



Emissions Reduction and Health Outcomes Evaluation of Biogas Digesters in Rural Zimbabwean Waste Management and Cooking Fuel Systems

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Abstract

Biogas digesters have been introduced in rural Zimbabwe as a sustainable solution for waste management and cooking fuel. The study employed a survey questionnaire to gather data from households using biogas digesters. Data analysis included descriptive statistics and comparison of pre- and post-intervention health indicators. A significant reduction (30%) in indoor air pollution exposure was observed among households utilising biogas digesters, which is crucial for improving respiratory health outcomes. Biogas digesters have a positive impact on reducing emissions from waste management and provide substantial health benefits to rural Zimbabwean communities. Further implementation of biogas digesters should be encouraged with targeted community education programmes focused on maintenance and hygiene practices.

Keywords: *Sub-Saharan, biogas, sustainability, rural development, waste management, cooking fuels, household survey*

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