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Sustainable Energy Access: A catalyst to landscape restoration and water management in rural Malawi

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INTRODUCTION

• The high increase in population over the past two decades in Malawi has contributed to environmental degradation.





- Out of about 20 million Malawians, 82% live in rural areas and they depend on subsistence agriculture for a living, whereas firewood and charcoal are predominantly used for cooking.
- The sources of water for domestic use are wells and surface water.
- The clearing of land for cultivation as well as unsustainable harvesting of biomass for cooking are among the salient drivers of the perceptible environmental degradation in Malawi.
- The impacts of land degradation are rampant in the rural Malawi.
- What role can access to sustainable energy play in restoring the landscape in rural Malawi?

Effects of Degradation on Malawians [Source: National Forest Landscape Restoration Strategy]

Land degradation

- Soil erosion
- Poor agricultural practices
- Deforestation

Local ecosystem services

- Declining crop yields
- Fuel wood shortages
- Waterscarcity
- Poor water quality

Effects on Malawians

- Food insecurity
- Vulnerability to disasters
- Lack of alternative income options

A picture depicting land degradation in rural Malawi [Source: Global Soil Week 2017]

- Increased water-borne illness
- Women and childen disproportionately affected

Map of Malawi Showing Topsoil loss [Source: Soil loss atlas of Malawi, 2019]

THE POTENTIAL OF ACCESS TO ENERGY IN LANDSCAPE RESTORATION

- Access to sustainable energy in most parts of rural Malawi can accelerate land restoration.
- This figure illustrating a model that has a potential of contributing to the regaining of ecological integrity and enhanced human well being in a degraded /deforested landscapes of Malawi.
- The model is suitable for location whose climatic conditions favors intensive animal and crop farming, for example in the lower shire.
- Therefore, this model, which uses circular economy approach has potential of restoring landscape

Increased crop productivity Improve **Regained ecological** crop husbandry integrity Increased crop wastes Water conservation Soil Fuel pellet improvement production Forest cover conversation Degraded/deforested SUSTAINABLE Cooking ENERGY landscape Reduced dependency on firewood/charcoal Biodigester slurry Increased animal wastes

An illustration of a model that show sustainable energy as catalyst to landscape restoration in Malawi

CONCLUSIONS AND OUTLOOK

- Authors concludes that integrating energy access in the landscape restoration and water management programs in rural Malawi has far reaching impacts.
- On the outlook, the model is intended to be implemented in the lower shire and later be replicated in various parts of rural Malawi.



- . National Forest Landscape Restoration Strategy; <u>https://afr100.org/sites/default/files/Malawi_NFLR_Strategy_FINALv2.pdf</u>
- 2. An introduction to bioenergy and landscape restoration; <u>https://www.cifor.org/knowledge/publication/8521</u>
- 3. Kalipeni E, (1992); Population growth and environmental degradation in Malawi.

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