Rising to the challenge: Bangladesh WASH Cluster's leadership in climate resilience

Context
Bangladesh regularly faces severe impacts from climate change, such as floods, cyclones, and water shortages. While these hazards have existed for a long time, their intensity, impact, and frequency have significantly increased due to climate change. Because of these changes, the usual emergency response is no longer adequate. Therefore, the WASH Cluster in Bangladesh has begun to adapt its work so that future WASH interventions are better suited to Bangladesh's specific climate risks.

TURNING POINT: A SHIFT TO RESILIENCE

Experience with Cyclone Amphan in 2020 made the WASH cluster and their partners realize that without adapting to specific climate risks in Bangladesh, WASH interventions would no longer be relevant. This realisation prompted a series of internal discussions to make WASH programming both hazard-specific and risk-informed. Following these discussions, the WASH cluster developed new guidelines in **2023** to help ensure that future WASH interventions would be better adapted to Bangladesh's specific climate risks.

> *"We realized after Cyclone Amphan in 2020 that emergency response alone was not enough. We saw millions of dollars vanish in temporary fixes that couldn't withstand the next storm or flood.* ***Sustainable solutions were no longer optional—they were essential****." (UNICEF WASH cluster coordinator.)*

STEPS FOR TRANSFORMATION

First steps: Consensus building among the partners and strengthening their capacity
The WASH cluster conducted extensive discussions among its partners, building consensus that integrating climate resilience into their WASH programming was essential rather than optional. This led to the creation of the practical "National Compendium of WASH Technologies for Disaster Response." (published January 2023) To further strengthen capacity, the cluster organized a Training of Trainers session in November 2023, enabling 24 government officials and NGO partners to effectively implement climate-resilient WASH practices.

Key highlights of the guidelines
Provides a detailed catalogue of practical WASH technologies explicitly designed for disaster contexts in Bangladesh, addressing local environmental and climatic conditions.

Highlights climate-resilient designs that can withstand floods, storms, droughts, and other extreme weather events, supporting sustained access to safe water, sanitation, and hygiene under changing climate conditions.

Includes low-carbon, energy-efficient solutions such as solar-powered water pumps and eco-friendly waste management systems that directly contribute to climate mitigation by reducing greenhouse gas emissions.

Presents clear, detailed guidance through technical drawings, step-by-step instructions, and material specifications, enabling rapid and practical implementation in the field.

Second step: proactive implementation through anticipatory actions (2024)
The cluster proactively implemented anticipatory actions ahead of forecasted severe flash flooding in northern Bangladesh. This marked a strategic shift toward proactive disaster management and was complemented by the systematic adoption of improved climate-resilient infrastructure.

Current status: Institutionalising resilience (2025)
Now, anticipatory action has become a central strategy in the Cluster's climate response. The Cluster also emphasises long-term adaptation and climate mitigation efforts as part of its core work. The cluster plans to develop an online version of the existing catalogue of resilient WASH technologies and update the catalogue to ensure all options are disability-inclusive and fully accessible.

Examples of anticipatory climate actions, climate adaptation actions, and climate mitigation actions taken by the WASH cluster:

Anticipatory climate actions:
In anticipation of severe flash flooding during the 2024 monsoon season in northern Bangladesh, the WASH Cluster proactively distributed essential supplies—including jelly cans for safe water storage, water purification tablets, and mobile water treatment units—across five vulnerable districts. **This advance distribution ensured immediate access to safe drinking water when flooding occurred, significantly reducing delays in response and limiting public health impacts.** The successful distribution directly benefited approximately 17 communities, clearly demonstrating that early intervention substantially improved community resilience and reduced the overall humanitarian impact. This experience reinforced the critical importance of preparedness and early action in effective disaster risk reduction and response.

Climate adaptation actions:
The Cluster aims ensure sustained access to safe drinking water and sanitation, even in the face of recurring floods, droughts, salinity, and other climate-related hazards. As such, the design of **WASH facilities have evolved from short-term sixes to more durable and inclusive infrastructure** that supports both emergency response and long-term development:

- Salinity and storm: In **coastal areas** where salinity and storm surges are common, infrastructure durability is being enhanced through design improvements such as tiled floors and walls, and **reverse osmosis systems** are being piloted at both household and community levels.
- Droughts: In **drought-prone northern regions**, the Cluster supports **ecosystem-based approaches**, including pond and watershed management, water reservoirs, and tree planting. While these initiatives are currently smaller in scale, they represent a significant move toward nature-based climate resilience.
- In response to increasing flood risks, the Cluster has constructed **raised-platform tube wells and flood-resistant latrines**, turning previously vulnerable infrastructure into dependable community assets. These facilities are designed to serve all community members, including older people and persons with disabilities. To date, **over 500 latrines have been installed**, with around **25 incorporating specific accessibility adaptations** tailored to individual needs—for example, ramps for wheelchair users or support railings for the visually impaired.

Climate mitigation actions:
The WASH Cluster is contributing to national mitigation goals by promoting **low-carbon, energy-efficient technologies**. Solar-powered water supply systems, for example, reduce reliance on fossil fuels, lower greenhouse gas emissions, and cut long-term operational costs. These practical interventions align with national climate goals while also strengthening sustainability and resilience at

LESSONS LEARNED

The experience of the WASH cluster in Bangladesh suggests that the combination of local insight, proactive planning, and effective communication is essential to translating climate resilience from a concept into sustained, operational change in the WASH sector.

- Begin with local context and hazards: Start by understanding the capacities, resources, and resilience levels of local WASH actors. Identify specific hazards and disaster patterns affecting different regions, while also considering local customs, practices, and existing coping strategies. These insights are essential to designing relevant and effective interventions.
- Conduct vulnerability assessments: Use detailed assessments to identify adaptation needs and tailor interventions accordingly. These assessments should consider social, geographic, and environmental vulnerabilities to ensure that solutions are both cost-effective and targeted to the real risks communities face.
- Advocate and communicate effectively: Build support for climate-resilient approaches by clearly articulating their benefits. Share data, field experiences, and outcomes from successful projects with policymakers and planners. Where possible, conduct comparative assessments to demonstrate the long-term value of resilient infrastructure versus traditional methods.
- Promote preparedness and planning: Anticipatory action depends on strong preparedness systems. Establishing protocols, pre-positioning resources, and conducting scenario planning help ensure early actions are timely and effective. This should be a core priority in both emergency and development programming.
- Share and adapt best practices: Engage with other countries and regions that have implemented successful climate-resilient strategies. Draw lessons from their experiences and customise them to suit your specific operating environment. Adaptation is not one-size-fits-all—it must reflect the local context.

ANNEX I. BANGLADESH WASH CLUSTER'S KEYS TO SUCCESS (ALIGNED WITH THE 6 + 1 CLUSTER COORDINATOR FUNCTIONS)

The Bangladesh WASH Cluster's experience demonstrates how the six core cluster coordination functions—plus the seventh cross-cutting priority of accountability—can be leveraged to embed climate resilience into practice. The table below provides an overview of how these functions were applied:

Function	How it was applied
Supporting service delivery	Conducted consensus-building discussions among partners, developed and disseminated the "National Compendium of WASH Technologies for Disaster Response," and strengthened national and local capacities through targeted training programmes. Implemented anticipatory actions such as pre-positioning emergency supplies ahead of predicted floods and delivered climate-resilient infrastructure, including raised-platform latrines and solar-powered water systems, to ensure continuous WASH access during and after climate hazards.
Informing strategic decisions	Used community-level and hazard-specific assessments, informed by tools like the INFORM Risk Index and national hazard mapping, to prioritise interventions in the most vulnerable areas.
Strategic planning and implementation	Emphasised anticipatory action and integrated planning across emergency and development contexts, supporting the humanitarian-development nexus.
Monitoring and performance	Applied real-time data collection tools, such as Kobo Toolbox, to monitor WASH infrastructure and track the effectiveness of adaptation and preparedness strategies.
Building national capacity	Delivered training programmes, including a national Training of Trainers session, to embed climate-resilient practices across local, district, and national systems.
Advocacy	Advocated for climate-resilient WASH investments with government and donors and promoted inclusion in national plans such as the NAP.
Accountability to affected populations	Ensured inclusive design of infrastructure, incorporating specific adaptations for persons with disabilities.

Simplified, culturally specific, pictorial-based guidelines were developed for household and community-level maintenance of WASH facilities, providing clear and practical guidance for implementers.
Currently updating the National Compendium of WASH Technologies to reflect user feedback, cultural practices, and ensure all listed technologies are disability-inclusive and fully accessible. The cluster also plans to develop an online version of the compendium to ensure broader accessibility.

ANNEX II. A LIST OF RESOURCES USED AND CREATED IN BANGLADESH

National Compendium of water, sanitation and hygiene (WASH) technologies for disaster response
This compendium is highly beneficial for coordinators working in Bangladesh and similarly climate-vulnerable areas, as it combines immediate humanitarian WASH needs with robust climate adaptation and mitigation approaches. Its detailed, practical guidance allows coordinators to quickly identify context-appropriate solutions that not only address immediate disaster impacts but also enhance longer-term resilience and environmental sustainability.

Report on Training of Trainers on Capacity Development in WASH Sector in Bangladesh: Climate Change Adaptation, Disaster Risk Reduction, and WASH in Emergency Preparedness and Response
The report provides a detailed account of the process undertaken by the Bangladesh WASH Cluster to conduct capacity-building training. It outlines the structure of the training, participant profiles, training objectives, and methods used for engagement and feedback. While not a standalone resource or guide for coordinators seeking specific training content or adaptable tools, this document offers a useful example of how to organize, structure, and document similar training events. Coordinators interested in the logistical or procedural aspects of training programs may find this documentation valuable.