

# Biogas Offers Fuel, Health, and Income Solutions in Bangladesh

Winrock International

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In Bangladesh, some 40 million tons of firewood are consumed annually as cooking fuel, contributing to deforestation, erosion, and flooding. Only 3 percent of the population has access to pipeline-supplied gas, creating heavy dependence on wood, animal wastes, and other biomass energy resources. Women and children bear the burden of collecting fuel and suffer from a variety of respiratory diseases

caused by indoor smoke from cooking.

Cooking times have dropped by as much as 80 percent, and household fuel costs and health hazards have been reduced thanks to biogas technology and a pilot project in Bangladesh. Under the auspices of the USAID-funded South Asia Regional Initiative/Energy Program, Grameen Shakti, a nonprofit renewable energy organization, and Winrock's Nepal Biogas Support Program have demonstrated the use of biogas as an efficient and renewable source of energy for the poor in Bangladesh.

Initially project plans included the construction of five biogas demonstration plants of varying size, that mixed animal wastes with water to produce methane gas. However, overwhelming public

support, coupled with the availability of loans for installation costs, led to the construction of more than 180 plants that provide small businesses and homes with biogas for a variety of uses.

The project's success can be largely attributed to the development of a consumer financing mechanism and business development services to borrowers, as well as the provision of training to local masons, clients, and Grameen Shakti staff. The initiative generates income by linking biogas production capabilities with poultry, livestock, and organic fertilizer markets. Animal waste used to generate methane leaves behind rich, organic slurry that can supplement chemical fertilizers. The use of slurry can improve soil fertility, increase farm productivity, reduce input costs, and mitigate the environmental risks associated with chemical fertilizers.

Rukshna Parveen, a biogas plant owner, enjoys the benefits of a smokeless kitchen. Since purchasing the plant, her cooking time has been reduced by 80 percent. Before using biogas, her fuel costs totaled 450 taka (approximately US \$6.50) per month. In just three years, when her small 558 BDT/month loan is paid, her fuel will be free.

Mr. Islam, a poultry farmer, purchased a biogas plant that provides fuel for his household cooking needs. He now earns about \$28 monthly from the sale of excess biogas to five nearby homes.

Winrock International is a nonprofit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources.