

## On-going Activity of Renewable Energy Sector

**Action Research project on Poverty Alleviation through Livestock Management and Bio-Gas Bottling**

- **Funded by :** Bangladesh Government (GOB)
- **Implemented by :** Rural Development Academy (RDA), Bogra  
Ministry of Local Government, Rural Development & Co-operatives
- **Project Duration :** September 2009 - December 2015
- **Infrastructure Facilities of the Project:**
  - Installation of 80-130 m<sup>3</sup> capacity of community bio-gas plant.
  - Biogas distribution network and electricity production by biogas generator
  - Slurry processing floor for organic fertilizer production
  - Biogas storage tank.
- **Infrastructure Facilities of the Project:**  
A total of 112 community biogas plant and water supply system have been installed by the capital investment of the project.
- **Biogas:**
  - Installation of 80-130 m<sup>3</sup> capacity of community bio-gas plant.
  - Biogas distribution network and electricity production by biogas generator
  - Slurry processing floor for organic fertilizer production- Biogas storage tank.
- **Credit:**  
There was a provision for training-match credit program to the beneficiaries for under in action different types of IGAs. A total of Tk.10.70 lakh is being allotted in each sub-project.
- **Cattle rearing on lease basis**  
There was a provision to distribute hazard free cattles among the beneficiaries for beef fattening on traditional lease basis.
- **Two-Storeied Agriculture with Solar Irrigation:**  
The ultimate long term impact of two storied agriculture with solar irrigation is to reduce poverty and improve livelihood of farmers and limit dependency on ever crying electricity for irrigation.
- **Implementation Date and Location:**  
Date: July, 2012 - 2013
- **Location:**  
Rural Development Academy Demonstration Farm.

## Rural Development and Cooperative Division Ministry of LGRD & Cooperatives



## Commitment to Environment Protection and Food Security



**Renewable Energy Research Centre (RERC)**  
Rural Development Academy (RDA)  
Bogra-5842, Bangladesh

1. Biogas Inlet Chamber
2. Community Biogas Plant
3. Community Participation
4. Power Generation through Biogas
5. Biogas using for Cooking
6. Biogas Purification Station
7. Solar Irrigation
8. Palli Joibo Sar



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## 4. Sources of Fund

- 4.1 Marketing of bio-gas and bio-fertilizer.
- 4.2 Service charge of RDA credits activities.
- 4.3 For consultancy and evaluation study on renewable energy technologies and supportive works the provision of service charge 30% would be the major source of earning of RERC.
- 4.4 Taking service charge for providing training courses on IGA related to renewable energy.
- 4.5 Searching fund for action research projects related to renewable energy from GO/NGO, nationally or internationally.

## 5. Property of Renewable Energy Research Centre (RERC)

The Academy is an autonomous body under the Rural Development and Co-operatives Division of the Ministry of Local Government, Rural Development & Co-operatives Division (LGRDC) presently working with an action research project titled "Poverty Alleviation through Livestock Management and Bio-Gas Bottling". After completing of this project all project properties would be used by this centre.

## 6. Management System of Renewable Energy Research Centre

RERC will run under the direct supervision and guidance of Director General, RDA, Bogra.





## Rural Development Academy Renewable Energy Research Centre (RERC)

### 1. Background

Bangladesh has major problems with energy crisis, persisting poverty and environmental degradation. With only 49% of Bangladesh having access to electricity, the per capita energy use is only 180 kWh. Moreover, the people who are connected with the national grid are experiencing frequent load shedding. At present, the country can generate about 4500 MW electricity, while peak demand is about 6000 MW (USAID, 2011). Therefore, the supply is unreliable. Most of the supply is limited to urban areas; access to electricity in rural areas is less than 10%. RERC can solve this problem by harnessing energy from country's free flowing renewable such as sunshine, wind, tidal waves, waterfalls or river current, sea waves or biomass. Use of renewable energy, increased energy efficiency and enhancement of energy security constitute a sustainable energy strategy approach.

Rural Development Academy (RDA), Bogra is a specialized national institution for training, research and action research in rural development of Bangladesh. The Academy is an autonomous body officiated with the Rural Development and Co-operatives Division of the Ministry of Local Government, Rural Development & Co-operatives (LGRDC). Rural Development Academy (RDA), Bogra creating environmental friendly model for rural developing rural livelihood socio-economics status since its inception. From a decade ago RDA is working on solid waste (created from

demonstration farm units- dairy, poultry, fisheries, cafeteria, guesthouse, hostel and residential areas) management and producing renewable energy through community based biogas plant to maintain a clean and environment friendly and residential areas) management and producing renewable energy through community based biogas plant to maintain a clean and environment friendly campus. With the rising population growth our natural sources of fuel are in decreasing trends. It is tough to fulfill energy demand from natural resources against required fossil fuel of about 40 million tons annually for Bangladesh. RDA, Bogra under the Ministry of Local Government, Rural Development & Co-operatives Division implementing an action research project with 5 years duration entitled "Poverty Alleviation through Livestock Management and Bio-Gas Bottling" to 112 areas in Bangladesh with the major focus on community based waste management to have friendly environment and to supply an alternative sources of renewable energy as well as organic manure for soil health improvement, safe drinking water to reduce hazardous diseases and to develop economically viable and sustainable model to rural community for further extension in hole over the country. Here is to be mentioned that supplying 2000-2500 kg of cowdung daily as input to the Bio-gas plant having volume of 130-150 m<sup>3</sup> from which 55-60 m<sup>3</sup> bio-gas and 400-500 kg bio-fertilizer may be produced. Besides this, using raw bio-gas to supplied 5KVA generator 3500-4000 Watt electricity may be produced and distributed amongst the community people, provision of CNG conversion

for vehicle and biogas bottling practice are going on. According to the decision of 41st Board Meeting of the Academy a specialized centre established in RDA as "Renewable Energy Research Centre" for quick extension, popularization, continuations as well as institutionalization and dissemination of sustainable technologies in home and abroad.

### 2. Objectives

- 2.1 The main objective of this action research project is to meet up rising demand of energy and building awareness of producing and using renewable energy through community based waste management practice, maintain friendly environment in rural areas of Bangladesh and to developed a replicable and sustainable model through the country. Besides, others renewable energy sources such as solar, wind, hydro energy etc also be given preference.
- 2.2 To strengthen organic farming system and utilization of organic manure at the field level. A community based bio-gas plant would be installed for environment friendly waste management and to reduce health hazard and practice of raising livestock's also be developed to meet up nutritional demand as well as ensure supply source of input materials (cow dung) to bio-gas plant.
- 2.3 To create an additional employment opportunity by providing RDA credits among the community members for IGAs mainly for raising livestock to have economic support as well as renewable energy such as- bio-gas, solar energy etc.
- 2.4 To arrange national and international seminar/workshops for disseminating successful model/technologies among the

- 2.5 To get self-sufficiency in energy sector through producing electricity locally by bio-gas driven generator as alternative means of renewable energy.
- 2.6 To take initiative for visiting nationally and internationally in order to sharing experience on renewable energy aspect.
- 2.7 To ensure waste management practice environmentally friendly and in sustainable manner.
- 2.8 To take initiative for dissemination of renewable energy technologies through suitable agencies like, GO/NGO and PPP (Public Private Partnership).
- 2.9 To take renewable energy and waste management related action research projects, consultancy work, research work in the allied fields in home and abroad.

### 3. Activities

- a. Establishing bio-gas plants for production of biogas, organic fertilizer and electricity as a means of renewable energy and inspire rural people towards livestock's farming.
- b. Ensuring support service for installing and management of solar panels.
- c. Conducting action research to strengthen irrigation skill and saving grid power for smooth of running solar pumps.
- d. Development of livelihoods through education, health-care, nutrition as well as income status of rural people through involving with RDA micro credit activities.

### Schematic Diagram of Biogas Plant (Capacity-130m<sup>3</sup>)

