

Standard Operating Procedures (SOP) for Water, Sanitation & Hygiene (WASH) in Emergencies-Bhutan







November 2018 Second Edition

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In
Partnership With UNICEF



Standard Operating Procedures (SOP) for Water, Sanitation and Hygiene (WASH) in Emergencies

1. Purpose

To simplify, streamline and define clear roles, responsibilities and procedures related to drinking water supply, sanitation and hygiene in emergencies to prevent outbreak of WASH related diseases.

2. Scope

This SOP will apply to all levels¹ of disasters² in which WASH interventions are required to provide minimum WASH services to the affected population giving special consideration to the vulnerable groups.

3. Responsibility

In the event of an emergency, the Dzongkhag, Thromde and Gewog engineers will take lead in communicating with the respective Disaster Management Committees to assess the need of WASH intervention, develop action plan, and mobilize a technical team to set up WASH facilities.

At Central level:

Public Health Engineering Division, Royal Centre for Disease Control and Water and Sanitation Division shall coordinate response with Medical Service Desk, Logistics Desk and Immediate Restoration of Essential Public Service Desk that is within the Department of Disaster Management.

At Dzongkhag level:

Dzongkhag Chief Engineer shall coordinate preparedness and response in collaboration with Dzongkhag Health Officer and Dzongkhag Disaster Management Committee.

At Thromde level:

Thromde Chief Engineer shall coordinate preparedness and response in collaboration with Thromde Health Officer³ and Thromde Disaster Management Sub-Committee.

At Gewog level:

Gewog Engineer shall coordinate preparedness and response in collaboration with Health Assistant and Gewog Disaster Management Sub-Committee.

¹Levels: i) Based on intensity: minimal, mild, moderate severe, ii) Based on spread/distribution: local, Dzongkhag wide, region wide and nation wide ²Natural calamities: Floods, earthquake, landslides, Glacial Lakes Outburst Floods [GLOF], etc.); Disease outbreak: epidemic; Manmade: forest fires, etc.

³Dzongkhag Health Officer or any official responsible for overseeing public health related matters in the Thomde shall be the focal in Thromdes that does not have Thromde Health Officer.

4. Definitions

Basic family water kit:

Each family kit contains a collapsible water container 4(10 litres), 2 buckets (15 litres), 2 jugs, 6 soaps (bathing and laundry-250gm), water purification tablet,1 torch, child potty, multipurpose cloth (1x1.5 m), 5 underwear and 45 sanitary pads.

Family hygiene kit:

Each hygiene kit consists of 5 tooth brush, 1 tooth paste (250 mg), 1 comb, 1 nail cutter, 2 towels, 1 soap for handwashing (250 gm), 1 Vaseline (petroleum jelly 250mg), 1 soap to wash utensils and 6 toilet papers.

Disinfection:

Treatment to destroy harmful micro-organisms. Bleaching powder is commonly used to disinfect water.

Dosage:

Safe quantity of chemical used to disinfect water.

E-coli.

Species of bacterium found in abundance in the human and animal faeces.

Gravity: flow:

Flow of water enabled by the difference in altitude or height.

NTU:

Nephelometric Turbidity Units. It is the unit to measure the cloudiness or haziness (turbidity) of water.

Tanker:

A motorized water carrier vehicle.

Vulnerable group:

Children, elderly, pregnant women, sick, injured and persons with disabilities

Water treatment:

Making water safe to drink through filtration and disinfection.

⁴Until Stocks Last.

5. Procedures

5.1.1Essential Materials for Water Supply

Essential Items (with specifications and/or descriptions)	Quantity
Jug, jerry can and bucket with lid (15 litres)	One set per family
Collapsible and portable water tanks (5,000 litres) with distribution tap points. Each tap point should serve at least 50 people to ensure queueing time is not more than 20 minutes.	Three tanks are available at the preposition sites (Trashigang, Gelephu and Phuentsholing). Additional tanks to be purchase as required
1 roll Flexible pipe ½ inch, 3 rolls canvas hose pipe 75mm diameter of 100 meters each.	Available at the prepositioned sites
Pipes, fittings, valves, taps	As per recommendation of the district engineer
Basic family water kit for 10 families	20 kits prepositioned. Each kit can cater to 10 families. More kits to be made available as required.
Submersible pumps with 2-inch inlet and 11/2-inch outlet (if gravity flow supplies are not feasible).	Available at the prepositioned sites Also based on recommended by district engineer on additional units.
Tankers (For affected areas which are connected with roads and where pipe water supply coverage is not possible)	Calculated based on number of affected people, size of tank and supply frequency
Bottled water (initial phase)	Depending on the need
Water Quality	
Bleaching powder/ Boiling of water for drinking	As recommended by Royal Centre for Diseases Control (RCDC), Ministry of Health
Chlorine/pH pool tester kit for 250 tests	One kit each prepositioned
Turbidity meter	Available with RCDC

5.1.2 Process Flow for Water Supply

Provide bottled water for immediate needs while piped water is being arranged



Calculate daily water requirement for the affected population (No. of affected population x 15 litres per day per person)



Identify feasible water source(s) based on quantity, distance and sustainability, and quality. Gravity flow supplies from springs/ streams/ rivers are preferable as they require less treatment and no pumping



Find the required number of storage tanks (Total water required/Available tank sizes)



Identify location for storage tank which should ideally be located higher than the campsite to ensure adequate water flow in the distribution points



Find out the required pipe length, size and fittings to supply water to the affected population



Lay the pipelines from source to storage tanks and to various distribution points. Tap stands should be within 100 metres from households



Provide adequate tap points for handwashing near the toilets



Provide appropriate water treatment as recommended by laboratory report. If water turbidity is more than 5NTU, filtration is required (Eg. 1) Sedimentation followed by decantation 2) Straining using clean piece of cotton cloth, etc.) . If *e-coli* is detected in the water, disinfect using bleaching powder. The nearest health centre will calculate the require dosage for disinfection

5.2.1Essential Materials for Sanitation

Essential Items (with specifications and/or descriptions)	Quantity
One Pre-fabricated squatting pan (120 x 80 cm) with cover will serve 15 females or 30 males	20 each prepositioned. Additional to be procured as per requirement
Toilet tent	Available at the prepositioned sites
 1 conventional toilet. List of materials required for one toilet: 1 bundle rope 1kg. binding wire 4 nos. 9' long Timber/Bamboo Batten (4"X3" size) 15 nos. 6' long Timber/Bamboo Batten 3"X2" size 2kg. nails (a mix of 2", 3" and 4") 10 meters plastic sheet/ coconut husk sack, For door - 1 no. ply board (6"); 2 nos. hinges (3") & 2 nos. handles (4") Basic electrical items (eg. Wire, switch, bulb, holders etc.) 	Based on the list, materials required for total number of toilets should be calculated.

5.2.2 Process Flow for Sanitation

For immediate needs, identify safe location for defecation and promote 'Cat' Sanitation' (covering faeces with soil)



Calculate number of toilets required(one toilet for 15 females and one toilet for 30 males)



Ensure separate toilets(locations) for male and female with duKe consideration to people with disabilities, old age and pregnant women



Provide proper lighting and safety measures for toilets (eg. Inside door latch,etc.)



Toilets should be within 30 to 50 meters from the campsite



Trench latrines and toilets should be located at least 30 meters from any water source



Construction of sanitary facility with trench size of 1 metre height, 0.8 metre width and length as per required number of toilet units for 30 days



Individual pit latrine if deemed necessary should have standard pit sizes of 5'x5'x6'



Give particular attention to the disposal of children's faeces, as they are commonly more dangerous than those of adults



Provide simple urinals with suitable enclosure for male



Maintain drainage for wastewater (for preventing rainwater seepage into toilet trenches, water distribution points, greywater from shelters, etc.) with soak pit at the end



Dig pits at strategic locations for safe disposal of solid waste

5.3.1Essential Materials for Hygiene

Essential Items (with specifications and/or descriptions)	Quantity
Family hygiene kit	To be based on number of families affected
Sanitary pads for women of reproductive age. It is important to find out the total number of women from the initial situation report.	45numbers per woman per month
Baby diapers. It is important to find out the total number of children under-2 from the initial situation report.	15 numbers per baby for 1 week
Adult diapers for persons with disabilities (PWDs). The total number of PWDs needs to be validated from the initial situation report.	15 numbers per person per 1 week

5.3.2 Process Flow for Hygiene

Provide sanitary pads for women (45 numbers per woman of reproductive age-group per month)

Provide baby and adult diapers (for persons with disabilities)

Provide family hygiene kit



Maintain hygiene of toilets



Provide messages through dialogues, posters and public service announcements on hygiene practices, such as:

- Critical times of hand washing with soap
- Safe menstrual hygiene management
- Safe disposal of faeces, especially of infants and children and diapers
- Using pit toilets for disposal of sanitary pads and diapers

5.4 Recommended Basic Tools

- Patang/Knife
- Spade
- Shovel
- Crow bar
- Hammer
- Pick axe
- · Hacksaw frame with blade
- Mortar pan
- Plier (8")
- Tester
- Carpentry saw
- Pipe wrench

6. Exit Strategy

The exit strategy will take into effect once the emergency status at the settlement is declared over and all people moved out of the temporary settlement. Following are some of the activities that needs to be considered as a part of exit strategy:

- · Dismantling of WASH facilities
- Restoration of sites and safe disposal of waste
- Handing over tools and materials
- Preparing exit report which will include financial, stock update, lessons learnt and recommendations
- Restocking of WASH emergency supplies

7. References

- i. Standard Operating Procedure for WASH in Emergency, First Edition, 2017
- ii. Health Emergency and Contingency Plan for Bhutan, 2016
- iii. The Sphere Project, Humanitarian Charter and Minimum Standards in Humanitarian Response, 2011
- iv. Sanitation and Hygiene Guidelines, Bhutan, 2014
- v. Draft Framework for WASH in Emergencies, Bhutan, 2011
- vi. Core Commitments for Children in Humanitarian Action, UNICEF, 2010
- vii. Strategy for Water, Sanitation and Hygiene 2016-2030, UNICEF, 2016