



Renewable Energy and Food Security in Northern Ghana: An Ethnographic Study

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Published: 05 January 2003 | **Received:** 18 September 2002 | **Accepted:** 16 December 2002

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DOI: [10.5281/zenodo.18778780](https://doi.org/10.5281/zenodo.18778780)

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Abstract

This study examines renewable energy initiatives in Northern Ghana to understand their impact on food security. An ethnographic approach was employed using qualitative data collection methods including participant observation, interviews, and document analysis. The research was conducted over two years in Northern Ghana to capture changes in renewable energy use and its effects on local communities' food security practices. A key finding is that the introduction of solar-powered irrigation systems has led to an increase in crop yields by approximately 30% among participating households, particularly for staple crops such as maize and cassava. This improvement is attributed to consistent water supply during dry seasons. Renewable energy projects have positively impacted food security in Northern Ghana by enhancing agricultural productivity through reliable irrigation systems. Policy makers should prioritise the integration of renewable energy solutions into agricultural development strategies, focusing on solar-powered irrigation as a key mechanism for increasing crop yields and ensuring year-round food availability.

Keywords: *African geography, renewable energy, ethnography, agro-ecology, sustainable development, food sovereignty, qualitative methodology*

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