



# *Challenges and approaches to addressing water contamination*

South Asia Regional Learning Event

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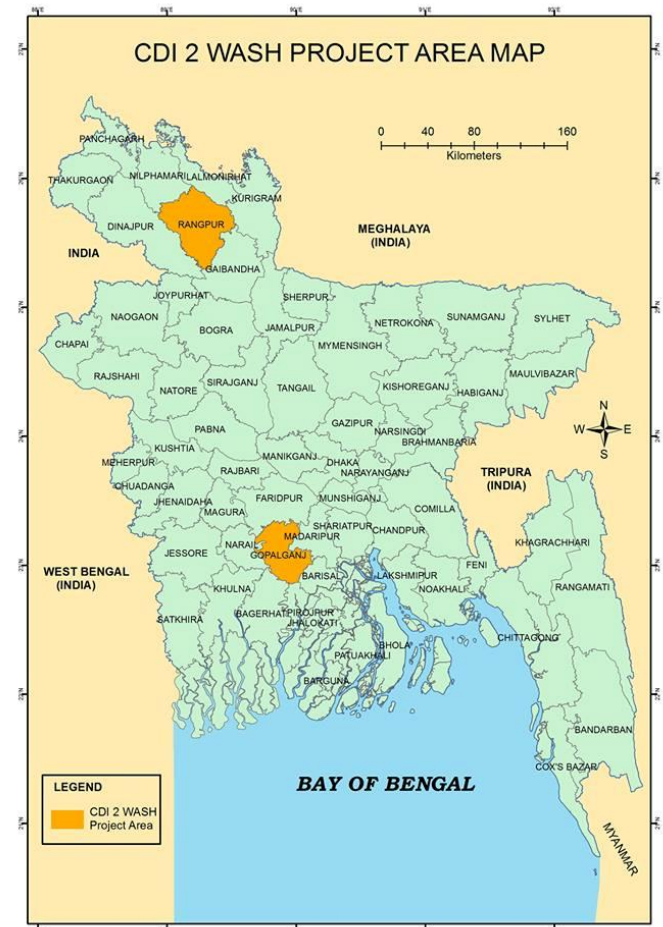


The CS WASH Fund is supported by the Australian Government and managed by Palladium International Pty Ltd.

# CDI2 WASH Program, Bangladesh

## Project at a glance

- ☀ **Goal:** Improving health outcomes for target communities
- ☀ **Implementing Partners:** Bangladesh Red Crescent Societies (BDRCS) and International Development Enterprises (iDE)
- ☀ **Supported by:** DFAT and Australian Red Cross
- ☀ **Project Period:** May 2014 – Jun 2018
- ☀ **Budget:** AUD 2.3 million
- ☀ **Target Beneficiaries:** 23,000 people from 1600 HH including 13,000 students from 29 Schools



# Challenges related to water contamination

- **20 million** people in Bangladesh are still drinking water contaminated with **arsenic**
- **Arsenic** found in 61 of 64 districts, including Gopalganj and Rangpur
- Ground water in project locations also **contaminated with Iron**
- **Salinity** in ground water in Gopalganj
- **Close distance between latrines and water points**, contaminating with **faecal coliform**
- **Bacterial contamination** with absence of platform around hand-pumps
- Frequent **flooding** in the project areas
- **Lack of land** / space of households around the courtyard

# Effects of water contamination

- Beneficiaries **collect water from unsafe sources**  
i.e. pond, river
- **Diarrheal diseases** constitute a major health problem in Bangladesh, killing over 100,000 children each year
- **43,000 people die every year** due to Arsenic contamination in Bangladesh (human rights watch)
- Chronically consuming large amounts **of iron can lead heart disease, liver problems, diabetes** etc.
- **Impact on livelihoods and missed education** due to illness
- **Low existing capacity to address arsenic issues** among change agents



# Project Approach to addressing Contamination

## Hardware Components

- Learning from what has been successful in the past (CDI1 Look Back Study)
- Locally made technologies
- Clearly marking contaminated tube-wells
- New tube-wells with raised platforms
- Rehabilitating old tube-wells
- Plan to pilot rain water harvesting



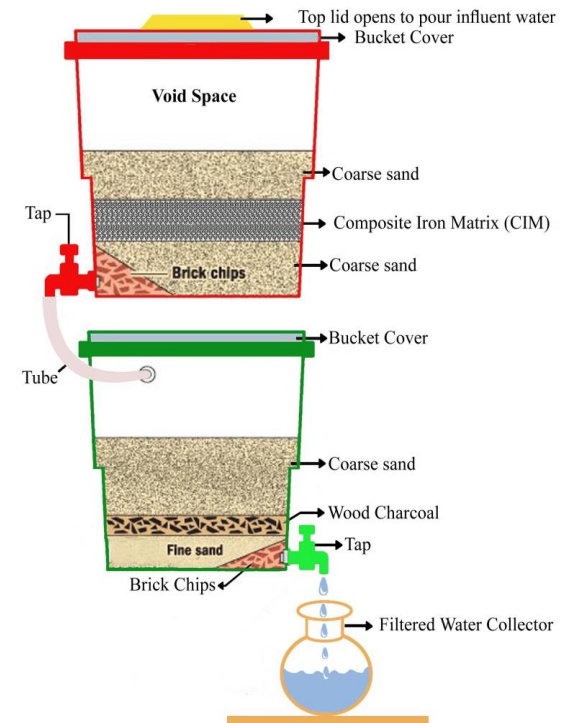
## Software Components

- Ground water monitoring
- Developing guidelines, testing kits on arsenic
- Strengthening capacity of government change agents
- Representation on WASH Committees
- IEC materials, workshops, trainings
- Community mobilising (PHAST & CHAST)
- Utilising media for mass messaging and awareness raising
- Training, Workshop on tube-well repairing, arsenic testing, water collection, use etc.

# Project Intervention – SONO Filter



Schematic Diagram of SONO™ Filter



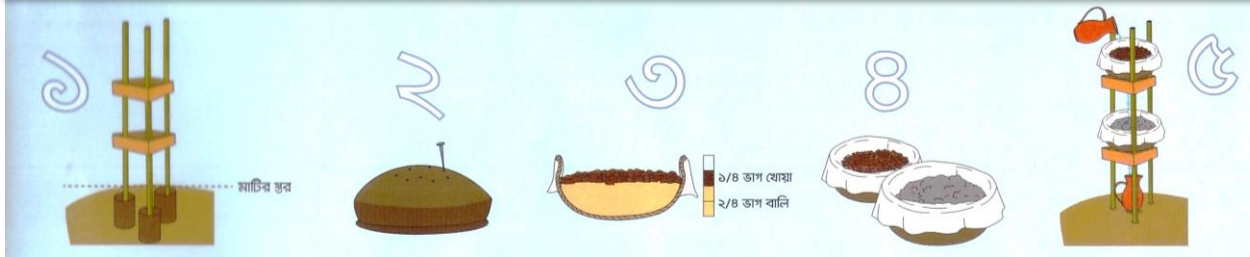
# Project Intervention – CHARI Filter

Low cost iron removal filter (CHARI Filter) utilised in Rangpur

Promotional campaign with BBC Media Action

Wide acceptance and use in communities

## Ways to reduce Iron from water



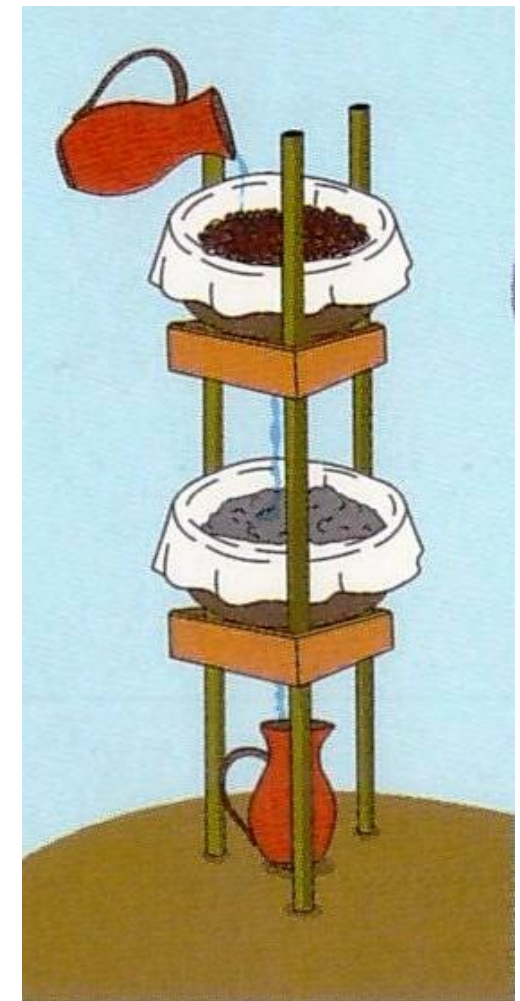
A triangular shelves should be developed first with bamboo or wood

Make 6-7 small holes under the mud bowl

In the upper bowl of the shelves,  $\frac{2}{4}$  portion will be filled with coarse sand and  $\frac{1}{4}$  portion will be filled with brick chips

In the lower bowl of the shelves, half of the bowl will be filled with fine sand

Put the both bowls on the shelves and put the iron water into the top of the bowl



# Project Intervention - Tube-wells



Installation of new tube-wells addressing flood level in Rangpur to increase the sources of drinking water



Rehabilitating tube-well platforms to remove the bacterial infection in drinking water



# Outcomes so far....

## Community level

- Beneficiaries getting arsenic and iron free safe drinking water
- Increased knowledge on safe drinking water among beneficiaries and communities improving health
- Reduction in diarrheal diseases in the communities
- Reduced faecal coliforms and bacterial in drinking water
- Reducing time to fetch water and using the saved times for livelihood and economic development
- Promotion of new and local technologies

# Outcomes so far....

## Institution level

- Increasing government capacity and responsiveness on monitoring groundwater including arsenic testing
- DPHE equipped with Arsenic testing kits
- Uion Parisad WASH committee, Community Program Committee and Community Disaster Response Team were sensitised on drinking safe water and disseminating messages on this
- Developed linkage between govt. and UP WASH
- Increased capacity to address DRR and climate change issues while designing and installing water points

