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BANGLADESH

GLOBAL CLIMATE CHANGE

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USAID's climate change activities in Bangladesh seek to improve energy sector performance through efficient energy use and to improve management of natural resources such as water and tropical forests. The USAID Mission's environment program has strengthened the capacity of the Bangladesh government and local nongovernmental organizations to carry out these improvements.

Background. Bangladesh is a low-lying riverine country located in South Asia. With a population of approximately 133 million, it is the most densely populated agricultural country in the world. The floodplains of Bangladesh represent one of the world's most important wetlands – home to hundreds of species of fish, plants, and wildlife, and a critical habitat for thousands of migrating birds. The Sunderbans in southwest Bangladesh is the world's largest single mangrove forest and is recognized as a World Heritage Site.

Pressures on Bangladesh's biological resources are intense and growing, due to poor management of aquatic and terrestrial resources, population growth, overexploitation, indiscriminate and unplanned development of infrastructure, and agricultural expansion onto marginal lands. The overall goal of USAID's environment program in Bangladesh is to strengthen the ability of the government of Bangladesh and the local nongovernmental organizations working in this area to improve environmental and natural resources management. Preservation of resources such as forests assists in the mitigation of climate change, as does energy sector reform. The energy sector in Bangladesh is mostly publicly owned and managed, exhibiting very high levels of inefficiency that increase greenhouse gas emissions. To reduce these emissions, USAID encourages the use of natural gas, a source of clean energy, and the reduction of energy demands through more efficient energy use.

Sector-Specific Climate Change Activities. The core global climate change program of USAID/Bangladesh is implemented under improving the performance of the energy sector, as well as the management of open water and tropical forest resources.

Addressing Potential Climate Impacts upon Water Resources and Ecosystems. As a follow-up to the U.S. Country Studies Program, whereby a climate change vulnerability assessment was completed for Bangladesh, USAID supported the development of Bangladesh's National Climate Change Action Plan and National Communiqué, which contribute to the goals of the United Nations Framework Convention on Climate Change.

USAID/Bangladesh also administers the Management of Aquatic Ecosystems through Community Husbandry (MACH) program. MACH promotes co-management of natural resources with the overall goal of promoting conservation and ecologically sound management of wetland resources. Partners in MACH have developed significant technical and managerial capacities to help protect fragile ecosystems from the adverse effects of global climate change. MACH has developed 80 permanent fish sanctuaries managed by 42 local resource management organizations with USAID support. As a result of MACH activities, a population of more than 500,000 is benefiting

USAID's partners in climate change activities in Bangladesh include*:

- Grameen Shakti (subsidiary of the Grameen Bank)
- National Rural Electric Cooperative Association (NRECA)
- International Resources Group (IRG)
- Rural Electrification Board (REB)
- United States Geological Survey
- World Vision Bangladesh
- Winrock International
- CARE
- Save the Children, USA
- Louis Berger Group

* Because partners change as new activities arise, this list of partners is not comprehensive.

from increased biodiversity, as well as increased fish production and improved nutrition and incomes.

A strong focus on building a sustainable food supply for the poor resulted in an increase of fish production by 152% in 2005—an estimated value of over \$10 million. In addition, by establishing alternative livelihoods—249 community credit groups have assessed more than \$1.2 million in micro-loans—the poorest families are increasing their income and reducing pressures on the wetlands.

Climate Impact Reduction – Enhanced Carbon Stock Co-benefit. To complement MACH, a bilateral activity, Co-management of Tropical Forest Resources in Bangladesh, otherwise known as Nishorgo, was launched in 2003. Bangladesh has the smallest amount of Protected Areas per person of any country in the world. This USAID initiative is designed to improve the conservation and management of increasingly rare tropical forests in Bangladesh through instituting an improved governing structure at the level of Protected Areas. USAID seeks to develop this governance model at pilot sites that can then be replicated throughout Bangladesh's entire system of 19 Protected Areas. Additionally, increasing forested protected areas has broad-reaching impact—strengthening the carbon stock supply and mitigating the damaging effects illegal logging has caused on the environment.

One of the notable successes of the project in the past year was the establishment of co-management agreements by which participants support conservation. Five newly constituted co-management Councils and Committees at pilot protected area sites set new standards for transparency and openness, and allow for a local voice in Protected Area management. The formation and activation of such participatory and representative councils represents a new direction from the previous forms of management. In addition to developing a pragmatic work plan, the project team has completed the socioeconomic, biological, and physical reconnaissance in five protected area sites. Landscapes included around these protected areas now total 35,000 hectares, exceeding the target. This activity will contribute significantly to increasing the carbon stock and thereby to global climate protection.

Energy Efficiency and Sourcing of Clean and Renewable Energy. Through advocating the “unbundling” or transfer of state monopoly assets to specialized transmission and distribution companies, USAID is improving the performance of the national power generation and distribution system and reducing system losses by ensuring greater accountability and transparency.

Continued assistance in rural electrification has further strengthened the overall Bangladesh rural electrification program, which is based on the U.S. rural electric cooperative model. This assistance to the Rural Electrification Board has resulted in the increase of in-country legal power connections.

PROJECT HIGHLIGHTS

- USAID placed a strong emphasis on joint forestry patrols between the Forestry Department and the local community for the Nishorgo project, allowing for greater awareness regarding illegal logging activities. Additionally, USAID has offered training programs for junior to mid-level forest officers on protected area co-management.
- Based on the success of Grameen Shakti's Renewable Energy Program, USAID is currently funding its initiative for "Women's Empowerment through Human Resource Development in Renewable Energy Technology." The project will develop women's direct employment as well as empower their socio-economic base, while further promoting the expansion of climate-friendly energy production in the future.

In 2005, USAID exceeded its program targets, increasing the number of electric connections from 7.9 million in 2004 to 8.7 million. Of these 800,000 new connections, more than 590,000 occurred in the rural areas under the Rural Electrification Program and represent an estimated 4.8 million people who now have access to electricity.

Institutional reforms include the establishment of the Bangladesh Energy Regulatory Commission (BERC) through an independent committee. The BERC, supported by USAID, among others, is expected to reach self-sustainability through the collection of licensing fees during the years ahead.

With Grameen Shakti, a subsidiary of the Grameen Bank, USAID facilitated the use of photovoltaic energy in the most remote sections of the country where conventional grid electricity will not reach in the foreseeable future. USAID's innovative work in the field of solar renewable energy reached a new cumulative total of more than 40,000 installations against a target of 13,000 installations over a five-year period that ended in September, 2005.

Impacts of Global Climate Change on Food and Water Supply. Damage to Bangladesh's coastline as a result of water and temperature changes, as well as the loss of low-lying landmass increases vulnerability of the food and water supply, particularly agricultural crops. Several projects that address these threats include Jibon-O-Jibika, which targets the most food insecure and vulnerable coastal populations by intervening through community mobilization, home gardening and nutritional training, construction and maintenance of safe drinking water sources and sanitary latrines, health education, and disaster preparedness activities. SHOUHARDO (Strengthening Household Abilities for Responding to Development Opportunities) focuses on community-based farming practices; productive and diversified farming systems; improved fisheries; improved health and nutrition services; sanitation and hygiene and disaster management. Most particularly, its efforts to improve farm management of water demand/water use helps to ensure the most effective and efficient water management systems are implemented and to reduce the strain on water resources. Water has also been a focus of the Groundwater Arsenic Contamination project which has conducted studies to analyze arsenic contamination in Bangladesh and find options to mitigate its adverse effects. The Food Security Enhancement Initiative has assisted with small-scale infrastructure activities, constructing village-to-village earthen roads/pathways, raising school fields and market areas above flood levels, implementing erosion control, ensuring land rehabilitation/leveling, and excavating or re-excavating ponds in efforts to protect the infrastructure against further damage from climate change activity or potential disaster impacts.

A major reason for indiscriminate clearing of the tropical mangrove forests has been the cultivation of shrimp in the coastal areas. To address this climate-change impact, USAID developed a Shrimp Seal of Quality initiative, a quality assurance program for the total shrimp value chain. By encouraging efficient on-farm and off-farm operations of the shrimp industry—including measures to expose and discourage unethical land-grabbing, this initiative will help to stop the destruction of valuable forest resources and reduce vulnerability of the coastal zone from cyclones and storms.

For more information on Bangladesh, visit
USAID/Bangladesh's Mission Web site at:
<http://www.usaid.gov/bd/>