



## REPORT

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

### **CONSULTATION WORKSHOP ON EMERGENCY PREPAREDNESS AND RESPONSE IN WASH FOR URBAN AREAS**



**Venue: ITN Seminar Room, BUET, Dhaka**

**Date: 20 May 2024**



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## TABLE OF CONTENTS

1. Introduction: .....	3
2. Goals and Objective:.....	4
3. Activity Overview.....	5
4. Workshop Participants .....	6
5. Feedback and General Recommendations from the Group Work .....	7
6. Conclusion: .....	8
ANNEX .....	9
Annex-1: Schedule of Workshop .....	9
Annex-2: List of Workshop Participants .....	10
Annex-3: Feedback of the Participants through Group Work .....	11

## LIST OF FIGURES

Figure 1: Opening session of the workshop .....	5
Figure 2: Facilitator presenting the outline and outcomes of the workshop.....	6
Figure 3: Group discussion between the participants during the group work .....	6
Figure 4: Participants Presenting their group work and sharing their feedback in the workshop .....	8

## 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; and (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.

The main objective of this capacity development initiative was to improve and strengthen the technical capacity of the WASH professionals as well as to raise awareness among different stakeholders at the national level and sub-national levels in different climate-affected regions of Bangladesh. The specific objectives of the assignment were:

- Strengthening the capacity of WASH sector professionals on disaster and emergency preparedness and response, and planning and delivering climate-resilient WASH services for efficient and effective implementation of emergency preparedness and response programs in vulnerable districts.
- Promoting awareness of Disaster Risk Reduction (DRR) to address the impacts of disaster and climate change on WASH.
- Developing sector capacity to integrate DRR and climate-resilient approaches into WASH programs nationwide and mainstreaming DRR mechanisms into WASH programming

Following the successful completion of the divisional training events aimed at enhancing capacity in the WASH sector to address climate change adaptation, disaster risk reduction, and emergency preparedness and response, the Department of Public Health Engineering (DPHE) has initiated the next phase of its collaboration with UNICEF. During this phase, DPHE planned to conduct a few workshops to address the gaps and limitations in the training module among which a lack of work on emergency preparedness and response in WASH for urban areas was one. Therefore, DPHE organized a consultation workshop under the guidance of the GoB-UNICEF technical cooperation, intending to improve emergency preparedness and response in urban areas. The workshop, took place on May 20, 2024, at the ITN Seminar Room, BUET, Dhaka.

## **2. Goals and Objective:**

The primary objective of this workshop was to identify the condition of emergency preparedness and response in the WASH sector for urban areas.

The specific objectives of this workshop were:

- Understanding the dynamics and challenges of water supply and sanitation in disasters in urban areas.
- Identifying solutions to address the challenges in urban areas.

### 3. Activity Overview

The workshop started on 20<sup>th</sup> May 2024 at ITN Seminar Room, BUET, Dhaka with an opening session. Eheteshamul Russel Khan, Addl. Chief Engineer (Planning) Addl.C., A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE, Dhaka, and Maharam Dakua, Consultant, DPHE were present during the opening session of the workshop.



*Figure 1: Opening session of the workshop*

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 the Chief Guest of the workshop Eheteshamul Russel Khan, Addl. Chief Engineer (Planning) Addl. C gave a short speech on the importance of the workshop and announced the opening of the workshop. The workshop schedule is attached as [Annex-1](#).

After the opening session, Maharam Dakua, Consultant, DPHE presented the workshop background and provided an overview of the contents of the workshop. The participants were asked to answer some questions as part of their group work. The questions were:

- What are the challenging issues in water supply/sanitation during/after disasters in urban areas of Bangladesh?
- What would be the mitigation measures?
- What adaptation measures do you practice/recommend to overcome the challenges?
- What are the institutional gaps and how the gaps could be addressed?

Participants were divided into groups keeping a mix of both DPHE professionals and other government organization representatives.



Figure 2: Facilitator presenting the outline and outcomes of the workshop.

#### 4. Workshop Participants

A total of 25 participants attended the workshop program. Among the participants, were Representatives of Municipality and Paurashava, Representatives of City corporations, DPHE Executive Engineers, Assistant Engineers, and Sub Assistant Engineers. The list of participants is attached as [Annex-2](#).



Figure 3: Group discussion between the participants during the group work

## 5. Feedback and General Recommendations from the Group Work

The participants shared some valuable experiences with WASH in disasters and emergencies. The feedback of the participants came through the answers to the questions in the group work. The feedbacks are attached as [Annex-3](#) and some general recommendations from the participants are given here:

- The initial planning of developing WASH services in city corporations, Paurashavas, and municipalities should be disaster resilient otherwise during a disaster damage to WASH services is seen.
- Renewable energy i.e. solar power, can be used to mitigate the problem of electricity shortage during a disaster.
- Town planning should be more climate resilient so that during disasters WASH services are not hampered
- Research and development is necessary to develop innovative technologies for the reduction of misuse of water.
- Pit latrines should be avoided and Latrines with septic tanks should be used.
- During the reconstruction of pipelines of the water supply and sewage network, it should be kept in mind that the WASH services are not disrupted. Otherwise, it can cause a shortage of water supply in the households and can cause water logging due to heavy rain. This can eventually lead to many diseases
- Research and development is necessary to develop the mobile toilet and make it more lightweight
- Coordination among stakeholders is necessary to mitigate the problem of manpower during disaster response.

## 6. Conclusion:

At the end of the training, a brief closing session was arranged. Dilruba Farzana, DPD, 10 towns Project, DPHE, Dhaka, and Maharam Dakua, Consultant, DPHE was present in the closing session.



*Figure 4: Participants Presenting their group work and sharing their feedback in the workshop*

## ANNEX

### Annex-1: Schedule of Workshop

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

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#### Consultation Workshop on Emergency Preparedness and Response in WASH for Urban Areas

Venue: ITN Seminar Room, BUET, Dhaka

Date: 20 May 2024

#### Program Schedule

Time	Session Contents
9.00 – 9.30	Registration and network building
9.30 – 10:00	Opening Session
10.00 – 10.45	Presentation on Emergency Preparedness and Response in WASH for Urban Areas
10.45 – 11.00	Tea Break
11.00 – 12.15	Group work on Urban Emergency Preparedness and Response
12.15 – 12.45	Open discussion
12.45 – 13.00	Closing Remarks
13.00 – 14.00	Lunch

## Annex-2: List of Workshop Participants

SL.No.	Name of Participants	Designation
1.	Roman Kabir	Deputy Project Director, 23 Paurashava Project, DPHE, Dhaka
2.	Dilruba Farzana	DPD, 10 towns Project, DPHE, Dhaka
3.	Mohammad Sheik Farid	DPD, 32 Pourashava Project, DPHE, Dhaka
4.	Ritthick Chowdhury	EE & DPD, BCISP-25 Town, DPHE, Dhaka
5.	Nazir Ahmed Tarik	AE, Bhola Paurashava
6.	Ranver Ahmed	Town Planner, Kushtia Municipality
7.	A.S.M. Ashrafujjaman Talukder	Town Planner, Lalmonirhat Municipality
8.	Md. Salim Sarower	AE (Water), Satkhira Paurashava
9.	Md. Anisur Rahman	Chief Waster Management Officer, Khulna City Corporation, Khulna
10.	Bony Ahsan	Town Planner, Rajshahi City Corporation
11.	Md. Badar Uddin	Social Development Officer, Jhenaidah Paurashava
12.	Alauddin	P.N.O., Lakshmipur, Paurashava
13.	Md. Ariful Islam	SAE, Saidpur Paurashava, Saidpur, Nilphamari
14.	Md. Jamal Hossain	AE, Khagrachari, Paurashava
15.	Nazmul Karim	EE, Satkhira Paurashava
16.	Ibrahim Md. Taimur	EE, DPHE, Kushtia
17.	Muhammad Samiul Hoque	EE, DPHE, Sherpur
18.	Anupam Dey	EE, DPHE, Bandarban
19.	Mohammed Mosleh Uddin	EE, DPHE, Meherpur
20.	Md. Kabil Hossain	AE, DPHE, Sirajganj District
21.	Md. Ashrafuzzaman	EE, DPHE, Patuakhali
22.	Dewan Rejaul Karim	EE, Sherpur Paurashava, Sherpur District
23.	Md. Yousuf Ali	SAE, DPHE, Nachole, Chapainawabganj
24.	Bilkis Akhet	EE, DPHE, Lakshmipur
25.	Md. Tanveer Rahman Mollah	Urban Planner, Sylhet City Corporation

### Annex-3: Feedback of the Participants through Group Work

Group No.	Challenges in WASH during/after disasters in urban areas.	Mitigation Measures	Adaptation measures	Institutional Gaps and how to address them
Group 1	<ul style="list-style-type: none"> <li>• Declining water levels</li> <li>• Lack of budget to take necessary steps</li> <li>• Communication problem</li> <li>• Lack of skilled manpower and additional standby manpower</li> <li>• Water logging</li> <li>• Lack of water source to handle fire situation</li> <li>• Lack of resources to address sanitation during disaster</li> <li>• Lack of proper planning to address solid and fecal sludge during disaster, especially during flood</li> </ul>	<ul style="list-style-type: none"> <li>• To consider alternate water sources such as surface water, rainwater</li> <li>• In hill areas proper maintenance should be ensured as well as a quick response team to handle any issue as soon as possible</li> <li>• A fund can be arranged to address emergency/disaster situation</li> <li>• Inter-institutional/departmental effective coordination and proper maintenance of mobile WTP</li> <li>• Proper designing of septic tanks and monitoring should be done to ensure no septic tank is linked to the drainage</li> <li>• Allocation of budget for FSM, and SWM during disaster</li> <li>• Proper training is necessary to get skilled professionals</li> <li>• Disaster-resilient drainage system design is necessary</li> <li>• Hygiene kits should be available</li> <li>• Safety measures for the workers should be ensured</li> </ul>	<ul style="list-style-type: none"> <li>• Climate Resilient Structure should be made</li> <li>• Awareness in mass people regarding water supply, sanitation as well as water management</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination meeting is required regularly</li> </ul>

Group No.	Challenges in WASH during/after disasters in urban areas.	Mitigation Measures	Adaptation measures	Institutional Gaps and how to address them
Group 2	<ul style="list-style-type: none"> <li>The treatment plant may overflow and can be structurally damaged</li> <li>The pipeline can be damaged</li> <li>Water Sources may be contaminated or choked up</li> <li>The Pit Latrine can be damaged and the soak well will be submerged</li> </ul>	<ul style="list-style-type: none"> <li>Cleaning water sources by bleaching powered</li> <li>The treatment plant should be constructed above flood level</li> <li>A sufficient amount of water purification tablets, jerrycan, hygiene kit, and mobile toiler should be stored</li> <li>Spare parts of tubewell accessories and pipeline repair accessories will be stored</li> <li>More use of mobile WTP</li> </ul>	<ul style="list-style-type: none"> <li>Construction of FSTP</li> <li>Reduce the misuse of water</li> <li>Sanitary pit latrine be constructed above flood level</li> <li>Raising platforms for WASH services</li> </ul>	<ul style="list-style-type: none"> <li>Lack of WASH cluster coordination</li> <li>Insufficient emergency response fund</li> <li>Insufficient store facilities cause many materials to be damaged</li> <li>Insufficient Man power</li> <li>Coordination with different dept</li> </ul>
Group 3	<ul style="list-style-type: none"> <li>Saline water intrusion causes groundwater to become saline and unusable</li> <li>Decrease of water level during drought and dry season cause shortage of water</li> <li>Problems occur when collecting sludge to FSTP during flood</li> <li>Overflow of Pit Latrine along with contamination during flood</li> </ul>	<ul style="list-style-type: none"> <li>Use of Solar/Renewable Energy in Production TW and WTP.</li> <li>Relocation or elevating structures out of floodplains</li> <li>Construction of durable/sustainable/climate resilient structure for WASH system</li> <li>Improve containment system</li> </ul>	<ul style="list-style-type: none"> <li>Promote Rainwater harvesting system</li> <li>Increase the use of Surface water as a water source</li> <li>Supply water purification tablets, and bleaching powder to treat water during flood</li> <li>Supply treated water through mobile WTP and Water tanker</li> <li>Community engagement and awareness building</li> </ul>	<ul style="list-style-type: none"> <li>Lack of coordination among the Ministry of Disaster, DPHE, LGIs, and other agencies</li> <li>Lack of database for resource assessment</li> <li>Absence of DDR plan</li> <li>Lack of Skills and expertise among WASH professionals</li> </ul>

Group No.	Challenges in WASH during/after disasters in urban areas.	Mitigation Measures	Adaptation measures	Institutional Gaps and how to address them
<b>Group 4</b>	<ul style="list-style-type: none"> <li>• Pipeline Leakage</li> <li>• Disruption of water supply</li> <li>• Electricity Problem</li> <li>• Inaccuracy of need assessment</li> <li>• Lack of Sufficient funds and Skilled Manpower</li> <li>• Shortage of Portable Drinking water source</li> <li>• The FSM system is not properly used</li> <li>• Sludge Contamination</li> <li>• Drainage Congestion due to inappropriate SWM</li> <li>• Insufficient Hygiene Kit</li> <li>• Handwashing Facilities are affected</li> </ul>	<ul style="list-style-type: none"> <li>• Town-based WASH Emergency Master plan</li> <li>• Inclusion in project planning/organizational planning &amp; implementation</li> <li>• Inclusion of emergency fund in the budget of the organization</li> <li>• Developing an emergency response team to solve the lack of manpower issue.</li> <li>• Capacity building at national and sub-national level</li> </ul>	<ul style="list-style-type: none"> <li>• Bringing Innovation in the WASH services so that monitoring of the condition of the WASH technologies can be done from one place</li> <li>• An alternative power source is necessary during a disaster</li> <li>• Portable drinking water devices availability needs to be ensured</li> <li>• Disinfectant and emergency response technologies need to be stored properly</li> <li>• The FSM system needs to be properly used and monitoring of the FSM system needs to be done using law enforcement</li> <li>• Disaster shelters should be maintained</li> <li>• Emergency Sanitation services need to be more innovative and available in all places</li> </ul>	<p>Challenges</p> <ul style="list-style-type: none"> <li>• Lack of coordination among stakeholders. This causes different stakeholders to do development work in a place at different times making the lives of the people in those areas miserable</li> <li>• Law enforcing policies among government agencies. If any of the agencies damage the other agencies' properties of development work then it is not possible to get the help of the law against the agency</li> <li>• Lack of Coordination of the resources among the stakeholders</li> </ul> <p>Solution</p> <ul style="list-style-type: none"> <li>• WASH Cluster Meetings and other Coordination meetings are necessary to discuss the resources of the stakeholders</li> <li>• Collaboration in development works is necessary</li> <li>• Guidelines, frameworks, and Policies among the stakeholders need to be coordinated.</li> </ul>