



## REPORT

Divisional Training on

# CAPACITY DEVELOPMENT IN WASH SECTOR IN BANGLADESH: CLIMATE CHANGE ADAPTATION, DISASTER RISK REDUCTION, AND WASH IN EMERGENCY PREPAREDNESS AND RESPONSE.



Venue: ITN Seminar Room, BUET, Dhaka

Date: 27-28 December 2023



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## 1. Introduction

Bangladesh is among the countries that experience frequent natural disasters due to climate change where the country's vast population is extremely vulnerable to cyclones, floods, droughts, and the danger of saline water intrusion into sweet water zones and the agricultural areas due to sea level rise. Over the past three decades, Bangladesh has experienced around 200 natural disasters as the nation gets exposed to several natural hazards every year because of its low-lying topography, proximity to the Bay of Bengal, and monsoon season.

The frequency of hazards and disasters has been increasing due to climate change, which has had a serious impact on the WASH sector in Bangladesh. As a result, climate-resilient WASH infrastructures are required to deal with the effects of climate change. Furthermore, it is critical to raise awareness among government policymakers and WASH program implementers to deal with climatic realities to turn WASH infrastructures into climate-resilient facilities that can also withstand the effects of disasters.

Under the joint initiatives of the Department of Public Health Engineering (DPHE) and UNICEF, the WASH Cluster has been functioning in Bangladesh since 2008, following Cyclone Sidr, to bring together the active partners working in the WASH sector. The WASH Cluster is a component of the international cluster strategy and the broader national Humanitarian Coordination Task Team (HCTT) to facilitate strategic collaboration in disaster planning and response within the WASH sector. The WASH Cluster seeks to guarantee a better coordinated and successful response by enlisting the help of the Ministries of the Government and their line agencies, UN organizations, INGO, and civil society organizations.

The WASH Cluster is specifically focused on: (i) using the Humanitarian Development Nexus to promote comprehensive WASH services and mainstream disaster risk reduction (DRR) in the WASH sector; (ii) bolstering national and local coordination mechanisms that involve all relevant stakeholders to improve the effectiveness of emergency and humanitarian response; (iii) enhancing local capacity in terms of WASH in emergency preparedness and response; and (iv) ensuring cooperation for collective action by its members. To meet these targets, along with other programs, the experts of the WASH sector are committed to continuing education and training initiatives for promoting climate-resilient approaches to deal with the changing climate and its impacts on the environment, especially in Bangladesh's many affected geographical areas.

Therefore, DPHE and UNICEF have planned to jointly organize divisional training events, titled “Capacity Development in WASH Sector in Bangladesh: Climate Change Adaptation, Disaster Risk Reduction, and WASH in Emergency Preparedness and Response”, for capacity building of DPHE officials, NGO representatives, and Government officials who play important roles in

WASH service delivery during disasters and in emergency preparedness and response in the affected areas of Bangladesh. To accomplish the objectives of the capacity building program, DPHE and UNICEF worked jointly where UNICEF Bangladesh provided guidance and DPHE implemented the activities that included the development of a training module, organizing meetings and consultations with stakeholders, organizing WASH Cluster meetings, and facilitation of the training events at the divisional level.

Following the development of the training module for a 2-day training program and a Training of Trainers (ToT) event in Dhaka, the trainings at the divisional level started in November 2023. After the first four batches of the training program in Barishal, Mymensingh, Khulna, and Rangpur for the respective DPHE circles, the fifth batch of training program for Dhaka circle was organized at ITN Seminar Room, BUET, Dhaka from 27-28 December, 2023.

## **2. Objectives of the training**

The main objective of the capacity development training program is to improve and strengthen the technical capacity of WASH professionals as well as to raise awareness among the stakeholders at the district level, focusing on Climate Change Adaptation (CCA), Disaster Risk Reduction (DRR), and Emergency Preparedness and Response in WASH, in different climate affected regions of Bangladesh. The specific objectives of the training are:

- Strengthening the capacity of WASH sector professionals on disaster and emergency preparedness and response, and planning and delivering climate resilient WASH services focusing on both government partners and non-governmental organizations for efficient and effective implementation of emergency preparedness and response programs in vulnerable districts.
- Promoting awareness of Disaster Risk Reduction (DRR) in WASH and developing sector capacity on the integration of DRR and climate-resilient approaches into WASH programs across the country.
- Addressing disaster and climate change impacts in the WASH sector and mainstreaming DRR mechanisms into WASH programming.
- Identifying gaps between current activities (capacity) and opportunities to make the WASH service climate resilient in different geographical contexts and developing a set of recommendations, based on gap assessment, to better align ongoing activities with the disaster resilient WASH approaches.
- Improving the local level WASH cluster coordination to capacitate the WASH service providers in emergencies.

### 3. Participants

A total of 39 participants attended the training program including DPHE engineers, officials from different departments of the government, and NGO representatives who are major stakeholders in WASH sectors, especially during disasters and emergencies. Among the participants, there were 4 Executive Engineers, 7 Assistant Engineers, 7 Sub-assistant engineers, 2 Estimators from DPHE, 9 officials from other departments of government, and 10 NGO representatives.

### 4. Training Facilitators

The 2-day training program with several engaging sessions was conducted by Maharam Dakua, Consultant, DPHE, Dr. Md. Imran Kabir, Professor, Department of Civil Engineering, SUST, Dilruba Farzana, Executive Engineer, DPHE, Dhaka, and Md. Samiul Hoque, Executive Engineer, DPHE, Sherpur.



*Figure 1: Opening session of the training*

### 5. Opening Session

The training started with an opening session on 27<sup>th</sup> November 2023 at the ITN Seminar Room, BUET, Dhaka. Md. Raushan Alam, Superintendent Engineer, DPHE, Dhaka Circle, Shofiqul Alam, Water, Sanitation and Hygiene (WASH) Specialist, UNICEF, A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE, and Bashir Ahammed, Executive Engineer, DPHE, Dhaka were present during the inaugural session of the training. At the beginning of the opening session, A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE presented the objectives of this training and provided an overview of the contents of the

sessions. Later, Shofiquil Alam, Water, Sanitation and Hygiene (WASH) Specialist, UNICEF gave a short speech on the importance of the training, and then the Chief Guest of the session, Md. Raushan Alam, Superintendent Engineer, DPHE, Dhaka Circle announced the opening of the training program.

## 6. Training Sessions

There were seven sessions in the 2-day training program. Four sessions were conducted on day 1 and the remaining three sessions were conducted on day 2. The schedule of the training is provided in [Annex-1](#). The facilitators of the sessions were:

- Session 1: Maharam Dakua, Consultant, DPHE
- Session 2: Dilruba Farzana, Executive Engineer, DPHE, Dhaka
- Session 3: Md. Samiul Hoque, Executive Engineer, DPHE, Sherpur
- Session 4: Dr. Md. Imran Kabir, Professor, Department of Civil Engineering, SUST
- Session 5: Dr. Md. Imran Kabir, Professor, Department of Civil Engineering, SUST
- Session 6: Dilruba Farzana, Executive Engineer, DPHE, Dhaka
- Session 7: Maharam Dakua, Consultant, DPHE

### 6.1. Sessions of Day 1

#### **Session 1: Climate Change and Its Impacts on Water, Sanitation and Hygiene (WASH)**

Outline of the session:

- Introduction to Climate Change and its Causes
- Elements of climate, how they interact, and consequences of Climate Change
- Identifying Impacts of Climate Change on WASH in Bangladesh

Outcome of the session:

- Understanding of the basics of climate change
- Understanding of the consequences of climate change
- Understanding of the impacts of climate change on WASH in Bangladesh

This session provided a brief overview of weather, climate, and climate change. It covers a wide range of topics, including the differences between weather and climate, the causes and effects of climate change, and the impact of climate change on various sectors such as agriculture, water, and health. The session also highlights the impact of climate change in different areas and on vulnerable populations such as low-income communities. A video on the effect of the greenhouse on the earth was shown to the participants. There was a quiz for the trainees which was conducted through Mentimeter. The participants were also given a groupwork for identifying indicators of climate change and finding its outcomes, consequences, and impacts.



*Figure 2: Participants engaging in a quiz on session 1*



*Figure 3: Group work of session 1 on identifying indicators, outcomes, consequences, and impacts of climate change*

## Session 2: Disasters and Impacts on WASH Infrastructures in Bangladesh

The session focused on disasters and their impacts on WASH infrastructures in Bangladesh.

The outline of the session was:

- Disasters in the WASH sector in Bangladesh
- Impacts of disasters on WASH infrastructures in Bangladesh
- Disaster management cycle and activities

Outcome of the session:

- Understanding of the main disasters in the WASH sector in Bangladesh
- Understanding of the main impacts of disasters on WASH infrastructures in Bangladesh
- Understanding of the steps and activities of disaster management in WASH



*Figure 4: Facilitator addressing the steps and activities of disaster management in WASH during session 2*

The session discussed the steps involved in disaster management for WASH infrastructures in Bangladesh. Participants learned about the different phases of the disaster management cycle, including preparedness, response, recovery, and rehabilitation, and the specific activities that are involved in each phase of the cycle. Participants also learned about the terminologies related to disaster risk reduction. During the session, different types of disasters and their impacts on WASH infrastructures were also discussed.

### **Session 3: Stakeholders' Roles in DRR and Emergency Preparedness and Response in WASH**

The session focused on Stakeholders' Roles in DRR and Emergency Preparedness and Response in WASH. The outline of the session:

- Identification of the stakeholders in DRR, and emergency preparedness and response in WASH
- Roles of stakeholders and their working areas
- DPHE's role in DRR, and emergency preparedness and response
- Coordination mechanisms among the stakeholders

Outcome of the session:

- Identified the stakeholders involved in WASH in DRR and emergency response, and their respective roles
- Understanding of the DPHE's role in disaster risk reduction, and emergency preparedness and response
- Understanding of the coordinating mechanisms among the stakeholders



*Figure 5: Participants understanding of the role of stakeholders and the coordinating mechanisms among them*

The session mostly discussed the organizations involved in disaster management, including the government, non-governmental organizations, and community-based organizations. The session also covered the Standing Orders on Disaster (SOD), which is a set of guidelines for disaster management in Bangladesh. The SOD aims to ensure a coordinated and effective response to disasters by all stakeholders. The session also discusses the formulation of the

WASH Cluster, its aims and objectives, and how to operationalize the WASH Cluster through meetings. The session also discussed about WASH cluster and the participants were informed about the WASH cluster meeting that took place after this session.

#### **Session 4: Standards and Guidelines for WASH during Disasters and Emergency Response**

Outline of the session:

- Overview of the regulatory framework and code of conduct for disaster management in Bangladesh in the WASH sector.
- Guidance on preparedness for WASH in emergency response, and early recovery interventions in disaster situations.
- Standards for WASH services during emergency response.

Outcome of the session:

- Understanding of the regulatory framework and code of conduct for disaster management in WASH.
- Understanding of the standards and guidelines for WASH services in an emergency.



*Figure 6: Facilitator addressing the standards and guidelines for WASH services in an emergency*

This session gave an overview of the regulatory framework and code of conduct for disaster management in Bangladesh in the WASH sector, guidance on preparedness for WASH in emergency response, and early recovery interventions in disaster situations, standards for WASH services during emergency response. The participants were given a small task to answer

some questions and to identify some statements whether they were true or false ([Annex-3](#)). A quiz was also taken through Mentimeter.



*Figure 7: Participants engaging in group work on Sphere Standards*

## 6.2. Sessions of Day 2

At the start of Day 2, there was a review session where a brief review of the previous day was given by Dr. Md. Imran Kabir, Professor, Department of Civil Engineering, SUST. The participants were asked some questions about what they learned on the previous day. After the review session, the remaining three sessions of the training started.



*Figure 8: Facilitator giving a brief review of the previous day*

## Session 5: Climate Resilient WASH Technologies

Outline of the session:

- Importance of adaptation and mitigation in building climate resilience into the WASH system
- Climate change adaptation in water and sanitation technologies

Outcome of the session:

- Understanding of the importance of adaptation and mitigation in building climate resilience into the WASH system
- Learning of the best practices for climate-resilient WASH technologies

In this session, the participants were provided with real examples to get an understanding of the importance of adaptation and mitigation in building climate resilience in the WASH system. The session covered examples of climate-resilient WASH technologies and the participants learned about the climate-resilient features of the technologies. They also learned about the different strategies that can be used to address these challenges and improve the resilience of WASH systems. The participants were encouraged to share their experiences at the field level as well. There was a quiz that was conducted through Mentimeter.



*Figure 9: Participants learning about the best practices for climate-resilient WASH technologies*

## **Session 6: WASH Services in Disasters and Emergency Response**

In this session, the participants learned about the technologies used for water supply sanitation, and hygiene during disasters and the operation and maintenance of water, sanitation, and hygiene facilities during and after disasters. The outline of the session includes:

- Technologies used for water supply, sanitation, and hygiene during disasters
- Operation and maintenance of water, sanitation, and hygiene facilities during and after disasters

Outcome of the session:

- Learning effective water supply, sanitation, and hygiene technologies for disaster risk reduction
- Understanding the operation and maintenance of water supply, sanitation, and hygiene systems during and after disasters

Some real-life problems were also discussed during this session and some suggestions came up to take steps to fix those problems.



*Figure 10: The facilitator discussing the operation and maintenance of water supply, sanitation, and hygiene systems during and after disasters*

## Session 7: Emergency Response Planning and Implementation in WASH

The last session of the training discussed the importance and steps of emergency preparedness and response plans in the context of WASH, and the key principles that should guide emergency response efforts.



*Figure 11: The last session of the training on emergency response planning and implementation in WASH*

The SOS and D-Forms were discussed, and later a demo of a digital data collection tool was introduced to the participants which was developed using Kobo Toolbox by which one can quickly share information about the current status of the WASH technologies of an area. After using the tool, the participants were requested to provide feedback about the tool for further improvement of the tool.

The steps for developing an inclusive emergency response plan and a contingency plan were discussed. Later, the groups were provided with a task to write down the steps for developing an emergency response plan and contingency plan. In the end, the participants were asked to make a presentation of their group work on a contingency plan or emergency response plan.



Figure 12: Participants preparing their group work for presentation



Figure 13: Group presentation from each group presenting on their topic

## 7. Feedback from the Participants

Participants addressed many topics related to the training implementation and offered some helpful recommendations for the training activities. They expressed their satisfaction over the 2-day long training program and appreciated the contents of the training module. While they were asked to share the scope for further improvement in the training, some feedback from the participants at the end of the training sessions were:

- The participants requested the development of an Operating Manual for district offices for maintaining the WASH technologies that are used during and after disasters.
- Participants suggested that the training needs to be organized at the Upazila level with a simplified version of the training module developed for the Upazila level that would be easy for the participants. They also stated the training module for the Upazila level should be in Bengali and the training duration should be three days.
- For the group work on developing an emergency response plan and contingency plan, some tools should be developed to better guide the participants on the task.

## 8. Closing Session

At the end of the training, a brief closing session was arranged on 28<sup>th</sup> December 2023. Md. Raushan Alam, Superintendent Engineer, DPHE, Dhaka Circle, A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE, and Maharam Dakua, Consultant, DPHE were present as guests in the closing session.



*Figure 14: Closing session of the training*

## ANNEX

### Annex-1: Schedule of the training

#### Capacity Development in WASH Sector in Bangladesh: Climate Change Adaptation, Disaster Risk Reduction, and Emergency Preparedness and Response

Venue: ITN Seminar Room, BUET, Dhaka

Date: 27-28 December 2023

### Training Schedule

Topics	Time	Session Contents
<b>Day 1</b>		
Opening Session	9.00 – 9.30	Registration, tea, and network building
	9:30 – 10:30	Opening Session
Section 1	10.30 – 11.15	Session 1 – Climate Change and Its Impact on Water, Sanitation and Hygiene (WASH)
	11.15 – 11.30	Tea break
	11.30 – 12.00	Session 2 – Disasters and Impacts on WASH Infrastructures in Bangladesh
Section 2	12.00 – 13.00	Session 3 – Stakeholders’ Roles in Disaster Risk Reduction and Emergency Preparedness and Response in WASH
	13.00 – 14.00	Lunch and prayer break
	14.00 – 15.00	WASH Cluster Meeting
	15.00 – 15.15	Tea break
Section 3	15.15 – 16.30	Session 4 – Standards and Guidelines for WASH during Disasters and Emergency Response
<b>Day 2</b>		
Review Session	9.30 – 10.00	Review of Day-1 Sessions’ Contents
Section 4	10.00 – 11.30	Session 5 – Climate Resilient WASH Technologies
	11.30 – 11.45	Tea break
	11.45 – 13.00	Session 6 – WASH Services for Disasters and Emergency Response
	13.00 – 14.00	Lunch and prayer break
Section 5	14.00 – 15.30	Session 7 – Emergency Response Planning (ERP) in WASH and Implementation
Closing Session	15.30 – 16.00	Closing Remarks

## Annex-2: List of participants in the training

Sl. No.	Name	Designation & Organization
1.	Md. Abu Saleh	Asst. Administrator, Asia Arsenic Network
2.	Md. Moktur Ali	Assistant Engineer, DPHE, Dhaka Circle
3.	Md. Sohib Alam	Sub Assistant Engineer, Store division, DPHE, Dhaka
4.	Robin Hossain	SAE, Store Circle, DPHE, Dhaka
5.	Mahmudul Hasan	Emergency officer, UNICEF
6.	Md. Kabul Khan	Assistant Engineer, DPHE, Manikganj Sadar
7.	Md. Dabirul Islam	Sub Assistant Engineer, DPHE, Bhuapur, Tangail
8.	Abdullah Al Mamun	Assistant Engineer, DPHE, Bhuapur, Tangail
9.	Md. Kalim Uddin	Assistant Engineer, DPHE, Dhaka Division
10.	Mosrat Jahan	SAE, DPHE, Tangail Sadar, Tangail
11.	Md. Shafiqul Islam	Assistant Commissioner, Office of the Deputy Commissioner Dhaka
12.	H.M. Shahid Hasan	National Risk Officer, UNRCO, Gulshan, Dhaka
13.	Md. Hasan Ahmed	UPIO, DDM, Dhaka
14.	Fatema Kawsar June	Deputy Manager, WASH, BRAC, Mohakhali, Dhaka
15.	Md. Abdur Razzak	Sr. WASH officer, Bangladesh Red Crescent Society, Dhaka
16.	Tasnim Binta Mukhlis	Program officer, Dwip Unnayan Sangstha, Noakhali
17.	Gazi Fatima Ferdous	Executive Engineer, DPHE, Manikganj
18.	Md. Shamim Anwar	Assistant Engineer, DPHE, store division, Dhaka
19.	Md. Noyon Ali	Program Officer-Engineer NGO Forum for Public Health, Dhaka
20.	Mohammad Abu Zahid	Assistant Coordinator Eng. EPRC, Dhaka
21.	Md. Humayun Kabir	Executive Engineer, DPHE, Munshiganj
22.	Muhammad Abdul Majid	DEO, District Education officer, Dhaka

23.	S.M. Abdur Rahman	SAE, DPHE, Mushniganj Sadar
24.	Md. Sharif Hossain	Estimator, Munshiganj, DPHE
25.	Md. Fuhad Mollah	Deputy Manager WASH DRR, Save the Children, Cox's Bazar
26.	Md. Shadik Al Hayat	Deputy Director MSE, Light House, Bogura
27.	Mst. Tanjena Akter	Head of External Relations & Communications, Global One, Dhaka, Bangladesh Country officer
28.	Md. Al Amin	Estimator DPHE, Dhaka Circle
29.	Rajoni Akter	Program Officer, GUSS, Dhaka
30.	Md. Azizur Rahman	Research Officer, ITN-BUET
31.	Md. Yasin Arafat	Executive Engineer, Store Division, Dhaka
32.	Md. Ibne Mayaz Pramanik	Executive Engineer, Tangail
33.	Mehedi Hasan	Sub Assistant Engineer, Dohar, Dhaka
34.	Dr. Kazi Md. Omaar Faruk	MO, CS, Civil Surgeon Office Dhaka
35.	Mohammad Mashod Reja	AE, Bhairan, Kishorganj
36.	Subrata Sarker	AE, Karimganj, Kishorganj
37.	Md. Shafiqul Islam	SAE, hosenpur, Kishorganj
38.	Md. Abdul Aziz	District Primary Education office, Mirpur, Dhaka
39.	Dr. Nigar Sultana	Deputy Program Manager, Hospital Services Management, Directorate General of Health Services

## Annex-3: Task for group work in session 4

### Sphere Standards

(Group work based on [Standard 1.1, 1.2, and 1.3](#))

Time: 15 minutes

Suppose there are **5000 disaster-affected households (HHs)** in a community in which 6000 people are women, 3500 are men, and the rest are children. To evaluate the awareness of the key public health risks related to hygiene, the following information is collected through a social survey.

- **1500 HHs** correctly describe the three measures to prevent WASH-related diseases.
- **3000 HHs** store drinking water in clean and covered containers.
- **4500 HHs** have soap and water for handwashing.
- The local environment is free from animal feces but nearly **25% area** is covered with human feces.
- Each HH has **only one** water container varying from **10-20L**.
- **None of the women** is satisfied with menstrual hygiene management.

#### Based on the above survey findings, answer/comment on the following queries

1. Find the percentage of HHs who correctly describe the three measures to prevent WASH-related diseases.

(Answer: \_\_\_\_\_ % of HHs)

2. Find the percentage of HHs who store drinking water in clean and covered containers.

(Answer: \_\_\_\_\_ % of HHs)

3. Find the percentage of HHs who have soap and water for handwashing.

(Answer: \_\_\_\_\_ % of HHs)

4. The affected area meets all the standards based on hygiene promotion.  YES  NO

5. Do you think that this affected community meets Standard 1?  YES  NO.

If NO, suggest any three potential measures to meet Standard 1.

(i) \_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_

\_\_\_\_\_

(iii) \_\_\_\_\_

\_\_\_\_\_

## Sphere Standards (Based on Standard Indicators)

Time: 15 minutes

### Hints:

- Go through the Sphere Standard 2 to 6, and answer the following queries.
- Mention that based on which Standard you have selected your answer.

1. Queuing time at water source  $\leq$  30 minutes     TRUE     FALSE    Standard: \_\_\_\_\_
2. At least 100 people per laundry facility     TRUE     FALSE    Standard: \_\_\_\_\_
3. Mean water usage = 15 L/HH/day     TRUE     FALSE    Standard: \_\_\_\_\_
4. Minimum water quality standard: <10 CFU/100mL at delivery point (chlorinated water)     TRUE     FALSE  
Standard: \_\_\_\_\_
5. Least water quality standard:  $\geq$  0.2-0.5 mg/L Free Residual Chlorine at delivery point     TRUE     FALSE  
Standard: \_\_\_\_\_
6. Maximum water quality standard: <5 NTU Turbidity     TRUE     FALSE    Standard: \_\_\_\_\_
7. All excreta containment facilities are an adequate distance from the groundwater source.     TRUE     FALSE  
Standard: \_\_\_\_\_
8. Maximum 50m distance between shared toilets and dwelling     TRUE     FALSE    Standard: \_\_\_\_\_
9. Ratio of shared toilets: minimum 1 per 20 people     TRUE     FALSE    Standard: \_\_\_\_\_
10. All excreta are disposed of in an unsafe manner to the public health and environment.     TRUE     FALSE  
Standard: \_\_\_\_\_
11. Percentage of HHs who have taken adequate action to protect themselves from relevant vector-borne diseases.  
 TRUE     FALSE    Standard: \_\_\_\_\_
12. There is solid waste accumulating around designated neighborhoods.     TRUE     FALSE    Standard: \_\_\_\_\_
13. Percentage of schools and public markets with appropriate and adequate waste storage.     TRUE     FALSE  
Standard: \_\_\_\_\_

## Annex-4: Pictures of the training







