

# Clean Energy for Rural Bangladesh (CERB)

*Our Lord! You have not created all without any purpose. Glory to You.*

*Holy Quran: Surah Al-Imran: Verse 191*

## **Optimizing on clean energy for integrated improvement of life**

The Clean Energy for Rural Bangladesh (CERB) project aims to generate clean energy to meet the cooking needs of rural women through an Interest-free Microfinance scheme. The project is based on the production of biogas from cow dung which can be used as cooking fuel. The project aims to produce biogas and bio-fertilizer from farm wastes whilst alleviating environmental pollution. It will generate additional income for rural women through dairy enterprises and stimulate milk production and consequently improve the nutrition security of the rural poor. Through clean energy, reforestation, daily cash income and nutrition, CERB aims to improve the quality (of life for rural women) lives of rural women in Bangladesh.

### **Environment Degradation & Climate Change**

**Reduces Deforestation** – The annual use of wood for domestic purposes such as cooking fuel is approx 1.5 tons. Coupled with this, the efforts for planting trees to periodically replace felled-forests are sporadic and extremely rudimentary. This has resulted in accelerated depletion of forests in the country. Therefore, biogas will act as a replacement fuel or as an alternative to the use of wood as fuel and also as renewable energy. This will affect the annual use on a macro-level and thus significantly reduce deforestation.

**Minimizes Green House Gas Effects** – Containing deforestation leads to prevention of carbon dioxide emissions especially in tropical areas which accounts for up to one-third of GHG emissions (according the Inter-governmental panel on climate change).

**Decreases indoor pollution** – Indoor air pollution from wood and charcoal fire has serious impacts on health especially for vulnerable groups such as pregnant women and children. The most common form of health problems resulting from this are respiratory related diseases amongst others. An estimated 1.6 million deaths occur each year due to wood and charcoal based indoor pollution according to the WHO. Therefore, reduction in the usage of wood and charcoal based fuel has benefits of decreasing indoor pollution whilst reducing health risks.

**Controls Environment Degradation Impact** – Deforested regions acquire significant adverse soil erosion that frequently results into wasteland and dryness. Bangladesh is a delta where river erosion is common and increased deforestation results in cultivable lands into wasteland and dryness due to drought. Biogas will be a great benefit for a region such as this to help reduce and control the impact of environmental degradation.

### **Health & Nutrition**

**Addresses problems of Malnutrition by Contributing to Milk and Meat Supply** – Malnourishment is a predominant cause of childhood deaths and illnesses in the country. The basic nutritional sources

during a child's formative years are milk, milk products and meat. The depletion of cultivable land and increase in rural poverty due to climate change increases food insecurity and consequential malnourishment of infants and children (According to FAO estimates of 2002-2008 number of children dying due to malnourishment globally is 60% and the 2001-2003 data shows – 43.45 million people malnourished in Bangladesh). The project design will ensure that the family and the community participating in the program have the opportunity to receive ample supply of milk and meat to address malnourishment.

**Enhances Soil Quality** – Fertile soil is a direct result of improvement in the quality soil from manure. Manure adds organic matter and nutrients like nitrogen, trapping the bacteria in the soil, which in turn becomes food for higher organisms which forms a chain of life. This is popularly known as 'organic' food and this process follows the natural process of decomposition and composition and contributes towards healthy and nutritional produce.

**Ensures greater independence of managing SME** – The self-managed process of producing and marketing provides independence and empowerment. The income is utilized in diverse ways such as gaining opportunities in accessing health care information and related services, setting up small and medium enterprises for milk related products like cheese, buttermilk and yogurt manufacture for local markets and providing other sources of nourishment that comes from kitchen gardens.

### Women's Empowerment

**Provides Daily Cash Income** – Women as operating owners of the mini-farm are in control of the daily income, providing greater access cash transactions through milk and milk product sales, kitchen garden produce sale, fish feed sales, and producing manure as natural fertilizer for farm land cultivation.

**Creates Opportunity of Contributing to Household Income** – Both as owners and workers the process gives women options of contributing to household income  $\Rightarrow$  augmenting her position as a provider  $\Rightarrow$  Generating recognition of her capabilities  $\Rightarrow$  creating societal respect for her as an individual with decision making rights = Socio-economic Empowerment and Improvement of Life.

**Expands the paradigm of Women's Empowerment** – This is done through providing access to income generating resources and its optimal utilization which, in turn contributes towards:

- The enhancement of household incomes
- Fosters wider acceptance of women's socio-economic emancipation leading to their empowerment in negotiating major decisions concerning themselves, their children and households e.g. reducing gender disparity in primary level education and adult literacy processes and savings as a social security.

### Long term Wider Socio-economic Impact

**Diminishing Poverty** – The Poverty Reducing Strategy Paper of Bangladesh clearly associates impacts of climate change on increasing rural poverty. Each year the country witnesses wide scale displacement of population from rural to urban areas due to the effects of environment degradation and climate change such as drought, flooding, riverbank erosion – this process has eventually turned into mass scale dislocation, increasing urban slums, and spreading poverty. The project relies on using minimal land area, clean energy, income generation scopes and women's empowerment, and hence very important for short and long term impacts for improving life.

**Reducing Social Evils** – improvement of lives in rural settings will reduce the influx of population migration from rural to urban settings in search of employment and income, thus reducing the growth of urban slums and ultimately prevent social crimes.

**Enable Greater Access to the Basic Services** - Most of the food, health, education and habitat related development actions leave out displaced and relocated populations in urban slums or streets. As a result it increases abject poverty and reduces the rights of social security. The reduction of migration would create possibilities of reaching the marginalized with basic services that will improve the quality of their lives.

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