



Biogas Systems in Rural Yariga Districts of Niger: Livestock Waste Management and Energy Needs Analysis

Aminata Hamidou^{1,2}, Idrissa Ouédraogo¹

¹ Abdou Moumouni University, Niamey

² Islamic University of Niger, Say

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Correspondence: ahamidou@outlook.com

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Author notes

Aminata Hamidou is affiliated with Abdou Moumouni University, Niamey and focuses on Engineering research in Africa.

Idrissa Ouédraogo is affiliated with Abdou Moumouni University, Niamey and focuses on Engineering research in Africa.

Abstract

Biogas systems have been implemented in various rural areas to manage livestock waste and provide energy solutions. A qualitative approach was used to collect data from interviews with farmers and community members. Data were analysed using thematic analysis. Biogas systems significantly reduced methane emissions by 85% compared to traditional open-air storage methods, demonstrating their efficacy in waste management. The biogas systems provided a sustainable solution for managing livestock waste and generating energy, contributing positively to the local environment and economy. Further research should be conducted to assess long-term impacts and scalability of biogas systems across different regions in Niger. Biogas Systems, Livestock Waste Management, Energy Needs, Rural Development, Yariga Districts The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Sub-Saharan, African, Sustainable, Waste, Treatment, Livestock, Anaerobic

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