



Solar-Powered Irrigation and Farmer Savings in Ugandan Highland Coffee Farming: A Policy Perspective

Mwesiga Byaruhangwa¹

¹ Department of Advanced Studies, Busitema University

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Correspondence: mbyaruhangwa@hotmail.com

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Author notes

Mwesiga Byaruhangwa is affiliated with Department of Advanced Studies, Busitema University and focuses on Law research in Africa.

Abstract

Solar-powered irrigation systems are increasingly being adopted by Ugandan coffee farmers in the Western Highlands to address water scarcity and improve efficiency. A qualitative study involving interviews with selected coffee farmers and analysis of existing policies in the region. Farmers reported an average increase of 20% in their net income due to reduced water usage costs and improved crop yields, though savings varied by farm size and irrigation system capacity. The adoption of solar-powered irrigation systems is a promising strategy for enhancing economic resilience among coffee farmers in the Ugandan Highlands. Policy support is needed to facilitate wider implementation. Implement policies that provide subsidies or grants for solar-powered irrigation systems, alongside education campaigns on sustainable water management practices.

Keywords: *Uganda, Highland, Solar-Powered Irrigation, Rural Electrification, Coffee Farming, Methodology, Water Management*

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