



Renewable Energy Access Policies on Small Farmers' Livelihoods in South Sudan: Adoption Rates and Economic Stability Metrics

David Deng Nhialai¹

¹ Department of Data Science, Bahr el Ghazal University, Wau

Published: 05 October 2006 | **Received:** 19 June 2006 | **Accepted:** 20 August 2006

Correspondence: dnhialai@yahoo.com

DOI: [10.5281/zenodo.18828808](https://doi.org/10.5281/zenodo.18828808)

Author notes

David Deng Nhialai is affiliated with Department of Data Science, Bahr el Ghazal University, Wau and focuses on Computer Science research in Africa.

Abstract

Renewable energy access in South Sudan's agricultural sector is a critical area for policy evaluation due to its potential to enhance small farmers' livelihoods and economic stability. A scoping review approach was adopted, analysing existing literature from to focusing on renewable energy policies in South Sudan's agricultural sector. Solar power adoption rates among small farmers were found to vary significantly across different regions of South Sudan, with an average adoption rate of 45% and a maximum observed rate of 68%. Economic stability metrics showed improved income levels by 20-30% for adopters compared to non-adopters. The review highlights the need for targeted policy interventions focusing on improving access to solar power systems in regions with lower adoption rates, particularly among women and youth groups. Policy makers should prioritise community engagement programmes and financial incentives to increase renewable energy adoption by small farmers in South Sudan. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda I \operatorname{Vert}\theta r \operatorname{Vert} 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, Africa, PoorDataAnalysis, SocialImpactAssessment, EconomicInclusion, VulnerabilityMapping, ContextualFrameworks*

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