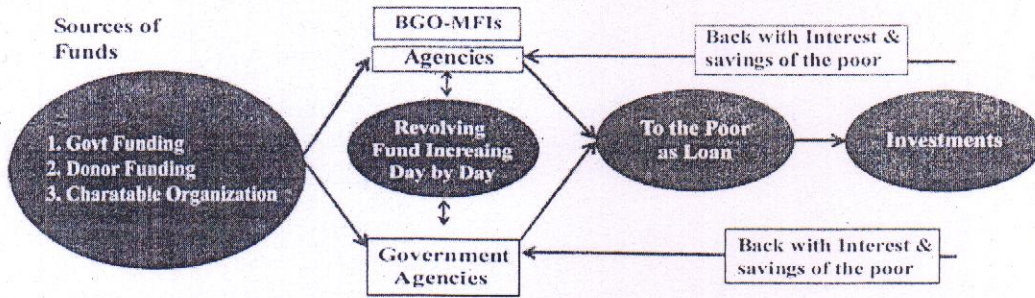


# 1. One House One Farm (OHOF) Project

**A special initiative of Sheikh Hasina: Paradigm shift from Microcredit to Micro savings**  
 Sheikh Hasina, the Honorable Prime Minister of Bangladesh, thought about poverty alleviation in true sense, not by dilemma, mockery or sarcasm like many other political or social leaders. Her consideration was why the world leaders had and have failed to combat poverty. Either there is lack of commitment or lack of proper strategy and/or proper action. So called Microcredit has failed to solve the poverty of the world. People are still struggling to find ways to eradicate it. She had been working on it for a long time and through trial & error, she established a specialized model of micro financing (contributing micro savings) for the poor of Bangladesh as traditional microcredit model failed to eradicate poverty. The traditional microcredit model can be conceptualized as followed:

## Traditional Microcredit Model of the World

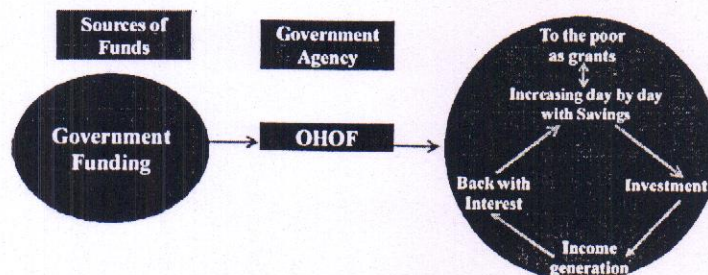


Capital lies with NGOs/MFIs/Institutions & increasing day by day

In traditional micro credit program, the fund of micro financing comes either from the government or from donors and local charitable and social institutions, and does not reach to the poor directly. The funds are given to the poor through middlemen, the NGOs-MFIs and government agencies as well. The middlemen i.e. the NGOs and other agencies are receiving the money from primary sources and distributing those as loan/credit to the poor. The poor, after investing the borrowed fund, are returning the money back to the middlemen along with high interest. The savings of the poor are also deposited to the bank account of the institutions. The poor remain vagrant for capital or fund to invest in income generating activities all over again. On the other hand, the fund does not go back to the primary sources like government or the donors and remains with the middlemen who keep using it as a revolving fund that increases day by day with them but not with the poor or primary sources. Consequently, the poor have to keep borrowing from the agencies time and time again. It is further cruel that the micro or small savings of the poor also goes to the pocket of the middlemen, the lending agencies.

Depending on the learning, Honorable Prime Minister designed the micro financing model in 2011 incorporating participatory fund mobilization by the poor with specific savings supported by government funding as incentives along with ownership to the entire amount. The model can be explained as below:

## Advanced Microfinance Model of Bangladesh

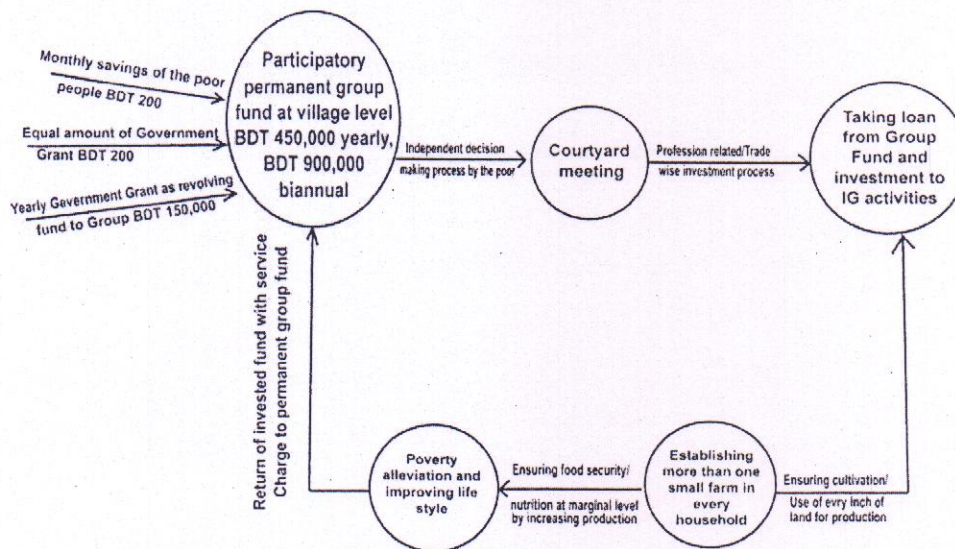


Capital lies with the poor & increasing day by day



The basic advancements in this model are- (a) Fund is given to the poor as grant instead of credit (i.e. forever); (b) Fund is raised up by their savings forming an integrated fund to invest for income generation at household level; (c) Finally, the fund is returned with interest to their own bank account, not to anybody else; and (d) Thus the fund is revolving & increasing and being directly used and handled by the poor instead of the middle men. The total activities can be shown as a sustainable poverty alleviation model, dreamt by the Honorable Prime Minister Sheikh Hasina as follows:

Model-1: Sustainable Poverty Alleviation Cycle



Based on the Advance Microfinance Model of HPM Sheikh Hasina, Rural Development & Cooperative Division of the Ministry of Local Government, Rural Development & Cooperatives of the Government of Bangladesh has been implementing One House One Farm project- A program for poverty alleviation through e-financial inclusion (i.e.fund mobilization) followed by family farming livelihood and income generation of the under privileged and smallholders of the country.

**The major differences between OHOF's Microfinance model and other Microcredit**

| Serial | OHOF (Micro Saving scheme/activities)   | Other micro credit schemes/activities   |
|--------|---|---|
| 1      | Participatory fund mobilization and ownership of the beneficiaries (i.e. the poor members of the VDO) to that.  | The fund is owned by the micro finance institutions or NGOs, where the poor have no ownership.                                |
| 2      | The fund is permanent i.e. loan repayment along with the service charge (8% only) is deposited by the poor in their own Bank Accounts of the VDO.   | Temporary funding: microcredit/loan lenders take away the original amount along with high interest.                           |
| 3      | Loans are sanctioned through the participatory decision making process by the poor (members of VDO) in courtyard meetings and the installments of repayment are based on the income generation of the poor. | Members have no freedom on decision making regarding loan sanction, loan amount, interest rate and repayment of installments. |
| 4      | Online and green management: ensures transparency and speedier service delivery at their doorstep.  | Manual management: more prone to corruption and hassles.  |

OHOF project has been implementing throughout the country. A total 2.2 millions of poor/ultra poor families of the country are rehabilitated under the project so far. Project with



its principal objective has taken initiative for e-financial inclusion of the poor households, the beneficiaries through electronic fund management. All 2.2 million poor/ultra poor beneficiaries of the project are now inclusive of e-Financial services. All the financial transactions like deposit weekly savings, installment of loan, distribution of Government incentives, post training support fund, loans disbursement etc are being transacted through online banking by interfacing MIS software and core banking software of the project. Rural poor beneficiaries are enjoying online banking facilities at their door steps sitting in courtyard meeting of the village. The major achievements (as on 31<sup>st</sup> December 2016) of the project are given below:

- 40213 Village Development Organizations (VDOs) formed.
- Number of beneficiaries (smallholders) 2.19 million.
- Savings deposited by the beneficiaries BDT 10172.9 million BDT i.e. US\$ 127.16 million.
- Matching project grant given to smallholders BDT 8531.4 million BDT i.e. US\$ 106.64 million.
- Grants from government to the Village Development Organizations (VDOs) BDT 11067.4 million BDT i.e. US\$ 138.34 million.
- BDT 31395.0 million i.e. US\$ 392.37 million BDT fund mobilized for 2.19 million smallholders.
- Skill development training provided to 2,00,400 people.
- Total investment BDT 35581.2 million BDT i.e. US\$ 444.75 million invested in 2.74 million small family farms.
- Income increased BDT10,921 per household/year.
- Number of online transactions are 79.94 million
- Number of households under financial e-inclusion is 2.19 million

This is a unique initiative in addition to the common help to the small farmers by the government. Fund constraint of the poor farmers efficiently addressed in this project. Micro savings instead of microcredit, the theme of the project is a new and exceptional initiative. Need based investment to the family farming ensure food production, livelihood and income leading to poverty alleviation. This will ensure their right to work and right to develop them as enshrined in the constitution of Bangladesh. If the project OHOF can be implemented successfully, this model would be a universal and ideal practice of poverty alleviation for the poor across the other developing countries.

#### **Third Revision of the Project:**

Based on the success of the implemented project the government has extended the implementation time and area coverage of the project aiming to achieve the goal of poverty free Bangladesh by 2021 and make Bangladesh a hunger free middle Income country. According to the extended project another 3.6 million ultra poor and poor families to be brought under the project forming 60 thousand village development organizations by June 2020. This project is being implemented involving all classes of people in the country.

#### **Sustainability of the project:**

The Government has established 'Palli Sanchoy Bank' (Rural Savings Bank) enacting a law in the National Parliament of Bangladesh to make the project activities sustainable and continue the ongoing poverty alleviation programs through the Bank. After completion of the project all assets, liabilities of the project would be transferred to the Bank.



## **2. Integrated Water Management (IWM) Project of RDA**

### **Philosophy of the Project**

#### ***Water is not only a consumable item; it is considered an input for production***

When water is used only for drinking and other household use, it is treated as a consumable item. In this regard people have to pay the water charge from (i) current income; (ii) past savings or (iii) both of the sources.

But when water is used as an input for production i.e. if the productive use of water is ensured through multipurpose use of borehole water, additional income of rural people is ascertained. Then the rural people become capable or willing to pay the water bill from their additional income.

### **Background**

Academy sailed its journey in June, 1974 as a specialized national institution for training, research, action research and advisory services 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).

Deep Tube well (Borehole) was first introduced in Bangladesh for irrigation in early 1960s. The average acre of coverage each Borehole (DTW) is about 40 acres only. The Borehole installed for irrigation remains in use only for four months a year to irrigate Boro rice. The rest of the time it remains idle, makes the investment non lucrative for farmers.

On the other hand, access to safe drinking water in Bangladesh is still inadequate. Average per capita use of water is only 45 liter/day. General people are also unable/unwilling to pay water charge for drinking and domestic purposes. Due to inadequate water supply facility in the villages they cannot involve in the poultry and livestock rearing, horticulture, fish farming, food processing, etc. which need adequate safe water.

Considering the above confrontation Academy has successfully carried out experiments in the field of water resources development, especially, in respect of optimum utilization of scarce water resources and has developed some models. The model includes: (i) partial buried pipe irrigation system; (ii) low and medium cost lined channel; (iii) compacted earthen channel; (iv) domestic water supply from irrigation well (v) installation of arsenic and iron removing plants (vi) productive and multipurpose use of DTW water etc.

Outcomes of this commitment, a specialized wing in the name of Centre for Irrigation and Water management (CIWM) has been formed by RDA in 2003 in continuation of research and action research activities as centre of excellence. The quick expansion and dissemination of evolved models in rural Bangladesh is the commitment of CIWM.

A GoB financed Integrated Water Management (IWM) Action Research Project has been implemented by CIWM, RDA for expansion and dissemination of water management models of RDA in integrated approach over the rural Bangladesh.

### **Objective of the Project**

The main objective of the project is to reduce the poverty level through RDA-developed integrated Water Resources Management (IWRM) approach as well as market-led livelihood promotion intervention in rural areas of Bangladesh.



### **Project Location**

A total of 78 sub-project sites are developed in all over the country. The vulnerable upazilas inadequate access to safe water supply is given priority.

### **Project Cost**

Each sub-project site costs BDT 4.5 (USD 0.056) million and credit for ensuring additional income of beneficiary household is BDT 1.60 (0.02) million.

### **Component/Proposed Activities at a Glance:**

- ◆ Installation of Low-cost DTW based on the technological option developed by RDA;
- ◆ Construction of multipurpose overhead tank;
- ◆ Construction of low-cost buried pipe irrigation system;
- ◆ Construction of networks for safe drinking water supply;
- ◆ Construction of water treatment plant;

### **Implementation Strategy**

All the activities of each sub-project have been implemented through the Center for Irrigation and Water management (CIWM) of Academy. On the basis of letter of interest by NGOs/Smity/Association /Group, a feasibility study is conducted in the proposed area to be selected as sub-project. Such a feasibility study concentrates on local people's interest, existing communication system, irrigation area, availability of 3-phase electricity connection, densely populated village, area affected by scarcity of potable water. Interested management group is paid in advance 10% of total capital investment. The rest of capital investment will have to be paid within 15 years without interest. In this regard a MOU is signed between the concern bodies and RDA.

### **RDA Credit Operation**

There is a provision of a village-based water users group in each sub-project area. The group members received training on different Income Generating Activities (IGAs). After successful completion of training, they took RDA credit. All the credit activities are operated by the concerned management group under the direct supervision of CIWM, RDA. The maximum interest rate is declaration rate of Bangladesh government i.e. 11% flat rate. Out of 11%, 4 percent is used for credit supervision/management, two percent for the management NGO/Samity/ Association/Group, 3% for CIWM of RDA for replicating similar nature of project in other areas and the rest two percent for bad loan. A separate MOU is signed with the two parties on credit management activities.

### **Impact of the Project**

Farmers can afford RDA-developed Borehole due to the reduction of 30-40% installation cost compared to the traditional Borehole. It uses locally available materials and thereby saving the foreign currency.

It ensures multipurpose productive use of water throughout the year and creating investment enabling environment.

Per capita water use at the project area boosted up to 60-120 liter/day compared to the national average of 45 liter/capita/day.

Villagers' access to safe water supply (about 2-3 hundred households in a project sites) ultimately improves their livelihood. Productive uses of water ensure additional income at the village level therefore helps in improving socio-economic condition of the villagers.

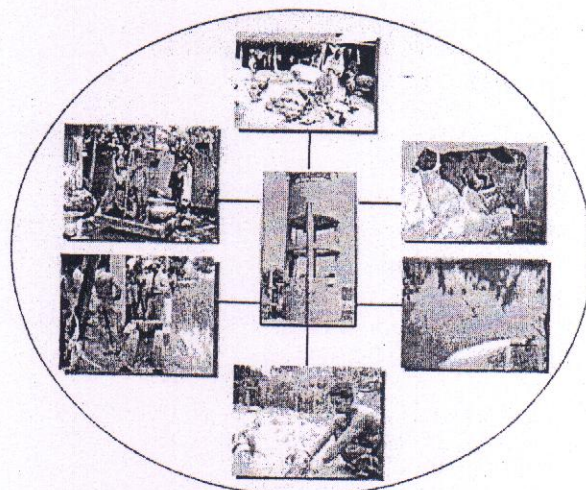


Peoples become willing to pay the water charge as their additional income is ensured by the training matched credit on various water based income generating activities and make the system more sustainable.

This technology establishes village level private entrepreneur/water supply group for supplying safe water in multi sectors without any subsidy from the government.

Being a demand based technology reduces the trend of ground water depletion is therefore, claiming as an environment friendly groundwater development technology.

Rural piped water supply was ensured by the farmer's operated water supply system and become the best option for uninterrupted safe water supply.



### Panjankhara Sub-project

Out of 78 sub-projects of IWM Project Panjankhara is one of them. Panjankhara is under Garpra Union Parishad of Manikgonj District. The inhabitation of Panjankhara is facing severe water crises due to presents of high level of iron. **Aragami Khudra Babasi Samabai Samittee, Manikgonj** come forward with a group of local people and discussed with the team of CIWM, RDA. Under the terms and conditions they agreed to extend the activities of IWM project in their village. The concern team of RDA practically visited the site and discussed with the local people to explore their problems, available resources, people's interest and willingness the pay of water charge. Besides this they also matched the project criteria. Considering the above criteria, RDA decided to implement a IWM sub-project site and invite **Aragami Khudra Babasi Samabai Samittee** to deposit 10% of total capital investment as down payment in this two MoU are signed one for infrastructure installation and other one for credit operation.

|                                 |   |
|---------------------------------|---|
| <b>Year of Establishment</b>    | : <b>2014.</b>  |
| <b>Funded by</b>                | : <b>Bangladesh Government.</b>   |
| <b>Total Capital Investment</b> | : <b>BDT 4.5 (USD 0.056) million and credit money for ensuring additional income BDT 1.60 (0.02) million.</b> |

The following infrastructures are developed in the project site:

- i. Automatic DTW/Borehole (Capacity 100-150 m<sup>3</sup>/hr)
- ii. Overhead tank- 30,000 liter.
- iii. Water Treatment plant (Capacity 15,000 liter).
- iv. Buried Pipe Irrigation Network (150 m)
- v. Water supply & Sanitation (1830 m)



Now the village people are enjoying safe drinking water in the project area. A total of 350 persons of 70 HHs are connected with water supply system. They are also using it for other productive uses like poultry, dairy and nursery development and secured additional income.



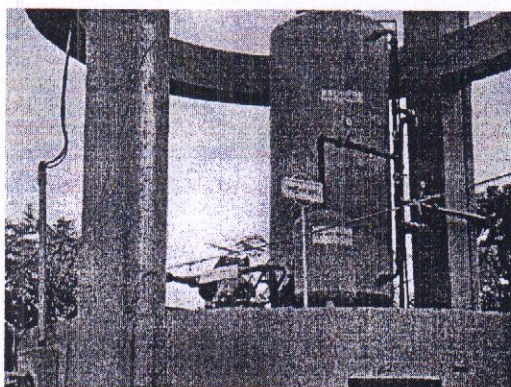
Water quality test report of the project site before and after filtration are tabulated below:

**DTW Raw Water Test Results (Before Filtration)**

| Sl. No. | Water Quality Parameters | Unit | Concentration Present | WHO Guidelines Values 1996 | Bangladesh Standard for drinking water (ECR'97) |
|---------|--------------------------|------|-----------------------|----------------------------|---|
| 1.      | pH                       | -    | 7.2                   | 6.5-8.5                    | 6.5-8.5   |
| 2.      | Iron, Fe                 | mg/L | 6.15                  | 0.3                        | 0.3-1.0   |
| 3.      | Arsenic, As              | mg/L | Nil                   | 0.01                       | 0.05  |

**Purified Water Test Results (After Filtration)**

| Sl. No. | Water Quality Parameters | Unit | Concentration Present | WHO Guidelines Values 1996 | Bangladesh Standard for drinking water (ECR'97) |
|---------|--------------------------|------|-----------------------|----------------------------|---|
| 1.      | pH                       | -    | 7.1                   | 6.5-8.5                    | 6.5-8.5   |
| 2.      | Iron, Fe                 | mg/L | 0.35                  | 0.3                        | 0.3-1.0   |
| 3.      | Arsenic, As              | mg/L | Nil                   | 0.01                       | 0.05  |



A total 133 people are trained on different trades. A credit program also prevailed there. The credit updates are enlisted herewith:

|                        |                    | <i>(Up to December, 2016)</i> |                   |
|------------------------|--------------------|-------------------------------|-------------------|
| RDA Credit Programme : |                    |                               |                   |
| Seed Capital           | : Tk. 1.60 million | Service Charge                | : 11% (Flat Rate) |
| Sub-Group              | : 01               | Loanee Member                 | : 10              |
| Disbursement           | : 0.81 million     | Due for Realization           | : 0.719 million   |
| Total Savings          | : 0.037 million    | Realization                   | : 0.719 million   |
|                        |                    | Rate of Recovery              | : 100%            |



### 3. Community Based Bio-gas Project of RDA

#### Philosophy of the Project

##### *Waste is converted to Value*

To make the dairy farm profitable one, only milk will not be the main product but waste will be noticed as the main product. When cow dung will be used as input for producing bio-gas and fermented slurry will be converted to good quality of organic manure, this resource will be converted to value. Because milk production of a cow is confined for a certain period but a cow produces about 10 kg of cow dung each day over its life time.

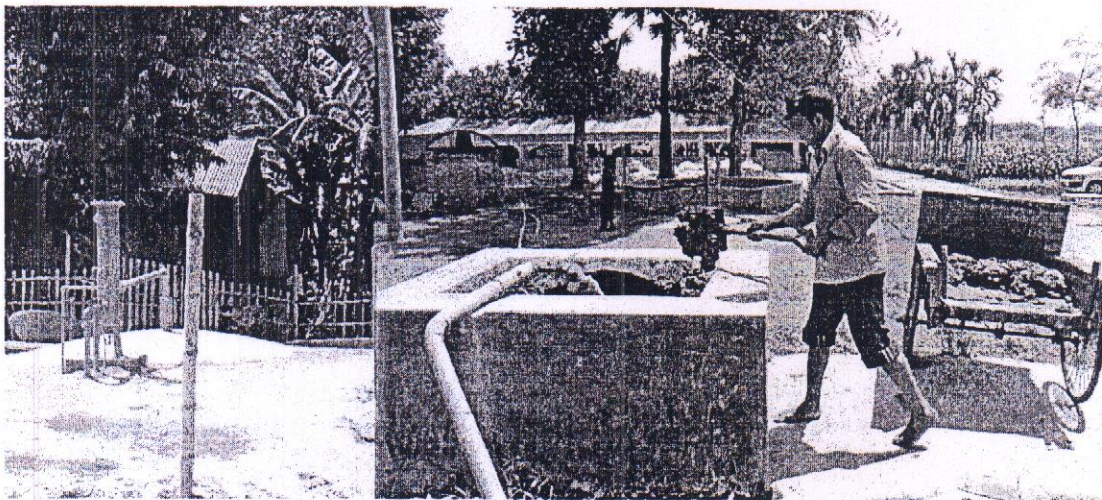
##### **Biogas**

Biogas is a colorless fuel gas, which is produced from decomposition of cow dung and other degradable materials in absence of air. It contains 50% to 70% of methane gas and the rest of part is Carbon dioxide (CO<sub>2</sub>), Hydrogen sulphide (H<sub>2</sub>S) and Moisture. At this technology, high nutrients rich organic fertilizer is produced as byproduct.

##### **Background**

Energy is the key factor for sustainable development. In Bangladesh, at present, per capita energy consumption is 407 kWh. The national grid cover about 78% of the total population and only three per cent people are enjoying piped gas supply. About 70 percent people of Bangladesh live in rural areas, where the situation is not as good as urban. As a result, rural to urban migration is high in Bangladesh.

Bangladesh has been facing severe crisis as fuel security sometimes considered synonym to food security. It has been next to impossible to meet up the yearly demand of 40 million tons of fuel from natural sources. About 90% electricity is generated using natural gas. Government has to spend a huge share of development budget to meet up the subsidy incurred for importing fuel. Rural people depend on homestead forestry for cooking which leads deforestation. The stock of natural gas is supposed to be exhausted by 2030. The country's environment, food security,



agricultural production and livelihood are being adversely affected under the circumstances.

On the other hand electricity generation is inadequate and meets only 40% of rural requirement. It becomes a financial burden for the government to give subsidy for supplying electricity in vast rural areas. The other challenges include losing soil fertility due to inadequate organic matter. In



Bangladesh soil contains less than 1% organic matter far below than the optimum level of 5%, which is alarming for soil health. Moreover, there is poor waste management causing environment pollution and diseases for man and animal. The community bio-gas may be one way of addressing the above challenges.

### Scope of Biogas production

At present, Bangladesh has 22 million cattle in number. They produce near about 220 million kg of cow dung. About 1.3 cubic ft (0.037m<sup>3</sup>) gas can be obtained from one kg of cow dung. Based on this calculation, it is possible to get 2.97 X 10<sup>9</sup> m<sup>3</sup> of gas which is equivalent to 1.52 X 10<sup>6</sup> tons of kerosene or 3.04 X 10<sup>6</sup> tons of coal. Besides this, a noticeable amount of biogas can be produced from the excrement of man, poultry, goat, ram etc. and other degradable waste, water-hyacinth or aquatic plant. Every year 1.2 X 10<sup>9</sup> m<sup>3</sup> gas can be produced only from human waste, if we are able to bring every family of Bangladesh under biogas plant project.

Bangladesh has natural gas storage of 351.59 X 10<sup>9</sup>m<sup>3</sup>. This storage will run out in next 20-22 years if we continue its use at the present rate. To overcome this fuel crisis, only Bio-gas can stand as a substitute fuel and contribute to preserve environmental balance and ensure the hygienic atmosphere, high quality organic manure, simple and safe fuel and developed rural life style.

### Main objectives:

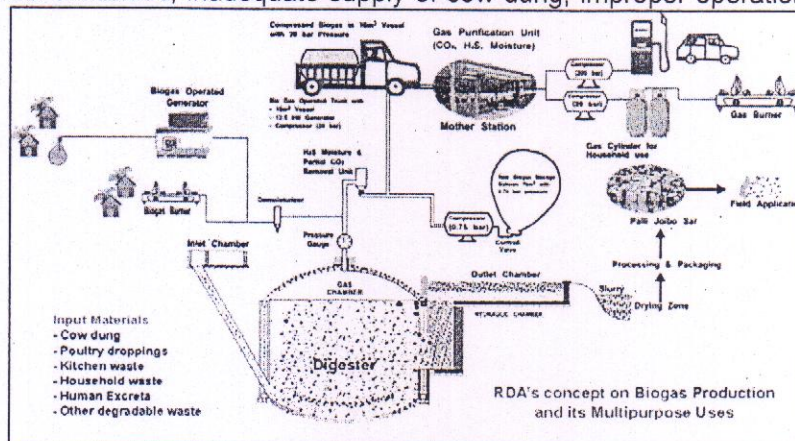
The main objective of the project is to reducing poverty, improve socio-economic and quality of life of the rural and semi urban people through replicating RDA-developed community based biogas model at rural and urban areas of Bangladesh.

### Project Cost

The each sub-project cost is BDT 1.45 (USD 0.018) million and credit for ensuring additional income of beneficiary household is BDT 1.096 (0.0137) million.

### Community Based Bio-gas Plant Technology

In Bangladesh traditional biogas digester has capacity of 3-6 m<sup>3</sup> at individual household level which incurs many technical difficulties, inadequate supply of cow dung, improper operation and maintenance. It was not also economically viable. Traditionally, only the cow dung was the input of biogas digester but in community approach all degradable waste generate village level i.e. farm waste, kitchen waste, market waste, sewerage waste etc. used as inputs for biogas generation.



A new approach of community based biogas model (Capacity of 150-200 m<sup>3</sup>) has been developed for waste management as a source of alternate energy in cooking, generation of power as well as CNG conversion and production of best quality organic fertilizer.



Raw biogas is collected by a truck mounted gas tanker (10 m<sup>3</sup>) under 20 bar pressure from community biogas plant located in 112 villages throughout the country. The raw biogas is firstly stored in balloons/tankers as buffer storage. The raw biogas is purified (remove CO<sub>2</sub>, H<sub>2</sub>S and moisture etc.) in mother station located at RDA. In purified biogas methane content raised up to 97% and store in a purified gas tanker (20 m<sup>3</sup>) under 20 bar pressure as buffer storage for its multipurpose use (electricity generation, supply to the gas line for cooking and supply to the vehicle under 200 bar pressure as CNG).

#### **Component/Proposed Activities at a Glance:**

- ◆ Installation of a community based bio-gas plant developed by RDA;
- ◆ Construction of networks for bio-gas supply;
- ◆ Electricity generation using bio-gas;
- ◆ Construction of slurry processing floor.

#### **Implementation Strategy**

All the activities of each sub-project are implemented through the Center for Irrigation and Water Management (CIWM) of RDA. On the basis of letter of interest by NGOs/Smity/Association/Group, a feasibility study is conducted in the proposed area is selected as sub-project. Interested management group has to pay in advance 10% of total capital investment allocated for a sub-project. The rest of capital investment will have to be paid within 10 years without interest. An MoU is signed between the concern bodies and RDA on the above issue.

#### **Project Impact**

Community biogas has created lot of interests among the policy makers, development planners and common people of Bangladesh considering a source of renewable energy, environment friendly and better management of decomposable wastes. Managing of waste is a big concern. Improper handling and management of waste is also a big challenge. Community approach biogas plant can ensure better waste management as well as adds value and creates positive impact on rural society.

Community biogas is used as alternate source of fuel energy for household cooking. As a result savings of fuel wood reduces deforestation and appears safeguard of village women against health hazard issues. Employment generation and additional income have been ensured in village level through production of organic manure and biogas marketing. Quality organic manure produced from biogas plant improves soil health. The proper waste management keeps rural environment sound and clean by reducing harmful carbon emission. Purified biogas is used for electricity generation and inject to vehicle substitute for CNG can reduce additional pressure on national power grid and saves costly foreign currency.

#### **Panjankhara Sub-project**

Out of 112 sub-projects of Community Based Bio-gas Project, Panjankhara is one of them. Panjankhara is under Garpara Union Parishad of Manikgonj District. The local people have the problem of waste management and energy shortage for cooking. **Aragami Khudra Babasi Samabai Samittee, Manikgonj** come forward with a group of local people and discussed with the team of CIWM, RDA. Under the terms and conditions they agreed to extend the activities of Biogas Project in their village. The concern team of RDA practically visited the site and discussed with the local people to explore their problems, available resources, people's interest and willingness the pay of gas bill. Besides this they also matched the project criteria. Considering the above criteria, RDA decided to implement a biogas sub-project site and invite **Aragami Khudra Babasi Samabai Samittee** to deposit 10% of total capital investment as down payment in this two MoU are signed one for infrastructure installation and other one for credit operation.

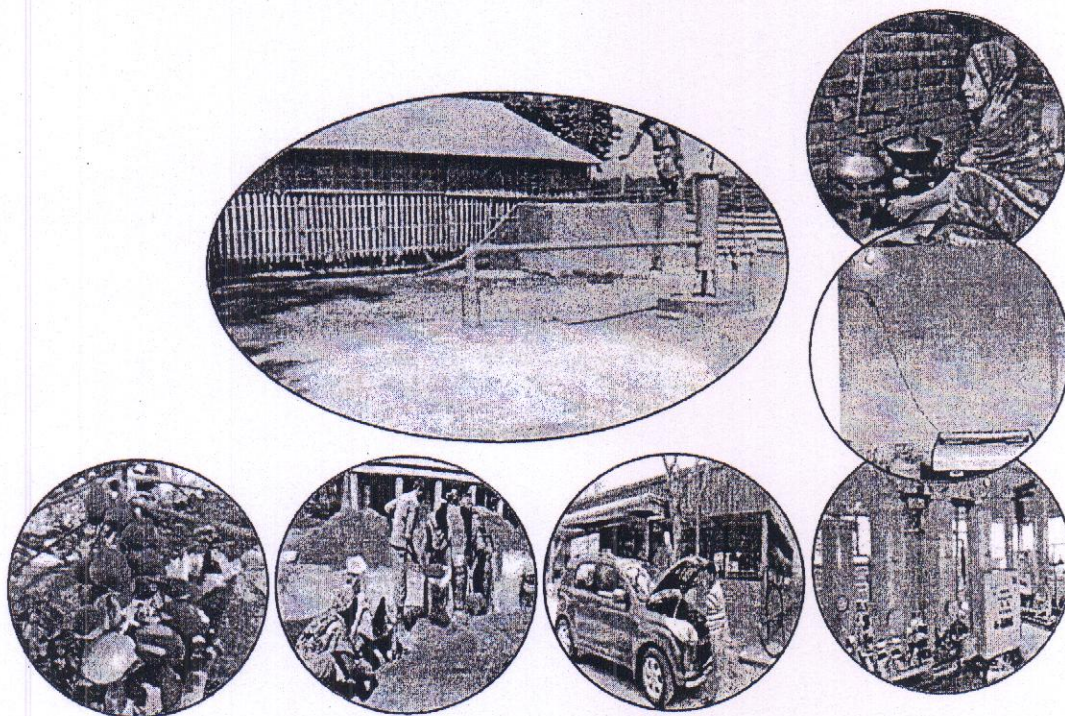


|                                 |   |
|---------------------------------|---|
| <b>Year of Establishment</b>    | : 2013.   |
| <b>Funded by</b>                | : Bangladesh Government.  |
| <b>Total Capital Investment</b> | : BDT 1.45 (USD 0.018) million and credit money for nsuring additional income BDT 1.096 (0.0137) million. |

The following infrastructures are developed in the project site:

- i. Bio-Gas plant (Capacity 130 m<sup>3</sup>);
- ii. Community Toilet- 01
- iii. Pipe line network for Bio-Gas plant (2600m)
- iv. Bio-gas operated Generator of 5 KVA

Now the village people are enjoying biogas in the project area. A total of 15 HHs are connected with biogas supply line.



Multipurpose use of RDA-developed Community Biogas Plant