

Using biogas to manage pig slaughter waste in Uganda



Wambizzi Cooperative Society Ltd is a pig farmers cooperative established in 1971. It operates the only pig slaughterhouse recognized by the veterinary services and government of Uganda. The slaughterhouse sits on a 0.43 ha plot of land leased from the Kampala Capital City Authority. It supplies a significant proportion of pork consumed in the city and nearby suburbs. During peak season, up to 150 pigs are slaughtered there each day.

The abattoir has long been troubled by the issue of waste; Bulk slaughter waste is largely disposed in public water bodies that flow through the neighbourhood, eventually reaching Lake Victoria, or is incinerated in a waste pit that contaminates the air and poses risks to public health. Rodents and marabou storks have access to the slaughter waste potentially resulting in cross-contamination. The slaughterhouse has a cooling room but not the necessary financial means to run it on electricity. Pork stored overnight is hung in the weighing room at ambient temperatures which facilitates bacterial growth.

In 2013, the Gesellschaft für Internationale Zusammenarbeit-funded Safe Food, Fair Food (SFFF) and the European Commission–International Fund for Agricultural Development-funded smallholder pig value chain development (SPCVD) projects examined pork handling and disposal practices at the slaughterhouse. In 2014, the Irish Aid-funded ‘More Pork by and for the Poor’ project, together with SFFF, financed the construction of a biogas digester

system, as part of a pilot study on the sustainable use of slaughterhouse waste to reduce pork contamination risk and meet the energy needs of the abattoir.



The pilot biogas system comprises three flexible tube biodigesters that transform waste (gastrointestinal tract contents) from the slaughterhouse into methane gas that heats water required to scald pig carcasses and provides energy for the cold room. The effluent produced from the digesters is being assessed for its value as an organic fertilizer. The impact of the biodigester system on pork safety is being monitored with partners at Makerere University using biological indicators, such as the burden of a defined set of pathogens (Salmonella, E. coli, Cryptosporidium, Giardia, Ascaris).

The slaughterhouse management and staff have been trained to operate and maintain the digester, learning which wastes can be fed into the digesters, how to use the gas burners, how to handle the effluent and maintenance of the biodigester. Further training on basic hygienic practices to achieve better sanitation at the slaughterhouse has also been provided.



Outstanding issues

The biogas plant offers immense potential to solve the energy needs and the waste management problem at Wambizzi. However capacity gaps still constrain its efficient operation. The management of this facility requires more training on live pig handling that promotes animal welfare, waste management and basic sanitary standards for the slaughterhouse.

The slaughterhouse still grapples with operational challenges, including high demand for water and a continuing demand for firewood for fuel. Before the intervention, the abattoir used 87.6 tonnes of firewood per year (about one tree a day). As the biogas comes on stream, the need for firewood will diminish.

To ensure sustainability of the biodigester system for waste management, the abattoir management will charge a waste management fee to traders per pig slaughtered. This will generate funds needed to maintain the biodigesters.

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Page 2: ILRI

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