

Identification of systemic challenges in sustainable WASH service delivery in 4 climate hotspots of Bangladesh

Digbijoy Dey

IRC International Water and Sanitation Centre, The Netherlands

Global South Academic Conclave on WASH and Climate linkages

2nd - 4th February 2024, Ahmedabad

CWAS CENTER
FOR WATER
AND SANITATION
CRDF CEPT
UNIVERSITY

BILL & MELINDA
GATES foundation



Presentation content

- A brief description about the project
- Scope of innovation in the project
- Identification of systemic challenges in WASH service delivery
- Way forward
- Scope of learning

Our Project

- Project Name: Equitable and Sustainable WASH Services in Bangladesh Delta plan Hotspots 2022-2026
- Implemented By: BRAC Bangladesh
- Innovation and Knowledge Partner: IRC International Water and Sanitation Centre, Netherlands
- Supported by: The Embassy of the Kingdom of the Netherlands (EKN)
- Duration: 4 Years (November 2022 - October 2026)

Project Goal and Objective

- Goal: To **promote and deliver** safe water and sanitation services by increasing **access to finance** (repayable finance and grants), **stronger local institutions**, introducing (**climate resilient**) technologies and service delivery models including more **sustainable operation & maintenance** mechanisms in 4 climate hotspots of Bangladesh.
- Strengthen WASH supply chains and develop an **entrepreneur-based** operation & maintenance model for drinking water and sanitation services in **climate hotspots** engaging entrepreneurs (and technologies)



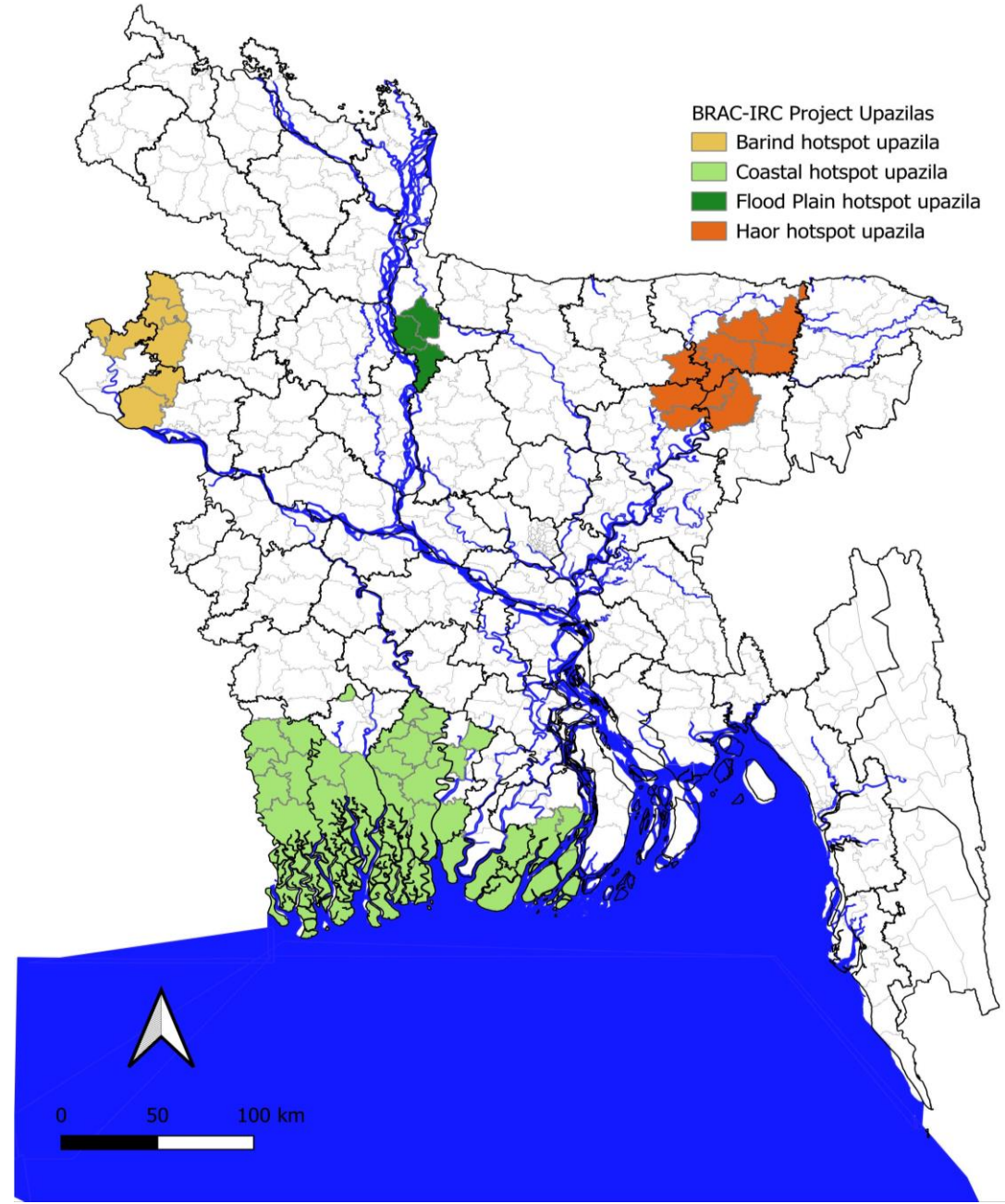
UNCTAD classification of economies

- Developed economies (Global North)
- Developing economies (Global South)

Map Showing Project Areas in
Delta Plan Hotspots of Bangladesh

6 Ecological hotspots under climate risk

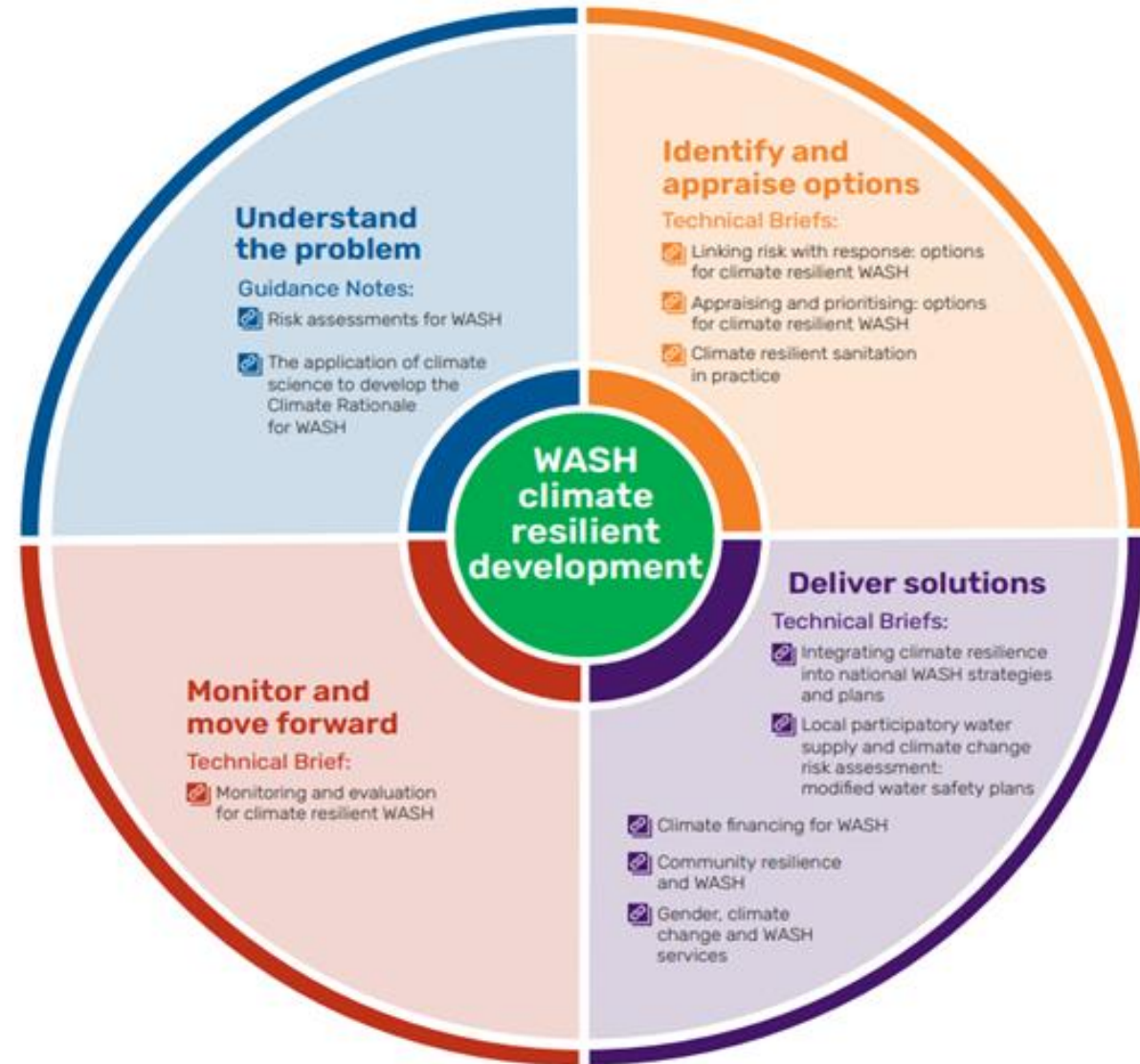
- Urban areas
- Barind
- Coastal region
- Haor region
- Riverine areas
- Chittagong Hill Tracts
- Cross-cutting areas



Steps of our plan

- Need assessment for climate resilient WASH solutions
- Development of an inventory of existing WASH technologies and service models
- Selection of technologies and/or service (O&M) for pilot/trial
- Selection of location and logistics for trial
- Conduction of the pilots/trials
- Documentation and development of a guiding manual from the pilots/trials
- Dissemination of the findings

Methodology of challenge identification

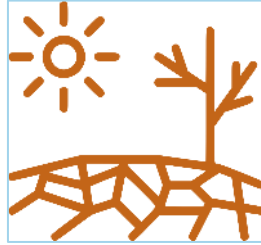


How do you persuade Trump to believe climate change is happening?

You tell him Obama didn't care about it.

The climate crisis = water crisis

90% disasters are water related



Too little water:
increased water
scarcity from increased
temperature and
changing rainfall
patterns



Too much water:
increased flooding,
extreme weather
events, and rising sea
levels that cause
infrastructure damage



Polluted water:
increased pollution
from flooding and
flashier rain events

Challenges identified

Location	Water Service Model (rural)	Sanitation Service Model (rural)	Climate Hazard and their impact on WASH service	Needs identified
Barind	<ul style="list-style-type: none"> • Barind Multi-purpose Development Authority (BMDB) managed irrigation pumps • DPHE provided and caretaker managed submersible pumps (some have mini piped water systems) • Self-supplied tubewells (handpumps) • Surface water sources such as rivers, canals and ponds 	<ul style="list-style-type: none"> • Self-supplied septic tanks and pit latrines • DPHE provided pit latrines for poor households • NGO provided/supported pit latrines • Manual pit emptying system 	<ul style="list-style-type: none"> • Fresh water scarcity • Declining underground water level • Inadequate sanitation service • High water scarcity during dry season • Reduction of durability of WASH infrastructures 	<ul style="list-style-type: none"> • Despite investment from BMDB and DPHE, water scarcity prevails during summer • The service models led by BMDB and DPHE are not pro-poor in reality • Lack of technology and lack of service model, both exist parallelly in barind areas

Challenges identified

Location	Water Service Model (rural)	Sanitation Service Model (rural)	Climate Hazard and their impact on WASH service	Needs identified
Coastal	<ul style="list-style-type: none"> • Self-supplied tubewells • DPHE provided and hh managed Tubewells and Rain Water Harvesting Systems • NGO/CSO or CSR provided and community managed options like Pond Sand Filters, Arsenic Iron Removal Plants, Iron Removal Plants, Reverse Osmosis, Nano Filter • DPHE provided and local government managed Reverse Osmosis, Nano Filter • Private operated Reverse Osmosis, Nano Filter • DPHE and NGO/CSO managed mini piped water supply 	<ul style="list-style-type: none"> • Self-supplied septic tanks and pit latrines • DPHE provided pit latrines for poor households • NGO provided/supported pit latrines • Manual pit emptying system 	<ul style="list-style-type: none"> • Fresh water scarcity • Saline water intrusion • Declining underground water level • Recurrent cyclone/storm surge/ Flooding • Reduction of durability of WASH infrastructures due to repeated climate hazards 	<ul style="list-style-type: none"> • Most of the existing water technologies cannot serve over the years • The ones can serve are costly • Finance from different sources are available but not converging to the consumers • LGIs and entrepreneurs lack skills to keep the service running

Challenges identified

Location	Water Service Model (rural)	Sanitation Service Model (rural)	Climate Hazard and their impact on WASH service	Needs identified
Flood Plain (estuaries)	<ul style="list-style-type: none"> • Self-supplied tubewells • DPHE provided and hh managed Tubewells 	<ul style="list-style-type: none"> • Self-supplied septic tanks and pit latrines • DPHE provided pit latrines for poor households • NGO provided/supported pit latrines • Manual pit emptying system • Open defecation exists to a certain extent 	<ul style="list-style-type: none"> • Recurrent flood/flash flood • Water quality • Inadequate sanitation service • Continuous land erosion pushes people not to invest in WASH infrastructure 	<ul style="list-style-type: none"> • Lack of focus, particularly finance available for Flood Plain areas • No specific service model has been designed for Flood Plain areas • Service should be designed in such a way so that, service remains despite the change of service recipients (service recipients are often mobile)

Challenges identified

Location	Water Service Model (rural)	Sanitation Service Model (rural)	Climate Hazard and their impact on WASH service	Needs identified
Haor	<ul style="list-style-type: none"> • Self-supplied tubewells • DPHE provided and hh managed Tubewells 	<ul style="list-style-type: none"> • Self-supplied septic tanks and pit latrines • DPHE provided pit latrines for poor households • NGO provided/supported pit latrines • Manual pit emptying system • Open defecation exists to a certain extent 	<ul style="list-style-type: none"> • Lack of space for sanitation • Poor faecal sludge treatment • High turbidity in water during monsoon • Due to lack of space and high water table, conventional septic tank or pit latrine do not work • Household/community water treatment systems are absent 	<ul style="list-style-type: none"> • Compare to water, sanitation is a major challenge in Haor • Due to lack of space, proper containment is a major issue • Almost no service model is present for fs emptying, transport and treatment

Way forward

- Need assessment for climate resilient WASH solutions
- Development of an inventory of existing WASH technologies and service models
- Selection of technologies and/or service (O&M) for pilot/trial
- **Selection of location and logistics for trial**
- **Conduction of the pilots/trials**
- **Documentation and development of a guiding manual from the pilots/trials**
- **Dissemination of the findings**

Thank You

CWAS CENTER
FOR WATER
AND SANITATION
CRDF CEPT
UNIVERSITY

BILL & MELINDA
GATES foundation



Global South Academic Conclave on WASH and Climate Linkages