

Rural Water Supply, Sanitation and Hygiene in Difficult and Hard-to-Reach Areas of Bangladesh

| Project Overview | |
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| Project period | November 2012 to December 2014 |
| Project value | Approx. 7.0M USD (5.2M EUR) |
| Partners | UNICEF (with Dhaka University, Department of Public Health Engineering (DPHE), Environment and Population Research Centre (EPRC), Oxfam, Concern Universal and Caritas) WHO (with DPHE) UNHCR |
| Geographical coverage | Eight districts across Bangladesh |
| Project areas | Water quality; Water, Sanitation and Hygiene (WASH) in Schools, Health Centres and refugee camps |
| Planned beneficiaries | Approx. 352,000 |

Background

In many areas of Bangladesh, particularly those in Hard to Reach¹ areas, people lack access to improved and sustainable water and sanitation facilities due to challenging environmental conditions, complex social factors and a lack of knowledge of the importance of using improved water and sanitation facilities. As a result, many people do not practice key hygiene behaviours including the practice of effective handwashing with soap at key times, as well drinking arsenic-safe water and using improved latrines. To address this, a project was developed in collaboration with UNICEF, WHO (World Health Organisation) and UNHCR (United Nations High Commission for Refugees) with financial support from the Dutch government, to increase the access to, utilisation of, and demand for arsenic-safe water, improved latrines and handwashing in schools, health centres and refugees camps, for an

estimated 352,000 people in Khulna, Sathkira, Narail, Patuakhali, Bandarban, Khagrachari, Rangamati and Cox's Bazaar districts. In the southern districts of Khulna, Sathkira, Narail and Patuakhali districts, the project is being implemented in districts overlapping with other Dutch government supported projects including Blue Gold for increased effectiveness.

At a national level, an estimated 13.4%² of the population consume water which is in excess of the Bangladesh national drinking water quality standard of 50 µg/l (0.05mg/l, which is five times that of the equivalent WHO standard), affecting an estimated 22 million people. Although much progress has been made on reducing open defecation from 34% in 1990 to 3%³ in 2013, this progress has not been translated into a corresponding increase in the use of improved latrines, which is reported as 55.9%⁴. In terms of handwashing with soap, practice levels are significantly lower than knowledge levels, estimated at 26%⁵ after defecation, 4% before feeding a child and 1% before preparing food and eating.

Project Overview

To implement the project, a grant of almost 7.0M US\$ (approx. 5.2M EUR) was given to UNICEF, as the main partner under the project, in November 2012. The project comprises five key areas:

- Managed Aquifer Recharge (MAR)
- Arsenic Safe Villages
- WASH in Schools
- WASH in Health Clinics and
- WASH in Refugee camps

Details of the components are summarised as follows;

Managed Aquifer Recharge (managed by UNICEF)

In many parts of coastal Bangladesh, the inhabitants suffer from acute water shortages as groundwater in the underlying aquifers is saline; there is almost no rainfall for seven to eight months of the year and fresh water reserves are contaminated due to storm surges. To compound matters further, many of the existing water sources are heavily contaminated with bacteria.

To address these issues, the innovative Managed Aquifer Recharge (MAR) technology has been implemented to improve access to safe water and reduce vulnerability to the potential impacts of climate change for an estimated 20,000 people in Khulna Division. Although this technology is not new to Bangladesh, it has not been widely implemented to

² National Drinking Water Quality Survey 2009

³ Joint Monitoring Programme (JMP) 2014 Update

⁴ Multi Indicator Cluster Survey (MICS) 2012/13

⁵ International Centre for Diarrhoeal Disease Research Bangladesh (icddr,b) report (control households cited, data collected 2012)

¹ Hard to Reach is an official term used in Bangladesh and is defined by a number of economic, social geographical factors



date. The component was developed to scale-up the pilot project implemented in 20 sites by UNICEF and partners since 2009. Through this project, monitoring at the original sites has continued and a further 80 sites are planned for construction.

With MAR technology, water is collected from ponds and roofs (primarily during the monsoon season) and, after passing through a sand filter, is then infiltrated into the aquifer, which contains higher levels of salinity, to create a lens of fresh water. The fresh water is later abstracted using a standard hand pump to yield drinking water of improved quality (reduced salinity, turbidity and bacteria) throughout the year when there is little rain and surface water sources are dry, serving several hundred people. In the absence of such schemes, the traditional water sources dry up and people are forced to collect water from far, often at very high cost.

This component has been implemented in collaboration with the Department of Public Health Engineering (DPHE), Dhaka University, Acacia (a Dutch consultancy firm) and local NGOs. Local NGO partners are providing support during the construction of 75 new MAR systems for community mobilisation, awareness building and importantly, to develop effective operation, maintenance and water safety mechanisms in communities. An additional five research sites have been explored and construction initiated to assess the suitability of MAR systems to operate in more challenging areas including urban sites and arsenic-affected areas. Supporting studies have been developed with collaborating institutions to assess social and health impacts.

Arsenic Safe Villages (managed by UNICEF)

This component comprises a comprehensive range of activities in Narail district, to improve the access to, utilisation of, and demand for, arsenic-safe water for approximately 100,000 people, complemented by supporting activities to increase the knowledge, acceptance and practise of key hygiene messages. The project builds upon experience garnered by UNICEF in other districts using a similar model. Under this component, improved (arsenic-safe) water sources have been constructed and/or rehabilitated, local people trained on arsenic-testing, women-led water committees established and trained and hygiene education carried out in the community and schools. The project has been designed to create a sustainable demand for arsenic-safe water by demonstrating technological options available when the shallow aquifers are contaminated, building the capacity of the community to be aware of arsenic levels, and improved knowledge of the community on the health and

economic impacts of drinking arsenic-contaminated water.



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Baseline surveys were carried out to gather information from households on existing WASH facilities and practices and to analyse water quality (arsenic, chloride, iron, manganese and faecal coliforms) from household drinking water devices and household storage containers. In addition to the construction/ rehabilitation and the dissemination of complementary key behaviour messages; construction and rehabilitation of WASH facilities in 40 schools, and mobilisation of the community on the sustainability of water supply facilities, are also currently underway.

To assist communities to be more aware of the levels of arsenic in their drinking water, 100 local community volunteers were selected and trained on arsenic testing, painting and reporting. As of early August 2014, water quality screening of 19,707 wells had been carried out and the wells painted red to highlight concentrations in excess of the national arsenic standard of 50 µg/l, or green, indicating arsenic levels do not exceed the national standard, by the trained local arsenic testers.

WASH in Schools (managed by UNICEF)



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To create a demand for arsenic-safe water, use of improved latrines and the practice of effective

handwashing, at home and in school, the School Led Total Sanitation (SLTS) approach is being implemented in 500 schools in seven districts using international and local NGO partners, in collaboration with the Directorates of Primary Education, and Secondary and Higher Education. The approach differs significantly from traditional WASH approaches and is anchored within the school, using children and teachers as change agents within the school, in the household and in communities.

To ensure that children and teachers can practice the key WASH behaviours, support is being provided to construct new water and sanitation facilities, as well as rehabilitate existing facilities. In addition, group handwashing facilities are also being constructed to facilitate more effective handwashing and to make the process more interactive for children. The facilities have been designed with particular features for girls including segregated facilities, segregated entrances and importantly, menstrual hygiene management facilities in both primary and secondary facilities. In primary schools, the facilities have been developed using the government-approved designs and these have been modified, where necessary. All facilities include a cubicle for male and female students with disability. In addition, the facilities have been designed with a higher number of sinks to facilitate handwashing.

To ensure the continued use of the facilities, training is also being given to the school committees on operation and maintenance and budgetary planning, to ensure that the necessary resources are available for the long term use of the facilities. As part of the project, training is also being provided to school representatives (including head teachers, teachers, school committee members and selected parents) on the importance of practicing key WASH messages, the need to allocate the necessary resources for proper maintenance and class time to disseminate messages on arsenic-safe water, use of improved latrines and effective handwashing.

This component comprises a comprehensive assessment of the existing facilities, knowledge and practice in each of the 500 schools and the development of a WASH plan for each school. The schools were prioritised based on the condition and number of students, and compared to government plans for intervention, and the list of schools was developed in conjunction with the respective local education officials.

To mobilise interest and support within the community, School Brigades are being established (these will complement the existing School Councils in

primary schools) as well as mobilisation to local government and community structures.

WASH in Health Centres (managed by WHO)

This component addresses the lack of appropriate WASH facilities in health clinics through the installation and/or rehabilitation of latrines and water systems in 40 selected clinics, as well as the installation of handwashing facilities in the clinics. To ensure the effective use of these, training on the operation and maintenance of the facilities has been incorporated into the project activities, in addition to community mobilisation to ensure the appropriate use of the facilities.



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WASH in Refugee Camps (managed by UNHCR)

Through this project component, access to water and sanitation facilities has been increased through the construction and rehabilitation of water abstraction points; water storage and distribution systems; latrines and bathing facilities as well as improved drainage systems, in the Nayapara and Kutupalong refugee camps in Cox's Bazaar, benefitting an estimated 30,000 refugees.

For more information, please contact:

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