REPORT

Training of Trainers

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

Venue: Sarah Resort, Gazipur

Date: 24-26 May 2024

unicef
for every child

TABLE OF CONTENT

LIST OF FIGURES

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 final training module, which incorporated feedback from the 5 divisional trainings from the first phase and the four divisional trainings and four consultative workshops from the second phase, the 3-day residential Training of Trainers (ToT) program was organized. The event was held at Sarah Resort Gazipur from May 24-26, 2024, and aimed to equip trainers with the knowledge and skills necessary to deliver effective WASH sector capacity-building programs. The ToT session provided a comprehensive overview of climate change adaptation, disaster risk reduction, and WASH in emergency preparedness and response, ensuring that trainers are well-prepared to enhance the capabilities of DPHE officials, NGO representatives, and Government officials involved in WASH service delivery during disasters and emergencies across Bangladesh.

2. Objectives of the training

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.

3. Participants

A total of 19 participants attended the training program including DPHE Executive engineers and NGO representatives who are major stakeholders in WASH sectors, especially during disasters and emergencies. Among the participants, there were 15 Executive Engineers and 4 NGO representatives.

4. Training Facilitators

The 3-day training program with several engaging sessions was conducted by Maharam Dakua, Consultant, DPHE, and A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE.

Figure 1: Opening session of the training

5. Opening Session

The training started with an opening session on 24th May 2026 at the Adar Conference Room, Sarah Resort, Gazipur. Engr.Tushar Mohon Shadhu Khan, Chief Engineer, DPHE, Eheteshamul Russel Khan, Addl. Chief Engineer (Planning) Addl.C., A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE, and Rafael, UNICEF Representative 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 Eheteshamul Russel Khan, Addl. Chief Engineer (Planning) Addl.C., and Rafael, UNICEF Representative gave a short speech on the importance of the training, and then the Chief Guest

of the session, Engr. Tushar Mohon Shadhu Khan, Chief Engineer, DPHE announced the opening of the training program.

6. Training Sessions

There were seven sessions in the 3-day training program. Three sessions were conducted on day 1, the remaining four sessions were conducted on day 2, and a final group work was done on the last day of the training. The schedule of the training is provided in Annex-1. The facilitators of the sessions were:

- Session 1: Maharam Dakua, Consultant, DPHE
- Session 2: Maharam Dakua, Consultant, DPHE
- Session 3: Maharam Dakua, Consultant, DPHE
- Session 4: Maharam Dakua, Consultant, DPHE
- Session 5: A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE
- Session 6: A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE
- 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)

The outcome of the session:

- Understanding of the basics of climate change
- Understanding of the outcome and 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 after the video. The participants were also given a group work for identifying indicators of climate change and finding its outcomes, consequences, and impacts, the group work is attached as Annex-3

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 outcome of the session:

- Identification of the main disasters in the WASH sector in Bangladesh
- Identification of the main impacts of disasters on WASH infrastructures in Bangladesh

Understanding the disaster management steps and activities in WASH.

Figure 4: Facilitator addressing the difference between disaster and hazard 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. The participants were also two group works. At one of the tasks, they had to show the timeline for each disaster management phase by drawing lines. The group work is attached as Annex-4. In another group work, they had to link the disaster management activities during different phases. The group work is attached as Annex-5.

Figure 5: Participants engaged in the group work of disaster management activities during different phases during session 2

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 outcome of the session:

- Identification of 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 6: 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. A small quiz was taken followed by group work where the participants answered some questions on the difference between the WATSAN committee and the WASH Cluster and gave a presentation on their answers. The group work is attached as Annex-6

Figure 7: Participants comparing the WATSAN committee and WASH Cluster and presenting their answers

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 Maharam Dakua, Consultant, DPHE. The participants were asked some questions about what they learned on the previous day. After the review session, the remaining four sessions of the training started

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

The outcome of the session:

- Learning the recommendations in the operational guidelines in Bangladesh for WASH services in an emergency.
- Learning the recommendations for WASH services in an emergency from the SPHERE standard.

Figure 8: 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. A quiz was also taken through Mentimeter.

Session 5: Climate Resilient WASH Technologies

The outcome of the session:

- Understanding of the importance of adaptation and mitigation in building climate resilience in the WASH system
- Learning the current practices in terms of promoting 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. Group work was done where the participants were given some names of WASH

technologies and asked to select the disasters for which the WASH technologies are used or can be used. The group work is attached as Annex-8. A short quiz was also conducted.

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 outcome of the session:

- Learning effective water supply, sanitation, and hygiene practices for disaster risk reduction
- .Understanding the operation and maintenance of WASH systems and services 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. The outcome of the session:

- Different steps in emergency preparedness and response with activity timeline
- Key considerations in emergency preparedness and response in WASH

The steps for developing an inclusive emergency response plan and a contingency plan were discussed. SOS form and D form were also presented. The roles of and emergency response team were presented along with the requirements of the training of ERT, and a guideline on the mock drill which will be part of the training of the ERT was shown. Furthermore, the WASH Cluster coordination mechanism was also discussed. A demo WASH cluster meeting was done at the end of the session, where every participant was given a role to play other than their work designation. An imaginary disaster situation was given to them on which they had to act their part in the WASH cluster meeting. The objective of this role-play WASH cluster meeting was to make the participants understand the different roles of the members of the WASH cluster and how to effectively conduct a WASH cluster meeting during an emergency.

Figure 11: Participants attending the demo WASH cluster meeting.

6.3. Sessions of Day 3

Group Work on Emergency Response Plan:

At the start of Day 3, there was a review session where a brief review of the previous days was given by Maharam Dakua, Consultant, DPHE. Then the participants were given the final group work on developing a hazard-specific emergency response plan. The participants were asked to give a presentation on their emergency response plans.

Figure 12: Participants presenting their group work on an emergency response plan

Orientation on Data Collection App

At the end of the session of day 3, a rapid assessment data collection app was introduced to the participants. The main purpose of this app was to collect authentic data on WASH rapidly from remote areas before disaster, during disaster, and after disaster. A team of app developers was hired for the development of this app and its database. The participants were given a brief overview of the purpose of the app. The features of the app were also shown along with the process of data entry, data authentication, and dashboard formation from those data.

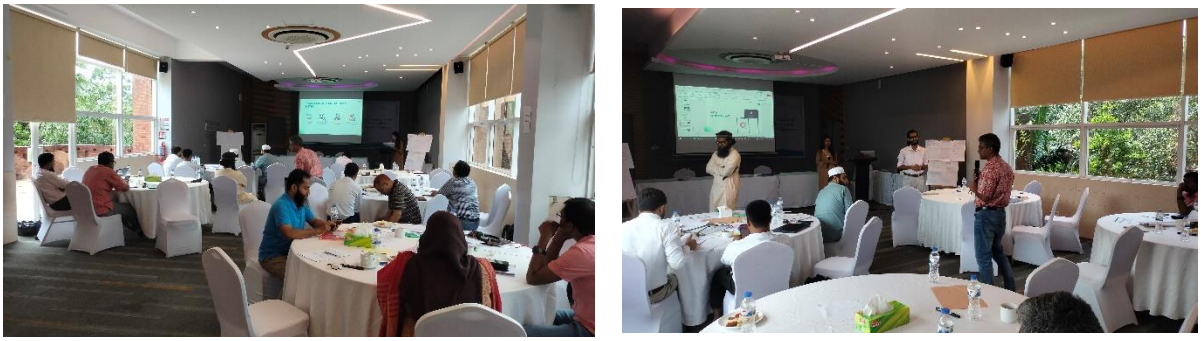


Figure 13: Demonstration of the app (left) and participants giving feedback on the app

Later participants were asked to give feedback on the app and give their inputs in the development of a more refined version of this app.

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 3-day long training program and appreciated the contents of the training module and the engaging group work. 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 a guideline on the decommissioning of WASH facilities provided during a disaster.
- 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.
- A guideline or training manual for mock drills of DPHE field-level officials should be made so that they can be trained as emergency response team members.

8. Closing Session

At the end of the training, a brief closing session was arranged on 26th May 2023. Dilruba Farzana, DPD, 10 Towns Project, and Maharam Dakua, Consultant, DPHE were present as guests in the closing session.

ANNEX

Annex-1: Schedule of the Program

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

Date: 24-26 May 2024 | **Venue: Sarah Resort, Gazipur**

Program Schedule

Topics	Time	Session Contents
Day 1 (24 May 2024, Friday)		
Travel	8.00 – 11.00	Participants travel from DPHE to the venue
Opening Session	11.00 – 11.30	Opening Session
	11:30 – 12:00	Presentation of the background and overview of the capacity-building program
	12.00 – 14.30	Hotel check-in, lunch, and prayer
Section 1	14.30 – 15.30	Session 1 – Climate Change and Its Impact on Water, Sanitation and Hygiene (WASH)
	15.30 – 16.00	Tea break
	16.00 – 17.00	Session 2 – Disasters and Its Impacts on WASH Infrastructures in Bangladesh
	17.00 – 19.00	Refreshment break
Section 2	19.00 – 20.30	Session 3 – Stakeholders' Roles in Disaster Risk Reduction and Emergency Preparedness and Response in WASH
Day 2 (25 May 2024, Saturday)		
Review Session	9.00 – 9.30	Review of Day-1 Sessions
Section 2	9.30 – 11.00	Session 4 – Standards and Guidelines for WASH during Disasters and Emergency Response
	11.00 – 11.30	Tea break
Section 3	11.30 – 13.00	Session 5 – Climate Resilient WASH Technologies
	13.00 – 14.00	Lunch break
Section 4	14.00 – 15.15	Session 6 – WASH Services in Disasters and Emergency Response
	15.15 – 15.30	Tea break
	15.30 – 17.00	Session7 – Emergency Response Planning (ERP) in WASH and Implementation
	17.00 – 19.00	Refreshment break

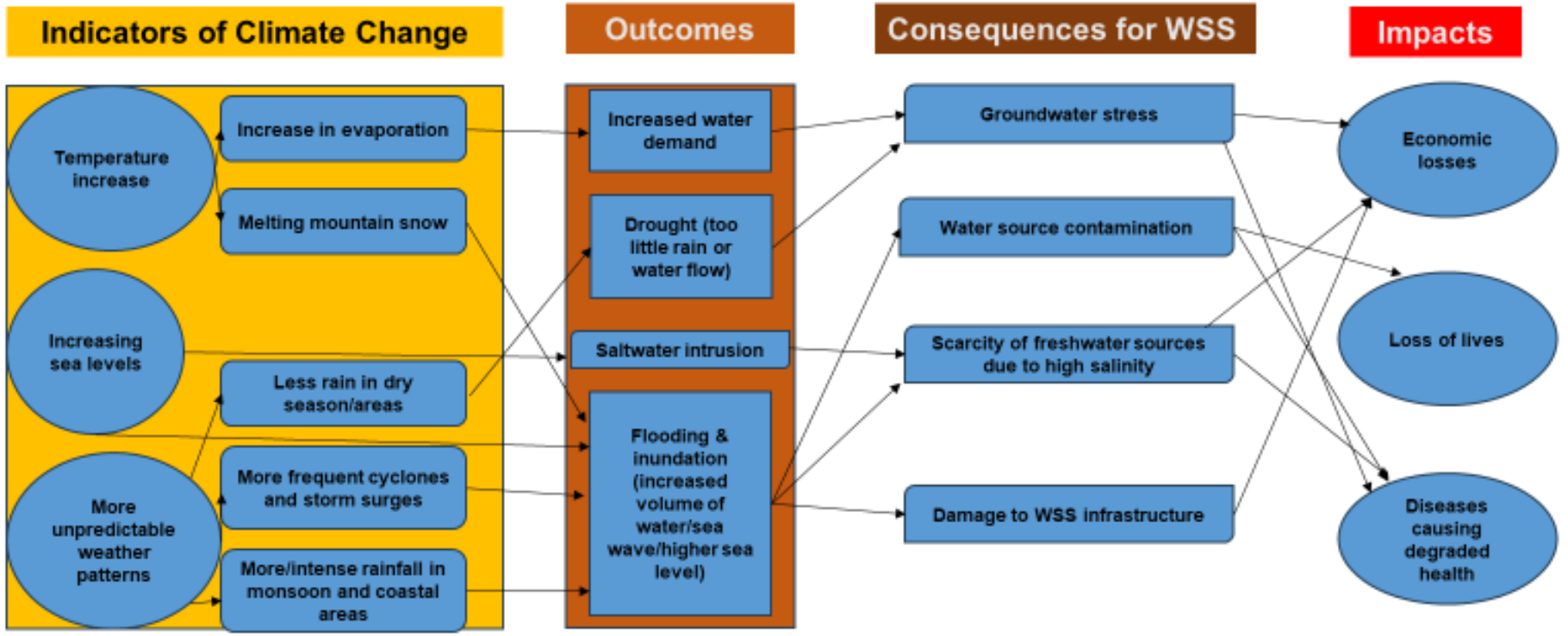
Topics	Time	Session Contents
	19.00 – 20.30	Demo WASH Cluster Meeting through role play and Activating WASH Clusters at the Local Level
Day 3 (26 May 2024, Sunday)		
Review Session	9.00 – 9.30	Review of Day-2 Sessions
Miscellaneous	9.30 – 11.30	Group Work on Emergency Preparedness and Response Planning in WASH and presentation of group work
	11.30 – 11.45	Tea break
	11.45 – 12.30	Orientation on Data Collection App
	12.30 – 13.00	Way Forward for WASH in Emergency Preparedness and Response
Closing Session	13.00 – 13.30	Closing Session
	13.30 – 14.30	Lunch
Travel	14.30 – 17.00	Participants travel back to Dhaka

Annex-2: List of participants in the program

Sl. No.	Name	Designation & Organization
1.	Muhammad Moshiur Rahman	EE, DPHE, Netrokona
2.	Mohammad Ali	WASH Officer, UNICEF
3.	Md. Tariqul Islam	Head of PO, NGO Forum for Public Health
4.	Ibrahim Md. Taimur	EE, DPHE, Kushtia
5.	Md. Azizur Rahman	Research Officer, ITN-BUET
6.	Md. Murad Hossen	EE, DPHE, Nilphamari
7.	Dilruba Farzana	DPD, 10 towns Project
8.	Md. Khairul Hasan	EE, DPHE, Store division, Khulna
9.	Mohammed Nurul Kabir Bhuiyan	EE, DPHE, Natore Sadar
10.	Farhana Hossain	EE, DPHE, P&C Division
11.	Md. Rokonujjaman	EE, DPHE, Sirajganj
12.	Dalila Afroze	EE, AMD, DPHE
13.	Md. Shayhan Ali	EE, DPHE, Gaibandha
14.	Furqan Ahmed	WASH Officer, UNICEF
15.	Md. Yasin Arafat	EE, Store Division, Dhaka
16.	Rebeka Ahsan	EE, Store Division, Chattogram
17.	Amit Kumar Sarkar	EE, DPHE, Chapainawabganj
18.	Pankaj Kumar Saha	EE, DPHE, Rangpur
19.	Muhammad Samiul Hoque	EE, DPHE, Sherpur

Annex-3: Group work of Session 1

Consequences of Climate Change on WASH

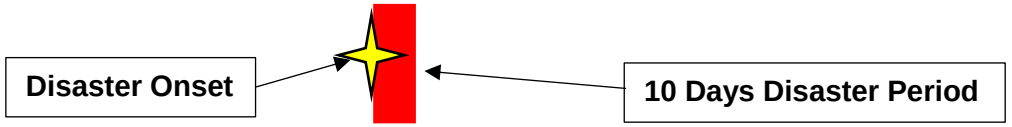


17

Annex-4: Task of session 2

TIMELINE FOR EMERGENCY PREPAREDNESS AND RESPONSE

Show the timeline for each phase by drawing lines

Phase	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
MITIGATION												
PREPAREDNESS												
												
RESPONSE												
RECOVERY												
EARLY WARNING												

Annex-5: Group work of session 2

Disaster Management Activities

Phase	Activities
A. Phase ⇨ 0 (Preparedness phase)	Preparedness
	Alert and Warning
B. Phase ⇨ 1 (Emergency Response)	Disaster Onset
	Emergency Response
C. Phase ⇨ 2 (Early Recovery)	Early Recovery
D. Phase ⇨ 3 (Rehabilitation and Development)	Rehabilitation and Development

56

Annex-6: Group work of session 3

Group Work: WATSAN Committee and WASH Cluster

Sl. No.	WATSAN Committee		WASH Cluster	
Purpose				
Scope of work				
Working stage	Yes	No	Yes	No
• District level				
• Upazila level				
• Union level				
• Ward level				
Who is the chair of the committee?				
No. of members				
Designation of members				
Can all organizations participate? Please explain.				
Is there any mechanism in the committee for coordination at the national				

Sl. No.	WATSAN Committee	WASH Cluster
level? Please explain your answer.		
Is there any mechanism for resource mobilization from national and international agencies?		
Benefits		
Limitations		

Annex-7: 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 ≤ 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: ≥ 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-8: Group work of session 5

DISASTER-BASED WASH TECHNOLOGIES

Please select the disasters for which the technologies are used or can be used:

WASH Technologies	Flood	Flash Flood	Drought	Cyclone	Tidal Surge	Landslide	None
Mobile Water Treatment Plant							
Water Tanker							
Raised Platform for Tube Well							
Double Platform for Tube Well							
Rainwater Harvesting System							
Pond Sand Filter (PSF)							
Reverse Osmosis Plant							
Ultra-filtration							
Nano-filtration							
Solar Desalination System							
Bio-sand filter							
Water Purification Tablet							
Alum/Fitkiri/Bleaching Powder							
Mobile Toilet							
Raised Pit Latrine							
Communal Latrine with Plastic Ring							
Floating Latrine							
Deep Trench Latrine							

Annex-9: Pictures of the training