



Renewable Energy Adoption in Ugandan Villages: Household Cooking Fuels and Emissions Reductions

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Abstract

Renewable energy adoption is increasingly recognised as a critical strategy for addressing climate change in developing countries like Uganda. Household cooking fuels are significant contributors to greenhouse gas emissions and air pollution, particularly in rural areas where access to modern energy sources is limited. The study employed qualitative research methods including participant observation, semi-structured interviews, and focus group discussions in four villages across Uganda. Data collection was conducted between October and January, involving a total of 50 households. A notable finding is the significant adoption rate (76%) of improved cookstoves powered by biogas digesters, which have reduced harmful emissions by up to 80% compared to traditional charcoal burning. Households reported higher satisfaction with these technologies and noted economic benefits from waste management. The findings highlight the potential for renewable energy solutions in reducing household cooking-related emissions in rural Uganda, providing insights into successful transition pathways that could inform future policy interventions. Policy makers should prioritise community engagement and infrastructure development to support further uptake of biogas digesters and other renewable technologies. Additionally, financial incentives and education campaigns can enhance the adoption rates and sustainability of these solutions.

Keywords: *African Geography, Ethnography, Anthropology, Sustainable Development, Renewable Fuels, Energy Transition, Indigenous Knowledge*

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