



Monitoring Solar Mini-grids on Smallholder Livelihoods in Eastern Uganda: Energy Access and Economic Impacts

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Abstract

Solar mini-grids have been introduced to provide energy access for smallholder farmers in Eastern Uganda, aiming to enhance agricultural productivity and rural livelihoods. A mixed-method approach combining quantitative surveys with qualitative interviews was employed to assess the effectiveness of solar mini-grid systems. Solar mini-grids significantly increased electricity connectivity, particularly in rural areas where only 30% had access prior to implementation. Economic benefits included a 20 increase € daily income for households using these grids. The findings suggest that solar mini – grids can effect $Y = \beta_{0+\beta} p X + \text{varepsilon}$ \$, ^ inference is reported with uncertainty – aware statistical criteria.

Keywords: African geography, Smallholder agriculture, Renewable energy, Impact assessment, Participatory monitoring

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