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Solar-Powered Irrigation in Malawian Maize Farmers: Water Savings and Profitability Gains

Nkombo Phiri[1], **Makwana Nkhata**[2,3], **Chinyengozi Mbulazi**[1], **Sarotwe Chakuamba**[1]

[1] Lilongwe University of Agriculture and Natural Resources (LUANAR)

[2] Department of Advanced Studies, University of Malawi

[3] Department of Advanced Studies, Mzuzu University

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Correspondence: nphiri@gmail.com

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Author notes

Nkombo Phiri is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Business research in Africa.

Makwana Nkhata is affiliated with Department of Advanced Studies, University of Malawi and focuses on Business research in Africa.

Chinyengozi Mbulazi is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Business research in Africa.

Sarotwe Chakuamba is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Business research in Africa.

Abstract

Solar-powered irrigation systems have been introduced to improve agricultural productivity in Malawi's maize farming sector. The study employed a mixed-methods approach combining quantitative data from farmer surveys and qualitative insights through in-depth interviews to assess system performance and economic outcomes. A notable finding was that solar-powered irrigation systems led to an average water savings of 20% compared to traditional methods, with farmers reporting increased profits ranging between 50−¿100 per hectare annually. Solar-powered irrigation significantly enhances maize farming profitability by reducing water usage and increasing yields, offering a viable solution for sustainable agriculture in Malawi. Farmers should be encouraged to adopt solar-powered irrigation systems through government subsidies and awareness campaigns. Extension services are recommended to provide technical support and guidance on system installation and maintenance.

Keywords: *Sub-Saharan, Agricultural-Sustainability, Solar-Power, Biomass, Cross-Sectional Analysis*

ABSTRACT-ONLY PUBLICATION

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