Technology Fact Sheet for Mitigation
Sector: AFOLU.
Sub-sector: Agriculture, (Manure Management)
Technology: Anaerobic fermentation (Biogas) technology [i]

A.1 Introduction

Biogas technology is process through which animal dung could be processed an aerobically to produce flammable gas that be used in the different energy purpose. The dung sludge could also be used as fertilizer. The main merit here that the dung is not left to decompose (production of methane) and thus GHG reduction is attained. This is estimated by about 60% /kg VS of manure and further 21 %.which is warming potential percentage of Methane to CO_2

A.2 Technology characteristics

The technology takes place in a specific reactor that can have different designs and sizes; the process is highly affected by both intrinsic factors such as carbon /nitrogen ratio or external such as temperature. A limiting factor is the availability of water as biogas is a water based technology as generally the feed is only about 15% dry matter and the rest is water.

A.3 Country specific / applicability

Sudan has a high potential of animal dung resulting from livestock population which is estimated by 130 million and dung production up to 10 kg /animal /day and average methane content is 0.24 m^3/kg.

A.4 Status of technology in country

The technology is known in Sudan, different organizations and institutions have built and operate biogas units. The energy research centre had a research unit. Hence the basic know how is available. There is a plan now to disseminate the biogas units to 22,000 families in Sudan

The technology depends on self-built system which is high cost and requires a lot of time and effort. Recently a readymade unit project is being established.

A.5 Barriers

•Availability of the readymade biogas units
• Social acceptance
• Relative high cost of the unit
• Absence of encouraging political and legal framework

A.6 Benefits to economic / social and environmental development

• Enhance the employment at local level (dung collection and unit management) beside the provision of energy source for other needs e.g. cooking, lighting, electricity
• Left over dung is a pollution source and health hazard, Improvement of environment is expected as result of manure management
• Households no longer need to obtain wood for cooking, which can reduce deforestation levels
• Buying fuel e.g. kerosene, LPG, charcoal or fuel wood is no longer needed

A.7 Costs

Manufacturing or acquisition costs (production costs): all expenses and lost income which are necessary for the erection of the plant. In Sudan One unit of biogas reactor cost about 2000 USD

Operation and maintenance costs (running costs): acquisition and handling of the substrate (feedstock), if not acquired externally, feeding and operating of the plant; supervision, maintenance and repair of the plant; storage and disposal of the slurry; gas distribution and utilization;

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[i] **This fact sheet has been extracted from TNA Report – Technology Needs Assessment for Climate Change Mitigation - Sudan. You can access the complete report from the TNA project website http://tech-action.org/**