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**EFFECTS OF COOKING PRACTICES ON FUEL CONSUMPTION, A CASE OF  
STOCK FARM CELL, MBARARA CITY, UGANDA**

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**A RESEARCH THESIS SUBMITTED TO THE FACULTY OF NATURAL  
RESOURCES AND ENVIRONMENTAL SCIENCES IN PARTIAL FULFILLMENT  
OF REQUIREMENTS FOR THE AWARD OF BACHELORS OF SCIENCE IN  
NATURAL RESOURCE ECONOMICS DEGREE OF BUSITEMA UNIVERSITY**

**SEPTEMBER 2024**

## DECLARATION

This thesis is my original work and has not been presented for any degree or any other award in any University

Signature..........Date .....25<sup>th</sup>/9/2024.....

ZAWEDDE AIDAH BIRUNGI

## APPROVAL

This thesis has been submitted to Busitema University with my approval as the University student's supervisor.

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Date: 18<sup>th</sup>/10/2024

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**DEDICATION**

I dedicate this thesis to the Almighty God for his encouragement, blessings, and provision, my family and friends for their patience and immeasurable assistance offered to me while striving to finish this work.

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## **LIST OF ACRONYMS**

|        |                                                       |
|--------|-------------------------------------------------------|
| NARO   | National Agricultural Research Organization           |
| ZARDI  | Zonal Agricultural Research and Development Institute |
| SDG    | Sustainable Development Goal                          |
| DOI    | Diffusion Of I nnovation theory                       |
| GDP    | Gross Domestic Product                                |
| USD    | United States Dollars                                 |
| FAO    | Food and Agriculture Organization                     |
| UNICEF | United Nations Children’s Fund                        |
| IEA    | International Eenergy Agency                          |
| WWF    | World Wildlife Fund                                   |
| UWA    | Uganda Wildlife Authority                             |
| ETF    | Energy Transition Framework                           |
| LPG    | Liquefied Petroleum Gas                               |
| EUFIC  | European Food Information Council                     |
| IUCN   | International Union for Conservation of Nature        |
| TwH    | Terawatt-hour                                         |
| ICS    | Improved Cook Stove                                   |

## **ABSTRACT**

Uganda has lost sixty (60%) of its forest cover (72,000 hactres) mainly due to charcoal burning and firewood exploitation. This loss negatively affects rainfall patterns, animal and plant habitats threatening biodiversity/wild life conservation and the tourism industry that are key livelihood sources in Uganda. Efforts to minimize charcoal burning and firewood exploitation through promotion clean and efficient cooking fuel technologies especially Liquidfied Petroleum Gas and energy saving stoves is underway. This study evaluated the effect of cooking practices on fuel wood consumption through determining the prevalent cooking stove used, the effect of stove prototypes on fuel consumption and the cost benefit of adopting energy saving stoves along side a researcher's prototype. Results showed out of 76 respomndents, majority, 37 (48%) used charcoal stoves, followed by 27 (35.5%) that used three stone fire stove with only 7 (9.2%) using energy saving stoves. Majority of fuel utilized per day was recorded in repondents that used the three stone cook stoves (8.3kg/day) while the leaset fuel was recorded in respondents that used energy saving stove (0.8 kg) of charcoal per day. At the same time, cooking trials with the researchers energy-saving stove prototype recorded utilization of 4.4 kg of firewood that cost 1,100shillings and 6.4 kg for the three stone fire stove that cost 1600shilling daily to cook unsoacked beans within 3:25 hours . It was concluded that use of firewood and charcoal were the main cooking fuels used among respondents, the practice used higher fuel biomass than energy saving stoves that would save 2kg worth 500shilling per day. This implied that the practice of firewood exploitation is still the major driver of deforestation in Uganda. It was recommended that government should support initiatives to increase access to affordable energy saving and envrironmentally friendly household cooking technologies.

***Keywords; Deforestation; fuel wood; energy saving stoves;charcoal; firewood***