were more than three kilometers apart while selecting ten respondents from each site. On the part of consumption and selling of charcoal, data was collected from areas of Kampala and Wakiso with only 81 respondents being interviewed with 46 and 35 sellers and consumers respectively. The study was done by collecting both qualitative to give the description of the problem and quantative data to measure the spread of the problem.

The data was analyzed by use of excel, Minitab and STATA packages. The data was enter into excel where was coded from and then the uncoded data was use to do the descriptive analysis of the data. The coded data was copied to Minitab and STATA where all the advanced analysis was carried out from.

From the findings of the study, it was found out that charcoal trade contributes to a high percentage on the economic development of the country providing employment to a considerable number of rural and urban populations. It was found out that on average, a charcoal producers who is well organized earns a monthly income of 253.8USD with 20.4US$ and 2166.7US$ as the minimum and maximum earnings from the charcoal business respectively. At least a tax of 0.2933USD is paid per bag of charcoal that big scale producers take to the market. averagely one can employ 6 people to producer

charcoal for them with 1 and 80 people as the minimum and maximum number of employees that one big producer can have.

Trading in charcoal also has a number of negative effects to peoples' health like causing diseases such as cancer, flu, cough, body pain, family problems and the health of the environment like causing desertification, habitat loss and global warming in which the trade activities are carried out from.

The study will help to provide information to policy makers and the players in the charcoal value chain to come up and implement sustainable ways of carrying out activities involved in the charcoal value chain in order to reduce on the negative health and environmental effects associated with charcoal trade.

Keywords: Environmental and Health impacts, charcoal production and trade, livelihoods, eastern Uganda

CHAPTER–I: GENERAL INTRODUCTION

1.1. Background

The increasing demand for energy in the world has made wood biofuels products the most preferred and it accounts for 80% of the total renewable energy consumption worldwide (Steve Sepp). Presently, half of the annually harvested round-wood (about 1.8 billion cubic meters per year) is used for fuel, as noted in a forests & energy report to the FAO Conference. Wood-based fuels provide upwards of 70 % of the total energy consumption in Sub-Saharan Africa. Between 40 and 80 percent of wood products from tropical countries are used as fuel (FAO 2009).

Like most African countries, Uganda's energy balance is dominated by fuel wood (firewood and charcoal). Firewood, charcoal, petroleum products and electricity contributes 88%, 5%, 6% and 1 % respectively. Uganda, therefore still depends mainly on biomass to satisfy its energy demand. More than 90% of the total energy consumption is still supplied by firewood and charcoal according to the Ugandan National Energy Balance 2003.Uganda has an abundant although unexpected variety of potential energy sources from solar, bio-mass, hydro, petroleum and geothermal. The energy sources that have been exploited so far include bio-mass, petroleum and hydro power. The National consumption of energy sources by type is 93 per cent, 6 per cent and 1 percent for bio-mass, petroleum and hydro power respectively (state of environmental report for Uganda 2006/2007).

In the SADC region of Tanzania, households consume about 97% of wood energy mostly for cooking, heating and cottage industries while industrial sector is the second to household sector (Monela & Kihiyo, 1999). The International Energy Agency predicts that by 2030, biomass energy in Africa will still account for an estimated three quarters of total residential energy. The biomass energy is in most cases traded as charcoal to urban areas since they have a ready market for it due to its high demand. Charcoal is preferred in urban areas on account of its being cheap, easy to transport, distribute and store. It is almost smokeless and has higher calorific value (30 MJ/kg) than firewood (15MJ/kg).

This has made charcoal trade with all its environmental impacts become a highly practiced economic activity in Uganda's rural and urban areas by most businessmen and women for a number of reasons in order to improve their livelihoods. Charcoal production activities are resulting into deforestation and individual tree cutting in developing countries and Uganda in particular. It is estimated that in Africa over 90 % of the wood taken from forests is wood fuel. More than 80 % of the charcoal is used in urban areas making it the most important source of household energy in many African urban areas. Charcoal trade encourages people to cut down trees on a large scale in order to produce charcoal which is then traded through the market and then it finally reaches the final consumers. The charcoal value chain is complex and may, on the

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