

Cost benefit analyses for small scale biogas systems development in Ethiopia

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Abstract:

In developing countries, anaerobic digestion offers a suitable solution to replace unsustainable utilization of traditional fuels. The full benefits can be gained when the biogas system is fully functional, which requires adequate efforts on the supply and on the demand sides. The National Biogas Programme in Ethiopia aims at developing a “commercially viable, market-oriented biogas sector in the country”. The factors for success and failures are analysed. Costs-benefits analyses are carried out on the supply and demand sides with sensitivity analysis at household level considering two scenarios (“potential” and “to date”). The analysis highlights the high potential in economic terms, but the need to address challenges that are specific to the Ethiopian context. The biogasifiers are still expensive for the households and not yet fully suited to the energy needs, and the constructors may not get sufficient benefits to remain actively involved in the sector. Biogas development is highly relevant in the Ethiopian context and these challenges are being addressed by the programme, with adequate solutions being put in place, but a pure commercial market model may not easily work at this stage.

Keywords: Anaerobic digestion, Ethiopia, Cost-benefit analysis, Entrepreneurship, Small and medium scale.