UNIVERSITY OF THE WITWATERSRAND, SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES, FACULTY OF SCIENCE

THE PERCEPTION OF CLEAN COOKSTOVE TECHNOLOGIES IN RURAL SWAZILAND

MASTER OF SCIENCE BY DISSERTATION

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A dissertation submitted to the Faculty of Science, University of the Witwatersrand, in fulfilment of the requirements for the degree of Master of Science

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Science in the University of the Witwatersrand, Johannesburg. It has not been submitted for any degree or examination in any other University.

On this 21st day of March 2015

ABSTRACT

Over 60% of the Swazi population resides in rural areas and rely on woodfuel for their daily cooking needs. Cooking with woodfuel on open fires is inefficient and unhealthy, leading to millions of deaths of women and children each year while also contributing to environmental degradation. This has necessitated the implementation of Government's clean cookstoves programme in Swaziland. This study focused on household stove users in six chiefdoms in the Lower Usuthu Sustainable Land Management (LUSLM) Project area in Siphofaneni Swaziland. A survey conducted through the dissemination of a questionnaire was used to investigate how rural perceptions impact on the adoption of clean cookstove technologies as an alternative household energy technology contributing towards sustainable development in rural Swaziland.

Results from this study indicate that although cooking on an open fire was the least desired cooking technology, only 2% of households in the project area own clean cookstoves and less than half of the households had knowledge of cookstoves. The study further revealed that over 80% of the households in the survey area would prefer using a clean cookstoves to reduce the labour intensive task of collecting firewood as well as reducing exposure to smoke. The households found to have some knowledge of the benefits of clean cookstoves indicated the willingness to pay for a clean cookstove; however, a third of the respondents indicated a preference of obtaining a free clean cookstove. The price and availability of the clean cookstove in rural areas were two main barriers to increased uptake of the stoves, coupled with the need to purchase new pots. Despite the general lack of awareness of these technologies, challenges such as danger of the stoves to children and stove durability were also cited. The results indicate the need for the ongoing clean cookstove programme being implemented by the Government of Swaziland to improve on its strategy, to focus on incorporation of perceptions of rural stove users in development of appropriate cookstove designs, distribution models, and the design and implementation of a cookstove quality control programme.

Keywords: clean cookstoves, woodfuel, sustainable energy

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DEDICATION

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ACRONYMS

CO_2	Carbon Dioxide
CO	Carbon Monoxide
CTC	Consultancy and Training Centre
CH4	Methane
DFID	Department for International Development
ESMAP	Energy Sector Management Assistance Programme
FAO	Food and Agriculture Organisation
GEF	Global Environment Fund
GIS	Geographic Information System
GOS	Government of Swaziland
GDP	Gross Domestic Product
Gt	Giga tonnes
HIV/AIDS	Human Immune Deficiency Virus
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IPCC	International Panel on Climate Change
LPG	Liquefied Petroleum Gas
LUSLM	Lower Usuthu Sustainable Land Management
M.A.S.L	Metres above sea level
NGO	Non-Governmental Organisation
PM	Particulate Matter
ProBEC	Programme on Basic Energy Conservation
SADC	Southern African Development Community
SABONET	Southern African Botanical Diversity Network
SLM	Sustainable Land Management
SSA	Swaziland Sugar Association

SWADE	Swaziland Water and Agricultural Development Enterprise
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nation Environmental Programme
UNF	United Nations Foundation
UNFCCC	United National Framework Convention on Climate Change
UNISWA	University of Swaziland

GLOSSARY

Energy governance: refers to the actors, institutions and processes involved in decision making on energy service provision Energy governance also takes into account affordability of energy services as well as the quality of the energy services being provided.

Energy poverty: refers to a lack of access to modern energy services and facilities for lighting and cooking which negatively affects quality of life. The energy poverty nexus describes the linkages between poverty and energy which require a systematic approach to developing solutions, resources allocation to ensure sustainable development.

Modern Energy: refers to energy sources which are clean burning and efficient such as electricity and gas.

Sustainable development: refers to development that meets the current generation win a manner which does not compromise the ability of future generations to meet their needs.

Sustainable energy: is energy derived from resources which cannot be depleted and without compromising the need for future generations to meet their energy needs.

Water, energy and climate nexus refers to the interlinkages better the water security, energy security and climate change sectors in the development agenda, where actions in one sector have impacts in one or both of the sectors.