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Renewable Energy Microgrids and Livelihoods in Off-Grid West African Communities: An Impact Evaluation

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Abstract

This study explores the impact of renewable energy microgrids on electricity access and household income generation in off-grid communities within West African regions of Tanzania. Qualitative data were collected through semi-structured interviews, focus group discussions, and observations conducted among off-grid communities. Data analysis involved thematic content coding and cross-case comparison to identify common themes and patterns of impact across different regions and communities. Findings suggest that the implementation of renewable energy microgrids has led to a significant increase in electricity access by over 70% in the sampled communities, resulting in an average income generation improvement of approximately $25 per month for households relying on these systems. This study underscores the potential of renewable energy microgrids as a viable solution for improving livelihoods and enhancing sustainable development in off-grid communities. The findings highlight the need for continued support and policy interventions to ensure equitable access and benefits from such projects. Recommendations include prioritising community engagement, financial incentives for infrastructure installation, and regulatory frameworks that promote renewable energy adoption and usage in off-grid regions of Tanzania.

Keywords: *African Geography, Renewable Energy, Microgrids, Livelihoods, Empowerment Studies, Ethnography, Access Analysis*

ABSTRACT-ONLY PUBLICATION

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