

**WASH Cluster Bangladesh Inter Agency Contingency Plan for Cyclones**

DRAFT

## 1. Executive Summary

### 2. Context and Risks

According to the World Risk Index 2013<sup>1</sup> Bangladesh is ranked as 5<sup>th</sup> most disaster prone country out of 173 countries around the globe that are most prone to natural disasters. Bangladesh also falls among top 25 countries that lack adequate capacities to cope with disasters. The size and density of the population, together with regular extreme weather events, such as tropical cyclones, storm surges and floods make the country extremely vulnerable to natural hazards becoming natural disasters.

#### 2.1 Tropical Cyclones

Devastating tropical cyclones hit the coastal areas of Bangladesh almost every year usually accompanied by high-speed winds, sometimes reaching 250 km/hr or more and 3-10m high waves, causing extensive damage to life, property and livestock. Cyclones in the Bay of Bengal occur in two seasons; April-June and October-November; before and after the monsoons. The Bay of Bengal is one of the regions in the world which is frequently affected by storm surges associated with tropical cyclones. 5% of global tropical cyclones form over the Bay of Bengal. Cyclones usually originate in the southern parts of the Bay of Bengal in the Andaman Sea, where they move from the West before curving to the North and Northeast. The Bay cyclones also move towards the eastern coast of India, towards Myanmar and occasionally into Sri Lanka. 80% of global casualties due to cyclones occur in this region. Bangladesh is situated at the northern tip of the Bay of Bengal and suffers from the highest and longest duration of storm surges due to its long continental shelf, northward-converging nature, complex coastal geometry with many kinks and islands, high tides and long tidal range between the east and west coasts. Bangladesh is particularly vulnerable to the effects of cyclones because of its low, flat terrain, high population density and poorly built houses. The UNDP has officially identified Bangladesh as the most vulnerable country to cyclones.

Most of the damage typically occurs in the coastal regions of Khulna, Patuakhali, Barisal, Noakhali and Chittagong and the offshore islands of Bhola, Hatiya, Sandwip, Manpura, Kutubdia, Maheshkhali, NijhumDwip, Urir Char and other newly formed islands.

Within the past 15 years, Bangladesh has experienced an increase in the frequency and intensity of natural disasters, including cyclones<sup>2</sup>. Since 1985, Bangladesh has experienced 107 cyclonic activities<sup>3</sup> that include Tropical Cyclones, Local Storms etc. These have resulted in the death of

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<sup>1</sup>Source: World Risk Index 2013 <http://www.weltrisikobericht.de/Tables.364.0.html?&L=3> . The ranking is made on the basis of Exposure, Vulnerability & Susceptibility to disasters along with lack of coping and adaptive capacities, at the country level.

<sup>2</sup> MoEF 2008

<sup>3</sup>Source: "EM-DAT: The OFDA/CRED International Disaster Database

165,615 people and affected about 54 million people. The economic damages that these events have inflicted amount to a staggering 5 billion USD.

Despite the fact that there has been a relative reduction in the impact of natural disasters over last 30 years in terms of casualties, which could be attributed to the improved macro-economic management, increased resilience and progress in disaster management, damage due to storm surges and cyclones continue to be enormous and widespread in Bangladesh.

### Recent History of Major Cyclones

1. CYCLONE SIDR, 2007: The storm caused large scale damage, but massive evacuations led to a significantly lower loss of life (Death toll: 3,447)
2. CYCLONE AILA, 2009: Damage was colossal, and half a million were evacuated (Death toll: Approximately 200)
3. CYCLONE MAHASEN, 2013: Severity of damage was minimal due to a weakened storm, but preparedness from all levels were high and more than 700,000 people were evacuated. However, post disaster rehabilitation efforts were disappointing (Death toll: 17)

### Seasonality of Tropical Cyclones in Bangladesh

Yearly Hazards	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Rainy Season												
Tropical Storm Season												

Cold Wave   
 Heat Wave   
 Monsoon   
 Storm   
 Cyclone

## 2.2 Silent Emergencies

With a population of more than 150 million people, Bangladesh is one of the most densely populated countries in the world. Aside from natural disasters, tens of thousands of Rohingya refugees (Muslim minority ethnic group from Myanmar) have been living in official and informal refugee settlements, while a far larger number live as ‘illegal economic migrants’ throughout Bangladesh. This is often referred to, as a ‘forgotten crisis’<sup>4</sup>.

As observed in the Global Assessment Report on Disaster Risk Reduction 2013 (UNISDR) , accumulated losses from small scale and localized but highly frequent disaster events often are equal to the magnitude of those (losses) from major disasters. They not only contribute to the

<sup>4</sup>[http://ec.europa.eu/echo/files/policies/strategy/fca\\_2011\\_2012.pdf](http://ec.europa.eu/echo/files/policies/strategy/fca_2011_2012.pdf)

decline in ecosystem but also undermine local development as well as national competitiveness. The same could be said about the socio-economic impact of recurrent flooding in Satkhira in Southern Bangladesh.

Water Quality issues, mainly Arsenic and Salinity is a growing concern of Bangladesh. At National Plan for Disaster Management 2010-15 identified both water quality issue as a dangerous environmental threat and a serious health risk. As per MICS 2012/13 near about 19 million people drinking Arsenic Contaminated water as per Bangladesh WQ –Arsenic Standard.

Saline water intrusion is mostly seasonal in Bangladesh; in winter months the saline front begins to penetrate inland, and the affected areas rise sharply from 10 percent in the monsoon to over 40 percent in the dry season. Coastal districts such as Satkhira, Khulna, Bagerhat, Barguna, Pataskala, Barisal are the victims of salinity intrusion. Agricultural production, fisheries, livestock, and mangrove forests are affected by higher salinity in the dry season. It is observed that dry flow trend has declined as a result of which sea flow (saline water) is traveling far inside the country resulting in contamination both in surface and ground water. <sup>5</sup>

### **3. WASH Cluster Emergency Response Strategy & Objectives**

Since 2007 WASH Cluster in Bangladesh has been working to strengthen the humanitarian response through partnership, in order to achieve better prioritization of available resources. WASH Cluster is committed to supporting the humanitarian community by ensuring participation of all the key WASH partners in planning, establishing and maintaining appropriate humanitarian coordination mechanisms, to ensure complementarity between all WASH actors.

#### **3.1 WASH Cluster Cyclone Emergency Response Objectives**

##### **3.1.1 Goal**

- Contribute (along with other clusters) to measurable improvements in population health through the efficient, effective, and timely implementation of ‘early recovery’ Water, Sanitation, and Hygiene programmes targeted at the most vulnerable populations as identified collectively.

##### **3.1.2 Overall Objectives**

- Restore access to safe drinking water to pre-crisis level
- Restore access to sanitation facilities to pre-crisis level
- Improve water and sanitation facilities in temporary communal centers till such time as displaced populations return to their original places of dwelling including the vector control and appropriate management of drainage and solid waste.
- Enhance personal hygiene standards and ensure availability of supplies.

##### **3.1.3 EXPECTED OUTCOMES (JSB)**

- Men, women and children in disaster-affected locations have increased access to, and have made optimal use of, water and sanitation facilities, and have taken action to protect themselves against threats to public health.
- No major outbreaks of WASH-related communicable disease in targeted areas
- Reduction in prevalence of WASH-related communicable diseases

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<sup>5</sup> National Plan for Disaster Management 2010-15

### **3.1.4 Specific Objectives and Indicators**

#### **Water**

- All men, women and children have access to safe drinking and domestic water up to pre-disaster levels within nine months.

#### **Indicators**

- Percentage of people with access to 15 litres per person per day of potable water
- Percentage of people whose distance from shelter/home to water collection is less than 500m
- Water supply meets national water quality standards

#### **Sanitation**

- 80% Men women and children have restored access to safe sanitary facilities to pre-disaster levels within nine months, and use fixed place defecation

#### **Indicators**

- No faecal matter is observed in target villages
- All newly constructed latrines conform to design standards, including those for vulnerable individuals
- There is at least 85% coverage of sanitary latrines per target villages
- More than 80% of men, women and children are using and maintaining latrines as evidenced by hygiene condition and availability of soap or ash inside the latrine
- More than 75% of women and girls express satisfaction with the safety and privacy of latrines and bathing facilities
- More than 80% of affected populations have knowledge and means to protect themselves from the disease and nuisance vectors
- ALL the affected population has an access to litter-free environment and means to dispose their domestic waste conveniently and effectively.

#### **Hygiene/Health Promotion**

- All men, women and children in the disaster zone are enabled to practice safer hygiene in a dignified and culturally appropriate manner within nine months of the disaster

#### **Indicators:**

- 80% of men, women, and children can demonstrate knowledge of key hygiene practices within nine months

### **3.2 Strategies (Ref. to this and above, JSB 2008...should be definitely revised)**

To meet these objectives, priority strategies for the post-disaster transition period are therefore to:

- Focus on ground-water scarce areas where access to safe drinking water is limited, and continue emergency supply until sustainable alternatives are restored.
- Target the most vulnerable in the affected areas, especially female-, elderly-, and child-headed households, widows, families with more than six children of school age.
- Prioritise pond cleaning, protection, and structural rehabilitation (of banks, linings, and Pond Sand Filters), and ensure sustained operation through training of Village Water-Sanitation Committees.
- Enhance rain-water harvesting at household and community levels, including in Cyclone Shelters.
- Provide WASH-related NFIs including soap, culturally acceptable sanitary items (e.g clean cloth instead of disposable sanitary napkins), and locally-produced aluminium water containers to the maximum extent feasible in close cooperation with other NFI distributions (e.g Shelter).

- Support provision of safe water and sanitation in temporary schools, 'child-friendly spaces', communal facilities, and cyclone shelters.
- Support community-based hygiene promotion using multiple communication methods.
- Strengthen community Water-Sanitation Committees in operation, maintenance, and management of water supply and sanitation systems.
- Monitor progress made in improving availability and access to safe water through surveys in comparison to GoB post Mahasen baselines.

### 3.3 Guiding Principles

WASH Cluster will;

- Clarify roles and responsibilities of various WASH actors and provide a clear focal point for emergency interventions.
- Ensure that activities are undertaken in conjunction with the national / local authorities and in participation with the communities, themselves.
- Encourage Partners to link their WASH programmes with those agencies constructing transitional housing so that dwellings are not without access to safe water and sanitation, and that pit latrines are not constructed alongside families still living in emergency shelter.
- Ensure provision of safe water and sanitation services to rehabilitated primary and secondary schools is encouraged. Attention should be given when doing so to inclusion of hygiene promotion messages within the curriculum, and maintenance by the school committee
- Monitor the adherence to global standards contextualized to national situations, in order to ascertain the equality, accountability and partnership.
- Support the mainstreaming of cross-cutting issues like Gender, Environment, DRR within WASH programming, from day-one.

### 3.4 Activities and Plans

WASH cluster Bangladesh categorized its activities and plans into 10 main categories. Beginning of the year, they jointly developed annual work plan and execute agreed activities round the year (Annex zz – Detail Annual Work Plan -2014). Major 10 categories for planning and activities are as follow:

- i. Coordination : National level, divisional level and district level
- ii. Need Assessment : Pre-crisis situation, In-crisis situation and post-crisis situation
- iii. Monitoring: In-crisis process and result
- iv. Technology : New technologies of WASH in Emergencies
- v. Emergency Preparedness : Contingency Stock, Pre-Positioning, Inventory Management
- vi. Standardization : Emergency related Water, Sanitation, Hygiene related activities and products standardization
- vii. Planning and Strategy: WASH in Emergency Guideline, Contingency Planning, Coordination, Collaboration
- viii. Advocacy & Resource Mobilization: Resource leverage, WASH in Emergency situation
- ix. Capacity building: National and local Cluster members , Government agencies on climate change, WASH in Emergencies, Need Assessment, Monitoring, WASH technologies etc

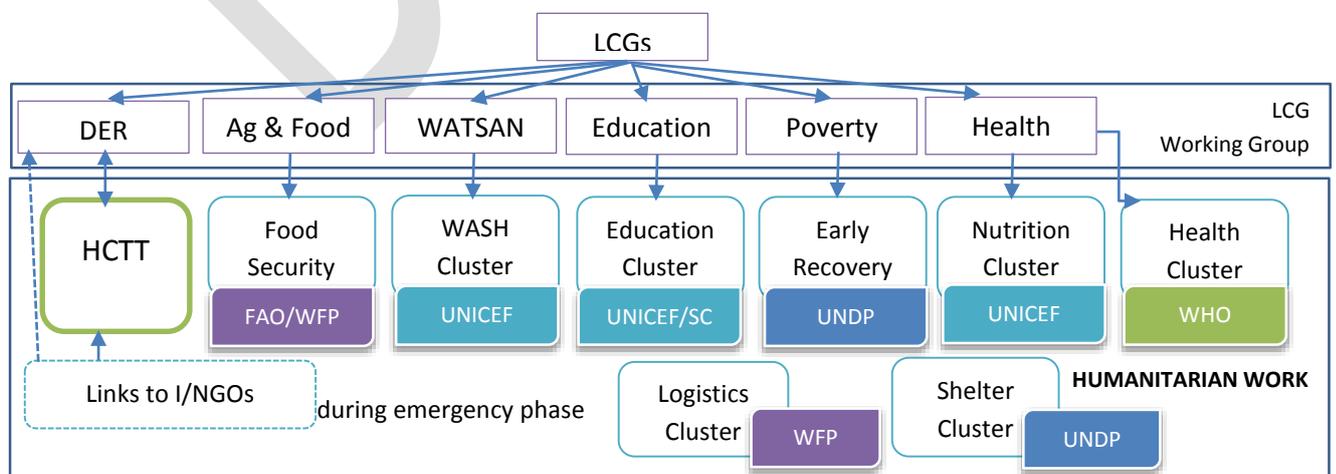
### 3.5 WASH Cluster Coordination Mechanism

#### 3.5.1 Global

Linkages would be established with Global WASH Cluster for surge capacity support and immediate deployment of WASH RRT IM Officers and Rapid Assessment Team (RAT) members to support the ongoing joint and inter-sectoral assessments. Support would be solicited from Regional Emergency Cluster Advisor (RECA) for guidance in the day to day operations of the cluster and physical coordination monitoring support, if required.

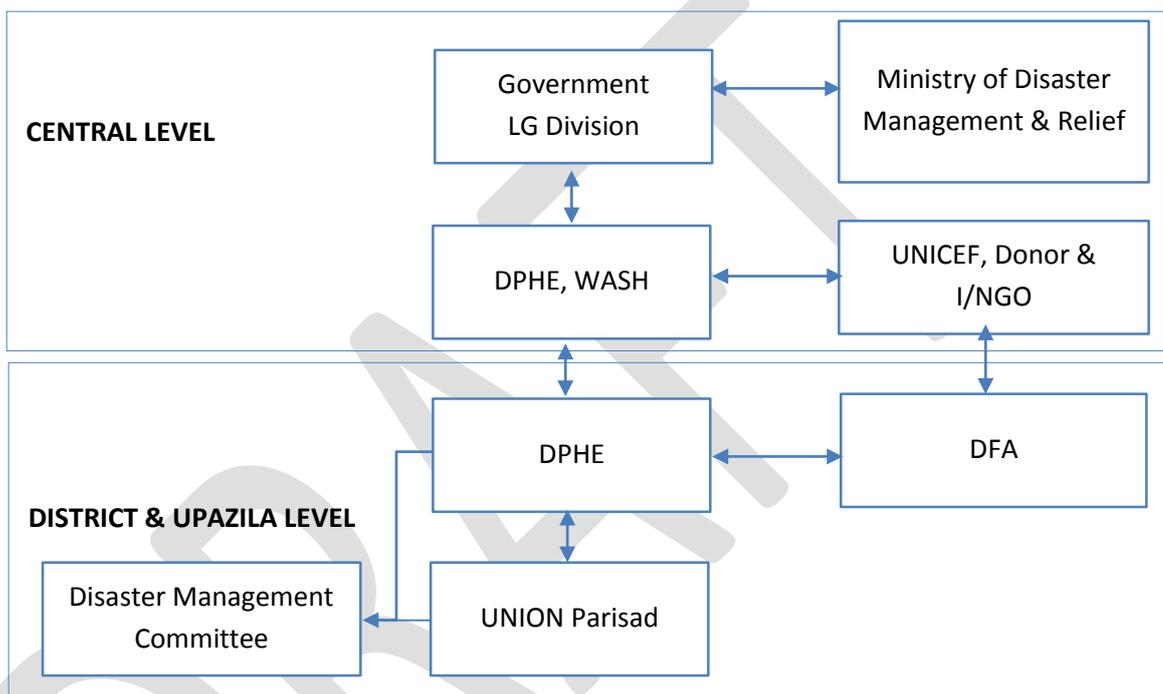
#### 5.1.2 National and Divisional WASH Clusters

- The activation of the various Clusters is decided by these Bangladeshi national authorities:
  - Ministry of Disaster Management & Relief
  - Department of Disaster Management (DDM)
  - UN Resident Coordinator
  - Cluster Lead Agencies
- The main decision-making level of the WASH Cluster at the national level, is in Dhaka, where most member agencies have their headquarters. However, coordination and information management mechanisms must be replicated at regional (division, district) and local (upazila, union) levels, ensuring bidirectional flow of information.
- At the national and division levels, **DPHE and UNICEF lead the WASH Cluster**. The primary job of the Cluster co-leads is to ensure that collective response meets humanitarian needs. DPHE and UNICEF are responsible for coordination with relevant GoB authorities, Local Government Division, Ministry of Disaster Management & Relief, DDM, Humanitarian Co-ordination Task Team (HCTT), Disaster Emergency Group, and other Cluster Leads. Coordination meetings will be organised weekly during emergency response and monthly during early recovery.
- Strategic issues will be decided on behalf of Cluster partners by SAG, which meets on an as-required basis in Dhaka or at the Division level. SAG is composed of agencies that have a substantial WASH component in their disaster response package. Members of this group are self-selecting and may opt out at any time. Representatives of other Clusters, particularly Shelter, Education, and Health, will be invited to join.
- Technical matters are discussed in small technically-qualified teams called Technical Working Groups (TWGs) under a Focal Point from within the WASH Cluster as identified by the Cluster Coordinator. TWGs will convene in response to needs expressed by Cluster partners. TWGs are accountable to WASH Cluster partners and report through the SAG.



### 5.1.3 District, Upazila and Union WASH Clusters

- At the district, upazila and union levels, DPHE and one volunteer WASH NGO will act as local co-lead which known as District Focal Agency of the WASH Cluster and will chair periodic coordination meetings. They also are responsible for the coordination with local authorities such as DCs, UNOs, UPs and other Clusters.
- All local WASH cluster members are accountable to their local WASH Cluster co-leads, who are responsible to ensure that all members share information and apply the Cluster's recommendations. The co-leads of the local Cluster are accountable to their regional WASH Cluster co-leads, who are responsible for dissemination of the Cluster's recommendations. Regional WASH Cluster co-leads are accountable to the National WASH Cluster co-leads, namely DPHE and UNICEF. Detail Co-ordination diagram at Annex -yy



#### 4.0 Vulnerability Analysis

With about 700 km of coastline (nearly 20% of land mass in coastal areas), a huge part of Bangladesh is highly vulnerable to cyclonic storms. Of the 13 coastal districts, 9 are at very high risk of cyclone (Working Note: WASH Cluster Focal Agency Activation, 2013). Furthermore 4 districts are prone to tidal surge, flooding and riverbank erosion.

The flat southern part of Bangladesh is highly populated with over 27 million people exposed to cyclone risk. Vulnerability to natural disasters is further exacerbated by a very high population density (800 people / sq. km), coupled with abject poverty. Almost 80% of its population lives on less than 2 USD / day<sup>6</sup>. Despite being (unfortunately) habituated to living-with-risk, the situation limits the opportunities for coping with the recurrent emergencies and their aftermath.

As per JMP 2014 reports, 85% of total population has access to improved water sources<sup>7</sup> including piped water on premises and other improved sources like public taps, tube wells, protected dugwells, springs and rainwater collection. However the sanitation coverage is still abysmal, with only 57%<sup>7</sup> of the total population having access to improved sanitation facilities. The average coverage figures deplete in the coastal areas with difficulties in physical access (Hard-to-Reach), inappropriate maintenance of facilities and inadequate funding provisions.

Hazard Type	# of Population
Cyclone	16,497,336
Drought	6,808,683
Flash Flood Zone	6,786,611
Flood & River Bank Erosion Zone	10,908,215
Water Logging Zone	2,764,547
<b>Grand Total</b>	<b>43,765,392</b>

Contamination of ground water table has been a problem in cyclone prone districts like Noakhali (and South Western district like Jessore which is vulnerable to water logging) with naturally occurring arsenic, which adversely affects the health of millions of people.

#### 4.1 Risks to WASH Infrastructure and Communities

Cyclonic events have left a devastating impact on the vulnerable communities. Impact of cyclones directly affect the WASH capacities (ability to access improved WASH services) of people leading to long-lasting effects on the existing infrastructure and service delivery system, which is already bearing brunt of development deficit. Risks from cyclone events for WASH sub-sectoral infrastructure and services could be listed<sup>8</sup> as follows;

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<sup>6</sup> Source: DFID 2011

<sup>7</sup>WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<http://www.wssinfo.org/>).

<sup>8</sup>Source: ECHO Model guidelines for Mainstreaming Water and Sanitation in emergencies, Protracted Crises, LRRD and Disaster Preparedness Operations, 2005

### Water Supply:

- Physical damage to above ground water supply infrastructure due to heavy winds and windblown debris (destruction of roofs, breakages in exposed pipelines due to falling trees, damage to elevated water tanks)
- Breaks in pipelines and structural failure of pipelines because of earth settling associated with flooding; wave damage to embankments of dams and intake structures)
- Damages to water sources, pipelines, river intakes, dams and impoundments, and protected springs due to uprooting of trees and/or falling trees and utility poles.
- Blockages and damages in water sources, protected springs (screens), screens of river intakes, water treatment plants, water storage systems, dams and impoundments (filling and overtopping of reservoirs), and pump stations caused by debris.
- Flooding and under-scouring of foundations of above ground pumps and electrical equipment, treatment plants, storage tanks and pipelines.
- Change in water quality because of landslides caused by the cyclones.

### Sanitation

- Physical damage to above ground sanitation infrastructure due to heavy winds (destruction of latrine superstructures, waste collection systems, etc.).
- Damage associated with floods and landslides caused by cyclones
- Non-functioning of water & sanitation infrastructure due to power outages and short-circuiting.

### Hygiene

- Standing pools of contaminated water and/or sewage if water and/or sewage systems are affected.
- Debris and mud cause generally unhygienic circumstances.
- Cadavers of animals and people left un-buried.
- Contaminated water used for drinking.
- Increased open defecation.
- Disruption to vector control measures

## 4.2 Planning Scenarios

To identify critically affected and vulnerable populations in the cyclone prone areas for contingency planning, the team identified six indicators, of which four are hydro-geographical and two are socioeconomic (Table xx). These are verifiable in terms of data availability and reliability in the context of Bangladesh.

INDICATOR	DATA SOURCE	SCALE (DATA)
GROUNDWATER TABLE	DPHE, BWDB	National and District
IMPROVED DRINKING WATER COVERAGE	MICS 2009, JICA-DPHE	National and District
SANITATION COVERAGE	MICS 2009, DHS 2011	National and District
HOTSPOTS (NATURAL DISASTERS)	NAPA, SRDI, World Bank	National and District
POVERTY	WFP,BBS, World Bank	National and District
CHILD MORTALITY	MICS 2009	National and District

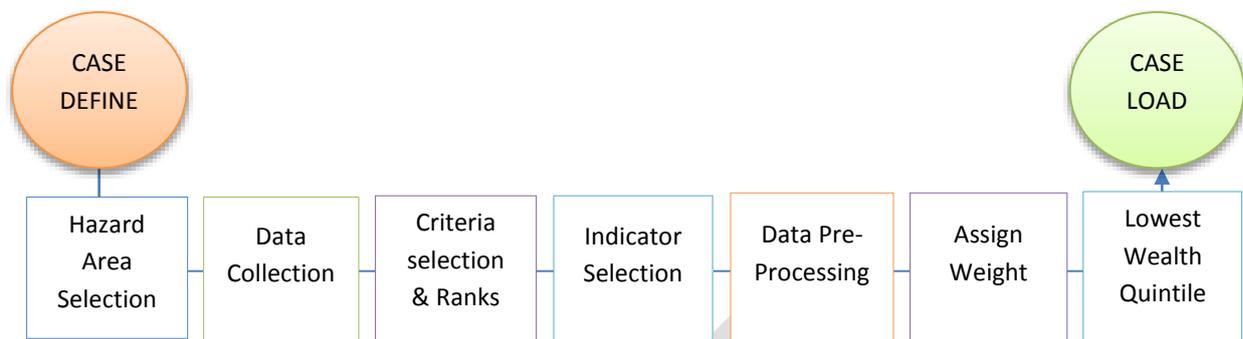
Lowest wealth quintile has been considered for further targeting. Resulting caseloads of populations vulnerable to cyclone are categorized into Min, Moderate and Max Case Scenarios.

Min case scenario focuses only on critically vulnerable people who lives at lowest wealth quintile at extreme-hard-to-reach<sup>9</sup> area, indicating the need to reach out to only those who need the Cluster support the most, considering that the hazard intensity and thereby the geographical coverage was low. Moderate case scenario however covers people in very- hard-to- reach areas<sup>9</sup>, indicating widened coverage, which is the same for the Worst case scenario, which has widespread geographical coverage of the hazard.

District	MOST CYCLONE PRONE AREA CASE LOAD (Population)		
	MIN CASUALTY (Wind speed Less than 170 kmph, risk of power failure)	MODE CASUALTY (170-225 kmph , flooding, damage to infrastructure)	MAX CASUALTY (225-280 kmph, major inundation, large scale damage to infrastructure)
BAGERHAT	32,273	75,314	75,314
BARGUNA	108,727	138,607	138,607
BHOLA	188,097	202,661	202,661
COX'S BAZAR	50,860	181,556	202,580
KHULNA	84,193	167,250	167,250
NOAKHALI	87,150	100,074	100,074
PATUAKHALI	108,727	138,607	138,607
SATKHIRA	152,632	166,175	166,175
PIROJPUR	76,642	114,964	229,927
<b>TOTAL</b>	<b>889,302</b>	<b>1,285,207</b>	<b>1,421,195</b>

<sup>9</sup> Hard-To-Reach-Areas: Providing Water Supply and Sanitation Services to All, November 2012

**Caseload Calculation Method:** In Bangladesh, out of 64, 20 districts are identified as most vulnerable<sup>10</sup> districts. Out of this 20 most vulnerable districts, 9 are identified for most cyclone prone districts. Following method is applied to determine WASH contingency planning caseload.



**Caseload MINIMUM: RULE**

IF safe water coverage is very low  
 AND IF sanitation coverage is also very low  
 AND IF groundwater level is very low  
 AND IF it is in hotspots areas  
 AND IF poverty status is very high  
 AND IF child mortality is very high  
 COUNT lowest wealth quintile people  
 THEN

The caseload will be demarcated as a **MINIMUM** Casualty

**Description of MINIMUM Caseload**

People who lives at extreme WASH hard to reach location and belongs to lowest wealth quintile at the most vulnerable area of cyclone

**Caseload MODERATE: RULE**

IF safe water coverage is low  
 AND IF sanitation coverage is low  
 AND IF groundwater level is in moderate zone  
 AND IF it is either in or not in hotspots areas  
 AND IF poverty status is moderate  
 AND IF child mortality is moderate  
 COUNT lowest wealth quintile people  
 ADD MINIMUM caseload  
 THEN

The caseload will be demarcated as a **MODERATE** Casualty

**Description of MODERATE Caseload**

People who lives at extreme and very WASH hard to reach location and belongs to lowest wealth quintile at the most vulnerable area of cyclone

**Caseload MAXIMUM: RULE**

IF safe water coverage is very good  
 AND IF sanitation coverage is good  
 AND IF groundwater level is in upper zone  
 AND IF it is not in hotspots areas  
 AND IF poverty status is low  
 AND IF child mortality is low  
 COUNT lowest wealth quintile people  
 ADD MINIMUM caseload  
 ADD MODERATE caseload  
 THEN

The caseload will be demarcated as a **MAXIMUM** Casualty

**Description of MAXIMUM Caseload**

People who lives at extreme, very and moderate WASH hard to reach location and belongs to lowest wealth quintile at the most vulnerable area of cyclone

<sup>10</sup> As per Department of Disaster Management, Ministry of Disaster Management and Relief

## **5. WASH Cluster Capacity Mapping**

### **5.1 WASH Cluster Agency**

- There are 41 active WASH cluster agencies in WASH Cluster
- 5 Donor agencies are actively involved with WASH cluster's activities
- 6 UN agencies and World Bank also involved in WASH cluster's activities
- 2 Government agencies are involved in WASH cluster's activities

### **5.2 WASH Staff**

- Agencies have staff specifically in the area of water, sanitation and hygiene either directly employed or hired through partners. Approximately 10,000 WASH trained staff are employed by WASH Cluster agencies directly or through their partner organizations, both professionals (engineers, public health specialist, trainers etc) and technicians (plumbers, rig machine operators etc)
- Government WASH agencies like Department of Public Health Engineering have staff in all the 64 districts which are trained and experienced.
- National NGOs like BRAC, NGO Forum, Dhaka Ahsania Mission are present in nearly all the regions and districts
- All WASH agencies have indicated that WASH staff shall be available during emergencies

### **5.3 WASH Stock**

- Individual WASH agencies have WASH related stocks, but not specifically earmarked for emergencies
- A number of agencies including large government agencies rely on the private sector to provide services and materials.
- Government WASH agency like Department of Public Health Engineering (DPHE) keep stocks of Tubewells, Pipes, Water Tanks, Water purification tablets, Mobile Water Treatment Plants ,Hygiene kits and Sanitation materials
- The major markets like Divisional headquarter (Dhaka, Chittagong, Syhlet, Khulna, Barisal, Rajshahi and Rangpur) and District headquarter stock adequate amount of WASH related stocks

### **5.4 Financial Preparedness**

- Budget dedicated for emergencies is generally not earmarked by most agencies except for UN agencies and some International NGO
- Funds during emergencies can be made available either through agencies head quarter, parent donors or in case of Government agencies through relevant ministries
- The turnaround time to request and release of such funds varies from a 7-15 days in most cases
- Agencies own funding vary between \$25,000 to \$350,000 for immediate response

### **5.5 WASH Training**

All WASH agencies impart WASH related training to their staff at some stage either under a series or as one-off event. Most trainings are related to Water and Sanitation facilities installing, fixing and Hygiene practices. Major themes of WASH related trainings organized by various WASH agencies are listed below:

Description of WASH Training	Available Resource Person
Emergency WASH Coordination	557
Emergency WASH Assessment	473
Monitoring & Evaluation Training	277
Community Mobilization	913
Hygiene promotion	949
WASH NFIs distribution	863
Rapid customs clearance	5
Water Quality testing & monitoring	240
Household Water Purification	716
Pond Cleaning	43
PSF construction, Repair and Disinfection	23
TW installation, repair and Disinfection	82
Basic Latrine Construction and Repair	64
WASH Sphere standards	164

### 5.6 Agency Orientation

WASH agencies capacity assessment also looks into the overall orientation of the agency vis-à-vis emergencies. Different agencies or departments have different levels of emergency orientation. Some agencies are only focus on emergencies, some are focus on development but also have emergency orientation. Therefore, five major categories were averaged out to determine a general picture of all WASH agencies and overall orientation of the WASH agencies is briefly described in the bulleted points.

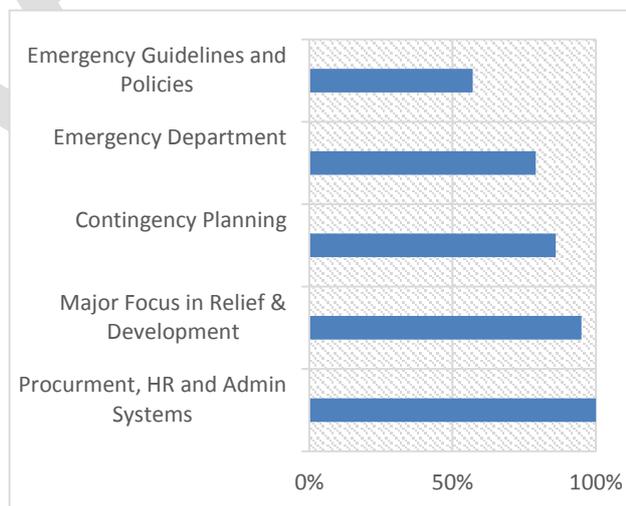
#### Major Focus – every agencies major focus on development work as well as emergency response

**Emergency Department** - Have a small emergency unit or none at all

**Procurement, HR and Admin Systems** – Some internal rules would be waived during an emergency, but would follow regular procedures

**Contingency planning** - Have some sort of a contingency plan but no indication when that was last updated

**Emergency Guidelines and Policies**- Rely on Generic Guidelines like SPHERE



## 5.7 WASH Equipment and Materials

The major markets and regional markets centers especially in district, divisional level are quite well developed. Besides traders who deal in importing and marketing WASH related materials there are several industries and manufacturers that produce sanitary items, water supply items and hygiene materials. Besides traders and manufactures a number of service providers like contractors, drilling companies, trainers etc are also available within the country. Electro-mechanical equipment like pumps, steel pipes and fittings also available at local markets.

Beside of local market WASH agencies also have pre-positioned items to reach vulnerable community immediately after emergency. Table- xx listed total WASH clusters pre-positioned items an quantity. (Detail at Annex-xx)

National	Total (National)	Unit Capacity	Total Capacity	Measurement Unit
Temporary Tube well	814	750	610,500	Water ltr/day
Water Purification Tablet	3,303,765	3	9,911,295	1 table = 3 ltr water
Water Purifying powder (4 mg) pack	1,134,860	1	1,134,860	1 pack = 1 ltr water
Jerry can	75,426	10	754,260	ltr/ jerry can
Water Tank (500/1000 liter)	1,900	500	950000	ltr/tank
Water Bucket	15,000	10	150000	ltr/bucket
Mobile Water Treatment Plant	58	1000	58000	ltr/hour
Superstructure for latrine	5,156	50	257800	50 people/latrine
Temporary Latrine slub	2,022	50	101100	50 people/latrine
De-slugging machine	12		0	
Hygiene Kits	7,166	1	7166	1 Kit = 1 HH
Sanitary Napkin	1,000	1	1000	1 S. Napkin = 1 Person
Communication Materials	7,051	1	7051	1 C.Mat= 1 HH

## 6. WASH Cluster Response Plan and Requirements

To design the WASH Cluster Response Plan, Extreme vulnerable Population caseload has been considered. By choosing this scenario, the WASH Cluster ensures that the minimal WASH needs for the Extreme vulnerable people are at minimal covered.

Once prepositioning and response capacities are ensured for the extreme vulnerable people in case of cyclone, very vulnerable caseload will be considered.

According to the total caseload considered: extreme vulnerable needs were extrapolate in terms of water, sanitation and hygiene, for the first phases of emergency.

Four phases have been considered with different indicators for water/sanitation/hygiene:

1. **Immediate phase 1 to 2 weeks:**
2. **Short term response weeks 3 to 6:**
3. **Mid-term response: 3 to 6 months:**
4. **Long term: 6 months onward:**

PHASE	WATER INDICATOR	SANITATION INDICATOR	HYGIENE INDICATOR
1	1.5 L per persons per day Indicator as defined by National Bangladesh Standards	50 persons per latrine Indicator as defined per SPHERE in the first time of emergency	1 kit per Household Considering 5 persons per household (national average)
2	10L/persons Indicator set by National Bangladesh Standards for basic need for drinking and cooking	50 persons per latrine As above	1 kit per HH per month
3	10L per persons per day Same as above	20 person per latrine As define y SPHERE standard.	Local Capacity building
4	20L per persons per day As defined by National Bangladesh Standards for all water needs	1 Latrine per Household As defined by National Bangladesh Standards	National Capacity building

The WASH Cluster considers that prepositioning should be done differently according to response phases. Obviously, prepositioning for the first emergency phase should be available for the first days of response. On contrary, resources for the short-term and mid-term responses demand less reactivity and can be schedule for broader intervention scale.

Recommendations:

- Prepositioning at **District level** for the Immediate phase (**Phase 1**) of intervention  
Contingency stock should consider water, sanitation and hygiene needs.
- Prepositioning at **Regional level** for the Short term phase (**Phase 2**) of intervention. Head agencies have to take the lead for the response coordination and support to provide to affected areas. Contingency strategy should consider water, sanitation and hygiene needs.
- Prepositioning / plan at **National level** for the mid-term (**Phase 3**) according to each agency strategy with the coordination to national institutions. Resettlements conditions and rehabilitation phase should be considered within WASH Cluster coordination.
- Phase 4 represents the development phase along with coordination of the relief intervention by WASH Cluster.

## PHASE WISE Key Actions during Cyclone

Phase	Water Supply	Sanitation	Hygiene
<b>Immediate Phase (1-2 weeks)</b>	<p><b><u>Drinking Needs 1.5L/person</u></b></p> <ol style="list-style-type: none"> <li>1. JNA [Coordinate with ER Cluster]</li> <li>2. Coordinate with FSC to provide water with food.</li> <li>3. Distribution of Chlorine Tablets</li> <li>4. Deploy water treatment plant</li> <li>5. Distribution of Jerrycans [Within hygiene kits]</li> </ol>	<p><b><u>50 people/Latrine</u></b></p> <ol style="list-style-type: none"> <li>1. Joint Need Assessment</li> <li>2. Building Temporary Latrines</li> <li>3. Coordinate with local government for spraying and disinfectants</li> <li>4. Private bathing cubicles for women</li> </ol>	<p><b><u>1 kit/HH</u></b></p> <ol style="list-style-type: none"> <li>1. Joint Need Assessment</li> <li>2. Distribution of hygiene kits in coordination with health clusters.</li> <li>3. Hygiene Awareness Messages</li> </ol>
<b>Short term (3-6 weeks)</b>	<p><b><u>Drinking and Cooking 10L/person</u></b></p> <ol style="list-style-type: none"> <li>1. Coordinate with shelter cluster to provide water in temporary houses [Water Tanking].</li> <li>2. Rehabilitation of damaged water points including platforms.</li> <li>3. Coordinate with education cluster to provide water in temporary schools.</li> </ol>	<p><b><u>50 people/Latrine</u></b></p> <ol style="list-style-type: none"> <li>1. Building Temporary Latrines [Cont.]</li> <li>2. Mosquito net distribution [Coordinate with ER Cluster]</li> <li>3. Collection and disposal of solid waste in coordination with local government</li> <li>4. Rehabilitation of damaged latrines in coordination with shelter cluster.</li> <li>5. Drainage and Dewatering of stagnant water pools.</li> <li>6. Provide temporary latrine in schools in camps.</li> </ol>	<p><b><u>1 kit/HH/Month</u></b></p> <ol style="list-style-type: none"> <li>1. Continued distribution of hygiene kits and hygiene awareness messages.</li> <li>2. Coordination with health cluster to monitor situation.</li> <li>3. MHM</li> <li>4. Hygiene awareness at temporary schools.</li> </ol>
<b>Mid Term (3-6 months)</b>	<p><b><u>10L/person</u></b></p> <ol style="list-style-type: none"> <li>1. Rehabilitation of damaged water points [continued] including schools.</li> <li>2. Coordination with health and nutrition clusters for safe water in health centers.</li> <li>3. Rehabilitation of ponds</li> </ol>	<p><b><u>20 People/ Latrine [Community]</u></b></p> <ol style="list-style-type: none"> <li>1. Repair of existing household and community/shared HH latrine including schools</li> <li>2. Construction of improved &amp; DRR latrines in coordination with Shelter Cluster.</li> <li>3. Collection and Disposal of solid wastes in collaboration with local government.</li> <li>4. Repairing and constructions of public latrine [separate male and female] including health facilities.</li> <li>5. Repairing of drainage channel with the local government.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training of community mobilizers in hygiene practices.</li> <li>2. Coordination with health cluster for hygiene in health centers.</li> <li>3. Training school children on hygiene awareness in collaboration with Education Cluster</li> </ol>
<b>Long term (6 months onwards)</b>	<p><b><u>20L/persons</u></b></p> <ol style="list-style-type: none"> <li>1. Repairing of pipelines and storage tanks</li> <li>2. Monitoring Water Quality</li> <li>3. Design exit strategy</li> </ol>	<p><b><u>1 Latrine/HH</u></b></p> <ol style="list-style-type: none"> <li>1. Collaboration of LG for Total Sanitation.</li> <li>2. Desludging [Human Sludge and Solid sludge]</li> <li>3. O &amp; M</li> <li>4. Design exit strategy</li> </ol>	<ol style="list-style-type: none"> <li>1. Institutionalize hygiene education in national structures.</li> <li>2. Design exit strategy</li> </ol>

## 7. Implementation Arrangements

### 7.1 Need Assessment

According to WASH cluster's Case load analysis and phase wise response plan district stack holder will be first level responder. Nine most cyclone prone districts have to be prepared to fulfill following needs as per Table-xx for immediate phase (1-2 weeks). Districts need calculated based on minimum caseload and suggested key actions during cyclone period.

SL	District	Hazard Zone	CASE LOAD (Population)			Immediate Phase (1-2 weeks)		
			Min	Moderate	Max	Water (1.5 l/p)	Sanitation (50 Person/Lat)	Hygiene (1 Kit/HH)
1	Bagerhat	Cyclone	32,273	75,314	75,314	48,410	645	6,455
2	Barguna	Cyclone	108,727	138,607	138,607	163,091	2,175	21,745
3	Bhola	Cyclone	188,097	202,661	202,661	282,146	3,762	37,619
4	Cox's Bazar	Cyclone	50,860	181,556	202,580	76,290	1,017	10,172
5	Khulna	Cyclone	84,193	167,250	167,250	126,289	1,684	16,839
6	Noakhali	Cyclone	87,150	100,074	100,074	130,725	1,743	17,430
7	Patuakhali	Cyclone	108,727	138,607	138,607	163,091	2,175	21,745
8	Satkhira	Cyclone	152,632	166,175	166,175	228,948	3,053	30,526
9	Pirojpur	Cyclone	76,642	114,964	229,927	114,964	1,533	15,328

Nine most cyclone prone districts are belongs to three regions and three regions have to be prepared to fulfill following needs as per Table-yy for short phase (3-6 weeks). Regional need calculated based on Maximum caseload of that reason and suggested key actions during cyclone period.

SL	Division	Hazard Zone	CASE LOAD (Population)			Short Term (3-6 weeks)		
			Min	Moderate	Max	Water (10 l/p)	Sanitation (50 Person/Lat)	Hygiene (1 Kit/HH = 2 week)
1	Barisal	Cyclone	108,727	138,607	138,607	1,386,070	2,772	55,443
2	Chittagong	Cyclone	87,150	100,074	100,074	1,000,744	2,001	40,030
3	Khulna	Cyclone	32,273	75,314	75,314	753,139	1,506	30,126

For Mid-Term response (3-6 Month), National level WASH Cluster have to prepare to fulfill 753,139 little safe drinking water supply per day and installing 3,766 Sanitation facilities at cyclone affected areas. National need calculated based on minimum of regional needs and suggested key actions during cyclone period.

Long time needs and response will be determined based on Joint Need Assessment, Government Appeal, and Cluster Assessment etc.

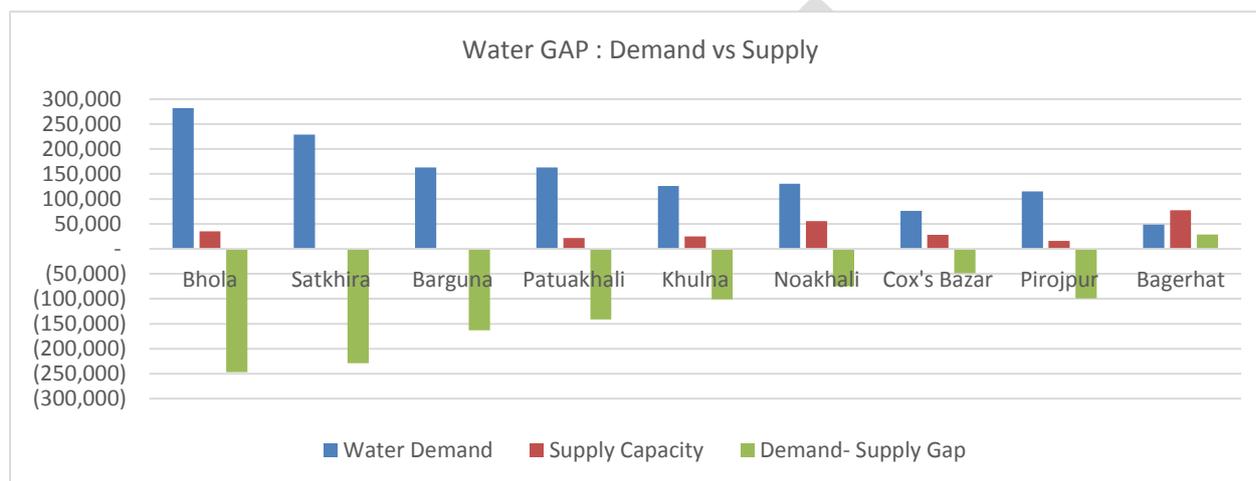
Error! Not a valid link.7.2 GAPS ANALYSIS

In this section, we will discuss about WASH cluster's emergency (cyclone) preparedness gaps and required steps to overcome those gaps. Gap analysis is carried out in three steps, District level Gaps for immediate phase response, Regional level gaps for short term gaps and national level gaps for mid-term response.

### District level GAP Analysis

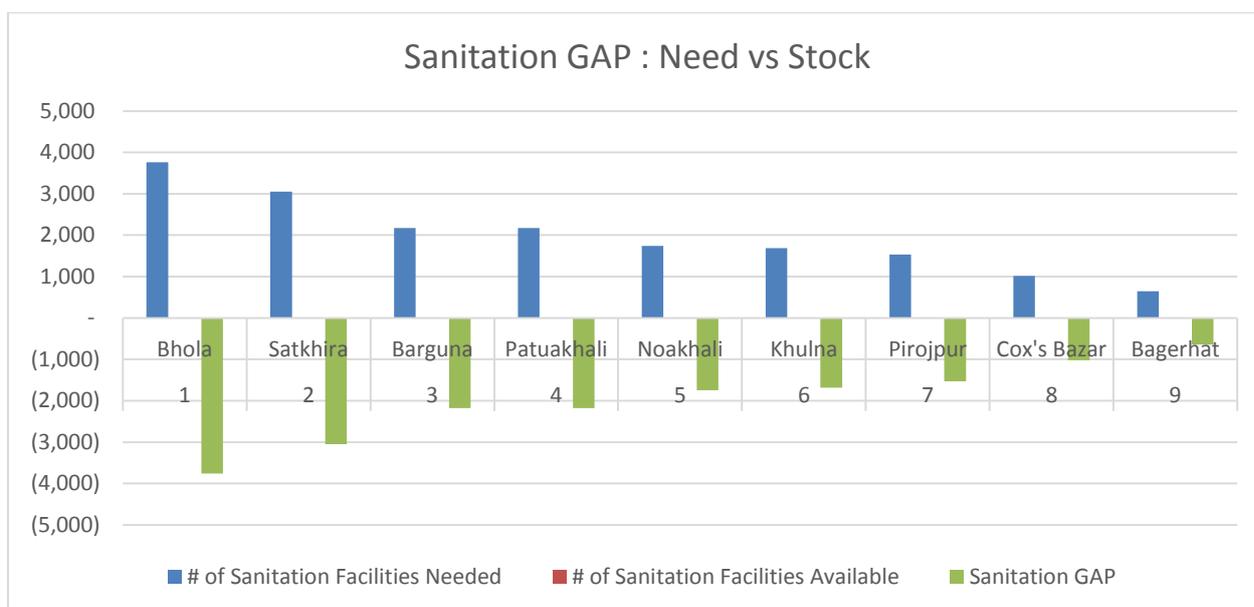
METHOD: WASH in Emergency Response GAP = CASE LOAD ~ WASH NEEDS<sup>11</sup> - ΣWASH Agencies stock pile

Out of 9 cyclone prone districts, except Bagerhat

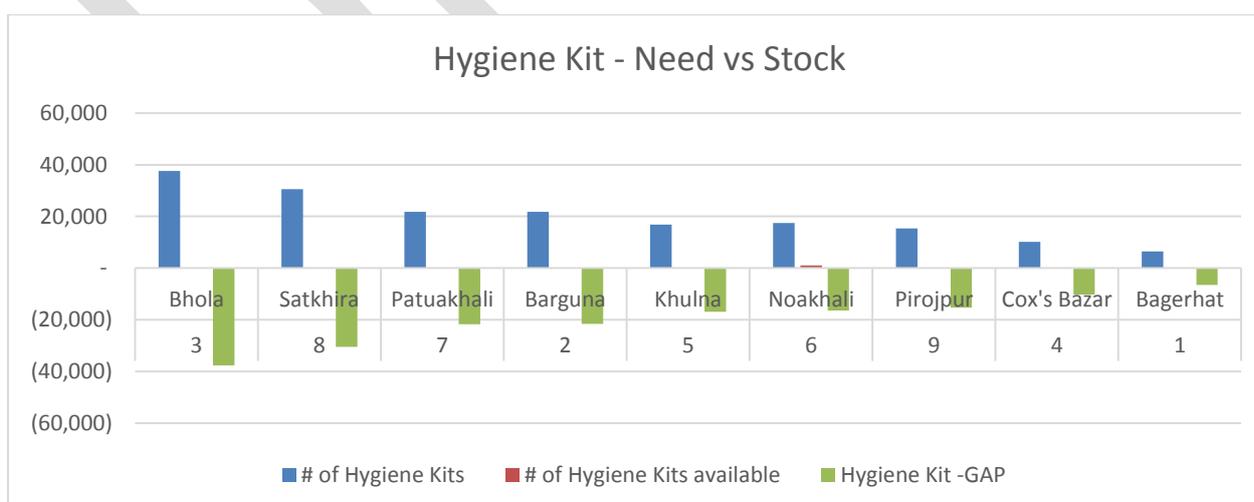


Cyclone Prone Area		liter/day – immediate phase (1-2 weeks)			
SL	District	Water Demand	Supply Capacity	Demand- Supply Gap	# of people
1	Bhola	282,146	35,520	(246,626)	(164,417.38)
2	Satkhira	228,948	-	(228,948)	(152,631.68)
3	Barguna	163,091	-	(163,091)	(108,727.16)
4	Patuakhali	163,091	22,000	(141,091)	(94,060.50)
5	Khulna	126,289	25,200	(101,089)	(67,392.84)
6	Noakhali	130,725	56,000	(74,725)	(49,816.69)
7	Cox's Bazar	76,290	28,000	(48,290)	(32,193.44)
8	Pirojpur	114,964	16,000	(98,964)	(65,975.67)
9	Bagerhat	48,410	77,320	28,910	19,273.60

<sup>11</sup> WASH needs as per Phase wise key actions



SL	District	# of Sanitation Facilities Needed	# of Sanitation Facilities Available	Sanitation GAP
1	Bhola	3,762	0	(3,762)
2	Satkhira	3,053	0	(3,053)
3	Barguna	2,175	0	(2,175)
4	Patuakhali	2,175	0	(2,175)
5	Noakhali	1,743	0	(1,743)
6	Khulna	1,684	0	(1,684)
7	Pirojpur	1,533	0	(1,533)
8	Cox's Bazar	1,017	0	(1,017)
9	Bagerhat	645	0	(645)



SL	District	# of Hygiene Kits	# of Hygiene Kits available	Hygiene Kit -GAP
3	Bhola	37,619	0	(37,619)

<b>8</b>	Satkhira	30,526	0	(30,526)
<b>7</b>	Patuakhali	21,745	0	(21,745)
<b>2</b>	Barguna	21,745	112	(21,633)
<b>5</b>	Khulna	16,839	0	(16,839)
<b>6</b>	Noakhali	17,430	1000	(16,430)
<b>9</b>	Pirojpur	15,328	51	(15,277)
<b>4</b>	Cox's Bazar	10,172	0	(10,172)
<b>1</b>	Bagerhat	6,455	0	(6,455)

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