

# Sanitation Quality Standards for Emergencies

## Faecal Sludge Management TWiG

---

6 April 2022

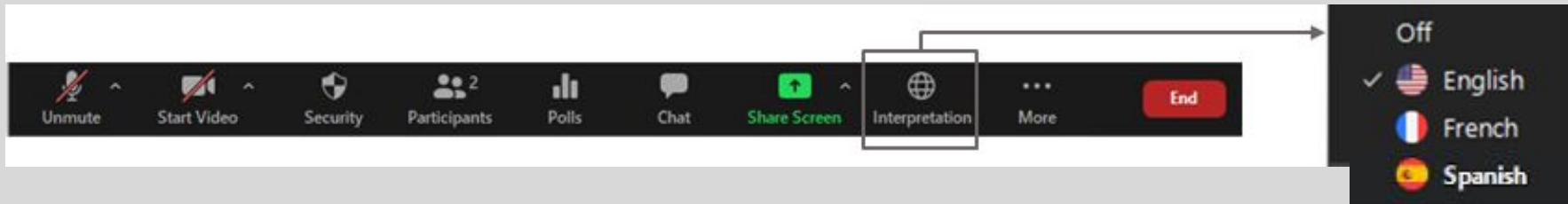


## Before we begin

### Everyone must select a language!

Click “interpretation” at the bottom of your Zoom window and select your language.

This webinar will be conducted in English with simultaneous interpretation in Arabic, French and Spanish.



Please ask your questions in the chat box, or during the Questions & Answers session after the presentation.

# Session content

1. FSM TWiG
2. Aim of Standards
3. Terminology
4. Motivation for Standards
5. Deep Dive in Standards
6. Road-Testing



## Session Objective

To present **Sanitation Quality Standards** for emergencies

→ When and where can they can be applied?

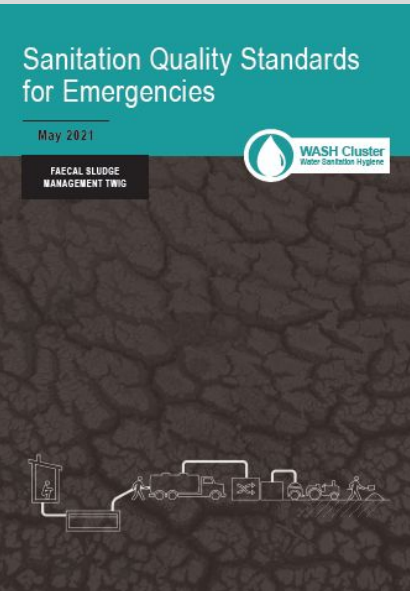
→ We need your help in application and testing!

# Aim of the Sanitation Quality Standards

To help the humanitarian sector meet the growing challenges of providing effective Faecal Sludge Management in emergency contexts



# The Sanitation Quality Standards for Emergencies



← Already in Sphere

**STANDARD 1: Environment free from human excreta**

Indicator 1.1 There are no human faeces present in the environment in which people live, learn and work.

← New!

**STANDARD 2: Access is provided to safe sanitation systems**

*The selection of safe sanitation systems should be context specific, thus respond to local physical, social and institutional conditions. Sanitation systems are considered safe when the below listed actions are taken.*

**Indicator 2.1** People have access to sanitation facilities that are adequately located respecting distances from surface or groundwater sources and with user interfaces based on user-centered designs.

**Indicator 2.2** The health risk of sanitation workers (all staff, including desludging, transport and treatment) is minimized.

**Indicator 2.3** Toilet pits and tanks are safely deslugged and the faecal sludge is safely transported.

**Indicator 2.4** Faecal sludge is safely treated and disposed of.

# A quick word on terminology

Terminology Factsheet




# Terminology



## Sanitation

- Sanitation refers to the provision of facilities and services for the safe disposal of human urine and faeces
- “Sanitation” can *also* refer to solid waste management, drainage and vector control


**Faecal Sludge Management Terminology Factsheet**  
MAY 2021

**FAECAL SLUDGE MANAGEMENT TWIG** 

The Faecal Sludge Management (FSM) Technical Working Group (TWIG) of the Global WASH Cluster has been created to improve the quality of sanitation services in emergencies. But what do we mean with that? As FSM is a relatively new field for the emergency WASH sector, confusion exists on terminology. This overview is meant to explain what we mean.

**SANITATION**

There are many possible definitions of sanitation. For the purposes of this factsheet, the word 'sanitation' alone is taken to mean the access to and use of facilities and services for the safe disposal of human urine and faeces needed to reduce faecal-oral disease transmission. It encompasses too the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of grey water management, solid waste management, drainage and vector control, but for the purpose of this document only the safe disposal of human urine and faeces is considered.



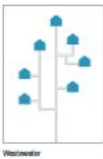

**SANITATION SYSTEMS**

A sanitation system is a multi-step process in which human faeces and urine, in the shape of wastewater or faecal sludge, are managed from the point of generation to the point of use or ultimate disposal. Under certain conditions, which are described under 'On-site Safe Sanitation Systems', all steps of a safe sanitation system can take place on-site, while in other contexts, a full sanitation service chain is required, including a sewer or the emptying, transport, treatment and final disposal or end use of faecal sludge or wastewater.

**WASTE WATER VERSUS FAECAL SLUDGE**

The term wastewater is generally used to refer to the mixture collected in and transported through a sewer system, using flushing water to transport faeces and urine. In addition to flushing water, wastewater generally also contains greywater, e.g. the water from showers and sinks.

Faecal sludge is the mixture of human urine and faeces, water and solid waste (such as toilet paper) that gets collected in on-site sanitation systems and is not transported through a sewer.

# Terminology



## Sanitation Service chain or System

- A **sanitation service chain** manages human faeces and urine (as wastewater or as faecal sludge) from the time it is generated until it is disposed of safely without harming public health and the environment

**Faecal Sludge Management Terminology Factsheet**  
MAY 2021


**FAECAL SLUDGE MANAGEMENT TWIG**

**WASH Cluster**  
Water Sanitation Hygiene

The Faecal Sludge Management (FSM) Technical Working Group (TWIG) of the Global WASH Cluster has been created to improve the quality of sanitation services in emergencies. But what do we mean with that? As FSM is a relatively new field for the emergency WASH sector, confusion exists on terminology. This overview is meant to explain what we mean.

**SANITATION**

There are many possible definitions of sanitation. For the purposes of this factsheet, the word 'sanitation' alone is taken to mean the access to and use of facilities and services for the safe disposal of human urine and faeces needed to reduce faecal-oral disease transmission. It encompasses too the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of grey water management, solid waste management, drainage and vector control, but for the purpose of this document only the safe disposal of human urine and faeces is considered.



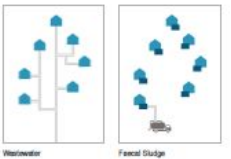
**SANITATION SYSTEMS**

A sanitation system is a multi-step process in which human faeces and urine, in the shape of wastewater or faecal sludge, are managed from the point of generation to the point of use or ultimate disposal. Under certain conditions, which are described under 'On-site Safe Sanitation Systems', all steps of a safe sanitation system can take place on-site, while in other contexts, a full sanitation service chain is required, including a sewer or the emptying, transport, treatment and final disposal or end use of faecal sludge or wastewater.

**WASTE WATER VERSUS FAECAL SLUDGE**

The term wastewater is generally used to refer to the mixture collected in and transported through a sewer system, using flushing water to transport faeces and urine. In addition to flushing water, wastewater generally also contains greywater, e.g. the water from showers and sinks.

Faecal sludge is the mixture of human urine and faeces, water and solid waste (such as toilet paper) that gets collected in on-site sanitation systems and is not transported through a sewer.








# Wastewater vs Faecal Sludge

# Terminology

**Faecal Sludge Management Terminology Factsheet**  
MAY 2021

**FAECAL SLUDGE MANAGEMENT TWIG** 

The Faecal Sludge Management (FSM) Technical Working Group (TWIG) of the Global WASH Cluster has been created to improve the quality of sanitation services in emergencies. But what do we mean with that? As FSM is a relatively new field for the emergency WASH sector, confusion exists on terminology. This overview is meant to explain what we mean.

**SANITATION**

There are many possible definitions of sanitation. For the purposes of this factsheet, the word 'sanitation' alone is taken to mean the access to and use of facilities and services for the safe disposal of human urine and faeces needed to reduce faecal-oral disease transmission. It encompasses too the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of grey water management, solid waste management, drainage and vector control, but for the purpose of this document only the safe disposal of human urine and faeces is considered.



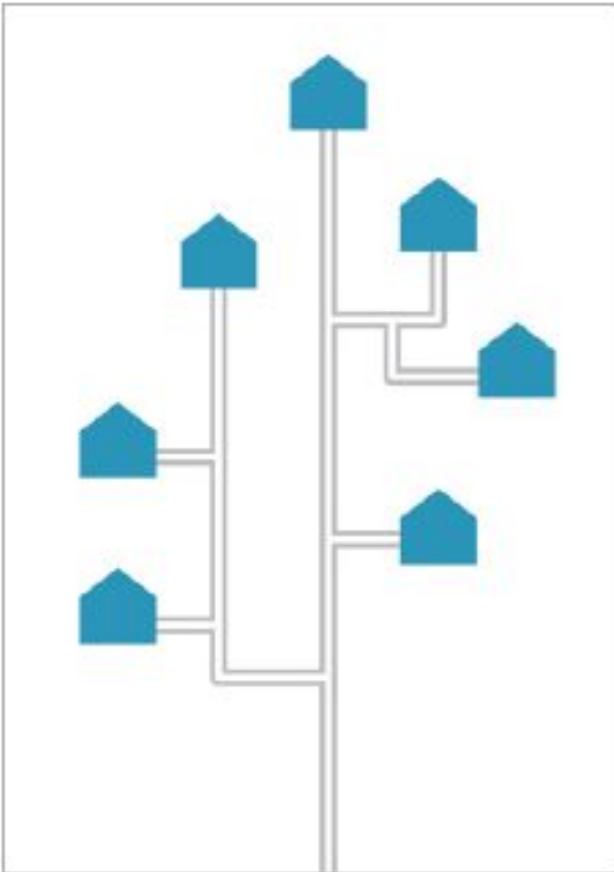
**SANITATION SYSTEMS**

A sanitation system is a multi-step process in which human faeces and urine, in the shape of wastewater or faecal sludge, are managed from the point of generation to the point of use or ultimate disposal. Under certain conditions, which are described under 'On-site Safe Sanitation Systems', all steps of a safe sanitation system can take place on-site, while in other contexts, a full sanitation service chain is required, including a sewer or the emptying, transport, treatment and final disposal or end use of faecal sludge or wastewater.

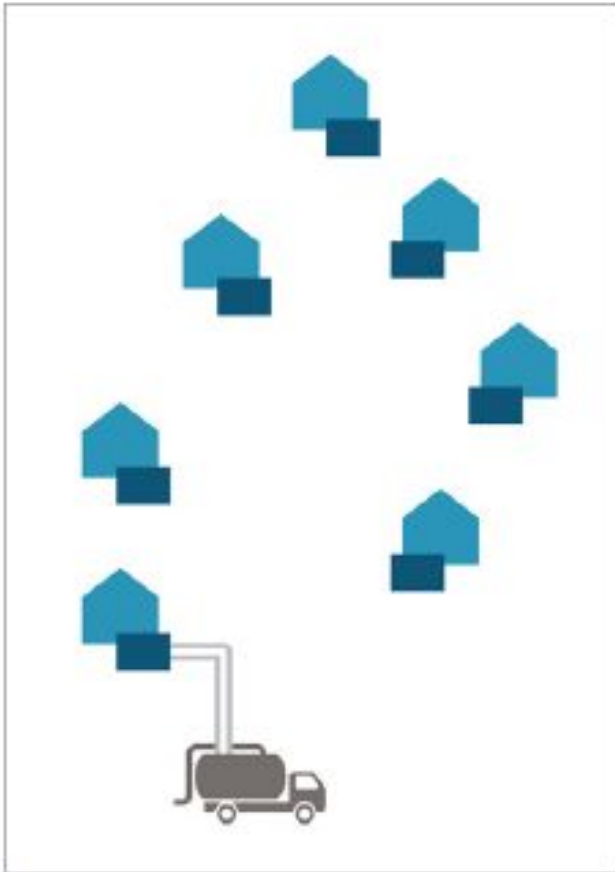
**WASTE WATER VERSUS FAECAL SLUDGE**

The term wastewater is generally used to refer to the mixture collected in and transported through a sewer system, using flushing water to transport faeces and urine. In addition to flushing water, wastewater generally also contains greywater, e.g. the water from showers and sinks.

Faecal sludge is the mixture of human urine and faeces, water and solid waste (such as toilet paper) that gets collected in on-site sanitation systems and is not transported through a sewer.

Wastewater



Faecal Sludge



# Safe sanitation service chain

# Terminology

- Many different shapes
- **Wastewater:** sewage network with treatment
- **Faecal Sludge:** safe sanitation service chain depends on conditions

**Faecal Sludge Management Terminology Factsheet**  
MAY 2021


**FAECAL SLUDGE MANAGEMENT TWIG**

**WASH Cluster**  
Water Sanitation Hygiene

The Faecal Sludge Management (FSM) Technical Working Group (TWIG) of the Global WASH Cluster has been created to improve the quality of sanitation services in emergencies. But what do we mean with that? As FSM is a relatively new field for the emergency WASH sector, confusion exists on terminology. This overview is meant to explain what we mean.

**SANITATION**

There are many possible definitions of sanitation. For the purposes of this factsheet, the word 'sanitation' alone is taken to mean the access to and use of facilities and services for the safe disposal of human urine and faeces needed to reduce faecal-oral disease transmission. It encompasses too the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of grey water management, solid waste management, drainage and vector control, but for the purpose of this document only the safe disposal of human urine and faeces is considered.





**SANITATION SYSTEMS**

A sanitation system is a multi-step process in which human faeces and urine, in the shape of wastewater or faecal sludge, are managed from the point of generation to the point of use or ultimate disposal. Under certain conditions, which are described under 'On-site Safe Sanitation Systems', all steps of a safe sanitation system can take place on-site, while in other contexts, a full sanitation service chain is required, including a sewer or the emptying, transport, treatment and final disposal or end use of faecal sludge or wastewater.

**WASTE WATER VERSUS FAECAL SLUDGE**

The term wastewater is generally used to refer to the mixture collected in and transported through a sewer system, using flushing water to transport faeces and urine. In addition to flushing water, wastewater generally also contains greywater, e.g. the water from showers and sinks.

Faecal sludge is the mixture of human urine and faeces, water and solid waste (such as toilet paper) that gets collected in on-site sanitation systems and is not transported through a sewer.

Wastewater      Faecal Sludge



# Terminology

## ON-SITE SAFE SANITATION SYSTEMS

A safe sanitation system **does not necessarily include the transport and off-site treatment of faecal sludge or wastewater**. If the below three points apply, **the use of household latrines with a plan in place to safely decommission the system once full, is considered a safe sanitation system**. This is generally the case in rural contexts.



The ground water level is 1.5 meter or more deeper than the bottom of the pit or soak pit.



The latrine or septic tank is 30 meter or more than away from a water source like a well or surface water.



There is sufficient space to dig a new pit or construct a new septic tank once the used one is full, and material and knowledge are available to safely decommission.



Households have access to their private toilet or latrine.



# Terminology

## OFF-SITE SAFE SANITATION SYSTEMS AND FAECAL SLUDGE MANAGEMENT

In other contexts, when the above-mentioned conditions do not apply, a sanitation service chain is required for safe sanitation services in emergencies. This can be the case in:



Crowded refugee camps, with no space for new pits once used pits are full and many people use the same toilet or latrine, resulting in short filling-up times.



Context where the groundwater table is high or where there is a flood risk

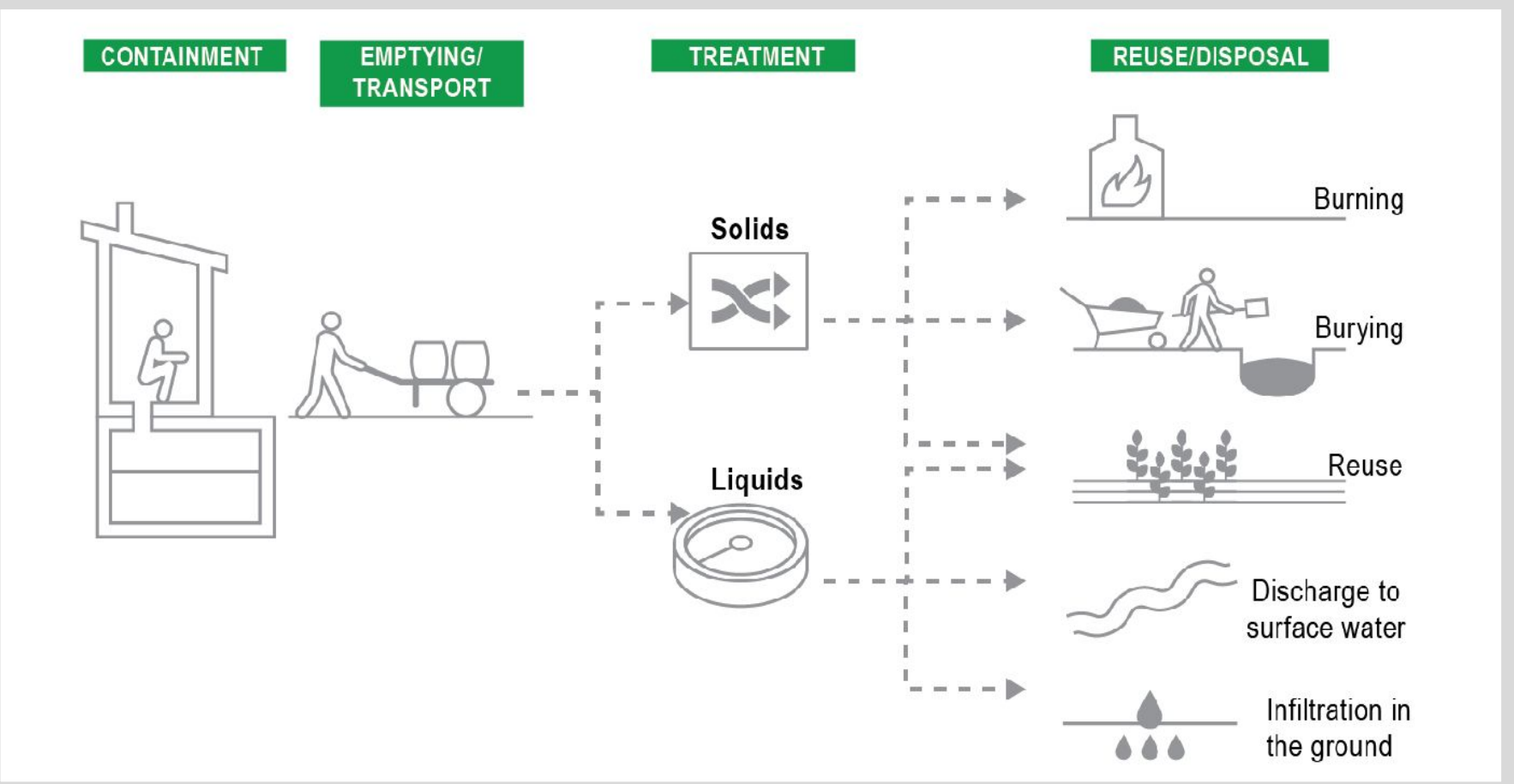


Urban contexts



# Safe sanitation service chain

# Terminology

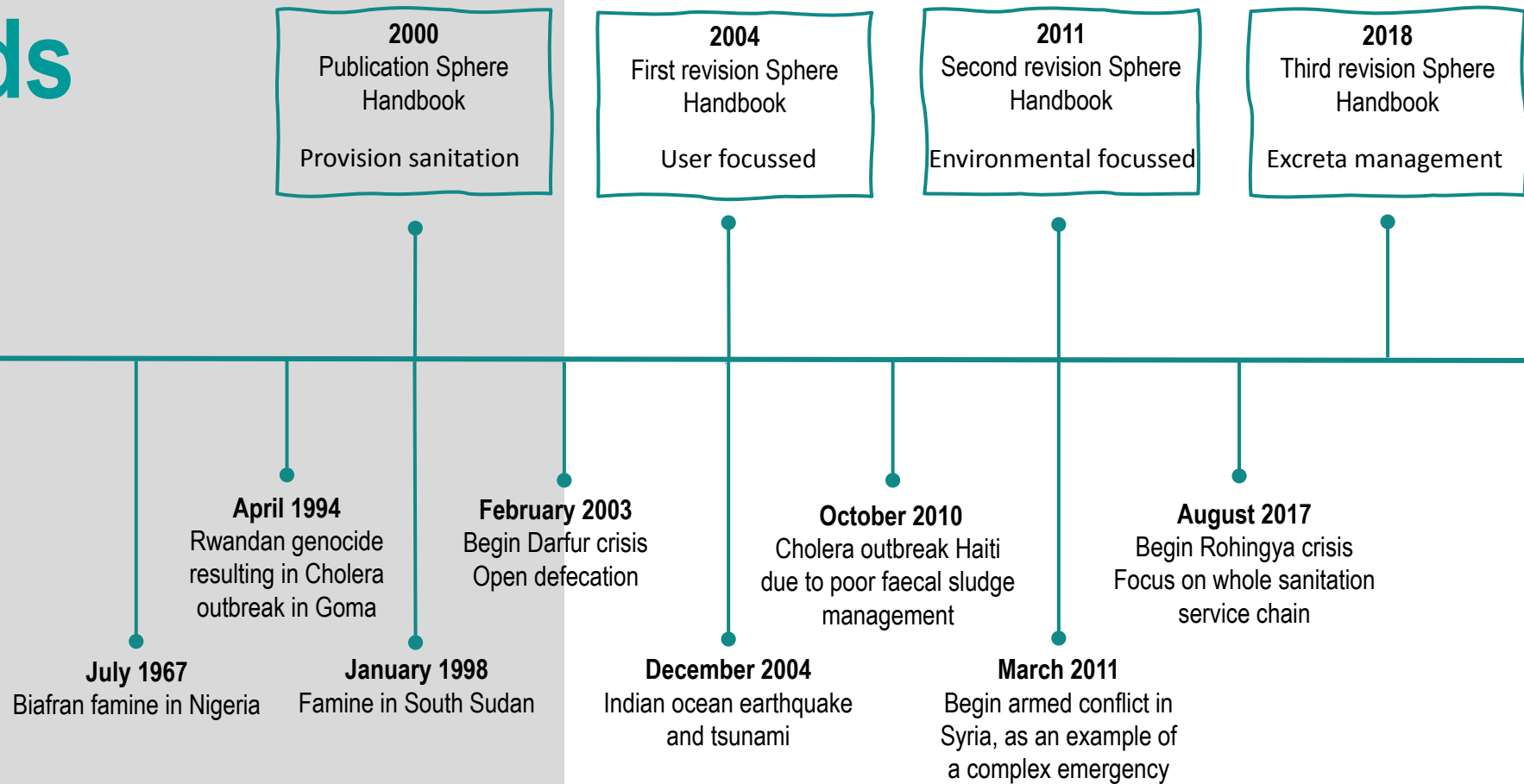


# Motivation for Issuing Standards



# Sanitation Standards Recap

## Sphere Standard Progression



# Limitations

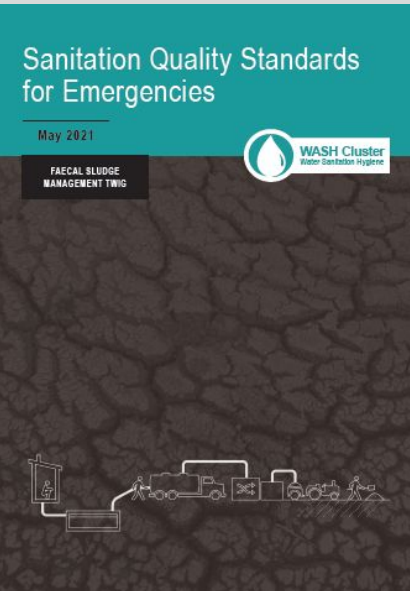
- Sphere recognizes that the provision of sanitation services requires more than just building latrines, but no clear guidance (or naming) of sanitation service chain is included
- National treatment standards barely available
- If available, focus on liquid component/ wastewater
- No mention of sanitation worker safety
- Lack of local context



# Deep Dive in Standards

To help the humanitarian sector meet the growing challenges of providing effective Faecal Sludge Management in emergency contexts

# The Sanitation Quality Standards for Emergencies



← Already in Sphere

**STANDARD 1: Environment free from human excreta**

Indicator 1.1 There are no human faeces present in the environment in which people live, learn and work.

← New!

**STANDARD 2: Access is provided to safe sanitation systems**

*The selection of safe sanitation systems should be context specific, thus respond to local physical, social and institutional conditions. Sanitation systems are considered safe when the below listed actions are taken.*

**Indicator 2.1** People have access to sanitation facilities that are adequately located respecting distances from surface or groundwater sources and with user interfaces based on user-centered designs.

**Indicator 2.2** The health risk of sanitation workers (all staff, including desludging, transport and treatment) is minimized.

**Indicator 2.3** Toilet pits and tanks are safely deslugged and the faecal sludge is safely transported.

**Indicator 2.4** Faecal sludge is safely treated and disposed of.

# Sanitation Quality Standards: 1.1



## Standard 1

### STANDARD 1: Environment free from human excreta

**Indicator 1.1** There are no human faeces present in the environment in which people live, learn and work.

#### KEY ACTIONS:

- Prioritize elimination of open defecation, followed by a rapid upscaling of access to safe sanitation systems universally implemented covering the full target population.
- Decontaminate/disinfect any faeces-contaminated living, learning and working spaces or surface water sources immediately

# Sanitation quality standards: 2.1



## Standard 2.1

### STANDARD 2: Access is provided to safe sanitation systems

*The selection of safe sanitation systems should be context specific, thus respond to local physical, social and institutional conditions. Sanitation systems are considered safe when the below listed actions are taken.*

**Indicator 2.1** People have access to sanitation facilities that are adequately located respecting distances from surface or groundwater sources and with user interfaces based on user-centered designs.

#### KEY ACTIONS:

- Involve users before, during and after the design to ensure a user-centered approach i.e. the SaniTweaks or a similar approach.
- Incorporate the following specifications in the toilet design:
  - Minimum 1 toilet per 20 people.
  - Distance between dwelling and shared toilet is maximum 50 meters.

# Sanitation quality standards: 2.2 & 2.3

Standard 2.2 and 2.3

**Indicator 2.2** The health risk of sanitation workers (all staff, including desludging, transport and treatment) is minimized.

**Indicator 2.3** Toilet pits and tanks are safely desludged and the faecal sludge is safely transported.

# Sanitation Quality Standards: 2.4



## Standard 2.4

Indicator 2.4 Faecal sludge is safely treated and disposed of.

**KEY ACTIONS:**

- Design and operate the treatment plant according to the local disposal possibilities and specific end use/disposal objectives as described in table 2.4. Use a risk assessment and risk management approach to identify, manage and monitor risk throughout the system.
- Ensure that regardless of the source (i.e. wastewater from sewer-based technologies or faecal sludge from on-site sanitation facilities) both the liquid and solid fractions are treated before end use/disposal.
- A process control and monitoring system needs to be in-place, based on most suitable disposal route (see table 2.4)

# The Sanitation Quality Standards for Emergencies

## Table 2.4 Solid Fraction



Treated solid fraction	
<p><b>Are conditions in place for safe reuse?</b></p> <ul style="list-style-type: none"> <li>There is enough space for on-site controlled reuse.</li> <li>Information, means, tools and materials for safe handling and monitoring of the treated solid fraction are available for the full duration of the implementation.</li> <li>There is specific focus on helminth egg reduction during the treatment process.</li> </ul>	<p><b>YES</b></p> <p>Implement conform national legislation or standards on reuse. If not available, comply with WHO guidelines for the safe use of wastewater, excreta and greywater.</p> <p>The implementing agency is required to prove that the reuse practice is safe for the serviced communities, sanitation workers and users of the end-product, using effluent quality data and safe management plans in place.</p> <p>For most types of reuse of the treated solid fraction, extensive drying is required. Treatment technology selection and design should allow for this.</p>
<p><b>NO</b></p> <p><b>Are conditions in place for safe burying of treated solids fraction?</b></p> <ul style="list-style-type: none"> <li>The groundwater level is at least 1,5 m deeper than the bottom of the pit. Increase this distance for fissured rocks and limestone.</li> <li>The closest water source is more than 30 meter away from the infiltration point.</li> <li>The burying site is fenced (considering long term risks buried helminth, up to 10 years).</li> </ul>	<p><b>YES</b></p> <p>Impact is minimal on environmental and public health, so no monitoring of the to be buried treated solid fraction is required.</p>
<p><b>NO</b></p> <p><b>Are conditions in place for safe burning of treated solid fraction?</b></p> <ul style="list-style-type: none"> <li>Burning is only possible if the treated solid fraction is extensively dried, treatment plant technology selection and sizing need to allow for this.</li> <li>A chimney is used to mitigate risks of particulate emissions (minimum chimney length of 2 m above roofs).</li> </ul>	<p><b>YES</b></p> <p>Impact is minimal on environmental and public health, so no monitoring of the to be burned treated solid fraction is required. In order to burn the treated solid fraction, extensive drying is required.</p>

# The Sanitation Quality Standards for Emergencies

## Table 2.4 Liquid Fraction



Treated liquid effluent fraction	
<p><b>Are conditions in place for safe reuse?</b></p> <ul style="list-style-type: none"> <li>There is enough space for on-site controlled reuse (i.e. treated effluent as irrigation water for low-risk crops). This means that reuse of the treated liquid effluent is ONLY supported if it can be done on-site of the treatment plant.</li> <li>Information, means, tools and materials for safe handling and monitoring of treated effluent are available, for the full duration of the implementation.</li> </ul>	<p><b>YES</b></p> <p>Implement conform national legislation or standards on reuse. If not available, comply with WHO guidelines for the safe use of wastewater, excreta and greywater.</p> <p>The implementing agency is required to prove that the reuse practice is safe for the serviced communities, sanitation workers and users of end-products, using effluent quality data and safe management plans in place.</p>
<p><b>NO</b></p> <p><b>Are conditions in place for safe infiltration?</b></p> <ul style="list-style-type: none"> <li>The groundwater level is at least 1,5 m deeper than the bottom of the infiltration trench. Increase this distance for fissured rocks and limestone.</li> <li>The closest water source is more than 30 meter away from the infiltration point.</li> <li>The soils infiltration capacity is sufficient, this should be determined with an infiltration test.</li> </ul>	<p><b>YES</b></p> <p>Impact is minimal on environmental and public health, so no monitoring of liquid effluent is required.</p> <p>Proper separation of solids and liquids before infiltration is essential for sustainable long-term operations.</p>
<p><b>NO</b></p> <p><b>Are conditions in place for safe discharge to a surface water body?</b></p> <ul style="list-style-type: none"> <li>Information, means, tools and materials for safe monitoring of treated effluent are available, for the full duration of the implementation. Monitoring can be done through a simple field lab or a professional lab can be contracted if available.</li> <li>In cases where the receiving water body has a very large flow relative to the discharged effluent flow, less stringent effluent standards can be discussed and agreed with local government.</li> </ul>	<p><b>YES</b></p> <p>To protect public health and environment below effluent quality standards should be met:</p> <ul style="list-style-type: none"> <li>E coli = 1000 n/L</li> <li>Helminth eggs = 1 n / 100 ml</li> <li>Total Solids = 100 mg/l</li> <li>COD = 150 mg/L</li> <li>Ammonia-N = 150 mg/l</li> <li>pH = 6 - 8</li> </ul>



# Road Test

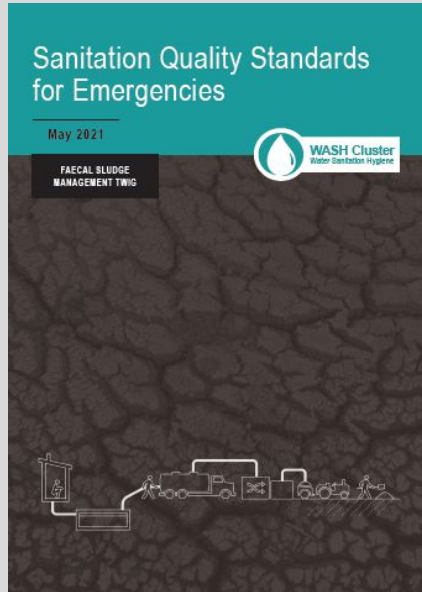
- Are The Standards useful?
- How could they be improved?
- Take **The Standards** into the field
- Provide Feedback
- Planned revision for end of 2023

# Where To Find the Standards

[Sanitation Standards for Emergencies](#)

[Sanitation Quality Standards \(emerson-compendium.org\)](http://emerson-compendium.org)

# The Sanitation Quality Standards for Emergencies



► Q and A?



## FSM TWiG is available for remote support!

Are you looking for practical guidance (BoQs, designs, SoPs)?

Could your cluster use support in defining if FSM is required?

Could your cluster use support in the creation of a sanitation chain strategy?

Could you use expert support in reviewing technical designs?

REACH OUT TO THE FSM TWiG!

Marij Zwart, FSM TWiG Coordinator

[mzwart@redcross.nl](mailto:mzwart@redcross.nl)



**WASH Cluster**  
Water Sanitation Hygiene



# Thank you!

---

*This presentation is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the PRO-WASH Award and do not necessarily reflect the views of USAID or the United States Government.*

