



Solar panel drawing enough water daily to irrigate 40 acres of land in Sohagpur, Dhamrai

Affordable and Reliable Solar Irrigation

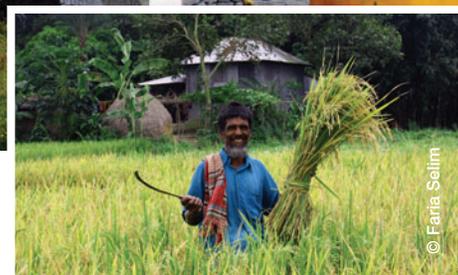
“During the last season, I spent a large amount on diesel to irrigate my crops. Now with the solar irrigation pump, the cost has reduced by almost half.”

“The irrigation pump will run with solar power, we thought it was too good to be true; but now this is a reality. With the solar pump installed, we are getting sufficient water with lower monthly bills than we spent on buying diesel to run the generator”, said smallholder farmer Mamun, from the Sohagpur village in Dhamrai.

For farmers like Mamun, the subsidized solar photovoltaic (PV) panels provided by Infrastructure Development Company Ltd. (IDCOL), is like a dream come true. These have replaced traditional electric or diesel run irrigation pumps and can draw up to 400,000 liters of water daily, enough to irrigate 40 acres of land.

Bangladeshi farmers are facing many challenges from climate change. Variations in rainfall patterns and extreme temperatures

have affected crop production severely. The situation only worsens without electrical grid coverage. Irrigation needs are always urgent: even a day without water could crack the land, damaging the quality and yield of crops. Till now, farmers have been mostly dependent on expensive and often scarce diesel fuel. The solar pump technology is ideal for the country's flat terrain which receives an abundance of sunshine. It is especially cost-effective in areas without electrical grid coverage, additionally reducing the government's fuel subsidy for the agriculture sector. “During the last season, I spent a large amount on diesel to irrigate my crops. Now with the solar irrigation pump, the cost has reduced by almost half” states Islam, a farmer from Sohagpur. The farmers are assured of



Happy farmer with a good harvest in Sohagpur, Dhamrai - thanks to solar pump

irrigation for their crops, even on the most overcast days. The solar pumps enable an easy installation and transition from the traditional systems. They have no moving parts, function without noise or pollution and require virtually no maintenance.

By lowering their usual diesel costs by almost half, the impact of solar pumps is evident from the smiles of the farmers. “This technology has attracted other farmers from the neighboring areas. They see that we are spending less and that our work has become simpler; now they are quite interested in accessing this system too”, summarizes Farmer Hossain.

Popularizing the use of solar pump technology is one of many initiatives of the Bangladesh Climate Change Resilience Fund (BCCRF) to facilitate climate change

adaptation and promote low-carbon growth. The BCCRF will grant US\$25 million to install 1,500 solar irrigation pumps to improve farmers' livelihoods,

increase the climate change resilience of the vulnerable agriculture sector and strengthen national food security. The technology encourages the use of clean,

renewable energy; provides environmental, social, and financial benefits and enables the sustainable development of even the most remote pastures.

INTERVIEW

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ABUL MAAL A. MUHITH
Honorable Minister
Ministry of Finance

Government of the People's
Republic of Bangladesh

What are your views on governance of the BCCRF as its Governing Council member?

The BCCRF governance mechanism is strong and is aimed at ensuring transparency and accountability. The Bangladesh government leads this well-coordinated financing mechanism that brings together climate change affected sectors across ministries. Its two-tier governance system consists of a Governing Council: to provide strategic direction and a Management committee: to provide technical advice. Both the council and committee members include representatives of ministries, development partners and civil society. World Bank, responsible for ensuring fiduciary management, transparency

and accountability in its execution, is a full member of the Management Committee but is a non-voting member of the Governing Council.

What are Bangladesh's key aspirations for enhancing financial support in the Climate Change negotiation (Conference of Parties 18, Doha)?

Bangladesh has successfully operationalized the BCCRF, an innovative financing mechanism for channeling climate change funds. We can therefore demonstrate Bangladesh's readiness to receive climate funds for adaptation and green growth. We would hope that in Doha, significant progress is made in operationalizing the Green Climate Fund. We would also like the focus of the discussions to remain on adaptation, capacity building and technology transfer. Bangladesh has developed multiple projects in water, agriculture, transport, shelter, power, forestry, urban life, rural development, pollution free industrial development and related sectors in an overall strategic plan to live with climate change mostly through adaptation. Implementation of the planned activities need huge resource injection. We need 'Fast Start Finance' and easy access to environment friendly and pollution mitigating technology.



DR. HASAN MAHMUD, MP
Honorable Minister
Ministry of Environment and Forests

Government of the People's
Republic of Bangladesh

What are the main achievements of the BCCRF during 2012?

The BCCRF has made significant progress during 2012. Ninety percent of the funds have been committed to six projects for enhancing climate resilience of the people of Bangladesh. These projects are helping to increase food security and to enhance the ability to cope with disasters. This year, funding from both new and old Development Partners increased by more than 30 percent. The initial project for cyclone shelters approved last year is progressing well. We are hopeful that successful implementation of the projects approved this year will attract further commitments from our

Development Partners to help implement our Strategy and Action Plan for Climate Change.

This year the milestone achievement for the Government was to make operational the BCCRF Secretariat. The Secretariat with active support of the World Bank is progressing well. The process of recruitment for effective management of the Secretariat has started.

What are the priorities of the BCCRF in the coming years?

We expect the BCCRF to become the main funding channel for Development Partners' climate change finances in the future. In addition to funding priority projects under our national strategy, we hope that the BCCRF will contribute towards building our capacity further. We want Bangladesh to demonstrate to the world that despite being one of the most vulnerable countries to climate change, our institutions are fully capable of both incorporating the impacts of climate change in policy making and in following a low carbon development path.

Becoming a “Forest Savior”: Community Participation for Conservation



Community people engaged in maintenance and protection of the forest

“The forest is an integral part of my life and only source of income. We exploited it until we saw people killed in landslides in the neighboring areas. Gradually we became aware of the consequences of unplanned felling of trees. Now we protect our forest alongside the Forest Department. I own 2 hectares of forest land and they pay for its maintenance. I have earned a good amount after the first felling”, says a proud Sabbir, participant from social forestry initiative of the Government of Bangladesh, Ukhiarghat, Cox’s Bazar.

Forests are the primary buffer against cyclones, storms and surges for over 16 million coastal people. Over the last three decades, forests in Bangladesh have declined by 2.1 percent annually, due to deforestation, illegal logging and harvesting, slash-and-burn agriculture, conversion into non-forestland for settlement, farming, recreation and industries. With the likely increased incidence and intensity of extreme cyclonic events, efforts must focus on reversing the decline in forests in order to adequately safeguard people against threats induced by climate change.



Rekha Barua at her homestead garden

“Community engagement, for forest conservation in the coastal and hilly areas, is critical to the sustainability of any afforestation project.”

Afforestation and forest conservation are promising opportunities for adaptation and mitigation efforts. Community engagement, for forest conservation in the coastal and hilly areas, is critical to the sustainability of any afforestation project. The Government of Bangladesh has a number of such successful forestry projects.

The participatory afforestation and reforestation project under the BCCRF is a timely initiative to complement the Government’s commitment towards forest conservation. The Bangladesh Forest Department and Arannayk Foundation will jointly cover 17,000 hectares of land and 1,672 km of road-side plantation. Following a transparent selection process, local communities will adopt locally tried and tested nursery and plantation techniques with improved forest management practices. Alternative livelihoods will be introduced to conserve the forests and reduce forest dependency. These resilience approaches are cost effective, will provide multiple socio-economic and environmental co-benefits, and enhance carbon stock. “I’m a widow with two children. I had to depend on the forest for a meager living. Then I received training on homestead gardening and am now a regular worker at the forest department’s nursery with a substantial income, both of my children now go to

school”, shares a content Rekha, from an alternative livelihood project in Pinijerkul, Cox’s Bazar. Most of the inhabitants of Pinijerkul have similar stories of change in their lives. They are now self-dependent forest-saviors, aware of the issues of soil erosion, biodiversity and climate change.

The direct benefits to one of the communities involved in Forest Department’s social forestry initiative are impressive. An investment of US\$4,800 on 100 hectares, allocated to 50 members returned US\$16,900. After the final harvest, the participants will receive 45 percent of the revenue, the Government 45 percent and 10 percent will go to the Tree Farming Fund for future plantations. “Without active community participation, forest conservation is almost impossible. People must understand that the forest provides ultimate safety and is a survival mechanism against natural calamities”, said Bipul Krishna Das, Divisional Forest Officer, Cox’s Bazar.

Yet without ensuring continuous investments in afforestation and reforestation, the retention of existing forestlands and the stability of sand bar island would be uncertain. Improved forest management must include participation of forest-dependent communities and provide them with alternative livelihoods to address the challenges of Climate Change.

Report Launch: 'The Cost of Adapting to Extreme Weather Events in a Changing Climate'

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Honorable guests at the BDS report launching

The report *'The Cost of Adapting to Extreme Weather Events in a Changing Climate'* sheds light on the potential damage from extreme weather events and the costs of adapting to the changing climate in Bangladesh. The study identifies vulnerable populations and infrastructure, quantifies outstanding deficits in dealing with the current climate-related risks,

and estimates the cost of adaptation to avoid further damage caused by climate change. It also provides an analytical framework for understanding adaptation to increased risks from climate-induced weather events.

The launch and dissemination of this report were supported as part of the BCCRF's analytic activities. It was produced through a collaboration of the World Bank, the Institute of Water Modeling (IWM), and the Center for Environmental and Geographic Information Services (CEGIS) in Bangladesh. The report estimates that due to climate change, monsoon floods will affect an additional 2 million people by inundating new areas. For cyclonic storm surges, currently 8 million people in the coastal area are vulnerable to inundation depths greater than 3 meters and this number will increase to 13.5 million by 2050. Another 9 million people are expected to be

exposed to inundation depths above 3 meters due to climate change.

It notes that Bangladesh already has extensive infrastructure to protect coastal residents from cyclones and tidal waves. However, to avert further damage and loss from cyclonic storm surges, an additional US\$2.4 billion will be required to build climate-proof, critical infrastructure by 2050. For inland monsoon flooding, the cost of adaptation to offset additional inundation for the railways, road networks, embankments and drainage infrastructure is estimated at US\$3.3 billion by 2050.

Reflecting on the value of the report in Bangladesh, Dr. Zahirul Haque Khan, Director IWM, states: *"The report will provide a basis for more research to assess the potential impacts of the changing climate; as well as generate new knowledge on climate change projections. It will benefit organizations dealing with climate change in Bangladesh"*.

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Communities Design Better Cyclone Shelters



Community consultation during the construction of multipurpose cyclone shelter in Lakshmpur, Patuakhali

"I am very happy that such a well-planned cyclone shelter is being built in our area. During Cyclone Aila we did not have any shelter facilities. We were devastated. This shelter even has a provision for livestock; a great relief for us", says Shahjahan, Lakshmpur, Patuakhali.

Lakshmpur cyclone shelter is one of the cyclone shelters, accommodating up to 2,730 people, being built with resources from the BCCRF. Local Communities

participated during the planning phase of these shelters.

"We were consulted and we shared our views when the Engineer came to plan the cyclone shelter. We demanded drinking water facilities. It is exciting to see that our ideas for separate toilets for women and a room for pregnant women are being incorporated in the shelter!" exclaims Shirin Akhter, a school teacher from Kalirtabak cyclone shelter, Barguna.

In total, 61 multipurpose cyclone shelters are planned for construction under the BCCRF in 5 districts: Patuakhali, Pirojpur, Barguna, Satkhira and Khulna. The construction of 37 of these shelters has already started, and is expected to be completed by June, 2013. The construction of the remaining 24 shelters will start from November, 2012. They will be used as schools, government offices and community centers during the rest of the year to maximize their utility.

BCCRF benefits from the generous financial support of the Australia, Denmark, European Union, Sweden, Switzerland, United Kingdom, USA and technical support of the World Bank



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