

Project Name	Bangladesh-Mitigation of Arsenic in Groundwater (+)
Region	South Asia
Sector	Water Sector
Project ID	BDPE50745
Implementing Agencies	Ministry of Local Government and Rural Development Dhaka, Bangladesh.
PID Date	July 29,1997
Projected Appraisal Date	December 1997
Tentative Board date	May 1998

1. Background: Groundwater in Bangladesh is contaminated with Arsenic which occurs naturally in alluvial and deltaic sediments. The first detection in 1993 and subsequent confirmation after 1995 of high levels of Arsenic in numerous shallow and deep wells in various parts of the country has raised serious health concerns. Recent investigations, though incomplete, confirm that the occurrence of Arsenic in groundwater is more widespread than assumed at first and that it already affects a large number of people. Wells in 28 out of Bangladesh's 64 districts are estimated to be contaminated with Arsenic mainly in the south western, middle and north-eastern parts of the country. Although 1,000 cases of chronic arsenicosis have been reported in Bangladesh, it is estimated that at least 1.2 million people are exposed to Arsenic poisoning. The effects of Arsenic poisoning can vary from skin pigmentation and development of warts and ulcers during initial stages to skin, liver and renal deficiencies and eventually cancer in severe cases. Other disruptive effects include diarrhea and social rejection as the disease is often confounded with leprosy.

There is an urgent need for a project to address Arsenic poisoning in Bangladesh since the situation can be described as a "crisis" due to devastating effects on human health and lives. Government of Bangladesh (GoB) and donors have also shown willingness to support a "fast track" project to address the crisis. The project will be financed by several donor under an "umbrella" arrangement" and will include both research and remedial activities.

Project Objectives: The project aims to reduce morbidity and mortality in Bangladesh due to high levels of Arsenic in groundwater. Specifically, the project will aim to (i) research and establish the extent, nature and causes of Arsenic poisoning (ii) implement rehabilitative sub projects related to Arsenic-free water supply and treatment, health and awareness building, (iii) improve technical capacity within governmental agencies to implement activities aimed at addressing Arsenic contamination.

Description: The project is being developed on a "fast track" basis in response to the urgent need to address the Arsenic crisis. It will consist of an "umbrella" type arrangement to coordinate

support from several donors. The project will consist of Annual Implementation Plans (AIPs) which will be approved on an annual basis. However, projects can be submitted at any time during the year based on the urgency of the situation. Progress on project implementation will be reviewed on a yearly basis.

The project will have three components: (i) improved understanding of the nature of Arsenic contamination in groundwater and the technical options for addressing them; (ii) investment in water treatment and supply infrastructure and related activities; and (iii) strengthening of decentralized technical capacity to execute rural/urban supply projects. Sub projects will correspond to these three components and are expected to include projects related to rural and urban water supply, water treatment, health and diagnostic surveys, medical support to affected people and studies on geology and geohydrology of the region.

Implementation: The Ministry of Local government and Rural Development will be the main implementing authority. The Department for Public Health Engineering (DPHE) under MLGRDC is primarily responsible for water supply and sanitation. Other ministries which will play an important role in project implementation include the Ministry of Health and Family Welfare and Ministry of Water Resources. Implementing arrangements are expected to involve NGOs in designing and executing sub projects related to community participation and public awareness.

Cost and financing: Total project costs are estimated to be US 20-25 million. These will be finalized during subsequent missions.

Project sustainability: Sustainability will be enhanced through involving a wide range of stakeholders in project development and implementation. The project will ensure sustainability through increasing public awareness and community participation, emphasizing cost-recovery for water supply projects where possible, using appropriate technology solutions which are within the reach of local government to operate and maintain and improving technical capacity to implement effective solutions to the problem.

Program and Poverty Category: The project focuses on water supply and poverty.

Benefits: The project mainly benefits people who are exposed to Arsenic poisoning. In particular, the project will benefit those that are already displaying symptoms of arsenicosis and are chronically ill due to arsenic poisoning. Since poor people are severely effected by the arsenic crisis and are least able to cope with the situation, the project will yield particular benefits for them. Further, the project will help relieve the suffering of those who have been subjected to social rejection since the symptoms of arsenicosis are often confounded with leprosy.

Environmental Category: The project has been awarded category "B". Only minor environmental impacts can be foreseen in the disposal of potential Arsenic contaminated water and treatment plant sludge. The

project will include the institutional input required to monitor environmental impacts, in case there is need for such support.

Contact Point: Nadim Khouri/Guy Alaerts, Task managers
The World Bank
1818 H Street, N.W.
Washington, D.C 20433
Telephone: 202 458 1905/ 202 473 6429
Fax: (202) 522 1500

Note: This is information on an evolving project. Certain activities and/or components may not necessarily be included in the final project.

Processed by the World Bank InfoShop week ending December 12, 1997.

Annex

Environmental Aspects

This project has been awarded a category "B". The project concentrates on developing safe methods of alternative water supply to the villages facing Arsenic contamination. Methods for alternative water supply and treatment of effected water will be required to comply with the World Bank's environmental guidelines. Schemes for alternative water supply are likely to be small scale and where possible, the equipment used for this will be low cost and of an appropriate technological standard. The effects of developing alternative water supply will have beneficial effects on the quality of water distributed and the corresponding effects on human health will be highly favorable. Only minor environmental effects can be foreseen with the disposal of Arsenic contaminated water or treatment plant sludge. The Bank will fully support any need for monitoring the environmental effects of water supply and treatment schemes.

There are no resettlement issues. The project envisages strong participation from local communities, NGOs, government agencies and donors. No adverse environmental impacts are foreseen with this project.