

Biogas Technology Adoption as an Alternative Source of Energy in Domboshava Communal Area of Zimbabwe: Benefits and Challenges

Thomas Marambanyika, Shingirayi Sakarombe, Tatenda Musasa and Rameck Defe

Abstract

The research examines challenges and opportunities of biogas technology adoption to achieve sustainable household energy in Ward 4 of Domboshava communal area, Zimbabwe. The research adopted both qualitative and quantitative research techniques. A total of 65 questionnaires were randomly distributed to households using biogas. Purposive sampling technique was employed to select key informants from the Environmental Management Agency, Netherlands Development Organisation, Zimbabwe Energy Regulatory Authority, Environment Africa and the Ward Councillor. The study revealed that the level of education attained do not influence biogas adoption ($p > 0.05$) whereas funds availability, awareness, promoters and gender of the household head were seen to have a major effect ($p < 0.05$). The benefits of biogas technology noted by households were that it cooks fast, provides clean energy and at the same time reducing the frequency of fire wood collection in the forest. Challenges such as lack of adequate knowledge about the technology and lack of required financial and material resources compromised the adoption of biogas technology by the households in Ward 4. The study recommends that relevant government agencies should provide accessible technical services and set up demonstration centres in every ward with a view of encouraging rural households to adopt biogas technology.

Keywords: Biogas, Sustainability, Renewable energy, Rural communities.