



Solar Microgrids and Women’s Livelihoods in Rural Northern Ethiopia: A Mixed Methods Study

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Abstract

Solar microgrids have been introduced in rural areas of Ethiopia to improve access to electricity and enhance livelihoods. A mixed methods approach combining quantitative data from surveys with qualitative insights from interviews for comprehensive understanding. Women reported an average annual increase in household income by \$150 following the installation of solar microgrids, indicating significant economic benefits. Solar energy microgrids positively impacted women’s financial stability and improved their ability to engage in diverse income-generating activities. Government policies should prioritise extending solar microgrid coverage to underserved rural areas to maximise poverty reduction efforts.

Keywords: *African geography, livelihoods, mixed methods, qualitative analysis, quantitative research, energy poverty, indigenous knowledge systems*

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