Technology Fact Sheet for Mitigation

L. The biogas thermal applications (BTA) [i]

1. Introduction	
Historical	Use of biomass is well implemented in Rwanda, Biogas is becoming popular
Location of Resources	Over the whole country, but forests are mainly in the highlands in West and North
Variability of Resources	Most of forests are affected by use related to wood and charcoal; Variability is in line with reforestation
2. Brief Description	
7.6. Conditions	- Availability of biomass resources - Production of biogas
7.7. Characteristics	- Organic materials, [solid urban and domestic waste, leafy plant materials/animal dung/human excreta] can be compacted, after selection and collection, and then covered in appropriate landfills, bio digesters - Mixing materials with water - Anaerobic digestion process: ✓ Decomposition of such materials by bacteria ✓ Production of a gas (main components are: CH_4, CO_2) ✓ The gas CO_2 can be solved into water present in the bio digesters - Extraction of the combustible CH_4 directly burned for heat and cooking but also for any industrial purposes
8. Applicability and Potentialities in Rwanda	

8.1. Applicability	- Limited to urban areas for the case of solid waste - Applicable at small scale in rural areas where among other biogas can be generated from the dung of cows in the context of the One Cow per Family program
3.5. Potentialities	- High
3.6. Limitations	- Limited to small scale
4.Status of the Technology in Rwanda	
4.1.Local Production	Biogas is just produced by mainly schools, health centres, prisons; this is for heat direct consumption
4.2.Shared Power Plants	NA
4.3.Projects	NA
5.Benefits to Development	
5.1.Social	- Refer to above solar and small hydro
8.2. Economic	- Idem
8.3. Environmental	- The CO_2 is captured as it is soluble in water filled in the landfill - The CH_4 is collected as an output product - Only traces of H_2S are polluting
9. Climate Change Mitigation Benefits	
9.1. Reduction GHG Emissions	Replacement of wood fuel and of fossil fuels used in lighting is a great alternative
9.2. Low Carbon Credits	Highly recommended especially because of potential large diffusion of such a technology at small scale for rural communities
10. Financing Requirements and Costs	
10.1. Private Sector Involvement	- Small loans are available from the banks

10.2.	Capital Cost	- Refer to above biomass-based technologies
10.3.	O & M Costs	- Refer to above biomass-based technologies
10.4.	GHG Emissions	- Refer to above biomass-based technologies - Emission factor ranges between 40 and 60 kg per MWh of heat generated
10.5.	Capability Building	- At communities level, a training related to the whole network of the biomass technology management is required

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