

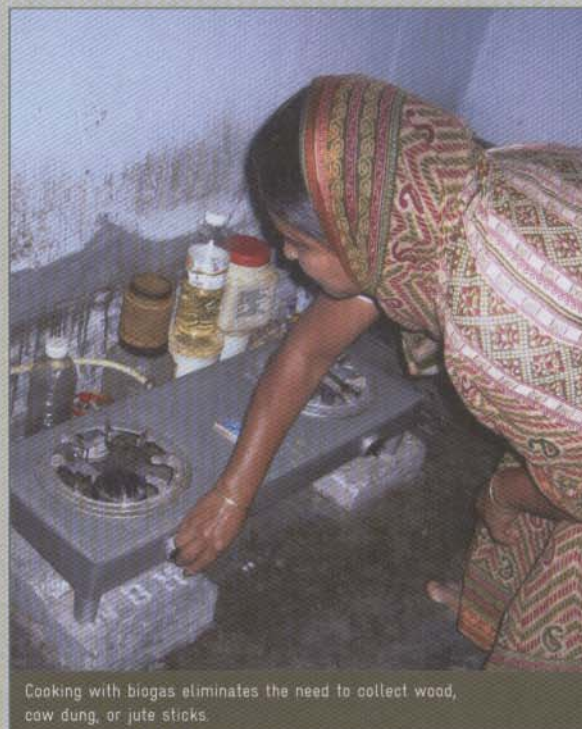
Mobilizing the Market for Biogas Technology

Addressing Bangladesh's energy needs is one of the priority areas of Bangladesh-German development cooperation. The Program Sustainable Energy for Development (SED), supported by the Ministry of Power, Energy, and Mineral Resources and the German Federal Ministry for Economic Cooperation and Development, through GTZ, is deeply involved in Bangladesh's effort to provide more and reliable energy to its people through the dissemination of renewable energy technologies and the more efficient use of energy from all sources.

80% of all Bangladeshis cook with traditional biomass, such as rice husks, jute sticks, cow dung, or wood. In fact, 50% of Bangladesh's total energy supply comes from biomass sources. However, biomass is becoming increasingly scarce and costly, putting additional pressure on already stretched poor households and resulting in unsustainably low levels of organic matter and nutrients in the soil.

A simple, comparatively inexpensive, but highly effective way to use biomass more efficiently and thus conserve on biomass is through the use of biogas digesters. Biogas digesters, fed with cow dung, poultry litter, night soil, urine, crop wastes, water hyacinth, leaves, etc., produce biogas, a mixture of mainly methane and carbon-dioxide, which can be used as a clean fuel for cooking and lighting or to power an electric generator. The biogas digesters also constantly release high-quality, germ-free organic fertilizer in the form of bio-slurry

The SED Program has been working with several partner organizations to test the potential of larger



Cooking with biogas eliminates the need to collect wood, cow dung, or jute sticks.

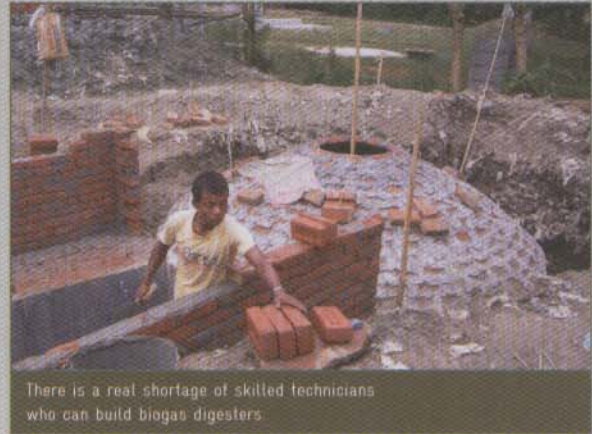
biogas plants in the rural/urban-rural fringe areas through demonstration projects. During the first initiative, 60 plants were sold, primarily through micro-credit, by Grameen Shakti to poultry farmers and several slaughterhouses. By September 2007 the program has been involved in the construction of almost 500 biogas digesters in poultry farms, slaughterhouses, madrassas, and schools throughout Bangladesh. Dairy farms and prisons are future customers. The target is to install over 2000 biogas digesters by 2009.

Large Farms can also Produce Electricity

There is, in fact, a large potential market for biogas digesters in the poultry sector alone: many of the over 100,000 poultry farms in the country could benefit from the technology, through savings of traditional cooking fuels (the cost of construction is recovered in two-three years), as well as the prevention of disease and the production of pathogen-free fertilizer. The larger farms with more than 5000 layer birds can also produce electricity, not a small matter in a country where 80% of the rural area has no access to electricity from the grid.

One of the program partners, Raj Poultry in Faridpur, a poultry farm with about 15,000 layer birds, had built three biomass digesters, which produce about 90 cubic meters of biogas a day. Raj Poultry wished to eliminate the hygienic hazards posed by such a vast quantity of chicken droppings and also to produce bio-slurry to fertilize the surrounding farm fields and fish ponds; it used some of the methane for cooking and to fire ovens in an integrated on-farm bakery and ceramics kiln. However, that still left a lot of unused gas. So the SED Program began working with the owner to test the feasibility of operating a biogas-powered generator for captive power generation on his poultry farm.

Powering a generator with biogas from poultry waste has its problems as the gas contains hydrogen sulfide, which is corrosive and therefore causes engine problems. This sulfur, as well as water vapor, must be removed with the help of chemical filters. The SED Program-supported engineers successfully tinkered with the biogas purification and power generator systems installed at Raj Poultry and today the owner produces electricity with two 5 kW generators. Other poultry farmers are travelling to Faridpur to view the results and interest is spreading rapidly.



There is a real shortage of skilled technicians who can build biogas digesters.

As interest in biogas has spread, it has become apparent that the lack of trained masons who can build biogas plants correctly is the major barrier hindering faster dissemination/marketing of biomass digesters. Thus Grameen Shakti approached the SED Program for training support in order to overcome this constraint.

Training of the first 102 masons was completed in May 2007. These masons will then offer their services to potential customers in conjunction with Grameen Shakti's micro-credit program, which has already been so successful in developing the market for other renewable energy technologies, such as solar home systems and improved cooking stoves. Other SED Program partners will use the same marketing system. Grameen Shakti together with SED is also in the process of developing effective ways of collecting and drying the bio-slurry so that the resulting pellets can be transported, stored, and sold in bulk as organic fertilizer.

gtz Office Dhaka

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

- German Technical Cooperation -

GTZ - Office Dhaka
Road 90, House 10/C
Gulshan 2, Dhaka 1212
Bangladesh
T +88-02-8823 070
F +88-02-8823 099
E gtz-bangladesh@gtz.de
I www.gtz.de/bangladesh

