African Journal of Swahili Studies (Kiswahili)

Solar-Powered Water Wells in Maasai Villages of Northern Kenya: Socio-Economic Benefits and Operational Efficiency Evaluations

Kamau Gitonga[1,2], **Oluoch Ochieng**[3], **Waweru Kinyanjui**[2], **Mwangi Ngugi**[4,5]

[1] Department of Research, Kenya Agricultural and Livestock Research Organization (KALRO)

[2] Pwani University

[3] Department of Research, Egerton University

[4] Department of Advanced Studies, African Population and Health Research Center (APHRC)

[5] Egerton University

Published: 13 February 2006 | **Received:** 06 December 2005 | **Accepted:** 13 January 2006

Correspondence: kgitonga@outlook.com

DOI: 10.5281/zenodo.18835905

Author notes

Kamau Gitonga is affiliated with Department of Research, Kenya Agricultural and Livestock Research Organization (KALRO) and focuses on African Studies research in Africa.

Oluoch Ochieng is affiliated with Department of Research, Egerton University and focuses on African Studies research in Africa.

Waweru Kinyanjui is affiliated with Pwani University and focuses on African Studies research in Africa.

Mwangi Ngugi is affiliated with Department of Advanced Studies, African Population and Health Research Center (APHRC) and focuses on African Studies research in Africa.

Abstract

Solar-powered water wells have become a critical infrastructure in many developing regions to address water scarcity and improve rural livelihoods. Qualitative data were collected through semi-structured interviews and focus group discussions with local residents and village leaders to assess user satisfaction, cost-effectiveness, and maintenance practices. Users reported a significant increase (25%) in water availability during peak demand periods, leading to improved hygiene standards and reduced time spent on traditional water collection activities. The implementation of solar-powered water wells has substantially enhanced the socio-economic conditions of Maasai villages by reducing reliance on expensive diesel generators and promoting community cohesion through collective maintenance efforts. Further research should explore the scalability of these solutions and identify potential barriers to wider adoption, while policy-makers should consider subsidies for renewable energy technologies in rural areas. Maasai Villages, Solar-Powered Water Wells, Socio-Economic Benefits, Operational Efficiency

Keywords: *Maasai, rural development, qualitative research, livelihoods, solar energy, sustainability, ethnography*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge