REPORT

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

CONSULTATION WORKSHOP FOR DEVELOPING HAZARD-SPECIFIC TOOLS FOR WASH IN EMERGENCY

Venue: ITN Seminar Room, BUET, Dhaka

Date: 31 March 2024

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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; 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 with the goal of 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) started 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 hazard-specific tools for planning in different types of disasters was one. Therefore, DPHE organized a consultation workshop under the guidance of the GoB-UNICEF technical cooperation, with the goal of developing hazard-specific tools for emergencies. This workshop, which took place on March 31, 2024, at the ITN Seminar Room, BUET, Dhaka, was an essential step in enhancing the technical proficiency of WASH professionals.

2. Objective:

The primary objective of this workshop was to develop a hazard-specific emergency response plan, with the goal of strengthening the nation's ability to withstand the wide variety of climate-related challenges that Bangladesh faces.

The specific objectives included developing hazard-specific emergency planning tools for floods, flash floods, cyclones, landslides, and drought.

3. Activity Overview

The workshop started on 31st March 2024 at ITN Seminar Room, BUET, Dhaka with an opening session. A.H.M. Khalequr Rahman, Superintending Engineer, Store Circle, DPHE presented the objectives of this training during the opening session of the workshop and announced the opening of the program. The workshop schedule is attached as Annex-1

Figure 1: A.H.M. Khalequr Rahman presenting the objectives of the training

After the opening session, Maharam Dakua, Consultant, DPHE presented the workshop background and objectives and provided an overview of the contents of the workshop. The participants were split up into groups, and each group was given a hazard-specific scenario related to a particular hazard.

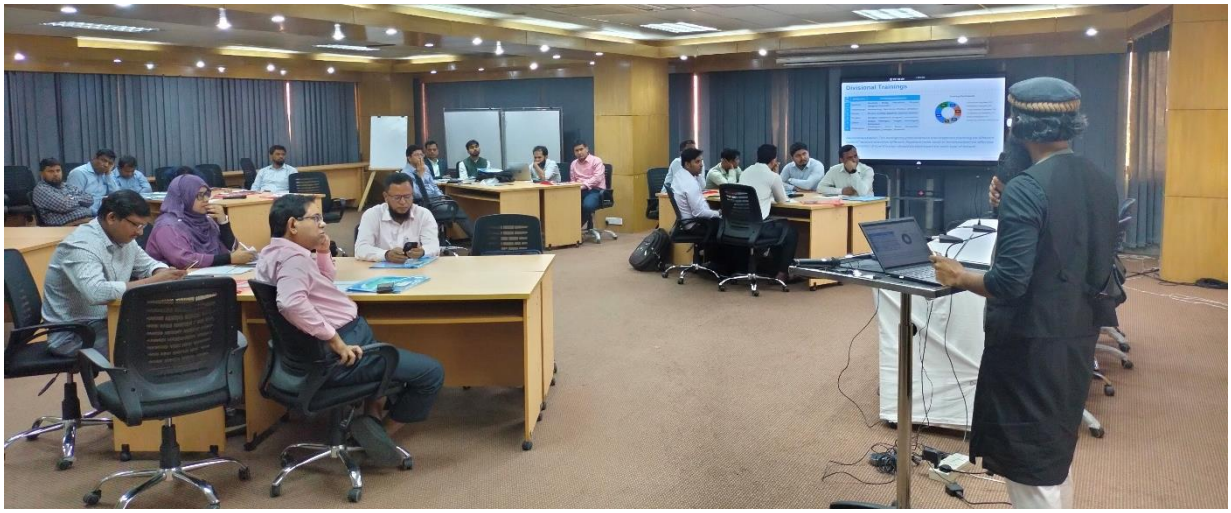

Figure 2: Maharam Dakua providing an overview of the content of the workshop

The participants developed an emergency response plan during the group work using the case they were provided. After that, the participants presented their emergency response plan.

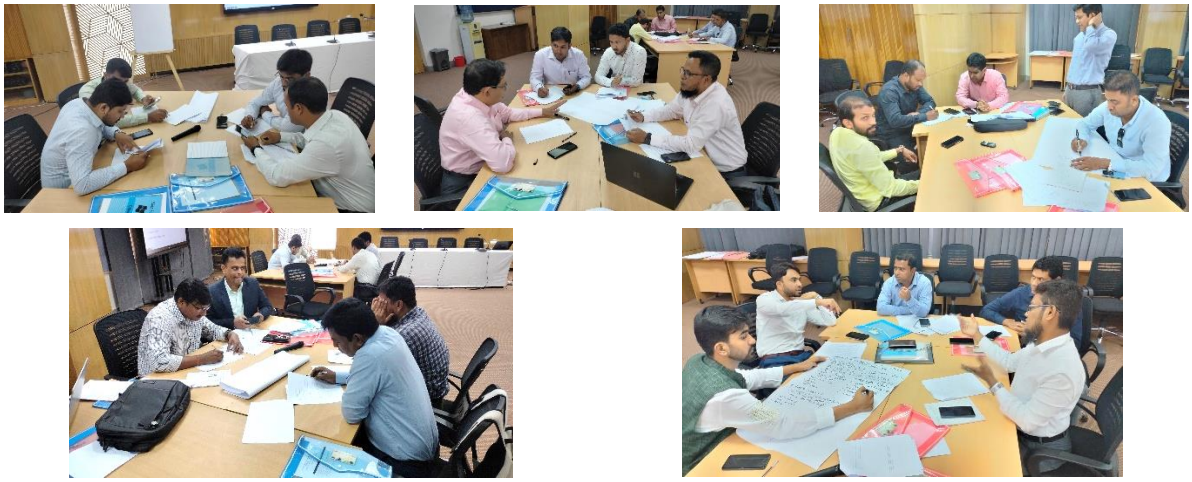

Figure 3: Participants developing hazard-specific emergency response plan

4. Workshop Participants

A total of 30 participants attended the workshop program. Among the participants, there were Executive Engineers, Assistant Engineers, and Sub Assistant Engineers. The list of participants is attached as Annex-2

5. Feedback and General Recommendation

The participants shared some valuable experiences with WASH in disasters and emergencies. The feedback of the participants and some general recommendations directed at the policy level are given here:

- There should be a guideline on who will be in the emergency response team and how to form the team.
- There is a need for a proper guideline by which an emergency response plan can be developed. The guideline can be from DPHE or it can be mentioned in the SOD so that all the stakeholders can develop an emergency response plan in the same format.
- There is a need for a software mechanism for resource mapping. If there is software that will give us the number, location, and condition of the resources of DPHE, then the risk assessment will be easier and more accurate.
- A floating Latrine is necessary. DPHE can collaborate with RFL for the development of a Floating latrine.
- A framework agreement can be developed by which contractors can be hired and given a specific area to work on. During disasters and after the disaster the contractors can do the response work and handle all the logistics and equipment. After the rehabilitation process is over they can showcase the bill to DPHE and DPHE will support them. In this way, the liability of DPHE equipment will be reduced and the work pressure will also be reduced. This will also increase the efficiency of emergency response.
- Guideline for resource decommissioning. Sometimes DPHE provides resources during the disaster and rehabilitation phase. But after the disaster is over or after the people settle down, those resources are not given back to DPHE. Sometimes the locals refuse to give it back, sometimes it is stolen, and sometimes it is damaged. There is a necessity for a guideline for what to do in such a situation.

Figure 4: Participants presenting their emergency response plans.

6. Conclusion:

At the end of the training, a brief closing session was arranged. Raushan Alam, SE, DPHE, Dhaka Circle DPHE, Md. Areef Anwar Khan, PD, DPHE, FREAP, Dhaka, and Saleha Khatun, Cluster Coordinator – WASH in Emergencies Specialist, UNICEF were present in the closing session.

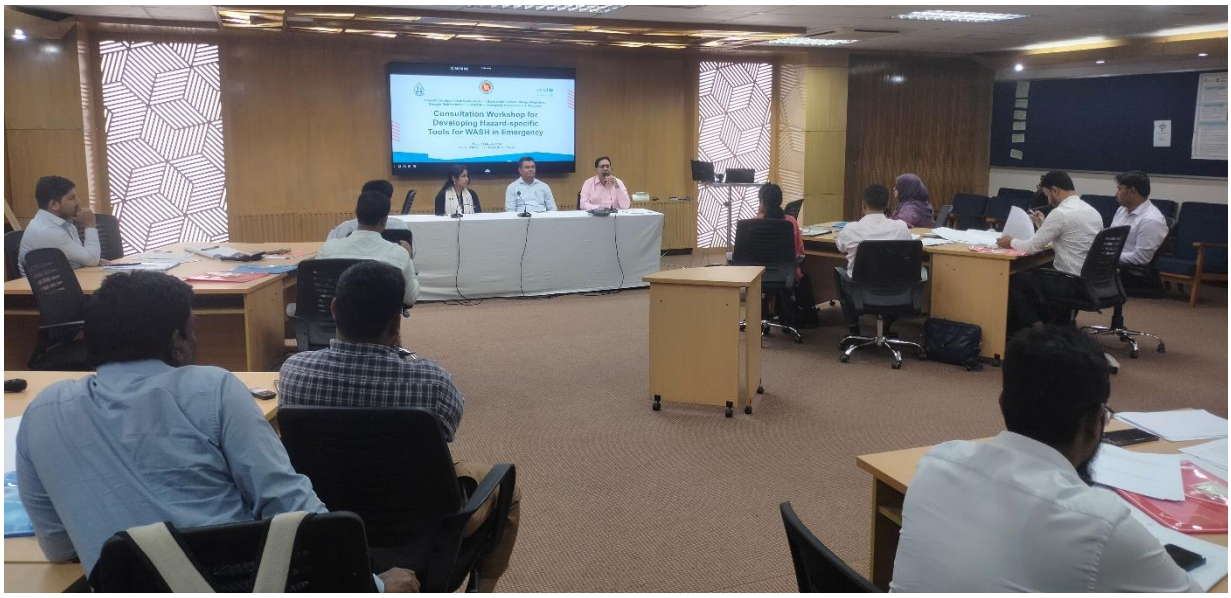

Figure 5: Guests of the workshop in the closing session

ANNEX

Annex-1: Schedule of Workshop

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

Consultation Workshop for Developing Hazard-specific Tools for WASH in Emergency

Venue: ITN Seminar Room, BUET, Dhaka
Date: 31 March 2024

Program Schedule

Time	Session Contents
9.30 – 10.00	Registration and network building
10:00 – 10:30	Opening Session
10.30 – 11.00	Background and overview of the capacity building program
11.00 – 11.30	Hazard-specific tools for WASH in emergency
11.30 – 12.15	Group work on hazard-specific tools and presentation
12.15 – 12.45	Open discussion
12.45 – 13.00	Closing Remarks and Certificate Distribution

Annex-2: List of Workshop Participants

SL.No.	Name of Participants	Designation
1.	Mohammad Kabir Chowdhury	PD, DPHE, 25 Town Project, Dhaka
2.	Raushan Alam	SE, DPHE, Dhaka Circle
3.	Md. Areef Anwar Khan	PD, DPHE, FREAP, Dhaka
4.	Dilruba Farzana	DPD, DPHE, 10 Town Project, Dhaka
5.	Dalila Afroze	EE, Arsenic Management, Dhaka
6.	Md. Yasin Arafat	EE, DPHE, Store Division, Dhaka
7.	Md. Robin Hossain	SAE, DPHE, Store Circle, Dhaka
8.	Md. Imran Tarafder	EE, DPHE, Barisal
9.	Md. Saihan Ali	EE, DPHE, Gaibandha
10.	Mohammad Azad Kazi	AE, DPHE, Zakigonj, Sylhet
11.	Md. Younus Ali	SAE, DPHE, Gowainghat, Sylhet
12.	Sujoy Karmokar	AE, DPHE, Sibganj, Chapainawbganj
13.	Md. Abul Kashem	EE, DPHE, Sunamganj
14.	Md. Yousuf Ali	SAE, DPHE, Nachol, Chapainawbganj
15.	Md. Moshiur Rahman	EE, DPHE, Netrokona
16.	Ahsan Habib	AE, DPHE, Kazipur, Serajganj
17.	Monjil Hossain	AE, DPHE, Godagari, Rajshahi
18.	Md. Shohidul Islam	EE, DPHE, Satkhira
19.	Md. Muztafizur Rahman	AE, DPHE, Asasuni, Satkhira
20.	Robiul Islam	SAE, DPHE, Mohonpur, Rajshahi
21.	Amit Kumar Sarkar	EE, DPHE, Chapainawbganj
22.	Muhammad Moshiur Rahman	EE, Netrokona
23.	Pankaj Kumar Saha	EE, DPHE, Rangpur
24.	Abul Manjur	AE, DPHE, Cox's Bazar
25.	Subrato Borua	AE, DPHE, Rangamati Sadar
26.	Md. Abdullah-al Mahmud	AE, DPHE, Dhakop, Khulna
27.	Harunur Rashid	EE, DPHE, Kurigram
28.	Abdur Razzak	AE, DPHE, Lama, Bandarban
29.	Chandrakishar Roy	AE, DPHE, Char Rajibpur, Kurigram
30.	Md. Khokon Rana	SAE, Sundarganj, Gaibandha

Annex-3: Feedback from the Participants

Sl No.	Disaster	Suggestions on the task	General Comment
1	Cyclone		• There should be a guideline on who will be in the emergency response team and how to form the team. • There is a need for a proper guideline by which an emergency response plan can be developed. The guideline can be from DPHE or it can be mentioned in the SOD so that all the stakeholders can develop an emergency response plan in the same format.
2	Landslide	• No Rainwater Harvesting system is used in the Landslide areas of the country. So, there is no effect on the rainwater harvesting system.	• There is a need for a software mechanism for resource mapping. If there is software that will give us the number, location, and condition of the resources of DPHE, then the risk assessment will be easier and more accurate. • There is a need to train the mechanics. Disaster Zone wise training is necessary.
3	Flood		• A floating Latrine is necessary. DPHE can collaborate with RFL for the development of a Floating latrine. • There is no emergency fund in DPHE. • A framework agreement can be developed by which contractors can be hired and given a specific area to work on. During disasters and after the disaster the contractors can do the response work and handle all the logistics and equipment. After the rehabilitation process is over they can showcase the bill to DPHE and DPHE will support them. In this way, the liability of DPHE equipment will be reduced and the work pressure will also be reduced. This will also increase the efficiency of emergency response.
4	Drought	• In the Barendra area, no deep tubewell is used. All are shallow tubewell	• Guideline for resource decommissioning. Sometimes DPHE provides resources during the disaster and rehabilitation phase. But after the disaster is over or after the people settle down, those resources are not given back to DPHE. Sometimes the locals refuse to give it back, sometimes it is stolen, and sometimes it is damaged. There is a necessity for a guideline for what to do in such a situation.

Annex-4(a): Group Work for Developing Hazard-Specific Tools for Wash In Emergency: Cyclone

WASH Emergency Response Plan: Cyclone

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1. Background:

In the last year, an extremely severe cyclonic storm event damaged 83,560 homes in Khulna. At least 4,00,000 people in 68 unions were affected in nine Upazilas of the district, of which Koyra Upazila was the worst hit. Both GO and NGOs worked together to protect the people and ensure adequate drinking water, sanitation, and hygiene facilities. Khulna District Administration, Mongla Port Authority, Bangladesh Navy, Bangladesh Coast Guard (BCG) of Mongla West Zone, Fire Service, and Civil Defence worked to rehabilitate the affected people of the coastal areas. Around 3,560 volunteers from different organizations, including Bangladesh Red Crescent and CPP, worked in different regions and 1,100 more volunteers from other non-government organizations (NGOs) were also in action while 116 medical teams with health workers worked in the cyclone-affected Upazilas. DPHE was the lead agency in the field of the WASH response where different development partners (e.g., UNICEF, JICA, etc.) provided support. Also, NGOs like SNV, BRAC, iDE Bangladesh, ProdiPan, Shushilan, Helvetas Bangladesh, NGO Forum for Public Health, JAAGO, Foundation Trust, HYSAWA, Jagorani Chakra Foundation (JCF) worked together.

The major sources of water and the major sanitation technologies used in the affected Upazilas are shown in **Table 1** and **Table 2,** respectively. It is predicted by the cyclone early warning system that there will be a cyclone this year that will hit the coastal areas of Bangladesh in 3 days, which may result in a storm surge 1.5 times more severe than the previous year's cyclone. Based on the previous year's experience, please develop an emergency response plan for the upcoming cyclone.

Table 1: Major water sources of the affected Upazila and the effect of last year's Cyclone

Major Water Sources	Total Number	No. Affected During Cyclone of the Previous Year
Tubewells	32,360	12,533
Rainwater Harvesting System	5,632	3,855
Pond Sand Filter (PSF)	70	45
Pond-based Ultrafiltration	23	15
Reverse Osmosis Plant for Desalination	8	3
Total	38,093	16,451

Table 2: Major sanitation technologies of the affected Upazila and the effect of last year's Cyclone.

Major Sanitation Technologies	Total Number	No. Affected During Cyclone of the Previous Year
Pit Latrine	15,064	7,522
Latrine with Septic Tank	11,205	3,752
Total	26,269	11,274

2. Planning for Emergency Response

2.1. Mitigation (Normal Stage)

1. As the forecasting agency has shared information about the disaster, what steps should be taken now to create awareness among local people?
2. Do you want to form an emergency response team (ERT)?
3. What is the purpose of the ERT?
4. Who will be the members of the ERT?
5. Will there be any volunteers in your ERT?
6. If yes, why?
7. When will you train the ERT?
8. How will you conduct the training for the ERT?
9. What is a mock drill?
10. Will you conduct a mock drill?
11. If yes, when?
12. Who will receive the mock drill?

2.2. Preparedness (Pre-disaster)

1. During normal times, how often you should conduct the WASH cluster meeting?
2. Since the forecasting agency has already provided a warning, how often you should conduct the WASH cluster meeting now?
3. How will you assess the available resources for emergency response in your working areas?
4. How will you assess the resource gaps?
5. Will you consult with the stakeholders?
6. What will you discuss with the stakeholders?
7. **Need assessment:**
    - What would be the total affected population in this year's Cyclone?
    - How many water sources do you think will be at risk of being affected by the Cyclone? (type and number of water sources)
    - How many sanitation infrastructures do you think will be at risk of being affected by the Cyclone? (type and number)
    - How many people will need hygiene kits? Among them, how many will be women, and how many will be children?

2.3. Response (During Disaster)

1. How will you arrange a safe water supply during the emergency period for the affected people? Describe your plan.
   (hints: estimate how many people will need water supply and how much water will be needed per day during the emergency, which technology/method will you use to supply the required amount of water, how will you transport water to the affected people, will you need support from other organizations or your organization to fulfill the demand alone, what kind of support will you need, etc.)
2. How would you deal with the sanitation challenge during the emergency? Describe your plan.
   (hints: estimate how many people will need sanitation system during the emergency, which technology/method will you use to address the challenge, will you need support from other organizations or your organization fulfill the demand alone, what kind of support will you need, etc.)
3. Do you have a contingency plan with a budget? If not, please explain how you will manage the emergency response resource.
4. What activities will you perform through the control room?
5. How do you ensure effective monitoring during your response?

2.4. Recovery (Post-disaster)

1. What activities will you consider in the recovery phase?
2. How do you ensure effective monitoring of recovery, rehabilitation, and reconstruction implementation after a disaster?

Annex-4(b): Group Work for Developing Hazard-Specific Tools for Wash-In Emergency: Flood

WASH Emergency Response Plan: Flood

1. Background:

Last year five Upazilas of Gaibandha district were affected by flood. The affected Upazilas were Sundarganj, Sadar, Fulchhari, Saghata, and Gobindaganj. The flood situation in the Gaibandha district inundated 35 out of 62 Unions in these five Upazilas. With the sharp increase in water level in the Karotoa River, the national highway at Hawakhana in Gobindaganj Upazila overflowed. The Karotoa and Brahmaputra rivers were flowing 16 cm above the danger marks, according to the district flood control room. Both GO and NGOs worked together to protect the people and ensure an adequate supply of drinking water, sanitation, and hygiene facilities. DPHE played the lead role in the WASH sector in emergency response where different development partners (e.g., UNICEF, JICA, etc.) provided support. NGOs like CA Friendship, SKS Foundation, Sinnomul Mohila Samity (SMS), Gana Uunayan Kendra (GUK), Cordaid, and the SONGO project worked together.

The population and number of Unions of the affected Upazilas in last year's flood are shown in **Table 3.** The affected major sources of drinking water and the major sanitation technologies in the affected Upazilas are shown in **Table 1** and **Table 2,** respectively. It is predicted by the flood forecasting agency that there will be another flood this year, which will be 1.5 times more severe than last year's flood. It has also been forecasted that the affected areas will remain underwater for 2 weeks. Based on the previous year's experience, DPHE wants to develop an emergency response plan for the upcoming flood.

Table 3: No. of Union and population of the affected Upazilas of Gaibandha in last year's flood

Upazilla	No. of Unions	Current Population	No. of Union Affected	Affected Population
Gaibandha Sadar	13	4,37,268	6	2,01,816
Fulchchari	7	1,65,334	7	1,65,334
Sundarganj	15	4,71,920	9	2,83,152
Saghata	10	2,67,819	8	2,14,255
Gobindaganj	17	5,14,696	5	1,51,381
Total	62	18,57,037	35	10,15,938

Table 4: Major water sources of the affected Upazilas and the effect of last year's flood

Upazilla	Major Water Sources	Total No. of TW	Total No. of RP	No. of TW Affected in Previous Year	No. of RP Affected in Previous Year
Gaibandha Sadar	TW	29,151	-	16,033	-
Fulchchari	TW, RP	11,022	827	6,062	703
Sundarganj	TW, RP	31,461	2,360	17,304	2,006
Saghata	TW, RP	17,855	1,339	9,820	1,138
Gobindaganj	TW	34,313	-	18,872	-
Total		1,23,802	4,526	68,091	3,847

Tube Well – TW, Rainwater Storage Pond - RP

Table 5: Major sanitation technologies of the affected Upazila and the effect of last year's flood

Upazilla	Major Sanitation Technologies	Current No. of PL	Current No. of ST	No. of PL Affected Previous Year	No. of ST Affected Previous Year
Gaibandha Sadar	PL, ST	48,585	20,822	29,151	12,493
Fulchchari	PL, ST	18,370	750	11,022	480
Sundarganj	PL, ST	52,436	22,472	31,461	13,483
Saghata	PL, ST	29,758	12,753	17,855	7,652
Gobindaganj	PL, ST	57,188	24,509	34,313	14,706
Total		2,06,337	81,306	1,23,802	48,814

Pit Latrine – PL, Latrines with Septic Tank - ST

2. Planning for Emergency Response

2.1. Mitigation (Normal Stage)

1. As the forecasting agency has shared information about the disaster, what steps should be taken now to create awareness among local people?
2. Do you want to form an emergency response team (ERT)?
3. What is the purpose of the ERT?
4. Who will be the members of the ERT?
5. Will there be any volunteers in your ERT?
6. If yes, why?
7. When will you train the ERT?
8. How will you conduct the training for the ERT?
9. What is a mock drill?
10. Will you conduct a mock drill?
11. If yes, when?
12. Who will receive the mock drill?

2.2. Preparedness (Pre-disaster)

1. During normal times, how often you should conduct the WASH cluster meeting?
2. Since the forecasting agency has already provided a warning, how often you should conduct the WASH cluster meeting now?
3. How will you assess the available resources for emergency response in your working areas?
4. How will you assess the resource gaps?
5. Will you consult with the stakeholders?
6. What will you discuss with the stakeholders?
7. **Need assessment:**
    - What would be the total affected population in this year's flood?
    - How many water sources do you think will be at risk of being affected by the flood? (type and number of water sources)
    - How many sanitation infrastructures do you think will be at risk of being affected by the flood? (type and number)
    - How many people will need hygiene kits? Among them, how many will be women, and how many will be children?

2.3. Response (During Disaster)

1. How will you arrange a safe water supply during the emergency period for the affected people? Describe your plan.
   (hints: estimate how many people will need water supply and how much water will be needed per day during the emergency, which technology/method will you use to supply the required amount of water, how will you transport water to the affected people, will you need support from other organizations or your organization to fulfill the demand alone, what kind of support will you need, etc.)
2. How would you deal with the sanitation challenge during the emergency? Describe your plan.
   (hints: estimate how many people will need sanitation system during the emergency, which technology/method will you use to address the challenge, will you need support from other organizations or your organization fulfill the demand alone, what kind of support will you need, etc.)
3. Do you have a contingency plan with a budget? If not, please explain how you will manage the emergency response resource.
4. What activities will you perform through the control room?
5. How do you ensure effective monitoring during your response?

2.4. Recovery (Post-disaster)

1. What activities will you consider in the recovery phase?
2. How do you ensure effective monitoring of recovery, rehabilitation, and reconstruction implementation after a disaster?

Annex-4(c): Group Work for Developing Hazard-Specific Tools for Wash In Emergency: Drought

WASH Emergency Response Plan: Drought

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1. Background:

In the Chapainawabganj district, several Upazilas suffered from a severe drought that struck between May and June last year. This area is predominantly reliant on groundwater for its water needs. About 85% of the total population uses tube wells as a water source; among which 51% of the population depends on deep tubewells and 34% relies on shallow tube wells for their water supply.

Other water sources in the region include:

- 5% of the population uses pond water for drinking purposes.
- 7% of the population relies on municipal water supply.
- 3% of the population utilizes Rainwater Harvesting Systems (RHS).

During the last year's drought -

- Among the shallow tube wells, 90% faced an acute shortage of water.
- Among the deep tube wells, 60% faced an acute shortage of water, 30% faced a medium shortage of water, and 10% were not affected by the drought.

Additional information:

1. People utilizing Rainwater Harvesting Systems had used their stored rainwater by the end of May.
2. Among ponds that are used for drinking water, all of them dry up before May.

It is predicted that there will be an extended drought this year which will be 1.5 times more severe than the previous drought as per the forecasting agency. The major sources of water and the major sanitation technologies used in the affected areas last year are shown in **Table 1** and **Table 2,** respectively. Based on the previous years' experience, DPHE wants to develop an emergency response plan for the upcoming drought.

Table 6: Major water sources of the affected area and the effect of previous drought

Upazila	Population	Major Water Sources with Number				
		Shallow Tubewell	Deep Tubewell	Pond	Municipal Water Supply Zone	Rainwater Harvesting System
Chapainawabganj Sadar	530,592	13,562	23,512	33	113	43
Gomostapur Upazila	275,823	9,642	18,388	137	35	12
Bholahat Upazila	103,301	4,123	7,893	176	3	23
Nachol Upazila	146,627	5,865	9,775	156	38	18
Shibganj Upazila	591,178	14,175	29,643	123	46	32
Total	1,647,521	47,367	89,211	625	235	128

Table 7: Major sanitation technologies of the affected area and the effect of previous drought

Upazila	Population	Major Sanitation Facilities with Number	
		Pit Latrine	Latrine with Septic Tank
Chapainawabganj Sadar	530,592	26,530	8,843
Gomostapur Upazila	275,823	13,791	4,597
Bholahat Upazila	103,301	5,165	1,722
Nachol Upazila	146,627	7,331	2,444
Shibganj Upazila	591,178	29,559	9,853
Total	1,647,521	82,376	27,459

2. Planning for Emergency Response

2.1. Mitigation (Normal Stage)

1. As the forecasting agency has shared information about the disaster, what steps should be taken now to create awareness among local people?
2. Do you want to form an emergency response team (ERT)?
3. What is the purpose of the ERT?
4. Who will be the members of the ERT?
5. Will there be any volunteers in your ERT?
6. If yes, why?
7. When will you train the ERT?
8. How will you conduct the training for the ERT?
9. What is a mock drill?
10. Will you conduct a mock drill?
11. If yes, when?
12. Who will receive the mock drill?

2.2. Preparedness (Pre-disaster)

1. During normal times, how often you should conduct the WASH cluster meeting?
2. Since the forecasting agency has already provided a warning, how often you should conduct the WASH cluster meeting now?
3. How will you assess the available resources for emergency response in your working areas?
4. How will you assess the resource gaps?
5. Will you consult with the stakeholders?
6. What will you discuss with the stakeholders?
7. **Need assessment:**
    - What would be the total affected population in this year's Drought?
    - How many water sources do you think will be at risk of being affected by the Drought? (type and number of water sources)
    - How many sanitation infrastructures do you think will be at risk of being affected by the Drought? (type and number)
    - How many people will need hygiene kits? Among them, how many will be women, and how many will be children?

2.3. Response (During Disaster)

1. How will you arrange a safe water supply during the emergency period for the affected people? Describe your plan.
   (hints: estimate how many people will need water supply and how much water will be needed per day during the emergency, which technology/method will you use to supply the required amount of water, how will you transport water to the affected people, will you need support from other organizations or your organization to fulfill the demand alone, what kind of support will you need, etc.)
2. How would you deal with the sanitation challenge during the emergency? Describe your plan.
   (hints: estimate how many people will need sanitation system during the emergency, which technology/method will you use to address the challenge, will you need support from other organizations or your organization to fulfill the demand alone, what kind of support will you need, etc.)
3. Do you have a contingency plan with a budget? If not, please explain how you will manage the emergency response resource.
4. What activities will you perform through the control room?
5. How do you ensure effective monitoring during your response?

2.4. Recovery (Post-disaster)

1. What activities will you consider in the recovery phase?
2. How do you ensure effective monitoring of recovery, rehabilitation, and reconstruction implementation after a disaster?

Annex-4(d): Group Work for Developing Hazard-Specific Tools for Wash In Emergency: Landslide

WASH Emergency Response Plan: Landslide

1. Background:

Excessive rains associated with heavy thunderclaps over several days led to wide-scale landslides in Rangamati in the previous year. The landslide claimed 74 souls including 5 army personnel in Rangamati Sadar Upazila. Ethnically, the death toll reads to be 61 Hill people and 60 Bengali people. Especially, in the Upazilas of Rangamati Sadar, Kaptai, Juraichari, Bilaichari, etc., the houses, hundred acres of groves and plantations, and cultivable lands got damaged. Both GO and NGOs worked together to protect the people and ensure an adequate supply of drinking water, sanitation, and hygiene facilities. DPHE played the lead role in the WASH sector in emergency response where different development partners (e.g., UNICEF, JICA, etc.) provided support. NGOs like DSK, YPSA, SOPNIL, WSUP, World Vision, BRAC, Caritas Bangladesh, and Green Will worked together.

The population and number of Unions in the affected Upazilas in last year's landslide are shown in **Table 3.** The major sources of water and the major sanitation technologies used in the affected Upazilas are shown in **Table 1** and **Table 2,** respectively. It is predicted by the Bangladesh Meteorological Department that there is a possibility of persistent rainfall for a couple of weeks, which might result in a landslide this year as well. Based on the previous year's experience, DPHE wants to develop an emergency response plan for the upcoming landslide.

Table 8: No. of Union and population of the affected Upazilas of Rangamati in the Previous year's Landslide

Upazilla	No. of Unions	Current Population	No. of Union Affected	Affected Population
Rangamati sadar	6	1,24,728	5	83,152
Kaptai	5	59,693	4	35,816
Bilaichari	3	17,973	3	17,973
Juraichari	4	11,621	3	7,263
Total	18	214,015	15	144,204

Table 9: Major water sources of the affected Upazila and the effect of last year's landslide

Upazila	Major Water Sources	Total No. of PRW	Total No. of RHS	No. of PRW Affected Last Year	No. of RHS Affected Last Year
Rangamati Sadar	PRW, RHS	8,315	2,495	4,302	855
Kaptai	PRW, RHS	3,980	1,194	1,489	687
Bilaichari	PRW	1,198	-	566	-
Juraichari	PRW	775	-	412	-
	Total	14,268	3,689	6,769	1,542

Protected Ringwell – PRW, Rainwater Harvesting System - RHS

Table 10: Major sanitation technologies of the affected Upazila and the effect of last year's landslide

Upazilla	Major Sanitation Technologies	Current No. of PL	Current No. of ST	No. of PL Affected Last Year	No. of ST Affected Last Year
Rangamati sadar	PL, ST	4,158	1,782	1,250	891
Kaptai	PL, ST	1,990	853	905	301
Bilaichari	PL	599	-	468	-
Juraichari	PL, ST	387	166	156	56
	Total	7,134	2,801	2,779	1,248

Pit Latrine- PL, Latrine with Septic Tank- ST

2. Planning for Emergency Response

2.1. Mitigation (Normal Stage)

1. As the forecasting agency has shared information about the disaster, what steps should be taken now to create awareness among local people?
2. Do you want to form an emergency response team (ERT)?
3. What is the purpose of the ERT?
4. Who will be the members of the ERT?
5. Will there be any volunteers in your ERT?
6. If yes, why?
7. When will you train the ERT?
8. How will you conduct the training for the ERT?
9. What is a mock drill?
10. Will you conduct a mock drill?
11. If yes, when?
12. Who will receive the mock drill?

2.2. Preparedness (Pre-disaster)

1. During normal times, how often you should conduct the WASH cluster meeting?
2. Since the forecasting agency has already provided a warning, how often you should conduct the WASH cluster meeting now?
3. How will you assess the available resources for emergency response in your working areas?
4. How will you assess the resource gaps?
5. Will you consult with the stakeholders?
6. What will you discuss with the stakeholders?
7. **Need assessment:**
    - What would be the total affected population in this year's Landslide?
    - How many water sources do you think will be at risk of being affected by the Landslide? (type and number of water sources)
    - How many sanitation infrastructures do you think will be at risk of being affected by the Landslide? (type and number)
    - How many people will need hygiene kits? Among them, how many will be women, and how many will be children?

2.3. Response (During Disaster)

1. How will you arrange a safe water supply during the emergency period for the affected people? Describe your plan.
   (hints: estimate how many people will need water supply and how much water will be needed per day during the emergency, which technology/method will you use to supply the required amount of water, how will you transport water to the affected people, will you need support from other organizations or your organization to fulfill the demand alone, what kind of support will you need, etc.)
2. How would you deal with the sanitation challenge during the emergency? Describe your plan.
   (hints: estimate how many people will need sanitation system during the emergency, which technology/method will you use to address the challenge, will you need support from other organizations or your organization fulfill the demand alone, what kind of support will you need, etc.)
3. Do you have a contingency plan with a budget? If not, please explain how you will manage the emergency response resource.
4. What activities will you perform through the control room?
5. How do you ensure effective monitoring during your response?

2.4. Recovery (Post-disaster)

1. What activities will you consider in the recovery phase?
2. How do you ensure effective monitoring of recovery, rehabilitation, and reconstruction implementation after a disaster?