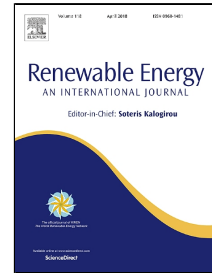


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Economic potential of flexible balloon biogas digester among smallholder farmers:
a case study from Uganda



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1 **Economic potential of flexible balloon biogas digester among smallholder farmers: a case**
2 **study from Uganda**

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16 **Abstract**

17 Biogas technology, as a pro-poor renewable energy source, has been promoted in Uganda since
18 the 1980s by the government and NGOs. However, many of the biogas designs promoted have
19 proved to be too expensive for the average Ugandan to afford. A cheaper flexible balloon
20 digester has been proposed, but there have been lack of evidence on the economic viability of
21 this design. The purpose of this study was to analyze the economic potential of a flexible balloon
22 digester among smallholder farmers in Uganda using the tool of cost-benefit analysis. Primary
23 data were obtained from survey of experimental households and 144 non-biogas households in
24 central Uganda. The results revealed that the net present value was negative and the payback
25 period was greater than the economic life of the digester. However, sensitivity analysis revealed
26 that with a 50% reduction in investment cost the technology is financially viable for 67% of the
27 households and to all households as a group (NPV= UGX5,804,730). The initial investment cost
28 is a critical factor to viability and potential adoption. We suggest that government and
29 development partners interested in the sector should consider strategies that could reduce
30 strategies that could reduce the technology cost e.g., manufacturing low cost balloon digester
31 locally.

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34 **Keywords**

35 Biogas, cost-benefit analysis, economic viability, flexible balloon digester, Uganda

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