

**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.

A handwritten signature in black ink, consisting of several overlapping loops and a horizontal line extending to the right.

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 |
| CH ₄ | 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 in 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 between 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.