

INDO-U.S. WATER MANAGEMENT AND CONSERVATION INITIATIVES IN INDIA

U.S. and Indian government agencies, businesses, academic institutions, non-profit organizations and multi-lateral organizations are engaged in active partnerships to address water resource management and conservation challenges. While the United States Agency for International Development (USAID) is at the forefront of this cooperation, a large and growing number of partnerships in both government and non-government sectors have emerged, reflecting the close people-to-people contacts that have developed between Indian and U.S. experts and stakeholders. Below are some examples of this cooperation.

India-U.S. Cooperation on Weather and Climate Forecasting and Agriculture

In their November 2009 Joint Statement, Prime Minister Singh and President Obama identified weather and climate forecasting for agricultural production as a priority area for collaboration. The two nations' scientific agencies have a long and productive history of cooperation, and both governments intend to enhance these relationships to address issues of food security and poverty. Indian and U.S. experts met in Washington DC in August 2010 to advance this objective, adopting a framework for specific areas of cooperation that will:

- Enhance agricultural productivity and reduce agro-meteorological risk in the context of a variable and changing climate
- Build an end-to-end decision support system at relevant temporal and spatial scales.

As part of this effort the U.S. and India will hold a binational workshop in New Delhi on March 22-23, 2011 to create a roadmap for cooperation on improving the use of water for agriculture.

USAID Water Program

USAID is implementing seven multi-year water programs with a total budget of nearly U.S. \$90 million, which target some of India's most impoverished communities.

- Financial Institutions Reform and Expansion – Debt (FIRE-D): Working with the Government of India Ministry of Urban Development and National Institute of Urban Affairs, the 17-year project (1994-2011) supported the provision of improved water and sanitation through identification and structuring of bankable projects and accessing market-based financing.
- Health of the Urban Poor: Working with the Government of India (GOI) Ministry of Health and Family Welfare, this four-year (2009-2013) project seeks to increase access to potable water and sanitation facilities by supporting community partnership approaches for the promotion of hygiene and sanitation as a core health function in urban slums.
- Point-Of-Use Water Disinfection and Zinc Treatment: This five-year (2005-2010) project is implementing a diarrhea reduction project using point-of-use (POU) water disinfection and zinc treatment with the goal of reducing morbidity and mortality from diarrhea.

- Market Based Partnership for Health: In partnership with the Ministry of Health and Family Welfare and working with various partners under the Child Health and Hygiene Alliance, this four-year (2008-2012) water project is promoting diarrhoea prevention and management through a number of key interventions, including hand-washing with soap, use of Oral Rehydration Solution and safe drinking water.
- Water-Energy Nexus Activity (WENEXA): Working with the Ministry of Power, the ten-year (2001-2011) WENEXA project seeks to improve the co-management of energy and water resources in agriculture, urban, and industrial sectors.
- Development Credit Authority (DCA): Credit guarantees have helped India's nascent capital markets grow and expand, and have created sustainable sources of financing that have resulted in improved living standards across the country. Since 2002, USAID has structured DCA guarantees in Tamil Nadu and Karnataka for bonds which raised \$29 million in investment in sanitation and water supply for low-income neighborhoods.
- Water Analysis, Innovations and Systems Project: This new, two-year project assesses the challenges and opportunities in the water sector in order to maximize the U.S. Government's resources and increase the security of rural potable water supply and sanitation services.

Water Safety Plan Project in Hyderabad and Nagpur

The U.S. Government has partnered with the World Health Organization (WHO) to help municipalities in Hyderabad and Nagpur carry out a pilot Water Safety Plan and share their experience with water operators throughout the country. The pilot project in Hyderabad finished last year, and the pilot in Nagpur will finish in 2011. The projects will help hundreds of thousands of city residents get higher quality and more reliable water service.

Since 2004 WHO has been promoting a process of developing Water Safety Plans in which water operators undertake a comprehensive risk assessment of a water supply system. The assessment helps prioritize investments to those areas that can have the greatest impact on reducing water-related disease. This novel approach focuses on the entire water system, for the water catchment to the consumer. The pilot projects are building a network of professionals trained and positioned to implement the key principles of water safety plans and preventative management throughout the country.

Columbia Water Center- Punjab Agricultural University collaboration

The Columbia Water Center (CWC), a division of Columbia University's Earth Institute, has partnered with Punjab Agricultural University to devise innovative farming solutions to address water overuse and scarcity. With support from the National Aeronautics and Space Administration (NASA), the U.S. Department of State, USAID and Nike Inc., CWC was founded in 2008 to identify emerging technologies to combat water scarcity. With support from the PepsiCo Foundation CWC and Punjab Agricultural University are introducing these technologies to Punjab and Gujarat.

Groundwater Monitoring with NASA Satellite Data

NASA-funded researchers are using data gathered from NASA's Gravity Recovery and Climate Experiment (GRACE) satellites to complement data gathered by the Ministry of Water Resources to develop a comprehensive model of soil moisture, lake and reservoir storage, vegetation and Himalayan glaciers. These observations provide a detailed picture over time and space of groundwater availability across India.
