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UNDP

Urban Sanitation in Low-income Communities:

A manual for city governments in Bangladesh

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For further information: www.snv.org

About the UTS Institute for Sustainable Futures

The Institute for Sustainable Futures (ISF) was established by the University of Technology Sydney (UTS) in 1996 to work with industry, government and the community to develop sustainable futures through research and consultancy. Our mission is to create change towards sustainable futures that protect and enhance the environment, human well-being and social equity. We adopt an inter-disciplinary approach to our work and engage our partner organisations in a collaborative process that emphasises strategic decision-making. In international development we undertake strategic research and engagement in the areas of development effectiveness, water, sanitation and hygiene, climate change, urban development and energy policy and planning.

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About the 'Livelihoods Improvement of Urban Poor Communities Project'

The 'Livelihoods Improvement of Urban Poor Communities Project' (LIUPCP) under UNDP's National Urban Poverty Reduction Programme (NUPRP) follows the successful Urban Partnerships for Poverty Reduction (UPPR) project that demonstrated solutions to the urban governance challenges in Bangladesh. The DFID-funded and UNDP-implemented UPPR programme developed a community-led approach to slum improvement addressing issues of community empowerment, skills, livelihoods and small-scale infrastructure. LIUPCP aims to contribute to balanced, sustainable growth by reducing urban poverty in Bangladesh and contribute to the achievement of the Sustainable Development Goals by 2030 that call for 'leaving no one behind'.

For further information: www.urbanpovertybd.org

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Introduction

This manual focuses on steps to improve sanitation in low-income communities.

Safely managed sanitation is critical for supporting public health, well-being and the environment in urban areas. Safely managed sanitation means that excreta and wastewater are contained, collected, transported, treated, and disposed of safely. **Everyone** in a city or town must have access to safe sanitation in order for public health benefits from sanitation to be fully realised. If anyone is left without safe sanitation, it affects the health and environment of the entire city. Too often, low-income communities with informal land tenure are left behind.

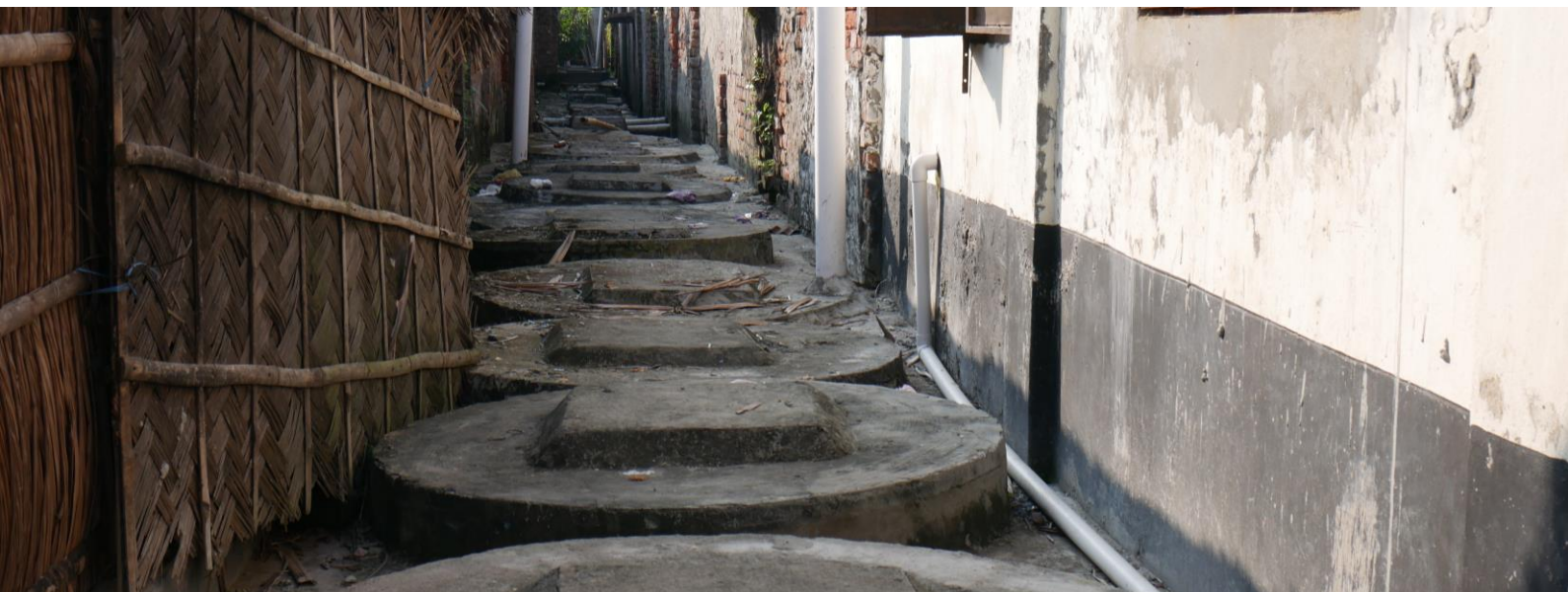
Low-income communities, including those with households living with informal land tenure (sometimes called 'slums'), often have the lowest levels of sanitation services in cities and face the most challenges. These communities are often characterised by severe poverty, high housing density, threats of eviction, and limited access to basic services such as electricity, water supply and healthcare. Improving sanitation services in low-income communities is difficult but necessary to protect human rights and improve health and equality outcomes for the whole city.

What is this manual and who is it for?

This manual is written for **local government authorities in Bangladesh, specifically the city corporations and paurashava**. However, it contains content useful for other urban sanitation actors in Bangladesh and other low- and middle-income countries.

The purpose of this manual is to provide guidance to local government in Bangladesh on supporting safely managed sanitation in low-income communities at the city, ward and community levels. The manual provides information and tips on urban sanitation, and instructions for practical activities that local governments in Bangladesh can undertake to improve sanitation in cities and municipalities. It is written in the context of Bangladesh government structures and challenges commonly faced by cities and municipalities in Bangladesh.

The manual is also written to be in alignment with two national level projects targeting low-income communities. One is the Livelihoods Improvement of Urban Poor Communities project (LIUPC), funded by UNDP, DFID and Government of Bangladesh. LIUPC, which is running from 2018 to 2030, aims to improve the integration of poor communities into municipal planning, budgeting and management, with a particular focus on women and girls and their climate resilience. The project pilots options for scale up, and it promotes lesson learning at the national level to inform overall urban policy and poverty reduction. Another is the Third Urban Governance and Infrastructure Improvement Project (UGIIP III), funded by ADB. UGIIP III aims to strengthen urban governance and improve urban infrastructure and service delivery in 35 pourashavas in Bangladesh, with particular focus on poverty reduction and slum improvement.



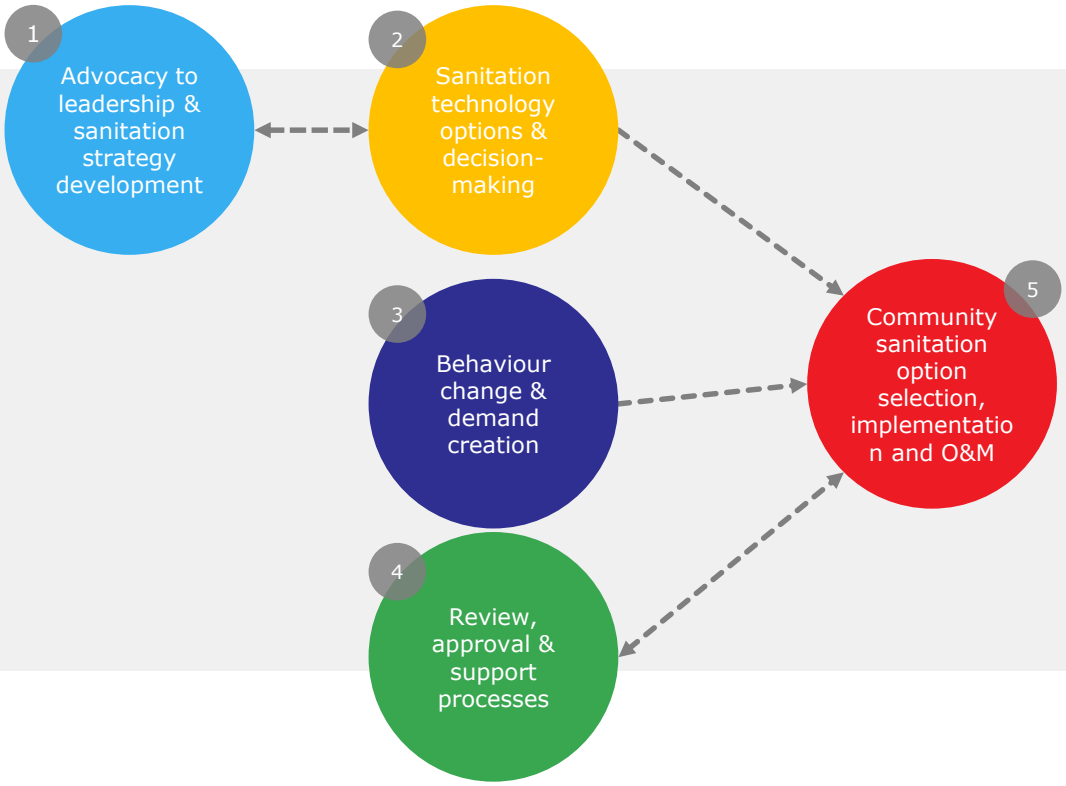
How to Use this Manual

Module 1	Advocacy to leadership and sanitation strategy development
Module 2	Sanitation technology options and decision-making
Module 3	Behaviour change and demand creation
Module 4	Review, approval and support processes
Module 5	Community sanitation option selection, implementation and O&M

These modules address key areas needed to achieve citywide inclusive sanitation (CWIS).

The city corporation or paurashava is the facilitator for each of the modules, and decisions about which individuals are responsible for ensuring that each module is followed should be made by the local government leadership. Each section of each module begins with a box that identifies the target audience (the people that should be involved in the activities described in the module), the objectives of the section, and a brief summary of the information or activities described in the section.

Ideally, the activities in the manual should be implemented in the order shown in the diagram on the next page. However, depending on the availability of different sanitation stakeholders and if the current level of progress in the city/municipality requires it, the modules may be implemented in a different order.



Module 1	Module 1 focuses on building commitment among city and ward leaders to improving sanitation in low-income communities, and taking steps toward developing city- and ward-level sanitation strategies.
Module 2	Module 2 provides information on different sanitation technologies, how to choose between sanitation options, and key considerations for managing, operating and financing community sanitation. This technical knowledge should be considered alongside the development of city- and ward-level strategies, as described in Module 1. This information should also be used to inform the selection of community sanitation options in Module 5.
Module 3	Module 3 explains the importance of sanitation and hygiene behaviour change and demand creation, and provides template Terms of Reference for hiring a partner to implement a behaviour change campaign. Module 3 should be implemented prior to implementing sanitation upgrades in communities as described in Module 5.
Module 4	Module 4 provides guidance for local government authorities on how to support communities to design, implement and manage safe sanitation options in alignment with LIUPC processes. Module 4 should be implemented at the same time as Module 5.
Module 5	Module 5 covers participatory community-based activities for involving community members in making informed choices about which sanitation option is best for them and how it will be managed and financed. Module 5 should be implemented at the same time as Module 4

Definitions

Centralised treatment: a facility for treating faecal sludge and/or wastewater at the scale of a city or municipality.

Containment: the ways of collecting, storing and sometimes treating the human waste generated at the toilet (or user interface).

Decentralised treatment: a facility for treating wastewater and/or faecal sludge wastewater at the scale of a neighbourhood or ward.

Effluent: the liquid waste or wastewater, that leaves a sanitation technology, often a containment unit such as a septic tank or a treatment site, after solids have been separated.

Emptier: a person tasked with removing human waste from on-site sanitation facilities, usually containment units. This person also may be responsible for transporting the waste to a place for treatment.

Emptying service: a service, usually run through a business, a government, or a community-based organisation, that employs emptiers to remove faecal sludge from on-site sanitation facilities, and sometimes also to transport the waste to a place for treatment.

Faecal sludge: the mixture of excreta, water and solid wastes disposed in pit or tanks of on-site sanitation systems.

Low-income community: communities that are poor compared to other communities in their wards, cities or municipalities. They may contain households living with informal land tenure known as slums. This manual does not address migratory populations which may also be considered to be low-income communities but have different sanitation needs.

Menstrual hygiene management (MHM): women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials. The women and girls understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.

Off-site sanitation: a sanitation system in which excreta and wastewater are collected and conveyed away from the plot where they are generated. An off-site sanitation system relies on a sewer technology for conveyance.

On-site sanitation: a sanitation system in which excreta and wastewater are collected and stored or treated on the plot where they are generated

Paurashava: a local governing body in cities and towns in Bangladesh.

Pre-treatment: a process that prepares faecal sludge or wastewater for treatment. Pre-treatment may reduce the number of pathogens in the faecal sludge or wastewater, but not to a level safe enough for disposal.

Safely managed sanitation: the use of improved sanitation facilities[1] which are not shared with other households. The excreta produced should either be 1) treated and disposed in situ, 2) stored temporarily in on-site containment structures which are emptied periodically and the excreta are transported to treatment plants off-site, or 3) transported through a sewer with wastewater and then treated off-site.

Sanitation: the systems for the management of faecal sludge and wastewater through the stages of containment, emptying, transport, treatment and end use/disposal. In this manual, this includes the use of drains for receiving wastewater. It does not include management of solid waste (rubbish) or greywater except when mixed with human waste.

Sewerage: The physical sewer infrastructure including all the components (pipes, pumps, tanks, etc.) of the system used for collecting and transporting wastewater and sometimes also greywater and stormwater.

Wastewater: the mostly liquid mixture of human waste and water, such the waste carried through sewers. In this manual, this term is also used to refer to the liquid waste that comes out of containment units (see *effluent*).

1 Improved sanitation facilities as defined by the Sustainable Development Goal monitoring include flush/pour flush to piped sewer, septic tank or pit latrine; composting toilet or pit latrine with slab.

Unimproved sanitation facilities include pit latrines without a slab or platform, hanging latrines and bucket latrines.

Abbreviations

ABR: Anaerobic baffled reactor

BCC: Behaviour change communication

CAP: Community Action Plan

CBO: Community-based organisation

CDC: Community Development Committee

DEWATS: Decentralised wastewater treatment system

IRF for FSM: Institutional and Regulatory Framework for Faecal Sludge Management

FSM: Faecal sludge management

GIS: Geographic information system

LIC: Low-income community

LIUPC: Livelihoods Improvement of Urban Poor Communities project

MCA: Multi-criteria analysis

NGO: Non-governmental organisation

O&M: Operation and maintenance

PIC: Project implementation committee

SFD: Shit Flow Diagram

SIF: Settlement Infrastructure Fund

WASA: Water Supply and Sewerage Authority

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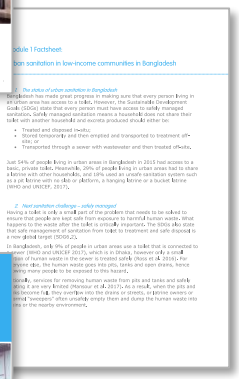
- PowerPoint presentation on sanitation advocacy to city leadership
- Factsheet on sanitation in Bangladesh

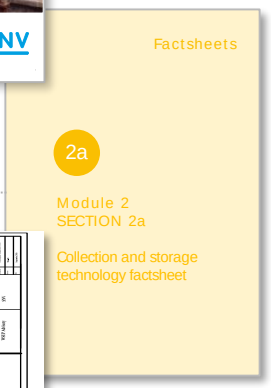


Module 1b
LIC sanitation advocacy to community leadership group

- PowerPoint presentation on sanitation advocacy to community leadership

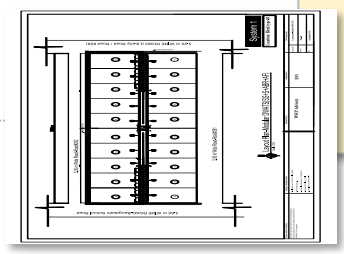
Module 2a
Sanitation technologies for households and communities

- Factsheets on collection and storage technologies



Module 4b
Detailed design and costing of community sanitation option

- Standard technical design sheets of sanitation containment options



Module 5c
Assign O&M responsibilities

- PowerPoint slides on operation and maintenance tasks and responsibilities

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Module 1

Advocacy to leadership and sanitation strategy development

Module 1
Advocacy to leadership and sanitation strategy development

The overall objective of this module is to encourage key leadership groups to prioritise sanitation development in low-income communities (LICs) and enable them to take action to begin a process of supporting citywide sanitation. Commitment from political leaders and well-developed strategies are critical for ensuring that sanitation development is carried out in a coherent way with no gaps in the sanitation service chain (see Module 2a).

This module includes activities for advocating the development of safely managed sanitation in LICs to leadership groups, and steps toward producing city-level and ward-level sanitation strategies for guiding the development of sanitation infrastructure and services at the community, ward, and city levels.

Objectives

The specific module objectives are to provide guidance to local government to:

- Build awareness among city leaders of the need to improve sanitation in LICs in a citywide context, and to strengthen leadership and political commitment to addressing sanitation in LICs.
- Build awareness among community leaders of the need to improve sanitation in LICs and the impact of sanitation on community health and the environment.
- Provide guidance on initiating the development of city- and ward-level sanitation strategies for LICs

Expected Outcomes

It is expected that implementation of this module will:

- Increase government officials' prioritisation of sanitation services in LICs when considering the city's development
- Improve the understanding of city-level, ward-level and community-level leaders of the current issues facing sanitation in LICs, including the status of supportive citywide sanitation services (e.g. emptying of pits and tanks, treatment of waste, etc.)
- Enable city leaders to contribute to strategies for achieving safely managed sanitation for all.

Module 1a

LIC sanitation advocacy to city leadership group

Module 1a.
LIC sanitation advocacy to city leadership group

AUDIENCE

- The mayor
- Relevant city-level standing committee(s)
- Representatives of WASA
- The city development authority
- Relevant city corporation or paurashava departments
- The CDC Federation

OBJECTIVES

- To build awareness among city leaders of the need to improve sanitation in LICs within a citywide context.
- To strengthen leadership and political commitment to addressing sanitation in LICs.

SUMMARY

With the assistance of an external expert, prepare a plan to advocate for sanitation development in LICs to city leaders using existing knowledge and laws or regulations about sanitation. The advocacy plan will include a workshop in which city leader participants discuss sanitation issues and make a commitment to resolving them.

STEP 1 – Arrange an external expert

It will be helpful to have an external urban governance expert (with some knowledge of sanitation) to support activities that involve working with leadership groups. The external expert can provide assistance in presenting the following activities to city leadership, and in identifying the steps for advocating to community leadership (Module 1b). Also, city and community leaders are often more likely to participate in activities and listen if they see that an esteemed guest with special expertise is coming to talk to them.

Activity 1: Identify an external sanitation expert

A suitable external sanitation expert must be identified. The expert (or team of experts) should be experienced and skilled in urban sanitation, and ideally should be based in the city/municipality. They should also be someone that the city leadership will respect and listen to. This could be a person from:

- University or Research Institute
- Local or International NGO
- Private Company

Activity 2: Make an agreement with the external expert

The external expert will need to be informed about the purpose of the activities, and what he or she will be asked to do. Review the sections of this module beforehand. Once the expert has been contacted, explain the following points:

- The objectives of the activities (to advocate for sanitation to the leadership groups, do a sanitation stakeholder and legal assessment, and support the development of city and ward sanitation strategies);
- The reason why an external expert is being requested (to bring in their expertise).

Come to an agreement with the external expert about responsibilities for:

1. Conducting a legal and regulatory review
2. Developing a plan for sanitation advocacy activities
3. Carrying out advocacy activities
4. Facilitating the development of city and ward sanitation strategies
5. Details for these points are described in the following steps

STEP 2 – Review laws and regulations for sanitation

Legal and regulatory documents on sanitation are important because they provide the formal framework which will guide the implementation of sanitation solutions. They can also state that certain government departments have responsibilities for developing sanitation. This section explains how to raise awareness amongst the city leadership of important legal and regulatory frameworks and documents on sanitation.

Activity 1: Review local by-laws and regulations relevant to sanitation in slums

This activity is to be done by the facilitator before calling a meeting with the targeted audience.

It is possible that some cities or towns will have local by-laws or regulations on sanitation or servicing slums. Decision-makers on sanitation should be aware of what these are to make sure that sanitation stakeholders are fulfilling their responsibilities. All cities and municipalities also need to follow national legislation and regulations on sanitation. These are listed in the next activity.

To learn about relevant local by-laws and regulations, ask key informants if they are aware of any rules about sanitation services, including in slums. These key informants may be officers working for.

City corporation	Paurashava	Development authority	Water and sewerage authority
Standing committee that covers sanitation	Long-serving councillor(s) or other relevant city officials	NGO working on sanitation or slums	University

Activity 1 (continued)

Some specific questions that can be asked of the key informants are:

1. What kind of sanitation infrastructure is allowed to be built in the city or municipality? Who is meant to check if infrastructure is built to the required standards?
2. Are there any local rules about the operation and maintenance of toilet facilities?
3. Are there any local rules about emptying pits and septic tanks, the businesses that provide these services, payment for such services and transporting human waste to a disposal location?
4. Are there any restrictions on providing sanitation and supportive services (e.g. services to empty pits and septic tanks) for households squatting on public land? (e.g. do houses need to be legally registered to receive services from the city/municipality?)
5. Are there any current city or municipal plans or by-laws for development in LICs that directly impact on sanitation facilities and services?
6. Are there any reference documents relating to the above questions that can be shared?

Make sure to record any local by-laws or regulations about sanitation that are mentioned. These will be presented in the next activity.

Activity 2: Prepare a presentation slide

Put any information about local by-laws or key documents identified in Activity 1 relating to sanitation into a **presentation slide**. This presentation slide can be inserted into the advocacy presentation accompanying this manual that is described in Step 4. The advocacy presentation already contains a slide on national level policies and legislation related to urban sanitation.

STEP 3 – Develop an advocacy plan

Working with the external expert, develop a plan for advocating for sanitation initiatives to the city leadership (and to the community leadership – see Module 2b). Advocating for sanitation will encourage the city leaders to take sanitation issues more seriously and take action to address them.

There are a few ways to collect ideas for advocating improved sanitation to city leadership:

- Check to see if there are any ongoing or recently completed sanitation programs in the city/municipality, especially programs focused on LICs. Contact the implementers of the programs to learn about the key drivers and barriers to improving sanitation in LICs. Also, these programs may have already developed advocacy materials and activities that can be used.
- Ask the external expert about how to approach the city leadership. He/she may have experience in designing sanitation advocacy approaches and may have recommendations.

Plan one or more of the activities described below:

→ **Site visits:** Take members of the leadership group to visit sanitation projects in the city/municipality or in a nearby city. This visit could show leaders how sanitation improvements make a difference in LICs. Site visits should also include an LIC where sanitation is poor, to show leaders the problems that this is causing.

→ **Invite leaders to special events**: Some local governments or NGOs host special events on Global Handwashing Day (October 15th), World Toilet Day (November 19th), World Water Day (March 22nd), Menstrual Hygiene Day (May 28th), and they may promote other water and sanitation programs. Leaders can be invited to participate in these events to learn about sanitation and to have discussions with the organisations that lead the events.

→ **Engagement with NGOs or civil society leaders**: City leaders can be introduced to NGOs or civil society leaders that advocate for improved sanitation services for the poor.

→ **Meetings/workshops with leaders**: A meeting with a presentation, workshop or training for leaders on sanitation can be held to deliver information and advocacy messages. An example of how this can be done is explained in the next step.

The ideas for advocating for improved sanitation to city leadership should be documented in an **advocacy plan**.

The next step gives detailed information on conducting a sanitation presentation and workshop. However, this should not be the only advocacy activity in the plan. Other complementary activities should be developed based on consultations with experts and other sanitation stakeholders in the area.

STEP 4 – Preparation for workshop

This step describes how to prepare and deliver a presentation and workshop on sanitation in LICs. This step is optional depending on whether it is included in the advocacy plan. Discuss with the external expert whether a presentation and workshop is a good way to advocate to city leadership. If it is, then the following activities can be implemented.

Facilitator	The workshop should be facilitated by the external expert with support from city corporation or paurashava staff.
Materials	May include a computer, projector, flip chart paper, markers, pens and notepads.
Duration	2 – 3 hours is recommended.

Activity 1: Collect background information for the presentation

There are PowerPoint slides that accompany this manual. They contain facts and information about sanitation in cities in Bangladesh. In addition, it is important to add more information and messages about sanitation specific to the city/municipality. There are a few sources:

- Data collected by LIUPC or other projects during poverty mapping of your city/municipality
- The Bangladesh Demographic Health Survey[1]
- The Report on Bangladesh Sample Vital Statistics[2]
- Bangladesh Slum Census 2014[3]
- District Statistics[4]
- Statistics on the incidence of diarrhoeal diseases from local health clinics
- NGOs, universities or other stakeholders working on sanitation in LICs in the area

Think about what messages and points will motivate the city leadership group to take sanitation in LICs seriously. These messages do not have to be all about statistics – it might be more motivating to add political messages, or to include human-focused stories from LICs.

1 https://dhsprogram.com/Where-We-Work/Country-Main.cfm?ctry_id=1&c=Bangladesh
2 http://www.bbs.gov.bd/site/page/ef4d6756-2685-485a-b707-aa2d96bd4c6c/Vital-Statistics
3 http://www.bbs.gov.bd/site/page/cc276201-9150-4e9a-a4a8-7cda87287e13/-
4 Http://www.bbs.gov.bd/site/page/2888a55d-d686-4736-bad0-54b70462afda/-

If enough data is available, consider developing a Shit Flow Diagram (SFD) for the city. An SFD is a way of visualising how excreta moves through the ward and where it ends up. An SFD can be used as a tool for highlighting the need for sanitation or for supporting decision-making on sanitation.

Detailed instructions on creating an SFD can be found at: https://sfd.susana.org/knowledge/how-to-make-a-sfd/how-to-get-started.

Activity 2: Check the presentation for information that needs to be updated

The PowerPoint slides that accompany this manual need to be updated so that they are relevant and motivating for the city leadership group. Based on the information collected and the messages designed from Activity 1, add new slides to the presentation.

In the presentation slides, there are places where local information needs to be entered. The presentation already contains facts and statistics. If any of these facts or statistics are out-of-date, and more recent information is available, they can be updated.

Activity 3: Understand the information presented in the slides

The factsheet accompanying this manual provide background information about each of the PowerPoint slides. Read through the factsheet before delivering the presentation to better understand how to explain each of the slides.


Module 1 Factsheet:

Urban sanitation in low-income communities in Bangladesh

1. The status of urban sanitation in Bangladesh

Bangladesh has made great progress in making sure that every person living in an urban area has access to a toilet. However, the Sustainable Development Goals (SDGs) state that every person must have access to safely managed sanitation. Safely managed sanitation means a household does not share their toilet with another household and excreta produced should either be:

- Treated and disposed in-situ;
- Stored temporarily and then emptied and transported to treatment off-site; or
- Transported through a sewer with wastewater and then treated off-site.

Just 54% of people living in urban areas in Bangladesh in 2015 had access to a basic, private toilet. Meanwhile, 29% of people living in urban areas had to share a latrine with other households, and 18% used an unsafe sanitation system such as a pit latrine with no slab or platform, a hanging latrine or a bucket latrine (WHO and UNICEF, 2017).

2. Next sanitation challenge – safely managed

Having a toilet is only a small part of the problem that needs to be solved to ensure that people are kept safe from exposure to harmful human waste. What happens to the waste after the toilet is critically important. The SDGs also state that safe management of sanitation from toilet to treatment and safe disposal is a new global target (SDG6.2).

In Bangladesh, only 9% of people in urban areas use a toilet that is connected to a sewer (WHO and UNICEF 2017), which is in Dhaka, however only a small portion of human waste in the sewer is treated safely (Ross et al. 2016). For everyone else, the human waste goes into pits, tanks and open drains, hence allowing many people to be exposed to this hazard.

Nationally, services for removing human waste from pits and tanks and safely treating it are very limited (Mansour et al. 2017). As a result, when the pits and tanks become full, they overflow into the drains or streets, or latrine owners or informal "sweepers" often unsafely empty them and dump the human waste into drains or the nearby environment.

STEP 5 – Workshop presentation followed by group discussions

The table below lists activities to conduct with the city leadership group during the workshop. The main components are the presentation and group discussions about improving sanitation. At the end of the workshop, the participants will be asked to write and sign a short declaration about improving sanitation in their city/municipality.

Time	Activity	Materials
10 min	**Welcome** Formal opening of meeting by Mayor or another city leader.	
15 min	**Presentation** Detailed in Step 3 and adapted to the local context. Presented by the external expert.	PowerPoint prepared (see above). Audio-visual equipment
15-20 min	**Discussion in small groups** Separate the participants into groups of 3 to 5 people. Ask the participants to talk about the following questions in their groups and write down their responses on a sheet of paper: 1. What is something new, surprising or interesting that you learned from the presentation? 2. Is there something from the presentation that you want to know more about? 3. What sanitation challenges do you see in the LICs in your city or municipality? 4. What do you think needs to change to make sanitation better in the LICs? 5. What do think needs to be the role of local leadership in leading change?	Pens, paper
30-45 min	**Open discussion** After the small groups have had time to discuss the questions, bring everyone back together. Ask someone from each group to present the group's responses to each question. Write down the key points from the discussion on flip chart paper so that the participants can read them The facilitators should respond to questions or requests for more information from the small groups.	Flip chart paper, markers
60 min	**Identify relevant stakeholders** (further details on next page) Share the Institutional and Regulatory Framework for Faecal Sludge Management (IRF for FSM), identify stakeholders and assess their power and interest in relation to sanitation. Details on this activity are in the following section.	Flip chart paper, markers, sticky notes, pens, copies of IRF for FSM framework
30 min	**City leadership group commitment to improving sanitation** Ask the group to write a short declaration of their commitment to improving sanitation in their city/municipality. Encourage the participants to write their own statements that focus on improving sanitation in LICs, meeting the needs of women, people with disabilities and other marginalised groups, and addressing the full sanitation service chain including safe emptying, treatment and disposal. Get all participants to sign the declaration once it has been drafted.	

→ Identify relevant local stakeholders

Multiple organisations are needed to make sanitation in LICs work properly. To get these organisations to work together effectively, it is helpful to identify the main sanitation stakeholders in the city/municipality and their responsibilities. This section covers activities to assist with this.

Activity 1: Share the Institutional and Regulatory Framework for Faecal Sludge Management (IRF for FSM)

For this activity, introduce the Institutional and Regulatory Framework for Faecal Sludge Management:

A soft copy of the IRF for FSM accompanies this manual and should be distributed to the participants. Sections 4.2–4.6 of the IRF for FSM list the responsibilities of organisations for ensuring that sanitation systems work properly.

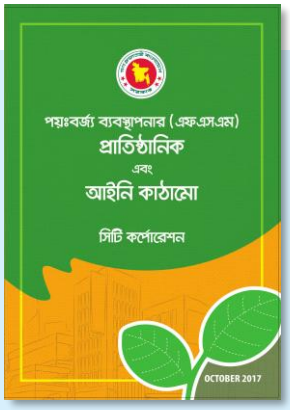
At this point, give the participants 10 minutes to read Sections 4.2–4.6 to become familiar with the listed roles and responsibilities.

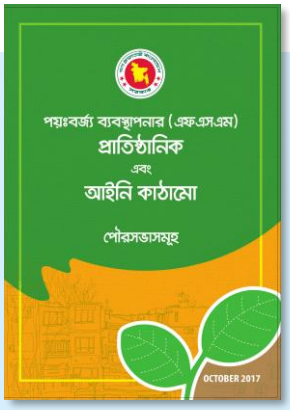
The Institutional and Regulatory Framework for Faecal Sludge Management (IRF for FSM) was published by the Ministry of Local Government, Rural Development and Co-operatives to:

1. Identify ways to implement faecal sludge management (FSM) services; and
2. Define specific roles and responsibilities of various institutions and stakeholders for effective implementation of FSM.

The IRF for FSM applies only to on-site sanitation facilities (e.g. pits and septic tanks) and the areas where these facilities are located. It does not apply to large sewerage systems.

Accompanying Materials





Activity 2: Consider how the IRF for FSM fits into the city/municipality

This activity will determine more specifically which people or organisations in the city/municipality can fulfil the roles as described in the IRF for FSM.

Together with the meeting participants, write down the names of the local stakeholders in the city/municipality (e.g. development authority, local NGOs, etc.) on sticky notes (one name per sticky note). Use the list of institutions in Chapter 3 of the IRF for FSM to help participants think about what stakeholders are present in the city/municipality. When considering stakeholders think about who in the city is responsible for:

- constructing on-site sanitation facilities
- managing on-site sanitation facilities including maintenance, regular cleaning and upgrading toilets
- confirming that the on-site sanitation facility design and construction meets standards
- emptying and transporting faecal sludge
- treating and disposing of faecal sludge
- monitoring effluent from on-site sanitation facilities and discharge from treatment plants
- allocating financing and other resources for improving sanitation
- setting policies and regulations for sanitation
- developing sanitation improvement plans and strategies

Activity 2 (continued)

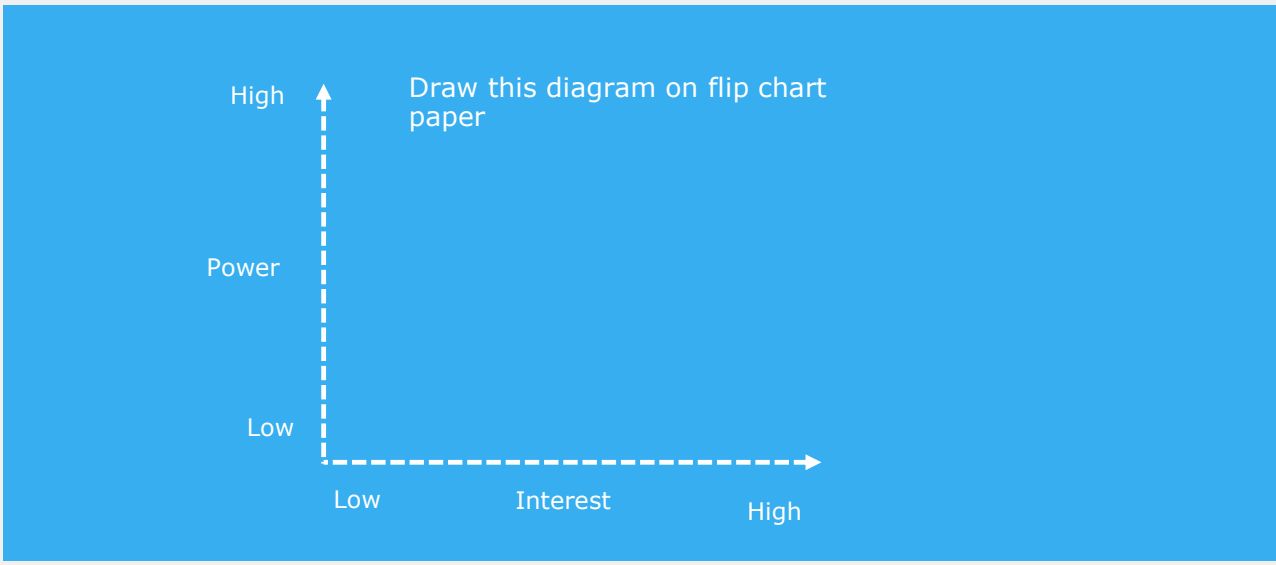
This diagram has two dimensions: power and interest.

- Power: Stakeholders with a lot of power can make changes to improve sanitation in LICs more easily than stakeholders with low power.
- Interest: Stakeholders with more interest want to make improvements to sanitation in LICs more than stakeholders with low interest.

Together with the meeting participants, decide how much power and interest each stakeholder has by putting each sticky note on the diagram drawn on the flip chart paper. For example, stakeholders that have both a lot of power and a lot of interest should be placed near the upper-right corner of the diagram. Stakeholders that have a lot of power, but low interest should be placed near the upper-left corner of the diagram.

1. Once all the sticky notes have been placed on the diagram, discuss the following questions with the group:
2. Which stakeholders are able to fulfil their sanitation responsibilities? Do they have an interest in improving sanitation in LICs?
3. Which stakeholders are not able to fulfil their responsibilities? Why are they not able to do so?
4. For stakeholders that have low interest: What can be done to make them more interested in improving sanitation in LICs?
5. For stakeholders that have low power: Who can support them and what support do they need to improve sanitation in LICs?

Take notes of the key points that the group makes by writing them down on a flip chart paper for everyone to see.



1b

MODULE 1b

LIC sanitation advocacy to community leadership group

Module 1b.
LIC sanitation advocacy to community leadership group

AUDIENCE

- Mayor
- Ward Councillors
- CDC Cluster Committees
- Relevant Ward Committees
- Leaders of CDCs and other community-based organisations in LICs

OBJECTIVES

- Build awareness among ward leaders of the need to improve sanitation in LICs within a citywide context
- Strengthen ward leadership and commitment to addressing sanitation in LICs.

SUMMARY

Similar to Module 1a, prepare a plan to advocate for sanitation development in LICs to ward leaders using existing knowledge and laws or policies about sanitation. The advocacy plan will include a workshop in which ward leader participants will discuss sanitation issues and make a commitment to resolving them.

STEP 1 STEP 2 STEP 3

STEP 1 – Arrange an external expert

As explained in Module 1a, it will be helpful to arrange an external sanitation expert to support advocacy activities to the community leadership group (Ward Councillors; CDC Cluster Committees; relevant Ward Committees, and leaders of CDCs and other community-based organisations in LICs). This can be the same expert that was used for advocating to the city leadership group or another person. The expert should have experience and skills working closely at the ward and community levels.

STEP 2 – Develop an advocacy plan

Another advocacy plan needs to be created for the community leadership group. This plan may be similar to the one created for the city leadership group, but will be adapted so that it is appropriate for people working at the ward and community levels.

Work with the external expert to develop the advocacy plan for the community leadership group. Refer to Module 1a for ideas on how to develop the advocacy plan. In addition to the activities listed in Module 1a, the following activities may also be considered:

Deliver messages from city leadership: If advocacy activities with the city leadership group from Module 1a have already been completed, the city leadership may have made a commitment to improving sanitation in LICs and the rest of the city. Delivering letters from the city level to the community leadership group about the commitment to improve sanitation can help motivate community leaders to take action.

Support community members to set up meetings with community leaders: Some CDCs, other community-based organisations, or individuals from LICs may be interested in speaking to their community leaders about improving sanitation. These people should be identified (with help from NGOs or the CDC Federation) and supported by helping them arrange a meeting with ward councillors.

With the external expert, come up with a list of activities for advocating for sanitation to the community leadership. Make sure you come to an agreement about who is responsible for which preparations and when each activity will be implemented. Document the list of activities and who will do them as an **advocacy plan**.

STEP 3 – Presentation and workshop

This step describes how to prepare and deliver a presentation and workshop on sanitation in LICs. This step is optional depending on whether it is included in the advocacy plan. Discuss with the external expert whether a presentation and workshop is a good way to advocate to city leadership. If it is, then the following activities can be implemented.

- Activity 1
- Activity 2
- Activity 3

Facilitator	The workshop should be facilitated by the external expert with support from government staff.
Materials	May include a computer, projector, flip chart paper, markers, pens and notepads.
Duration	1.5–2.5 hours is recommended.

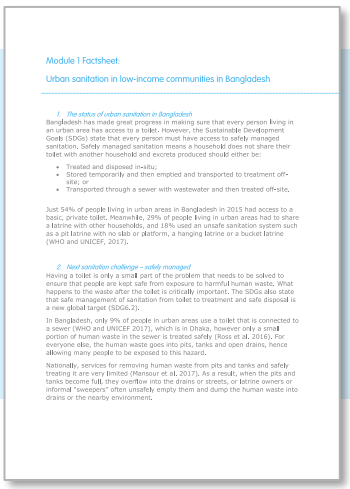
Activity 1: Check the presentation for information that needs to be updated

There are PowerPoint slides that accompany this manual for the community leadership group. They need to be updated so that they are relevant and motivating for the community leadership group. Some of the information from presentation in Module 1a can be used here, but make sure the information is appropriate for the community level.

In the presentation slides, there are places where local information needs to be entered. The presentation already contains facts and statistics. If any of these facts or statistics are out-of-date, and more recent information is available, they can be updated.

Activity 2: Understand the information presented in the slides

The factsheet accompanying this manual provides background information about each of the PowerPoint slides. Read through the factsheet before delivering the presentation to be better able to explain each of the slides.


Module 1 Factsheet:

Urban sanitation in low-income communities in Bangladesh

1. The status of urban sanitation in Bangladesh

Bangladesh has made great progress in making sure that every person living in an urban area has access to a toilet. However, the Sustainable Development Goals (SDGs) state that every person must have access to safely managed sanitation. Safely managed sanitation means a household does not share their toilet with another household and excreta produced should either be:

- Treated and disposed in-situ;
- Stored temporarily and then emptied and transported to treatment off-site; or
- Transported through a sewer with wastewater and then treated off-site.

Just 54% of people living in urban areas in Bangladesh in 2015 had access to a basic, private toilet. Meanwhile, 29% of people living in urban areas had to share a latrine with other households, and 18% used an unsafe sanitation system such as a pit latrine with no slab or platform, a hanging latrine or a bucket latrine (WHO and UNICEF, 2017).

2. Next sanitation challenge – safely managed

Having a toilet is only a small part of the problem that needs to be solved to ensure that people are kept safe from exposure to harmful human waste. What happens to the waste after the toilet is critically important. The SDGs also state that safe management of sanitation from toilet to treatment and safe disposal is a new global target (SDG6.2).

In Bangladesh, only 9% of people in urban areas use a toilet that is connected to a sewer (WHO and UNICEF 2017), which is in Dhaka, however only a small portion of human waste in the sewer is treated safely (Ross et al. 2016). For everyone else, the human waste goes into pits, tanks and open drains, hence allowing many people to be exposed to this hazard.

Nationally, services for removing human waste from pits and tanks and safely treating it are very limited (Mansour et al. 2017). As a result, when the pits and tanks become full, they overflow into the drains or streets, or latrine owners or informal "sweepers" often unsafely empty them and dump the human waste into drains or the nearby environment.

Activity 3: Presentation and workshop

The table below lists activities to conduct with the community leadership group during the workshop. The main components are the presentation, small group discussions about improving sanitation, and the development of a community leadership group action plan.

Time	Activity	Materials
10 minutes	**Welcome** Formal opening of meeting by a city-level leader (e.g. Panel Mayor or Chairman of Standing Committee)	
15 minutes	**Presentation** Detailed in Module 1a and adapted for the ward-level and to the local context. Presented by the external expert.	PowerPoint slides (see template accompanying this manual). Audio-visual equipment
15-20 minutes	**Discussion in small groups** Separate the participants into groups of 3 to 5 people. Ask the participants to talk about the following questions in their groups and write down their responses on a sheet of paper (considering the entire ward, but giving special attention to LICs in the ward): 1. What are some challenges that people are facing with sanitation in this ward? 2. What are some things that have helped people gain access to sanitation? 3. What level of sanitation should people in this community have? 4. What can local leaders do to help improve sanitation in this ward?	Pens, paper
20-30 minutes	**Open discussion** After the small groups have had time to discuss the questions, bring everyone back together. Ask someone from each group to present their responses to each question. Write down the key points from the discussion on flip chart paper so that the participants can read them. Encourage the participants to pass on what they have learned to CDCs and communities in their areas.	Flip chart paper, markers
45 minutes	**Community leadership group action plan** Ask the group to reflect on the answers that were given to the question "What can local leaders do to help improve sanitation in this ward?" from the small group discussion activity, and develop a list of actions that they can take within the next year to start improving sanitation in the ward. The actions should be specific and there should be deadlines for each one. Record each action in a document and make copies for the participants	
10-15 minutes	**Closing** Synthesis of discussions by facilitator including next steps in the proposed process. Ward Councillor closes the workshop.	

1c

MODULE 1c

City-level sanitation in LICs strategy development

Module 1c.

City-level sanitation in LICs strategy development

AUDIENCE

- Mayor
- Relevant city-level standing committee(s)
- Representatives of WASA Development Authority
- Relevant city corporation or paurashava departments
- CDC Federation

OBJECTIVES

- Assess the current status of sanitation in the city/municipality.
- Identify priority areas for action on sanitation development.
- Develop goals and actions for improving sanitation in the city/municipality.

SUMMARY

Facilitated activities in which the participants collaboratively develop ideas for city-level sanitation in LICs strategy. These activities include data collection on sanitation, scoring different aspects of sanitation service delivery, identifying priority areas for action, and developing a list of goals and actions for improving sanitation.

A **city sanitation strategy** includes the vision and goals for sanitation development in the city/municipality and strategies to meet these goals. Development of a citywide sanitation strategy is an important step toward deciding how safe sanitation will be brought to everyone, and it lays the foundation for coherent sanitation action plans. This section outlines some of the key steps in forming a citywide sanitation strategy that emphasises improvement in LICs.

Designing a citywide sanitation strategy is a complex process. The steps presented here are simplified, but in reality, there will be many challenges in developing and implementing a strategy. At the end of this section there are some questions to consider when going through the process of strategy development. Getting support and commitment from city leadership (Module 1a) is crucial to a successful process.

Three broad areas that a citywide sanitation strategy should address are covered here:

1. The current sanitation status and priority areas (Where are we now?);
2. A vision and goals for improving sanitation in the city/municipality, especially for LICs (Where do we want to go?);
3. Preferred approaches for achieving the goals (How can we get there?).

I. Current sanitation status and priority areas

As a first step, understanding the current status of sanitation in the city/municipality helps to identify areas of success that can be built upon and areas which need to be addressed. These activities should be carried out before developing the citywide sanitation strategy.

Information that was collected during step 4 of Module 1a can be used here. However, the data collected for the city sanitation strategy should be more detailed than the information that was used for advocating to the leadership groups.

If the availability of data on sanitation is inadequate, especially for LICs, there may be a need to collect more. As much data as possible on aspects of sanitation services, as shown in Table 1.4 in Module 1d, should be collected to inform the citywide sanitation strategy.

STEP 1 – Data Collection

First, collect any data or information that is available on the status of sanitation systems in your city/municipality. Focus on collecting information on sanitation in low-income areas. This information may already be available in reports on surveys that have already been conducted. Table 1.1 shows the types of information than can be useful, and possible sources.

Key informants should be consulted to validate this data and check if they have more to add. Key informants for validating the data can be anyone that is familiar with sanitation conditions in the city/municipality. This may include:

- ward councillors
- CDC and other community leaders
- government officials from health or environment departments
- NGO representatives
- local university staff.

Ask the key informants if they believe the available data is up-to-date, complete and accurate enough to be used for planning. If they think it is not, ask the key informants to explain what they think the status of sanitation facilities and services is based on their experiences and knowledge. If data is not available for any of the items in Table 1.1 ask the key informants if they have knowledge of those areas that they can share.

Record notes from the conversations with key informants because these will be used into inform the assessment in the following step, and to inform the city and ward-level sanitation strategies (Modules 1c and 1d).

Develop a **profile of the city** with the existing data.

Table 1.1 Types of information to collect to develop city and ward sanitation strategies

Types of information	Possible sources
○ Households with access to toilets vs. households practising open defecation. ○ Proportion of toilets that are communal vs. shared vs. privately owned. ○ Types of toilets (e.g. pour flush, basic, unimproved). ○ Types of containments for toilet (e.g. pit, septic tank, direct to drain). ○ Availability of faecal sludge management services and treatment plants. ○ Proportion of households that have had their pits/tanks emptied before. ○ Areas in the ward that are serviced by professional emptying services. ○ Proportion of households that manually empty toilets vs. hiring a professional emptier. ○ Areas where faecal sludge and effluent/wastewater is disposed. ○ Areas where faecal sludge or wastewater is used for agriculture or aquaculture. ○ Major problems with current sanitation systems (e.g. non-functional infrastructure). ○ Availability of functional and formal disposal sites or treatment plants. ○ Status of water supply, electricity and drainage. ○ Land availability for new infrastructure. ○ Flood-prone areas. ○ Areas with high groundwater levels. ○ Cleanliness, maintenance, and hygiene (e.g. presence of handwashing and menstrual hygiene management facilities) of sanitation facilities. ○ Areas with frequent disease outbreaks (e.g. diarrhoea).	○ LIUPC poverty mapping. ○ Bangladesh national statistical surveys or censuses. ○ Reports from NGOs and other organisations working in low-income areas. ○ City/municipality Master Plans or existing databases or GIS data.

Step 2 – Assessment of the status of sanitation facilities and services

A meeting between city-level sanitation stakeholders should be called to assess the status of sanitation facilities and services in LICs in the city/municipality. During this meeting, the participants will score different aspects of sanitation in the city/municipality based on their judgement, the available data, and the knowledge shared by the key informants from Step 1 of this section. This will help identify which areas of sanitation service delivery need to be improved.

Activity 1

Activity 2

Invite any sanitation stakeholders that contribute to making decisions on sanitation at the city/municipality level. These may include:

- standing committee members that oversee sanitation
- representatives from the city corporation/paurashava, Development Authority, or WASA
- CDC Federation members

Follow the activities below to assess the sanitation situation in the city/municipality and identify areas of need for LICs.

Activity 1: Share the information collected from existing sources

Share the information that was collected from Step 1 of this section on the current status of sanitation facilities and services in LICs in the city/municipality. While sharing the information, address the following topics if possible:

- The wards or areas that have the lowest levels of improved sanitation coverage or services for emptying.
- Areas with higher incidence of diarrhoea or faecal related disease outbreaks
- Major gaps in data (e.g. missing data on types of containment for sanitation facilities).
- Opinions and observations shared by the key informants from Step 1.
- Areas where improvements in sanitation in LICs have been made recently and what drove those improvements.

Give time for the participants to ask questions and discuss their thoughts on what is known about the sanitation situation in LICs.

Activity 2: Score different aspects of sanitation service delivery in LICs

The objective of this activity is for the participants to make judgements on the quality of different aspects of sanitation service delivery in LICs in the city/municipality. The participants will go through different sanitation criteria and collectively agree on a score for each criterion[1].

The following table lists questions to assess each criterion. In response to the question, have the participants collectively score each criterion with a 0 (poor), 0.5 (developing) or 1 (good). Also record any key notes that come up from the discussions of each question. To answer the questions, refer to the information collected from Step 1 of this section, and from the information collected as part of Module 1a on stakeholder and legal assessment.

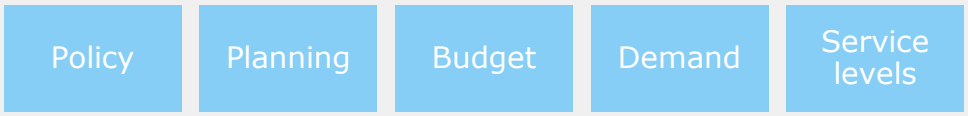


Table 1.2 → Questions for assessing the status of sanitation service delivery in LICs

Criteria	Questions	Score	Scoring guide
Policy	Policy: Is there a policy (national or local) for improving sanitation in the city, including for safely managing faecal sludge, pit/tank effluent and wastewater?		• 1: There is an approved policy that covers toilet coverage, faecal sludge management, and effluent/wastewater management. • **0.5:** Policy only in draft form, or does not address effluent/wastewater/faecal sludge. • **0:** No appropriate policy.
	Policy: Is the policy acknowledged by key sanitation stakeholders?		• 1: Key stakeholders acknowledge the policy. • **0.5:** Only some stakeholders are aware of and acknowledge the policy. • **0:** The policy is generally unacknowledged and there is poor awareness of it.
	Inclusion: Does the policy recognise the diverse sanitation needs of women, children, people with disabilities and other vulnerable groups?		• 1: Policy recognises and calls for action to meet sanitation needs of wide range of vulnerable groups. • **0.5:** Policy weakly refers to sanitation needs for vulnerable groups, or only focuses on one group (e.g. only women). • **0:** Policy makes no mention of diverse sanitation needs or needs of vulnerable groups.
	Institutional roles: Are institutional roles and responsibilities for sanitation, including faecal sludge management and effluent/wastewater management in LICs, clearly defined and followed in the city?		• 1: Roles are clearly defined and followed. • **0.5:** Roles are defined but not always followed, or roles are only partially defined. • **0:** Roles are not defined.

1 This activity is based on the City Service Delivery Assessment method published by the World Bank: http://documents.worldbank.org/curated/en/461321468338637425/pdf/106805-REVISED.pdf

Table 1.2 → Questions for assessing the status of sanitation service delivery in LICs (continued)

Criteria	Questions	Score	Scoring guide
Planning	Targets: Are there specific targets/objectives to improve sanitation quality, faecal sludge management, and effluent/wastewater management in LICs?		• 1: Targets are set for improving sanitation in LICs, including for faecal sludge and effluent/wastewater management. • **0.5:** Targets are set for improving toilets in LICs, but do not address faecal sludge and effluent/wastewater management. • **0:** No targets are set for LICs.
	Investment plan: Is there an annual or medium-term plan for improving sanitation in LICs, including faecal sludge and effluent/wastewater management?		• 1: There is a plan in place for improving sanitation in LICs, including faecal sludge and effluent/wastewater management. • **0.5:** There is a plan in place for improving sanitation in LICs, but it does not address faecal sludge or effluent/wastewater management. • **0:** There is no plan in place for improving sanitation in LICs.
	Inclusion: Do plans exist to improve sanitation access and quality specifically to meet needs of women, children, people with disabilities and vulnerable groups?		• 1: There is a plan in place for improving sanitation specifically for women, children, people with disabilities and vulnerable groups. • **0.5:** There is a plan for improving sanitation for only one vulnerable group (e.g. people with disabilities) • **0:** There is no plan for improving sanitation specifically for women, children, people with disabilities or other vulnerable groups.
Budget	Budget: Does the city have an adequate budget dedicated to improving sanitation in LICs?		• 1: There is enough funding allocated to meet most of the sanitation needs in LICs. • 0.5: There are only enough funds to meet some sanitation needs in LICs. • 0: There are only enough funds to meet very few sanitation needs in LICs.
Demand	Sanitation demand: Is the public aware of the need for safe sanitation services throughout the entire city?		• 1: There are high levels of awareness and demand for safe sanitation. • 0.5: There is moderate demand for safe sanitation, but little awareness of the need for emptying services and citywide safe sanitation coverage. • 0: There is little awareness or demand for safe sanitation.

Table 1.2 → Questions for assessing the status of sanitation service delivery in LICs (continued)

Criteria	Question	Score	Scoring guide
Service levels	Toilet options: Do people in LICs have options to install different kinds of toilets depending on their needs?		• 1: Community members in LICs are consulted about which type of toilet works best for them and have multiple options. • 0.5: Community members in LICs have only a couple of options for toilets or are weakly consulted. • 0: Community members in LICs are only offered a single toilet option or are not consulted about its design.
	Sharing vs. Private: Do most people in LICs have to share toilets with other families or do they have their own private household toilet?		• 1: Most people in LICs have a private household toilet. • 0.5: Roughly half of people in LICs have a private toilet and half use a shared toilet. • 0: Most people in LICs used shared toilets.
	Containment: Are toilets in LICs generally connected to some form or containment or treatment, or do they go straight to drains?		• 1: No toilets in LICs discharge straight to drains. • 0.5: 25% or less of the toilets in LICs discharge straight to drains. • 0: More than 25% of toilets in LICS discharge straight to drains.
	Faecal sludge management: Are professional and safe services for emptying pits and tanks available and used in LICs?		• 1: Professional emptying services are available and widely used in LICs. • 0.5: Professional emptying services are available, but seldom used in LICs. • 0: Professional emptying services are generally unavailable or unaffordable for people in LICs.
	Effluent management: Do sanitation facilities in LICs safely treat and dispose of liquids coming out of septic tanks and pits?		• 1: Effluent from septic tanks is generally treated or disposed where it cannot come into contact with people and animals, and pits are generally at least 20 metres away from drinking water source. • 0.5: Effluent from some septic tanks goes to open drains, or some toilets are within 20 metres of a drinking water source. • 0: Effluent from septic tanks usually goes to open drains, or pits are often within 20 metres of a drinking water source.
	Disposal: Is faecal sludge taken from pits and tanks in LICs disposed of at a location where it will not be exposed to people, drinking water sources, or food sources?		• 1: Faecal sludge is generally disposed of at a treatment plant or a government-approved location where there is no health risk. • 0.5: Faecal sludge is generally disposed of away from the community, drinking water sources, and food sources, but in an unapproved location (e.g. a river). • 0: Faecal sludge is generally disposed of within a community (e.g. a drain) or near drinking water or food sources (e.g. onto farmland with no treatment)
	Treatment: Does the city have a facility for safely treating faecal sludge or wastewater?		• 1: There is a faecal sludge/wastewater treatment plant that can receive waste from LICs. • 0.5: There is a faecal sludge/wastewater treatment plant, but it functions poorly or currently does not receive waste from LICs. • 0: There is no faecal sludge/wastewater treatment plant available to receive waste from LICs.

Step 3– Identify the greatest strengths and weaknesses of sanitation service delivery

Identifying strengths and weakness of current sanitation service delivery in the city will help city leaders identify which areas need attention and show that progress is possible.

Refer back to the scorings of different aspects of sanitation service delivery in the city/municipality that the group did in Step 2.

Based on the scorings**, identify the aspects of sanitation service delivery that are strongest** (score of 1). Consider the following questions:

- Are they stronger than they were 5 or 10 years ago?
- What has contributed to these aspects being relatively strong (e.g. partnerships, national or local initiatives, rising sanitation awareness)?
- Can these drivers of improvement be leveraged again, now or in the future?

Next, **identify aspects of sanitation service delivery that are weakest** (score of 0) and consider the following questions:

- What are the main obstacles that prevent these aspects from improving?
- Have these aspects always been poor, or were they once better? What caused the regression?
- Are there currently any plans or initiatives to address these weak points?

Also consider the relative importance of the different aspects of sanitation service delivery. Are some more important than others, or do some need to be improved before others can be improved?

If possible, make a ranking of the top aspects of sanitation service delivery in the city/municipality that need attention, and a ranking of the top aspects that are currently being provided successfully.

Create **a list of the priority aspects of sanitation service delivery in the city** that must be addressed.

Step 4 – Identify priority areas in the city/municipality

It is likely that levels of sanitation service delivery are not equal throughout the city/municipality. Often, LICs have lower levels of sanitation quality than other places. This has negative consequences for both the people living in LICs and for the entire city/municipality (see information in Module 1a).

Priority areas that require the most immediate attention for improving sanitation services should be identified. Multi-Criteria Analysis (MCA) is one way to do this.

To conduct an MCA, first choose which criteria should be considered when prioritising wards or other areas in the city/municipality. For example, these criteria could include:

- Which wards have the highest rates of open defecation?
- Which wards have the fewest toilets per capita?
- Which wards have the highest housing densities?
- Which wards have the highest proportions of toilets discharging straight to drains?
- Which wards have the highest proportions of septic tank effluent discharging straight to open drains?
- Which wards have the lowest rates of professionally emptied containment units?
- Which wards are in flood-prone areas?
- Which wards have the highest levels of poverty?
- Which wards face the highest threats of eviction?

Next, for each criterion, give each ward a score on a scale of 1–3 where 1 is best and 3 is worst. For example, a ward with high density would receive a score of 3 and a ward with low density would receive a score of 1.

Each criterion can also be weighted if some criteria are more important than others. The score is multiplied by the weight to give a higher value.

Add up the scores for each ward. The wards with the highest total scores should be the ones that are prioritised. The table below is a simple example:

Table 1.3 Example of sanitation scoring to identify priority wards

Wards	Housing density (Weight: 1)	Poverty (Weight: 2)	# of toilets (Weight: 1)	Total score
Ward #1	2	6	2	10
Ward #2	3	4	2	9
Ward #3	2	2	1	5

Sanitation data disaggregated by wards, where available, and the opinions of key informants on sanitation in the city/municipality, can be used to score the criteria.

Priority areas as identified by the LIUPC program may also help in the identification of the wards that most urgently require attention, but note that the LIUPC priority areas do not have a specific focus on sanitation.

In order to secure good public and environmental health for the city/municipality, **every ward must have safe sanitation** – if any ward does not have safe sanitation, it will affect the health of the entire city/municipality. However, focusing on the wards most in need first will likely result in the quickest improvements in public health.

Create a document that **lists the wards that have been prioritised** and describe the process used to identify them as the priority wards.

II. A vision and goals for improving sanitation

The citywide sanitation strategy should also contain a vision and goals for sanitation development in the city/strategy. The vision and goals represent the sanitation status that the city leadership wants to achieve and provide guidance for sanitation development initiatives.

Step 1 – Create a vision statement

The group should create a **vision statement** that describes in one line what sanitation in the city/municipality should be 10 to 15 years in the future. At a minimum, the vision statement should align with Sustainable Development Goal 6 targets for water and sanitation (Box 1.1), the Bangladesh National Strategy for Water Supply and Sanitation[1], and the Bangladesh National Policy for Safe Water Supply and Sanitation[2].

Box 1.1

Sustainable Development Goal 6 targets on sanitation and wastewater

Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	**Indicator 6.2.1** Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water
Target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, **halving the proportion of untreated wastewater** and substantially increasing recycling and safe reuse globally	**Indicator 6.3.1** Proportion of wastewater safely treated
Target 6.B Support and strengthen the participation of local communities in improving water and sanitation management	**Indicator 6.B.1** Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

1 https://www.who.int/globalchange/resources/wash-toolkit/national-strategy-for-water-supply-and-sanitation-bangladesh.pdf
2 http://nda.erd.gov.bd/files/1/Publications/Sectoral%20Policies%20and%20Plans/National-Policy-for-Safe-Water-Supply-&-Sanitation-1998.pdf

The vision statement should include an ambition for equitable sanitation services that meet at least the basic needs of disadvantaged people and people living in LICs. It should further aspire to contribute to achieving SDG target 6.B by:

- making progress in the degree of influence of women in municipal- or ward-level decision-making about sanitation; and
- making progress in the degree of influence of socially excluded and/or low-income groups in municipal- or ward-level decision-making about sanitation.

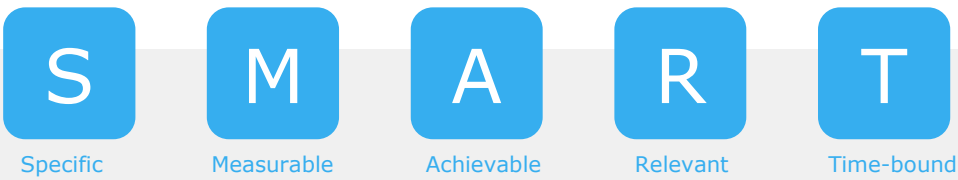
For example, a vision statement might be: "Safely managed sanitation services for everyone living in the city by 2030, including strengthened participation from women and socially excluded groups in decision-making about ward-level sanitation"

Step 2 – Create goals for achieving the vision statement

The group should then create goals for reaching the sanitation vision statement. The goals are more specific than the vision statement, and achieving all of the goals will mean that the vision statement has been achieved.

There is no minimum or maximum number of goals to make, as long as there are enough to achieve the vision statement and not so many that they are difficult to manage. The goals should have the following qualities:

- **Specific** – Each goal should focus on a specific aspect of sanitation service delivery.
- **Measurable** – It should be possible to find out whether the goal has been achieved through data collection.
- **Achievable** – The goals should be realistic for the city/municipality to achieve.
- **Relevant** – The goals should be related to improving sanitation in the city.
- **Time-bound** – Each goal should have a date or year by which it will be achieved.



The goals should seek to address the weaknesses or gaps in sanitation service delivery that were identified in Module 1d and earlier in this section. They should address technical problems with sanitation service delivery chain, for example:

- Everyone in the city uses a toilet that is no more than 10m away from their home by 2025
- No toilets in the city are connected directly to open drains by 2025
- 75% of septic tanks in LICs are connected to technologies that treat their effluent by 2028
- Mechanical emptying services are available to everyone, including at an affordable cost for low-income customers by 2030
- 25% of households in the poorest wards have their waste treated in a DEWATS by 2026
- A faecal sludge treatment plant capable of receiving 75% of the faecal sludge produced by the city is operational by 2030

The goals should also address institutional, social, and environmental aspects of sanitation service delivery. For example:

- Every ward has a Ward Sanitation Action Plan by 2023
- Every ward has a Ward Sanitation Committee that is at least 50% women and includes representatives from LICs by 2023
- The number of households upgrading their containment units is increasing more rapidly in the poorest wards than in the wealthier wards at all times
- *E. Coli* counts in the city's largest river are reduced to a level safe for public health by 2030

List the final goals to be included in the city sanitation strategy.

A draft list of goals should be reviewed and endorsed by different stakeholder groups including government agencies, the CDC Federation, civil society groups, and NGOs working in urban sanitation.

III. Approaches for achieving goals

A third component that the citywide sanitation strategy should include is a set of strategic approaches for achieving the goals that were developed in the previous section. The approaches should describe the processes that are needed for meeting each goal and how they will be monitored.

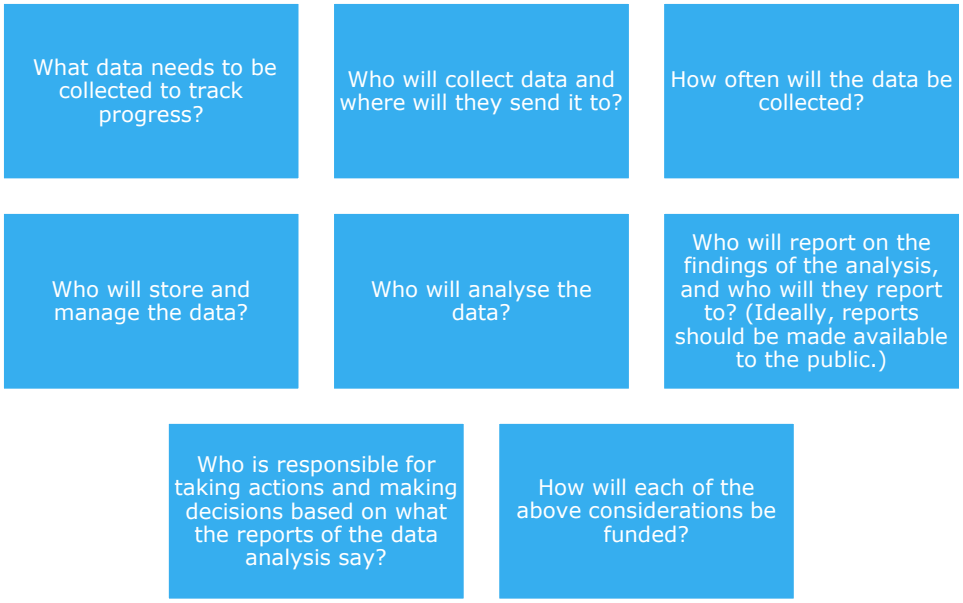
The group should go through each goal one by one and specify the main strategic approaches for attaining each goal. For example:

Goal	Strategic approach
No toilets in the city are connected directly to open drains by 2025.	Raise public awareness of the importance of safe containment.
	Pass local by-laws that ban toilets from discharging to open drains and/or incentivise construction of safe containment.
	Allocate public funds for the construction of appropriate containment technologies.
75% of septic tanks in LICs are connected to technologies that treat their effluent by 2028.	Endorse engineering designs for proven technologies for treating septic tank effluent to safe levels in LICs.
	Support ward sanitation strategies to identify where effluent is being discharged.
Every ward has a Ward Sanitation Action Plan by 2023.	Raise awareness of ward councillors and CDC clusters on the need for safe sanitation.
	Convene meetings in every ward to assess sanitation status and needs.
Each ward has a sanitation committee comprising 50% women and representatives from LICs by 2023.	Raise awareness among ward councillors of the need for sanitation and support them to establish ward sanitation committees.
	Reach out to CDCs and other community-based organisations to recruit women and people from LICs to serve on the committee.

Document the list of actions that will be done to achieve each goal, and include this list in the city sanitation strategy.

IV. Monitoring progress toward goals

Each strategic approach requires an accompanying **monitoring mechanism** to track progress toward achieving the goal. Design of monitoring mechanisms should consider:



If there is an existing monitoring/data collection system, the monitoring mechanism should align with it.

The data should be disaggregated across different levels of wealth to check whether adequate progress is being made in LICs to reduce inequalities in the city/municipality. This may mean that additional data collection and analysis are needed to determine the wealth levels of different households.

The monitoring mechanism for each action should also be documented in the city sanitation strategy.

V. Questions to consider when formulating goals and approaches

Citywide sanitation strategies can be challenging to implement for many reasons. The following questions should be considered when forming the citywide sanitation strategy to avoid complications that could stall implementation of the strategy[1]:

1. Will national government authorities support the strategy, and do they have their own initiatives that they expect cities to follow?
2. Do the strategic approaches need to be piloted first, or can they immediately be applied across the entire city/municipality?
3. Will the citywide sanitation strategy be driven by a single government agency or a multi-stakeholder partnership? What are the benefits and drawbacks of each of these approaches?
4. Are there currently enough skills, capacities, and motivation in government to plan and implement each component of the citywide sanitation strategy?
5. To what extent will members of the community be involved in planning and implementing the citywide sanitation strategy? How can their involvement benefit the strategy?
6. Is finance is available for planning and implementing the citywide sanitation strategy? Or is there a clear plan for how finance will be secured?
7. Are there sufficient incentives for each stakeholder involved in the citywide sanitation strategy to carry out their role fully?
8. Is the vision statement of the citywide sanitation strategy ambitious enough but also realistic?

These questions should be considered throughout the process of creating the citywide sanitation strategy to help ensure that the plans have a higher likelihood of being successfully implemented.

1 Adapted from ISF-UTS & SNV (2016) 'Are we doing the right thing? Critical questioning for city sanitation planning'. Prepared by Institute for Sustainable Futures, University of Technology Sydney and SNV Netherlands Development Organisation

1d

MODULE 1d

Ward-level sanitation in LICs strategy development

Module 1d.
Ward-level sanitation in LICs strategy development

AUDIENCE

- Ward Councillors
- CDC Cluster Committees
- WASA
- LIUPC
- Leaders of other community-based organisations

OBJECTIVES

- Collect and analyse sanitation data in wards to identify sanitation needs and opportunities.
- Develop a Ward Sanitation Action Plan.
- Identify who is responsible for implementing and monitoring the Action Plan.

SUMMARY

Facilitated activities in which the participants collaboratively develop ideas for a ward-level sanitation in LICs strategy. These activities include analysis of ward-level sanitation data to identify sanitation needs and opportunities, identification of actions to address priority areas, and joint agreement on roles and responsibilities.

A **Ward Sanitation Strategy** is used to develop actions to support sanitation at the ward level. They focus on decisions and infrastructure that is above the community level, but are more specific and manageable than the city-level strategy. This section provides guidance on the development of a ward sanitation strategy. Each city/municipality should have one ward sanitation strategy which comprises the development of different ward sanitation action plans for each selected ward.

Developing the Ward Sanitation Strategy will involve five steps:

1. Selection of priority wards
2. Desk-based identification of sanitation needs
3. Field identification of sanitation needs through existing CAPs
4. Development of Ward Sanitation Action Plans
5. Implementation and monitoring of Ward Sanitation Action Plans.

It is recommended that two committees be formed to oversee the design and implementation of the Ward Sanitation Strategy:

- A **lead decision-making committee** at the city level responsible for making higher-level strategic decisions relating to the Ward Sanitation Strategy, making changes to the Strategy as needed, and deciding how to overcome obstacles that arise.
- A **working committee** for coordinating stakeholders to implement actions, monitor progress, propose solutions to obstacles, liaise with project implementation committees that oversee CAPs (see Module 5b), and report to the lead decision-making committee.

The city corporation/paurashava should lead discussions with city authorities to decide who will join each committee, how often they will meet, and what the exact responsibilities are.

Members of the lead decision-making committee could include:

- City corporation: e.g. mayor, CEO, CPO, or CCO.
- City WASA: managing director and sanitation focal person.
- Development authority: chairman and focal person.
- Chairperson of conservancy standing committee.
- Councillors of the wards where action plans are being implemented.
- Other stakeholders to act as advisers to the lead decision-making committee could include:
    - Government ministries (Education, Health, etc.)
    - Universities
    - IEB (Institution of Engineers of Bangladesh)
    - CDC Federation
    - Representative from the LIUPC project
    - Representative from NGOs or other civil society organisations.

Members of the working committee could include representatives from:

- City corporation/paurashava: CPO and CCO
- City WASA: Sanitation focal person
- CDC Cluster of selected wards
- Representative from LIUPC project
- Representative from NGOs or other civil society organisations.

Step 1 – Selection of priority wards

It is better to start with prioritising certain wards first, instead of attempting to improve all wards at the same time, because successful sanitation improvements in the first wards will enable replication in other wards to be done more efficiently.

Module 1c – Step 4 provides instructions for identifying which wards to prioritise first. One ward or multiple wards can be prioritised at a time. The selection of wards should be informed by available data. Possible data sources to use when prioritising wards are shown in Table 1.1.

Selection of priority wards may be complex when balancing different political interest and pressure from each of the Ward Councillors. The criteria for selection should be objective and transparent, and approved by Mayor/City Council.

Step 2 – Desk-based identification of sanitation needs

Collecting information on the status of sanitation in the priority wards is required to understand where improvements need to be made. Some information may have already been collected during the development of the city sanitation strategy. However, more detailed information may be required to learn about the specific needs of the ward.

Existing information on sanitation at a greater level of detail may be available from NGOs, universities, or previous government programmes. For example, information may come from previous sanitation feasibility studies, sanitation or community development plans, government censuses, or research.

Information that might be useful includes:

- GIS maps showing the location of toilets, other sanitation infrastructure, roads and drains;
- GIS maps showing water-logged or flood-prone areas;
- Ward-level data on different aspects of sanitation as described in Table 1.1 of Module 1c;
- Reports on sanitation and hygiene practices and behaviours in the ward.

The working committee should ask sanitation experts at NGOs, universities, or government in your city if they have any of this existing information that is specific to the ward. Information collected for the city-level sanitation strategy may also have detailed ward-level data.

The working committee should then develop a **draft profile of the selected ward** with the existing data, and develop a checklist of the required data and information to be collected in Step 3.

Step 3 – Field identification of sanitation needs

Based on the missing or pending data and information collected in the ward from Step 2, two levels of data collection can be applied:

1. The Community Action Plan (CAP) developed in each CDC area, which provides valuable information, but localised to only parts of the ward.
2. A complete sanitation mapping of the overall ward that completes the picture of the sanitation situation beyond the limits of the CDC areas.

According to the CAP process, individual communities within the ward will identify their sanitation needs and select sanitation options which are recorded in their CAP (Module 5a). The CAPs are then reviewed at the ward level (Module 4a).

- These CAPs contain useful information about sanitation in the wards. For example, they may include information on existing toilet conditions, water supplies and electricity availability, flooding, and land availability (See Table 5.1 in Module 5a). They should also contain each community's preferences for type of containment, number of toilets, and features of the toilets.
- Any sanitation CAPs that have already been developed should be collected to help inform the ward sanitation strategy.

For the sanitation mapping, a contractor can be hired to collect field data using GIS-based tools.

- It is important to update the different datasets at the ward level to have precise information of roads, drains, households and residents, containment types and sanitation facilities, and to identify critical areas. The information collected during CAPs should be integrated in this mapping.
- Finally, develop a **complete ward profile**, but keep it brief enough to be readable by councillors. Include summary tables, maps analysing and cross-cutting information, and ensure it provides a clear picture of the situation.

Step 4 – Development of Ward Sanitation Action Plans

A working committee should lead the following activities to develop a Ward Sanitation Action Plan for each of the prioritised wards.

- Activity 1
- Activity 2
- Activity 3

Activity 1 – Analyse the collected information

The available information on sanitation in the ward should be analysed in order to prepare for the development of the Ward Sanitation Action Plans. Review the available information collected during Steps 2 and 3 and answer the following questions with respect to the entire ward:

Sanitation infrastructure

- What is the existing coverage of toilets and containment units per type in the ward?
- Where toilets or containment outlets are connected to drains/rivers/ponds?
- Are any areas currently serviced by sewers, or areas that are planned to be?
- Are there any decentralised wastewater treatment systems in the ward or plans to install one?
- Are there any existing non-functional toilet blocks or sanitation infrastructure that can be upgraded or rehabilitated?
- Which types of toilets/containments do communities prefer (according to CAPs if they exist)?
- Are there any schools, health centres, markets or other public spaces within the ward that require new or upgraded sanitation facilities?

Land

- What land is available for building sanitation infrastructure (including toilet blocks, containment units, or decentralised wastewater treatment systems)?
- What is the land tenure status of those available land plots (e.g. privately owned, government owned, squatter settlement)?
- Which parts of the ward are prone to flooding?
- Which parts of the ward are prone to disease outbreaks?
- In which parts of the ward do communities prefer new toilets and containment units to be built (according to CAPS if they exist)?

Services

- Which parts of the ward have reliable electricity and water supplies?
- Are professional emptying services available in the ward or city? Are they affordable for the residents?
- Are existing emptying services in the ward or city able to reach all the households (check road width and Vacutug size)? (Explain the reasons in cases where access is not available).

Answering these questions will help in developing actions to improve sanitation in the ward (Activity 2).

If enough data is available, consider developing a Shit Flow Diagram (SFD) for the ward. An SFD is a way of visualising how excreta move through the ward, and where it ends up. It can be used as a tool for convincing stakeholders of the need for sanitation, or for supporting decision-making on sanitation. Detailed instructions on creating an SFD can be found at: https://sfd.susana.org/knowledge/how-to-make-a-sfd/how-to-get-started.

Activity 2 – Develop actions to improve sanitation in the ward

Refer to the information that was collected on sanitation and the analysis done in the ward from Step 1 onwards. The working group should develop actions to address sanitation needs and gaps in service.

Actions should aim to address the entire sanitation service chain (see Module 2a), meet the needs of women and people with disabilities, and prioritise the communities with the lowest levels of sanitation service.

The actions should be at the ward level and should not focus on community-specific needs (e.g. the design and construction of specific toilets which is already covered in the CAP process). See the example in Table 1.4.

The working group should also consider who will be responsible for operation and maintenance (O&M) and management of the proposed infrastructure and services.

A **draft list of actions** and who will be responsible for O&M and management of infrastructure and services should be documented by the end of this activity.

Table 1.4 Example actions for a ward sanitation action plan

Ward-level sanitation infrastructure	Identify potential areas to be covered by sewer network: If a sewer network is available or proposed to be built, can a feasibility study be carried out to determine the cost-effectiveness of connecting parts of the ward to the network through simplified sewers (See 'Conveyance – simplified sewers' section of Module 2a)?
	Identify potential areas to build decentralised low cost sanitation solutions: Can decentralised wastewater treatment systems (See 'collection and storage/pre-treatment' section of Module 2a) be built in parts of the ward to handle the waste from many households in a cost-efficient way?
	Ensure that households and other facilities have adequate toilet interface and containment: Toilet interfaces should be well-operated and maintained, and containment should not leaking or connect illegally to drain system.
	Re-activation of non-functional communal toilet blocks: If previously constructed communal toilet blocks have fallen into disuse, can action be taken to rehabilitate them?
Public buildings	Ensure safely managed sanitation in schools, health centres, markets and other public spaces: The CAP process (see Module 5) may not cover public buildings in the ward like schools and health centres. Do actions need to be taken to upgrade sanitation in these places?
Removing waste from communities	Identify the implementation of transfer stations for faecal sludge: In many LICs, only small Vacutugs are suitable for the small roads and they require several trips to fully empty a containment unit. Can mobile or fixed transfer stations be implemented to provide an intermediate point for holding faecal sludge until a larger vehicle can take it to a city treatment plant (See Module 2c)?
	Establishment of professional emptying services: Professional services for emptying pits and tanks in the ward may already exist or be planned in the city-level strategy. If not, is an interim solution to empty containment units in the ward and treat the faecal sludge in a local DEWATS needed?
Demand creation and behaviour change	Demonstration of innovative technologies: Can new sanitation technologies (e.g. BioFil toilet, plastic septic tanks, container-based sanitation) be tested and demonstrated raise interest and demand for sanitation?
	Sanitation and hygiene behaviour change: Is a behaviour change campaign needed to improve people's awareness and practices in the ward about handwashing and menstrual hygiene management (See Module 3)?
Financing	Financing strategies for LICs: The poorest communities and households may be unable to afford to construct and maintain sanitation infrastructure, or pay for professional emptying services. Do financing mechanisms (e.g. sanitation taxes or transfers from government budgets) need to be implemented to ensure that the poorest people can afford safe sanitation?

Activity 3 – Share and finalise the Ward Sanitation Action Plans

A meeting should be held to share the list of actions with community stakeholders in the ward to gain their inputs on the list of actions and their agreements on implementation. Community stakeholders that should be invited to the workshop include:

- Other CDC members that are not already on the working committee.
- Community-based organisations.
- Representatives from schools, mosques, businesses, and healthcare facilities in the ward.
- Any other interested citizens.

During the meeting, the working group should present the sanitation needs of the ward (identified in steps 2 and 3) and proposed list of actions for improvement (step 4). The committee should answer any questions that the participants have and receive their comments about the proposed actions.

The working group should also share its proposal for who will be responsible for O&M and management of the proposed infrastructure and services. Anyone that is proposed to have a responsibility must agree and sign off on the Action Plan. The working group again should answer any questions and take comments from the participants.

Based on the feedback from community stakeholders, a Ward Sanitation Action Plan should then be drafted for each ward. Each Action Plan should include:

- An explanation of the process for creating the Action Plan;
- The identification of sanitation needs and sanitation situation using a ward-level SFD;
- The proposed list of actions to improve sanitation in the ward;
- Agreements in terms O&M and management for proposed infrastructure and services; and
- The specific action plan for implementation.

The proposed **Ward Sanitation Action Plans** should be presented to and **approved by the City Council**.

Step 5 – Implementation and monitoring of Ward Sanitation Action Plans

It is recommended that the working committee take on the responsibility of coordinating stakeholders, ensuring actions are implemented, and monitoring progress. The working committee should decide who exactly will have which specific responsibilities. The Institutional and Regulatory Framework for Faecal Sludge Management (IRF for FSM) states that the city corporation/paurashava and WASA always have certain responsibilities:

City corporations/paurashavas are responsible for faecal sludge management services for "collection and removal of refuse" in all buildings and land (City Corporation Act 2009) and for ensuring individual owners keep proper sanitation facilities within their premises. This means that the city corporation/paurashava is responsible for public sanitation facilities and for providing (by outsourcing if necessary) emptying services and transport to treatment or disposal sites.

The city WASA is responsible for "construction, development and maintenance of sewerage system for collection, pumping, treatment and disposal of sanitary waste", which should include conventional sewer networks and decentralised sewerage systems like DEWATS or simplified sewers. This also means that, apart from the sewer network, the WASA is responsible for wastewater and faecal sludge treatment and disposal facilities.

The committee should decide on and document who will fulfil other specific roles and responsibilities for implementation and monitoring of each action in the Action Plan.

In terms of **coordination**, the working committee should consider the following:

- How frequently should the working committee meet to discuss progress and obstacles?
- Which stakeholders need to be contacted to ensure actions are implemented?
- Is each part of the sanitation service chain (see Module 2) being addressed?
- Do the steps in the action plan need to be implemented in a certain order (i.e. should some actions be implemented before others)?
- Are their existing sanitation projects ongoing or planned in the ward? If so, how can they be integrated into the strategy?
- Which organisation or individual will lead the working committee (e.g. ensure the working committee meets regularly, ensure committee members attend meetings, plan committee meetings, etc.)?
- How will each part of the action plan be funded?
- How will overall progress of the actions plans, and obstacles encountered, be documented and reported to the lead decision-making committee?

2

Module 2

Sanitation technology options and decision-making

Module 2

Sanitation technology options and decision-making

The overall objective of this module is to build technical knowledge about safely managed sanitation in LICs for the key government staff responsible for sanitation so that they can support communities in choosing appropriate sanitation options. To achieve safely managed sanitation in LICs, a range of sanitation options need to be considered at the household and community levels. Further, city-level municipal infrastructure and services for the safe emptying, transport and disposal of human waste, or connections to existing sewer networks, also need to be considered.

This module contains information on sanitation technologies and their operation and maintenance, including their relative advantages and disadvantages based on the Bangladesh LIC context. It also provides guidance on how to judge what sanitation technologies are appropriate for different communities based on their physical, economic, social and environmental conditions.

Objectives

The specific module objectives are to provide guidance to the local government sanitation expert to:

- Understand the advantages and disadvantages of different sanitation technologies and prioritise the ones most suitable for LICs in their city.
- Understand the required management and financing considerations for community sanitation, including operation and maintenance tasks.
- Understand the needs for city-level supporting services (e.g. desludging, transfer stations, sewer networks) and inform the development of plans/programs to ensure supporting services are developed and/or sustained.

Expected Outcomes

It is expected that implementation of this module will:

- Provide local government authorities with the necessary knowledge to support LICs in choosing the most appropriate sanitation options for them; and
- Enable local government authorities to explain to communities: the advantages and disadvantages of different options; how to recognise which options are suitable in a given setting; and the management tasks and financial considerations involved..

2a

MODULE 2a

Sanitation technologies for households and communities

Module 2a.

Sanitation technologies for households and communities

There are many different sanitation options, and the most appropriate option for a household or community depends on many factors. This section describes different kinds of sanitation technologies that are suitable for LICs in Bangladesh, and what should be considered when choosing a preferred option with the community.

This section focuses on the toilet and how human waste will be contained. However, supporting infrastructure and services provided at the city level are also critical for making sure sanitation is safe (as described in the 'sanitation service chain' sub-section below). Supporting infrastructure and services are discussed further in Module 2c.

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Government sanitation expert becomes familiar with a range of different sanitation options.
2. Government sanitation expert able to tell when certain sanitation technologies are appropriate to implement.

SUMMARY

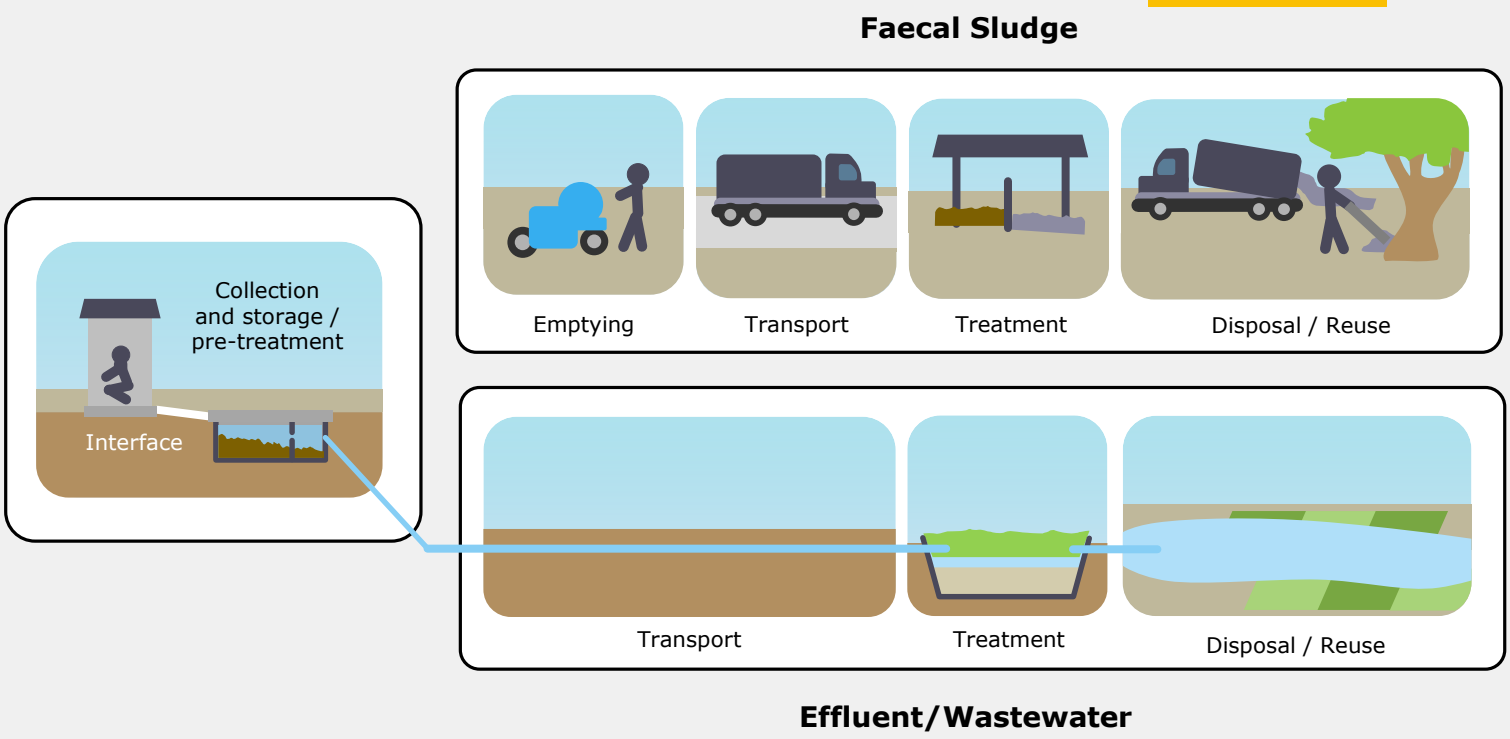
The appropriate government official(s) will read through this section and make themselves familiar with it. There are no activities in this section to undertake with others. The government official responsible for assessing sanitation options in the communities will use this information to help them select the best technology for the community. Government authorities involved in the development of city- and ward-level sanitation strategies should also review this section.

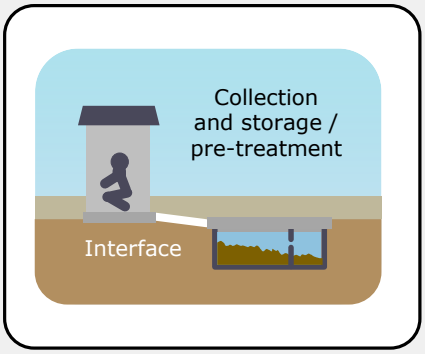
I. The sanitation service chain

Safe sanitation is not just about the toilet that the household uses. In order to have safe sanitation in cities and towns, other technologies and processes need to be put in place. When selecting a sanitation option for a community, decision-makers should consider how it will fit into the "sanitation service chain".

The sanitation service chain comprises the technical systems that are used to make sure human waste does not cause problems for public health or the environment. The sanitation service chain should address both faecal sludge and effluent that result from sanitation use (Figure 2.1):

Figure 2.1





Interface and Containment

User interface is the part of the sanitation chain that the person using the toilet sees and touches. This includes the cubicle, the squatting pan, and the tap for handwashing.

Collection and storage/pre-treatment refers to a place where human waste is collected in some kind of container (usually a pit or tank), either at the household level or at a community level. Containment units are usually designed to hold faecal sludge until it is emptied and allow some liquids to flow out to be treated.

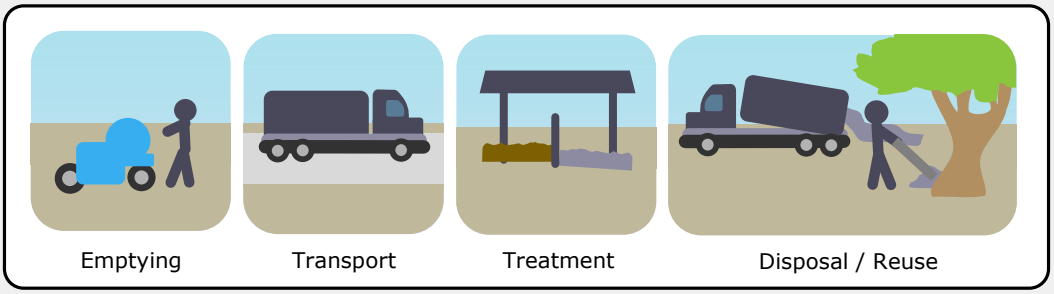
Sanitation Services for Faecal Sludge

Emptying is the system for taking the faecal sludge out of the container once it fills to its designed capacity or after a certain duration of time. Emptying should be done with machines that can pull the faecal sludge out. Sometimes emptying is done by people manually using ropes, buckets and shovels, but this is unsafe and violates labour rights, so should it be discouraged (see Module 3 on occupational health and safety for emptiers).

Transport is how the faecal sludge is taken away from the households. Usually this is done with a truck, but sometimes the sludge is taken away on carts that are pulled by animals or bicycles. Sewers can also act as transport for moving faecal sludge if enough water is present.

Treatment is the part of the chain where the faecal sludge is processed with special technologies that remove dangerous bacteria, viruses, other pathogens and environmental contaminants (nutrients).

Disposal/reuse is the final part of the chain where the treated faecal sludge is either put into a body of water or on the land, or is used for some useful purpose such as fertiliser for crops, briquettes for energy, or for feeding fish in farm ponds.



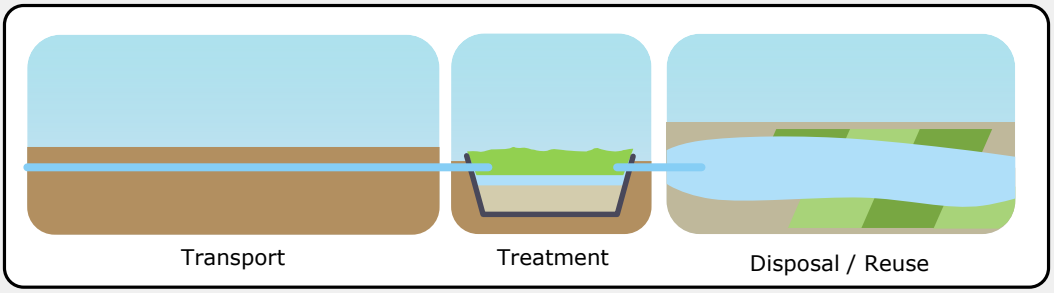
Sanitation Services for Effluent/Wastewater

Transport is how the liquid effluent is taken away from a containment/pre-treatment unit. Effluent normally leaves the containment unit through a pipe or, in the case of a soakpit or a pit latrine, by directly soaking into the surrounding soil (and the soil itself forms the treatment step). Effluent exits the containment unit by design of the unit, and normally does not require a person to remove it.

Effluent may be transported toward treatment via closed pipes. Usually the effluent flows via gravity and no energy source is needed to transport it, though there may be cases where pumping is required. In current practice sometimes effluent is discharged directly to open drains however this practice is not advisable due to associated health risks.

Treatment is the part of the chain where the effluent is processed with special technologies that remove dangerous bacteria, viruses, other pathogens and environmental contaminants (nutrients, chemicals). In the case of pit latrines and soak-pits, effluent is treated as it soaks through the soil, but this is only effective if there is adequate distance between the pit and the groundwater table and drinking water points.

Disposal/reuse is the final part of the chain where the treated effluent is either put into a water body (canal, river, pond etc.), or safely managed for some useful purpose such as water for crops.



Where centralised sewerage systems exist, there are usually no significant containment or emptying stages, and instead the waste is conveyed by pipes. Human waste should be transported directly from the toilet to the treatment centre (although in practice, many sewers have substantial leakage or discharge the waste into a water body with no treatment).

To have city-wide safe sanitation, there must be both technical and management systems in place for **all** parts of the sanitation service chain.

Many LICs in cities in Bangladesh have a toilet, but no or poor containment (the human waste goes into a ditch or an open drain). Many more communities have containment, but the container is never emptied so it overflows and, again, the human waste goes into the drain or a public area. If the sanitation service chain is incomplete like this, it causes problems for people's and the community's health and the environment.

Modules 2a and 2b focus on the user interface, collection and storage/pre-treatment, and treatment at the community or ward

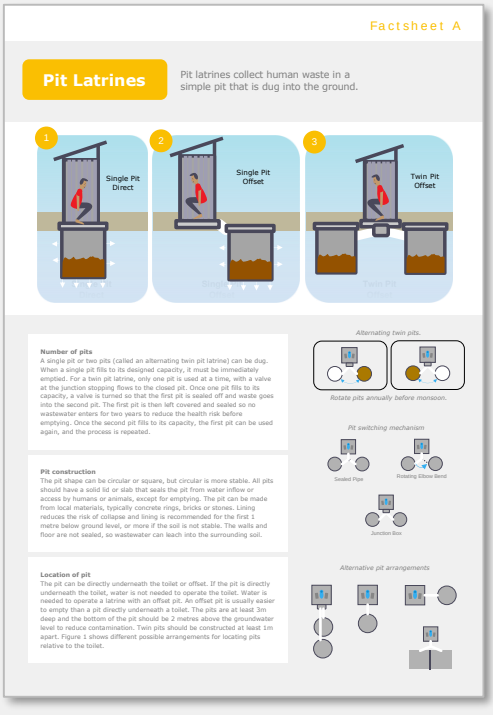
Accompanying Materials

Factsheets

2a

Module 2
SECTION 2a

Collection and storage technology factsheet



II. User interface – How people access and use the toilet

The user interface is the part of the sanitation option that the person using the toilet sees and touches. This is important to consider because this interface needs to be designed well to ensure that everyone, including women, children, elderly people, and people living with disabilities are able and happy to use the toilet. This section describes some considerations for making sure the toilet is easy for everyone to use.

A. General design features

When people go to use the toilet, they should feel safe and comfortable and be able to keep themselves clean. Some important features that should be considered when a toilet is constructed include:

→ **Water supply:** Water is needed for cleaning, bathing, handwashing and flushing the toilet. Without any water available near the toilet, people may not be able to keep themselves clean and disease can spread. People also may stop using the toilet, or feel upset, if it is unclean (also see Module 2b about who will be responsible for cleaning the toilet).

→ **Handwashing station:** Along with water, people need soap and a place to wash their hands after using the toilet. A mirror at the handwashing station will encourage people to use the station. Used water after handwashing should flow into a drain, and should not remain stagnant anywhere or flow to drinking water points.

→ **Lockable doors:** Door should have locks on the inside so people can have privacy and safety while they are using the toilet. Depending on the preferences of the community (see Module 5), locks can also be installed on the outside, for example when cubicles are allocated to individual households.

→ **Ventilation**: Ventilation pipes and/or wall ventilators should be installed to control odours inside and outside the toilet.

→ **Clear signs**: For shared and communal toilets, signs that show which toilet is for men and which toilet is for women should be displayed.

A. General design features (continued)

→ **Lighting**: If possible, lights inside and outside of the toilet should be installed to help people see at night and improve safety. The cubicle should also be designed to allow sunlight inside during the day, but should not allow people to see inside.

→ **Bathing facility**: A place for people to bathe or shower themselves will help keep them clean. This feature is optional.

→ **Bin for rubbish**: A covered bin for rubbish should be available to discourage people from throwing rubbish, including menstrual hygiene products, into the toilet.

→ **Hooks**: Hooks on the wall for people to hang their clothes or other belongings are helpful.

→ **Service hours sign**: For shared and communal toilets, the hours that the toilet will be open to people (if the toilet is not open 24 hours per day) should be publicly displayed.

The community should be consulted about these features and other considerations, such as the location of the toilet. The process for consulting the community is explained in Module 5.

B. Considerations for women and people with disabilities

Women and people with disabilities have special needs for sanitation that are often ignored when toilets are built. The following considerations are important to remember when designing the user interface of the toilet.

Sanitation considerations for women are shown in Box 2.1 below.

Box 2.1

Sanitation considerations for women

→ **Female-only toilets**: For shared and communal toilets, there should be separate toilets for women and men. If possible, the women's toilets should have a separate entrance from the men's toilets, and the entrances should not face each other. There should also be clear signs indicating which toilets are for women and which are for men.

→ **Safe location:** The toilet should be located in an area where women feel safe, including at night. Women in the community should be consulted about choosing a safe location (see Module 5).

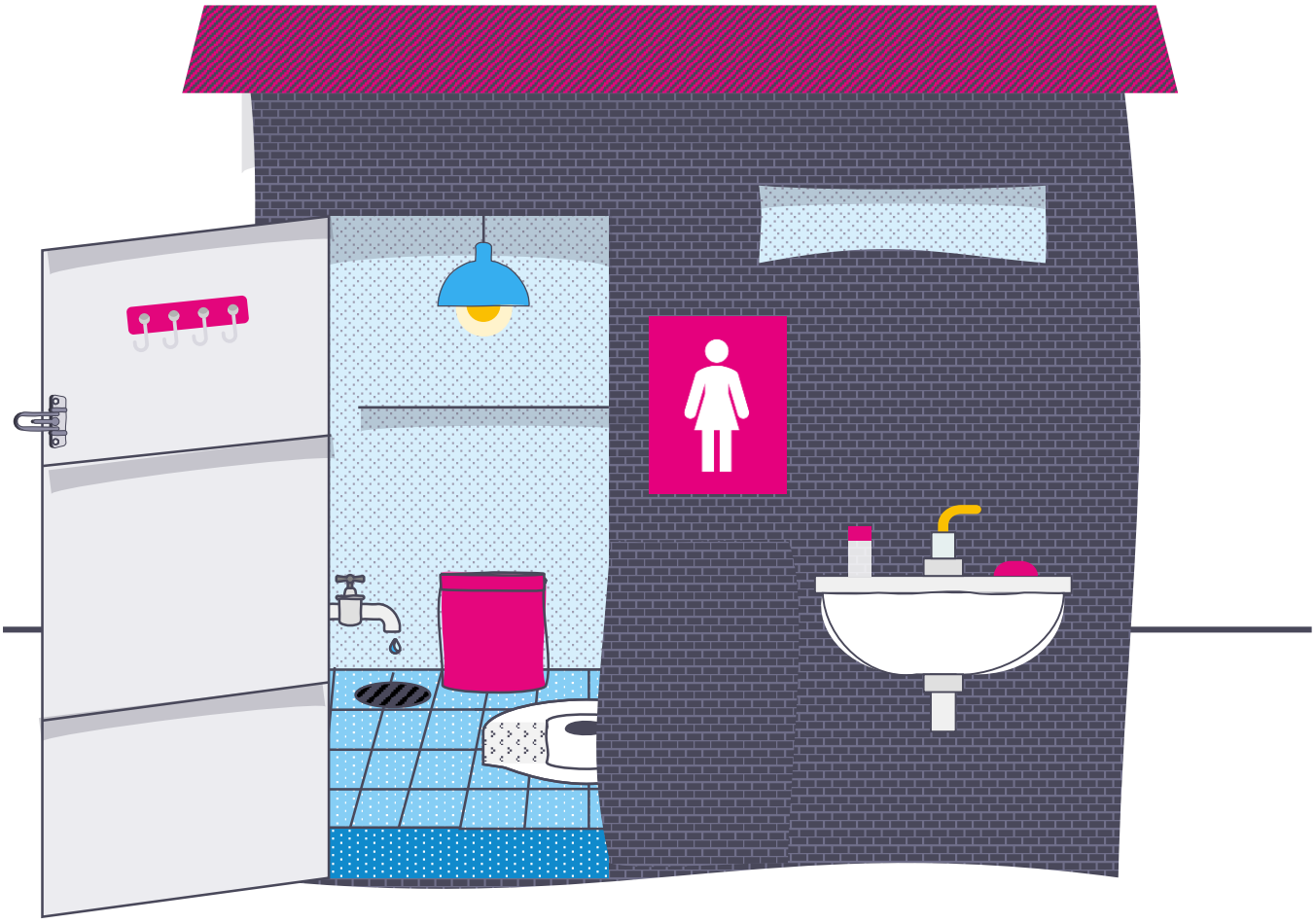
→ **Bigger toilet cubicle:** More space is required in female toilets for women to clean, bathe or change themselves, and to bring their children inside with them.

→ **Female caretakers**: For shared and communal sanitation, the person in charge of cleaning and looking after the women's toilets should be a woman (see Module 2b on management options).

→ **Good privacy:** All toilet designs should provide privacy (e.g. no holes in the walls or doors where people can see who is inside). This is especially important for women's toilets.

→ **Facility for managing menstrual hygiene:** Inside the women's toilet, there should be space for women to wash menstrual hygiene products and bathe themselves (see the materials accompanying Module 2 for designs of how to construct menstrual hygiene management facilities). A covered bin for throwing away menstrual hygiene products should also be a provided. A sign to tell women to throw menstrual hygiene products in the bin, and not in the toilet, is also helpful. A small shelf to place menstrual hygiene products while changing should be included.

Figure 2.2 Example of a female friendly toilet (Adapted from: Schmitt et al., 2018 Making the case for a female-friendly toilet. Water, 10, 1193)



- → Female-only
- → Safe location
- → Large cubicle
- → Good privacy
- → Running water
- → Soap
- → Sink
- → Light
- → Lock
- → Hook
- → Shelf
- → Dustbin

The design of the toilet should also take into the account the specific needs of people with disabilities living in the community. During the community consultation process (see Module 5), people with disabilities and their families should be asked what they need to make sure they can access the toilet. Some considerations are show in Box 2.2 below.

Designing features for making the toilets suitable for women and people with disabilities should be done following consultations with them. The consultation process is described in Module 5.

Box 2.2

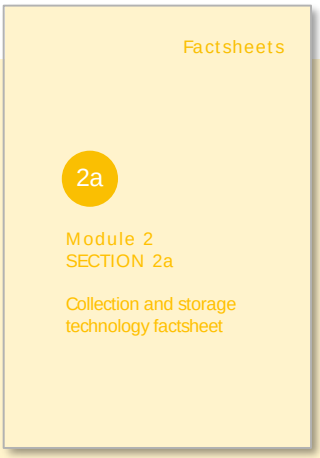
Sanitation considerations for people with disabilities

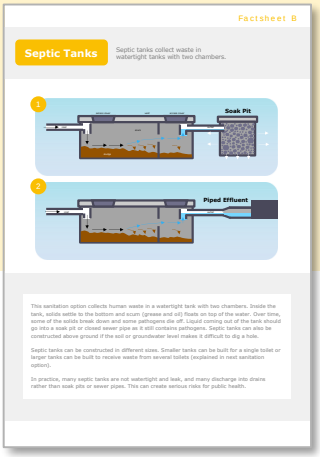
- → **Ramp**: If steps prevent some people from reaching the toilet, a ramp may need to be built.
- → **Entrance:** The entrance should be wide enough for everyone to enter. This is especially important for people in wheelchairs or people on crutches.
- → **Door handles**: The door handle and lock should not be placed too high up for some people to reach (including children).
- → **Internal space:** There should be enough space inside the toilet for people to turn around. For example, a person with crutches may require more space to turn around. There should also be enough space for a second person if anyone in the community requires assistance each time they use the toilet.
- → **Floor:** The floor of the toilet should not be so rough or uneven that it is difficult or uncomfortable for anyone to move around inside.
- → **Handrails:** Handrails may need to be installed inside and outside the toilet to help people move around or avoid falling down.
- → **Location:** The toilet should be located in an area where people with disabilities can reach it. People with disabilities and their families should be consulted about this (see Module 5).
- → **Seats:** Special seats may need to be installed if anyone is unable to squat.

III. Collection and storage/pre-treatment – Where human waste will be contained before removal

Collection and storage/pre-treatment is the part of the sanitation option where the human waste is contained. The factsheets accompanying this module describe five different collection and storage/pre-treatment options that could work in LICs in Bangladesh:

- Pit latrines
- Septic tanks
- Communal septic tanks
- Composting
- Anaerobic filters (also sometimes referred to as DEWATS)





Each option is described in the factsheets that accompany this manual, with information about its advantages and disadvantages. However, when supporting the community to select an option, expert judgement will be needed to decide which options are appropriate.

Wastewater (also known as effluent) that comes out of containment units is often neglected in sanitation design, but it must be safely managed (see Box 2.3). The containment technology factsheets accompanying this module, and the following section, address wastewater management.

Box 2.3

Managing wastewater from containment units

Don’t neglect wastewater when designing a sanitation option

When choosing a containment option, it is important to consider how the wastewater (effluent) will be handled. Wastewater is the mostly liquid part of human waste that has been separated from the solids. For example, wastewater includes the liquid that comes out of a septic tank or the liquid that soaks into the ground from pit latrines. Wastewater also includes the mostly liquid waste that sewers carry.

Wastewater contains high levels of dangerous pathogens that can make people sick. Many toilets in LICs in Bangladesh are designed to contain faecal sludge, but have little or no design features for managing the resultant wastewater.

Each containment option described in the factsheets has a wastewater treatment section to consider how the wastewater will be managed.

A. Local wastewater treatment options

The wastewater from the collection and storage/pre-treatment technologies require treatment. This section describes a few technologies for treating wastewater at the community level. Three options for local wastewater treatment are presented here:

Soakpits	Anaerobic Filters	Constructed Wetlands

There are other more complex technologies like membrane bioreactors or rotating biocontactors that can be very effective at reducing pathogens, but they are unlikely to be feasible solutions in LICs in Bangladesh.

It is not necessary for every toilet to have its own local treatment technology. Pipes or covered drains can carry the wastewater from multiple containment units to a treatment plant. This can help save space and money. If wastewater is transported by drains, the drains must be covered so that people and animals do not come into contact with the wastewater.

It is important that only liquids, and not solids, are put into these drains because solids can cause them to become blocked and dysfunctional.

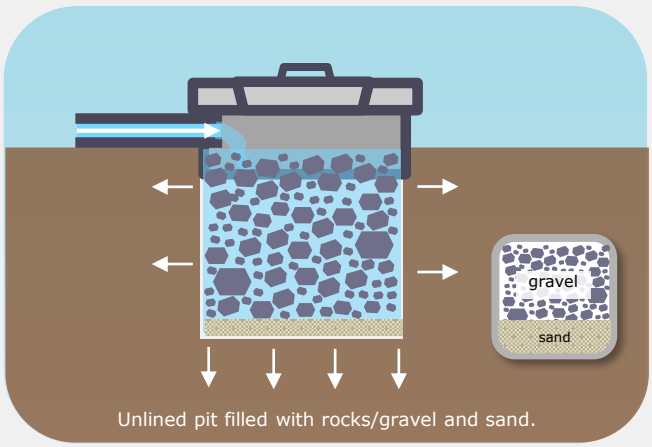
With each of these options, it is still possible for the wastewater to contain dangerous levels of pathogens, even after treatment. Therefore, wastewater leaving a treatment plant should not go to an area where people can come into contact with it.

Soak pits

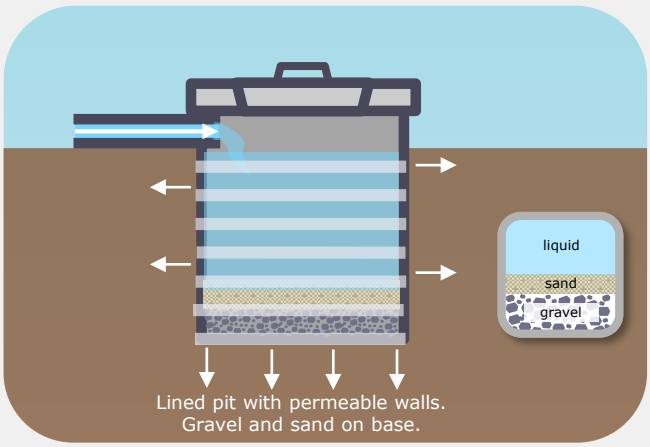
A soak pit (or soak well or leach pit) is a covered pit that has porous walls that allow wastewater to slowly soak into the ground. It can either be lined (e.g. concrete ring or brick) and empty, or unlined and filled with rocks and gravel to prevent the walls from collapsing. A layer of sand and fine gravel is spread on the bottom of the tank. The wastewater from the containment unit enters the soak pit and slowly filters through the base layer into the surrounding soil, therefore it is best suited to permeable soils. Clay, hard packed or rocky soils are not appropriate.

Flooding or heavy rainfall can increase the risk of soak pits contaminating groundwater or water supplies Soak pits should be located 30 metres away from water points. If the groundwater in the community is used for drinking, the bottom of the soak pit should be 2 metres above the groundwater level at all times. Soak pits should be built with a lid to provide access for maintenance and should be away from trafficable areas because traffic will compact the soil and may reduce percolation. Soak pits can become clogged if solids get inside, which often occurs if the primary treatment structure (e.g. septic tank) isn't emptied regularly.

Figure 2.3



Unlined pit filled with rocks/gravel and sand.



Lined pit with permeable walls.
Gravel and sand on base.

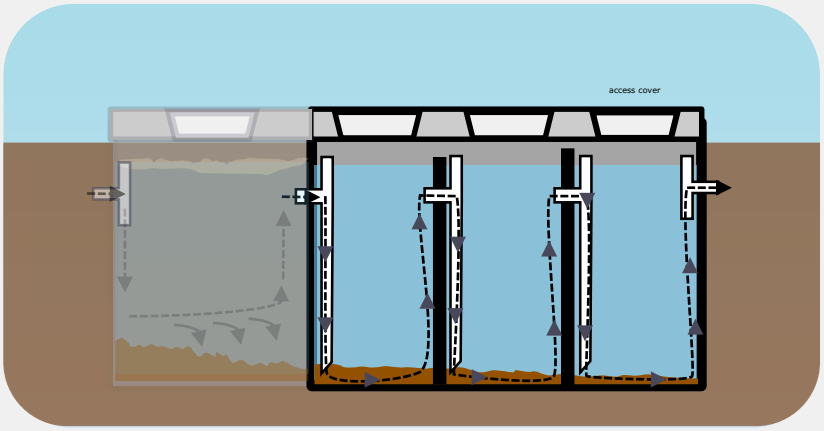
Advantages	Disadvantages
+ Simple to build and maintain	- Can become clogged easily if solids get inside.
+ Inexpensive to build and maintain	- Can contaminate groundwater, particularly if the groundwater level rises or during flooding.
+ Requires less land than other treatment options	- If the soil is too dense, the liquids may not soak into the ground quickly enough and the soak pit can overflow

Anaerobic Filters

The anaerobic filter has multiple chambers. In each chamber, wastewater flows from the bottom to the top, allowing particles to settle at the bottom. Anaerobic filters include several layers of submerged filter media that increase treatment as wastewater comes into contact with biomass growing on the filter media. Anaerobic filters can only be a secondary treatment step. Otherwise they will quickly block with solids. Filter media should have a large surface area for bacteria to grow on, and can include gravel, crushed rock or plastic pieces.

Anaerobic filters can be added to septic tanks or ABRs and consist of one filter or more than one filter in series. They are large but can be built underground, or under roads. However, they require ventilation to let gases escape and access for maintenance.

Figure 2.4



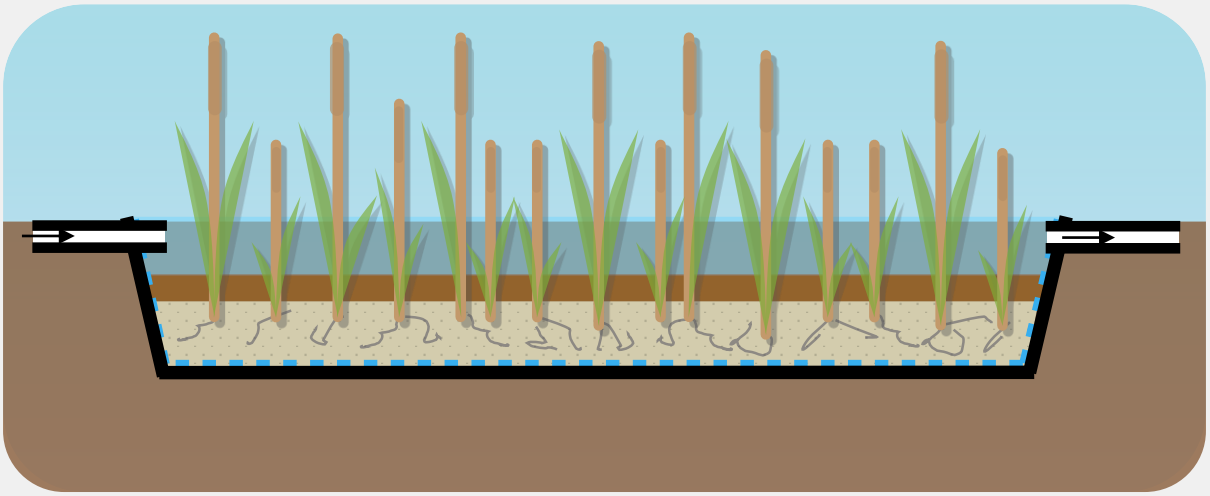
Advantages	Disadvantages
+ Can be built above or below ground	- Require an expert to design and construct
+ Can be designed to receive a large amount of wastewater from many different containment units	- Can become clogged if too many solids enter the system, adequate pre-treatment is necessary
+ Further reduce the amount of solid particles in the wastewater	- A trained person is needed to perform maintenance and remove blockages in the filters
	- Low reduction of pathogens and nutrients

Constructed wetlands

A constructed wetland is a man-made wetland, or swamp, that contains water, plants, gravel and an impermeable lining. The wastewater flows horizontally below the surface where the gravel (or similar filter medium) filters out solids. The plants provide some treatment and the roots maintain the permeability of the filter. The treated wastewater exits the wetland through a pipe at the opposite end of the inlet.

The constructed wetland requires a large amount of space which may be difficult to find in LICs. However, wastewater from many different containment units can be transported to a central constructed wetland in the community.

Figure 2.5



Advantages	Disadvantages
+ Can have an attractive look and will emit no odours if designed and maintained well	- Requires an expert to design and construct
+ Can connect wastewater from many containment units to a single wetland	- Requires a large amount of land surface area to install
+ Low operating cost	- There may be a risk of clogging, depending on pre-treatment
	- Requires a long start-up time to get it functioning at full capacity

IV. Choosing a sanitation option with the community

There are many factors to consider when deciding what type of toilet and containment are most appropriate for an LIC. The preferences of the community are important, so they should be consulted (see Module 5). Before consulting with the community, the local government sanitation engineer or expert should consider what he/she would recommend. This section explains how to select an option for the community.

A. Factors affecting the choice of sanitation options

When thinking about what user interface and containment options will work best for the community, consider financial, technical, environmental, social and institutional factors.

Financial

Cost of sanitation infrastructure: The cost of building the sanitation option, and maintaining it over a long-term period, is one of the most important factors. Shared or community facilities, such as communal septic tanks, can appear expensive overall, but may actually be cheaper on a cost per household basis compared to individual tanks for each household. Important costs to consider include:

- cost of building materials
- cost of labour to build option (especially if skilled experts are needed)
- cost of emptying the container once it has become full
- cost of paying for someone to clean the toilets or collect fees (if a shared option is chosen)
- cost of operating it (electricity or water bills, sludge removal, operator fees)
- cost of repairs (small and large) if something breaks or becomes blocked
- cost of water for flushing the toilet.

Depending on the option, each of the costs will be different. Whatever the selected option is, there must be a way to cover the costs of construction and the operation and maintenance (O&M) costs over the long term.

Willingness and ability to pay: Alongside an understanding of costs, it is also important to consider the community willingness and ability to pay. Depending on levels of wealth, understanding of sanitation and other factors, there may be a wide variation among community members in their willingness and ability to pay for sanitation services.

Availability of complementary funding for ongoing costs: Almost all sanitation options will require some ongoing costs to be financed by entities beyond the community. The availability of funding from local government, corporate donors or other sources to support ongoing costs, including the cost of large-scale repairs or emergencies, may affect the decision about which is the most appropriate option.

Technical

Land and space availability: There must be enough land available to build and to access the sanitation option, noting that some sanitation options can be built beneath the ground (e.g. under a road).

Number of users: The option must take into account the number of people that will use it, and must be designed to handle that number of people, taking into account any potential future population growth and the possibility that many people may be attracted to the new toilet.

Available materials: The materials for constructing the option must be available. Some sanitation options may require special materials that are hard to find.

Operation requirements: Some sanitation options require more management and coordination from the community than others, or may require specialised skills or external support services.

Drainage: Some sanitation designs may require that good drainage is available. Local drains should be checked to see if they can safely handle any liquids from the toilet, and whether the sanitation project can cover the drains so people and animals are not exposed to any waste.

Sewer network: If there is a conventional or decentralised sewerage system in the city or nearby, the connection to the network should be investigated, even if the distance is out of the standard coverage area. It is also important to consider if there are near-future plans to construct or extend a sewerage system in the area.

Environmental

Type of soil/ground: In some areas, the ground may be too hard or too soft to dig a deep hole. In addition there may be more or less potential for pollution to occur through the soil depending on the type of soil and the distance to any surface waterways or groundwater.

Water availability: Some sanitation options require more water to work than others.

Groundwater level: In areas where the groundwater level is high, certain sanitation options cannot be used.

Water pollution: The chosen sanitation option must not contaminate nearby drinking water sources and should avoid contaminating the environment (e.g. nearby rivers).

Highest flood level: In areas that flood regularly (i.e. every year), the sanitation option should be constructed so that it will still operate normally when floods are at their highest usual level.

Social and institutional

Preferences of the users: The people in the community may have special needs or preferences for their toilets relating to traditional or religious beliefs, the need for privacy, relationships within the community, community members with disabilities, and lifestyles. In addition, the level of community cohesion may influence whether options that require cooperation and coordination will be successful.

Local by-laws: In some cities or wards, there may be by-laws that promote or do not allow the construction of certain types of sanitation options.

Presence of city-level supportive services: The decision may be influenced by whether or not there are businesses, NGOs, or local government departments that can support the community and provide necessary services (e.g. emptying pits or tanks, or repairing broken technologies).

During the activities described in Module 5a, the local government sanitation expert should support the community in choosing amongst the available sanitation options. The sanitation expert should consider the different factors listed in this section, and any other relevant factors. Table 2.1 can also be used as guidance.

Table 2.1 Guidance on assessing suitability of systems for different conditions

Low (L)
Medium (M)
High (H)

Each system is most applicable in the conditions shown	Population density is:	Risk to groundwater used for drinking is:	Water availability is at least:	Risk of flooding is:	Land availability is:	Human resource capacity for construction and O&M is at least:	Financial capacity for O&M is at least:
Pit latrine	H	L	L	L	L	L	L
Septic tank (with effluent piped to further treatment)	M	M/H	M	M	L	L	L
Septic tank with soak pit/infiltration	L	L	M	L	M	M	M
Communal septic tank (with effluent piped to further treatment)	H	M/H	M	M	M*	L/M	L/M
Communal septic tank with soak pit/infiltration	M	L	M	M	M/H	M	M
Composting Toilets	L	H	L	L	M	M	L/M
ABR (with effluent to anaerobic filter)	M/H	L/M	M	M	M*	H	M
Simplified sewers	H	M/H	H	M	L	H	M

* or L if under ground or under a road

B. Choosing between a household, shared or community toilet

Toilets can be household, shared or communal depending on how many people can access the toilet:

→ **Household toilet:** A toilet used by only a single household.

→ **Shared toilet**: A toilet shared by approximately 2–3 households (or up to 20 people for one toilet) close by one another, or by 2–3 families living in the same building or premises.

→ **Community toilet**: Toilet blocks that are used by 4 or more households. Toilet blocks have multiple toilets in the same facility. Sometimes each family or group of families will hold a key to one toilet within the block.

Household toilets are usually better than shared or communal toilets. Sustainable Development Goal 6.2 does not consider shared toilets to be basic or safe sanitation. This is because shared and communal toilets:

- are often dirtier and cleaned less frequently than household toilets
- often require users to walk further to reach the toilet
- require different families to agree on how to manage the toilet and make payments to maintain it
- usually provide less privacy than household toilets.

However, it is often not possible to construct toilets for every household in an LIC because:

- There is not enough land available to build household toilets for everyone.
- Very poor families may be unable or unwilling to pay for toilet maintenance on their own.
- People may be unwilling to pay for household toilets if they are worried they could be evicted, or landlords may be reluctant to pay for household toilets.

If possible, household toilets should be chosen as the preferred option for an LIC. If household toilets are not possible, then shared or community toilets will need to be chosen. It is important to remember that having household toilets does not necessarily mean every house needs its own containment. Toilets can be built inside houses and use a shared containment unit (e.g. a communal septic located between multiple houses).

The availability of land will affect the decision about which type of toilet to build. Land for toilets should be:

- As close to the users as possible (ideally no more than 20 metres away)
- in a place that is safe after dark
- in a place where the people living nearby are not upset the latrine has been built there
- Close to a road so that trucks can get to the pit or tank for emptying
- in a place where there is a water supply and, if possible, an electricity supply.

Checking land availability is done during a community mapping exercise. This is explained in Module 5a.

The preferences of community members will also affect the decision about whether to implement a shared toilet used by a few households or a community toilet shared by many households. Some households may prefer shared ones because they can be placed closer to homes and have more privacy. Other households may prefer communal toilets because their operation and maintenance costs are usually lower because more households contribute to covering the costs. This should be discussed when presenting the options to the community.

2b

MODULE 2b

Management, operation and finance options for shared and community sanitation

Module 2b.

Management, operation and finance options for shared and community sanitation

Good management of community sanitation is required to ensure that the sanitation systems work over the long term. Management is needed to conduct O&M of the system and to control finances.

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Understand the responsibilities needed to manage shared/communal toilets.
2. Understand that communities cannot manage shared/communal toilets completely on their own.
3. Become familiar with different management options that can be offered to the community.

SUMMARY

The appropriate government official(s) will read through this section and make themselves familiar with it. There are no activities in this section to undertake with others. The government official responsible for assessing sanitation options in the communities will use this information to help them select the best management and finance options for the community.

I. General management tasks

The sanitation manager or management team must ensure the toilet facilities are kept clean, arrange minor and major repairs and maintenance, collect fees to pay for operation and maintenance, and make plans for improving the facilities. Local government should make sure that the sanitation managers are aware of the following responsibilities and are able to carry them out (Box 2.4)

Module 5c describes activities for assigning management tasks to different actors. It is important to note that local government should have a role in supporting LICs to manage their sanitation.

Box 2.4

Management tasks for community sanitation

Regular operation and maintenance tasks: Operation and maintenance tasks for each type of toilet are shown in the factsheets accompanying Module 2. However, there are some general tasks that every sanitation option needs. Someone needs to be responsible for carrying out inspections and other work to make sure each requirement in the checklist below is taken care of:

- → The toilet is kept clean and there are no faecal stains, rubbish or bad smells.
- → The toilet functions (can flush), particularly after heavy rains or flooding.
- → Water and soap are available at the facility for people to wash their hands.
- → A covered bin is available for throwing away sanitary products, and the bin is not full.
- → The door closes and locks properly.
- → Signs showing which toilets are for women and which are for men can still be seen.
- → Any holes that can allow people to see inside the toilet are blocked.
- → Any minor damage (e.g. leaking taps) is repaired.
- → Fees from households are collected for the O&M fund.
- → If lights are installed, lightbulbs are working properly.

If any of these requirements are not being met, the sanitation manager must make a plan to make sure they are addressed.

Emptying considerations: All pits and tanks will eventually need to be emptied. The managers, with support from local government, are responsible for knowing when the pit or tank needs to be emptied, and for contacting an emptying service. Information about emptying for each type of sanitation facility is shown in the factsheets accompanying Module 2.

Arrange for major repairs, maintenance and improvement: If there is major damage to the sanitation option (e.g. damage caused by a large storm, old age of the materials, or poor construction quality), the managers, with support from the local government, need to make a plan for repairing the damage. The managers should also make plans for improving the sanitation option based on feedback from the community (e.g. adding a special toilet seat so that community members with disabilities can use the facility).

Collecting fees to cover operation and maintenance costs: For shared and communal sanitation, the managers are responsible for making sure the fees are collected and put into a bank account, and for ensuring that records are kept about who has paid, how much money has been put into the account, and how much money has been taken out. Arrangements for who has access to this fund and what it can be used for should be agreed to prior to construction. See the finance options section for an explanation of the different costs that need to be considered.

II. Government's role in general management of sanitation

LICs often struggle to manage sanitation systems on their own, so they require support from government. Without government support, sanitation systems can fail and leave some people with no toilets to use, or lack of support may result in human waste discharging directly into the neighbourhood environment.

There are several responsibilities that government should assist communities with (Box 2.5). More information on local government's role in ongoing monitoring and support of sanitation in LICs is provided in Module 4c.

Box 2.5

Government responsibilities for supporting community sanitation

Check to make sure sanitation technologies are working properly: Community members sometimes do not have the technical knowledge to know when their sanitation options are not working correctly. Local government should send an engineer or other qualified professional to inspect containments every year to make sure they are working well. The local government authority should also check with the CDC or people responsible for managing the option to see if they are having any problems with it.

Help identify solutions to technical problems: If a problem with a sanitation technology is found, local government should help the community find a way to fix the problem. For example, if the toilet is smelling badly, a technical expert may be needed to find what is causing the smell and how to fix it. The local government should also provide advice to the CDC on accessing their O&M fund (see finance management options section) so they can pay for repairs.

Check to make sure that pits and septic tanks are emptied: Sometimes community members are not aware that their pits and tanks need to be emptied, are not motivated to empty pits and tanks, or do not know how to find a proper emptying service. Local government should raise awareness and provide advice to communities on how pits and tanks can be safely emptied. A local government authority should visit each community every year to identify any pits or tanks that need to be emptied.

Work with communities for regular management of shared and community toilets: The next section shows different management options for shared and community toilets. Whichever option is chosen, local government should regularly check with the community to make sure that the management tasks are being done. In some cases, local government can enter into a co-management agreement with a community in which local government takes on management responsibilities (see co-management option in the management options section).

III. Management options for shared/community sanitation

Different options for ensuring that someone carries out the management tasks for shared and community sanitation are shown below. Household toilets are usually managed by the individual households that own them. The assignment of management responsibilities should be done in collaboration with the community as described in Module 5c. The information below is provided to give ideas on the different ways in which shared/community sanitation can be managed.

A. All management done directly by CDC

Under this management option, the members of the CDC are the ones responsible for taking care of the management tasks. This means that the CDC members personally keep the shared/community toilet clean, as well as collect fees and manage finances, carry out inspections, and arrange for repairs or emptying to be done.

When is this a good management option? This option may only work for small communities because it puts all of the responsibilities onto the CDC members. In larger communities, it may be too much work for CDC members to do everything on their own. It is less suitable for larger, more complex treatment systems where additional support might be needed, such as systems with extensive pipe networks, anaerobic filters or constructed wetlands.

B. Management done by CDC, but cleaning tasks done by cleaning staff

Managing finances, arranging repairs and emptying, and carrying out inspections are done by the CDC members. However, regular cleaning tasks like cleaning the toilet, emptying the bin, and replacing soap are by done by one or more people that have been hired by the CDC. These people can be from within the community or external. A female cleaner may be considered important for the female toilets. The CDC takes money out of the O&M fund to pay a wage to the cleaning staff. The CDC is also in charge of supervising the cleaning staff and making sure the cleaners have the materials they need to do their job.

When is this a good management option? This option may work if the CDC is interested and motivated to manage the shared/communal latrines in its community, but CDC members do not have the time or interest to do the cleaning themselves.

C. Some management done by CDC, other tasks given to a caretaker

The CDC makes important decisions such as approving money taken out of the O&M fund, deciding how much community members should pay in fees, and approving major changes to the toilet facility (e.g. building a new tank). Other management responsibilities are given to a caretaker hired by the CDC. The caretaker looks after the shared/community toilets to make sure they are working properly and arranges repairs, collect fees from community members, and makes sure the pit/tank is emptied when needed. The caretaker also hires and supervises cleaning staff. The CDC pays the caretaker and cleaning staff wages with money from the O&M fund. The caretaker can be a member of the CDC.

When is this a good management option? If the CDC has many responsibilities, and does not have the time or interest to look after the shared/communal latrines, this may be a good option. Good coordination and defined roles and responsibilities are needed to ensure that the caretaker reports to the CDC about any issues with the toilets.

D. Management responsibilities given to another community-based organisation

Management responsibilities can also be given to another committee or community-based organisation (CBO). This could be an existing CBO such as a women's group or it could be a new committee (with approximately 5 members) formed specifically to manage the shared/community toilet. Under this management model, the CBO makes important management decisions instead of the CDC. The CBO can also choose to hire cleaning staff or a caretaker.

When is this a good management option? If there is a CBO present that is motivated to manage the toilets, this can be considered. For example, if a CBO such as a women's group has received training from an NGO about how to manage sanitation in their community, they may have the interest and skills to be good managers. If the CDC does not have any interest in managing the shared/community toilets, a new management committee may need to be elected by the community.

E. Management responsibilities given to the landlord

In cases where the community is settled on private land, the landlord may be given responsibilities for managing the shared/communal latrines. The landlord can choose to hire a caretaker or cleaning staff to assist.

When is this a good management option? If the shared/community toilet is built on private property, the landlord may agree to or demand management responsibilities. The landlord must make an agreement with the government to make sure all of the management tasks are taken care of. The landlord must also agree to not charge a fee, or impose an increase in rent, that the poorest households cannot afford.

F. Management responsibilities shared with another organisation at the ward level or city level (Co-management)

Under the co-management option, other organisations from outside of the community can take some responsibility for managing shared/community toilets. These outside organisations could be local government departments, local NGOs, or private businesspeople. In these cases, the community will need to sign an agreement with the outside organisation about which responsibilities they will take.

Co-management is usually done between the community and the local government. Local government takes on support tasks that are difficult for the community to handle by themselves, such as maintaining records about sanitation in the community, providing expert advice on technologies, making large repairs, and helping set up a system for fee collection.

When is this a good management option? Co-management may be a good option when there are sanitation technologies that are challenging to operate and maintain (e.g. the DEWATS system). The outside organisation (e.g. local government) needs to be willing and able to take on some management responsibilities in LICs.

IV. Finance options for sanitation

It is critical to raise enough funds to support the operation and maintenance of sanitation over the long term. Part of the responsibility of the manager/management team is to ensure that money is collected for and spent on sanitation.

A. Ongoing costs to consider

Costs that need to be covered for the operation and maintenance of sanitation over the long term include:

→ small, frequent repairs (e.g. fixing broken doors, leaking taps, damaged ventilation pipes, materials needed to unclog the toilet, etc.)

→ materials for handwashing and keeping the latrine clean (e.g. soap)

→ wages to pay for cleaners and/or a caretaker

→ water and electricity bills for the latrine

→ improvements to the sanitation facility over time (e.g. adding a sink)

→ payments for a service to empty the pit or tank when it becomes full

→ payments for an expert to do special maintenance tasks (e.g. special maintenance required for the DEWATS system)

→ payments for large repairs (e.g. badly cracked septic tanks).

When undertaking a new sanitation project, local government, the community, and any external funders should discuss how the funds for addressing these costs will be covered over the long term. Decisions about who is responsible for organising fee collection and making payments to address these costs should be discussed as part of the community consultations on which management option to adopt.

B. Options for collecting funds to cover O&M costs

Three possible ways that the sanitation management team can collect funds for O&M of shared/community sanitation from the households are: monthly fees, pay per use, or taxes.

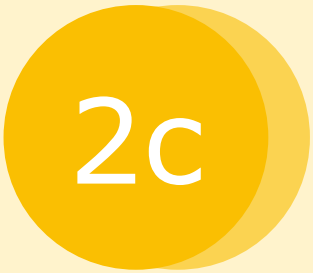
→ **Monthly fee**: Each household/family in the community is requested to pay a monthly fee for using the shared/community toilet. Collected monthly fees can be used directly to cover O&M costs.

The amount of the fee will need to be decided by the sanitation management team with support from local government. This fee and how it will be paid should be agreed to by the community prior to construction of the facility. The fee does not have to be the same for every household in the community. If the community agrees, very poor families can pay a smaller fee than others.

→ **Pay per use**: Instead of monthly fees, people can make a small payment every time they use a shared/community toilet. This option requires that a person (e.g. the caretaker or a cleaner) is present at the facility to collect payment each time someone uses the toilet. Different fees can be charged based on what people want to do in the facility (e.g. go to the toilet or use the shower). Money collected from people each time they use the toilet can be used directly to cover O&M costs.

Another option is to charge a fee to people outside the community each time they use toilet, while community members pay a monthly fee.

→ **Taxes**: Taxes can be set by government to collect money for the O&M fund. For example, a tax can be added to water bills or other services in the ward, or it may be levied on land and property. Money generated from this tax can be put into the O&M fund for sanitation in LICs.



MODULE 2c

Supporting infrastructure and services for sanitation in LICs

Module 2c.

Supporting infrastructure and services for sanitation in LICs

As the sanitation service chain (Module 2a) shows, there must be a process for emptying human waste from pits and tanks, transporting it, and treating it (known as supporting infrastructure and services). If these services are not put in place, the toilets will eventually fail, or dangerous human waste will be dumped in or nearby communities.

When designing toilet and containment options for the community, it is important to consider what supporting infrastructure and services will also need to be developed. Supporting infrastructure and services are usually beyond the capabilities of communities. They must instead be provided by the government or a private business. Therefore, these options do not need to be discussed in detail with communities. However, they should be discussed with city leaders when developing city- and ward-level sanitation strategies (see Module 1).

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Understand the need for supporting infrastructure and services.
2. Become familiar with different options for emptying, transporting and treating human waste.

SUMMARY

The appropriate government official(s) will read through this section and make themselves familiar with it. There are no activities in this section to undertake with others. The government sanitation experts will use this information to help the development of city- and ward-level sanitation strategies.

PART I PART II

I. Emptying and transport – Removing the human waste to be treated

Services for emptying pits and tanks and taking human waste to a place for it to be treated are needed for sanitation systems to work properly. If pits and tanks are not emptied, eventually they will become full and the toilet will stop working or human waste will go directly into the community and spread disease. Information on occupational health and safety for emptiers is addressed in Module 3c.

Emptying of containment units (removing the solid and/or liquid contents from inside the containment unit) is generally done in one of three ways: manual, partial mechanical, and fully mechanical.

A. Types of emptying

Manual emptying

Partial mechanical emptying

Fully mechanical emptying

Manual emptying

Manual emptying involves removing human waste from containment units using buckets, shovels, or other hand tools. **Emptying with buckets and shovels should not be done**. The people doing the manual emptying face a high risk of catching an illness from coming into contact with the human waste, or being injured or killed by breathing in toxic gases. Manual emptying is also not safe for the community because it is easy for the human waste to be accidentally spilled into the street or dumped into the local drain.

Where manual emptying is practised, emptiers should be supported to switch to partial mechanical of fully mechanical emptying.

Figure 2.6

Partial mechanical emptying

Partial mechanical emptying is done by using a device that is powered by hand. The device is usually some kind of pump that pulls human waste out of the containment unit and is powered by pushing and pulling, or rotating, a lever (similar to how a water handpump pulls up groundwater). The pump is attached to a sealed container which holds the human waste to be taken away.

The main **advantages** to partial mechanical emptying is that the pumps:

+ Are portable and can be carried into dense areas
+ Are usually cheaper to purchase and operate than fully mechanical technologies
+ Do not require electricity or fuel to operate.

The **disadvantages** to partial mechanical emptying:

- The pumps are slower and less powerful at pulling up human waste compared to fully mechanical technologies
- Operating the pump is labour-intensive for the emptier
- The pump can become clogged if there is rubbish in the containment unit

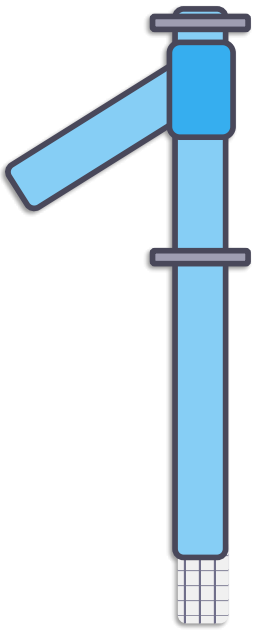


Figure 2.7

Fully mechanical emptying

Fully mechanical emptying uses a technology, usually a pump, that is fully powered by electricity or a fuel to pull human waste up into a sealed container or tank. Some of these pumps are pushed in a cart or carried by hand to the latrine.

Some larger pumps are attached to and powered by a vehicle (sometimes called a Vacutug). In the case of the Vacutug, the tank or container to receive the waste is attached to the vehicle. Vacutugs come in different sizes:

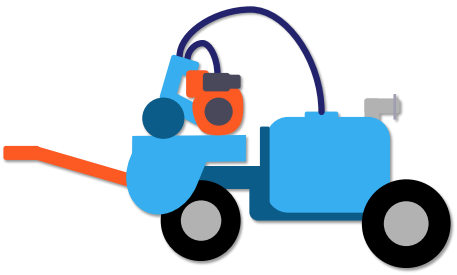


Figure 2.8

Smaller Vacutugs, like the MK-II (Figure 2.8) and MK-IV (Figure 2.9), can fit into narrower roads and get closer to households. This is an advantage in many LICs where the roads are narrow and there is not a lot of space. However, smaller Vacutugs only have a small amount of storage space and cannot drive long distances.

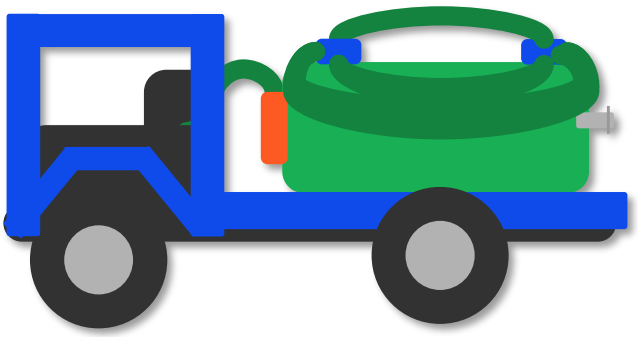


Figure 2.9

Fully mechanical emptying (continued)

Larger Vacutugs, like the MK-VII (Figure 2.10), can empty many pits and tanks in one trip because they have larger storage volumes. They are also usually attached to trucks that can be driven to empty from different locations and transport the human waste back to a treatment site. However, due to their large size, they sometimes cannot reach households that are in narrow streets and far from a main road.

Figure 2.10

More information on Vacutugs can be found at:
https://www.fsmtoolbox.com/assets/pdf/243.pdf

The main **advantages** to fully mechanical emptying are:

+ The pumps can remove human waste more quickly than partial mechanical emptying.
+ The work of emptying pits and tanks is easier for the emptiers than partial mechanical emptying.
+ In the case of Vacutugs, the machine and container is attached to a vehicle which makes transport easier.

Disadvantages to fully mechanical emptying include:

- Upfront and operation costs are higher than for partial mechanical emptying.
- Higher costs make the service more difficult for poorer households to afford if the service is not subsidised.
- Larger technologies (like the Vacutug) may have difficulty accessing high-density LICs.

Aside from vacuum pump technologies, there are many other manual and mechanical/motorised devices for emptying containment units. Some examples can be seen at https://www.un-ihe.org/sites/default/files/fsm_book_lr.pdf (pages 74 – 85).

B. Types of transport

Once the pit or tank has been emptied and the human waste is safely stored in a sealed container, the waste must be transported to somewhere where it can be safely treated. The two main options for transporting the waste are manual transport and motorised transport.

Transfer stations can be used to break the trip from the communities to the treatment location into multiple shorter, more manageable trips.

During transport, health and safety practices must be followed to ensure that the emptiers and the public are not exposed to the human waste (see Module 3c). **Human waste should always be transported covered and without leakage to an appropriate place for treatment and never dumped near drinking water sources, food sources, or where people live**

Manual transport

Manual transport involves moving the human waste on a cart or rickshaw that is pulled by a person on a bicycle or by animals. This option is cheaper than motorised transport, and small carts can fit into small areas in dense settlements. However, manual transport options can only carry small amounts of human waste comparted to motorised transport, and can only travel short distances.

Manual transport may be suitable for accessing areas that are difficult to reach. Usually, manual transport will need to be complemented with motorised transport, or transfer stations, in order to get the human waste to an appropriate treatment plant

Figure 2.11

Motorised transport

Motorised transport involves trucks or other vehicles to move the human waste. The Vacutugs described in the emptying section are examples of motorised transport. Vehicles for motorised transport can come in different sizes, with larger vehicles able to take large amounts of human waste over longer distances. However, larger vehicles are more expensive to purchase and operate and may not be able to access dense settlements.

In most cases, a city or town will need some kind of motorised transport to safely move human waste away from communities and to a waste treatment site.

Figure 2.12

Transfer Stations

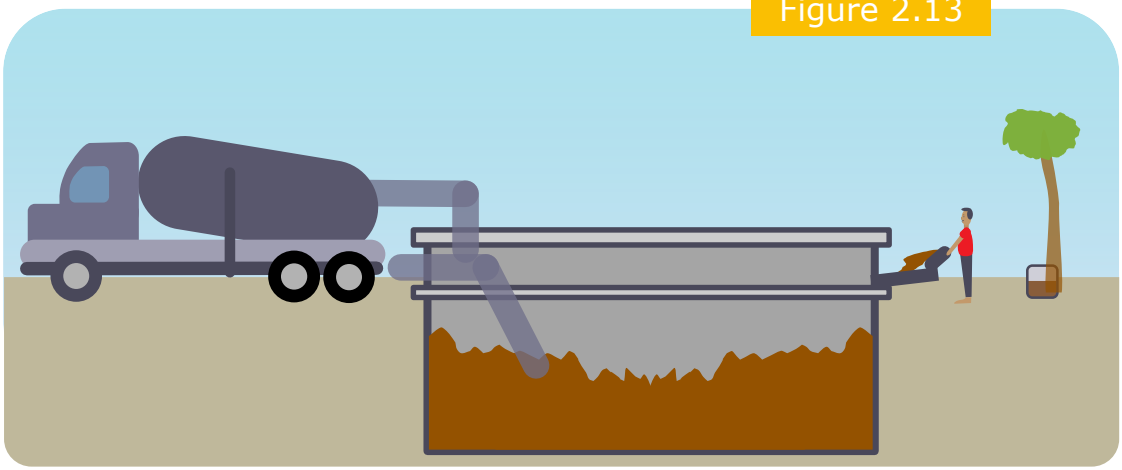
Transfer stations are sites where emptiers can temporarily store human waste removed from multiple containment units. One large tanker truck can remove waste from the transfer station and transport it to the treatment site. This is beneficial if the treatment site is a long way away. They can also reduce the costs of transport by reducing the number of vehicles that need to drive all the way to the treatment site.

Transfer stations have drums, tanks, or other containers that hold human waste until a larger truck comes to take it away. Some transfer stations can also provide preliminary treatment to the human waste such as drying it out or removing plastics and other rubbish.

Transfer stations do not need to be permanent buildings – **mobile transfer stations** can be moved from location to location if there is no space available for a permanent site. Mobile transfer stations consist of large tanks placed on or towed by trucks. The trucks can drive to locations where small-scale emptiers operate, and take the human waste from them and deliver it to the treatment site.

More information on transfer stations is available at https://www.uts.edu.au/sites/default/files/ISF-UTS_SNV_2016_A%20guide_to_septage_transfer_stations.pdf.

Figure 2.13



C. Management for emptying and transport

Every city and town needs a service for emptying pits and tanks and safely transporting human waste to a site where it can be treated. The service can be managed by the government, CDC federation, or private business. In some cases, communities can be trained and supported to safely empty their own pits and tanks, provided they have access to safe emptying equipment, but they will require assistance in transporting the waste to a treatment site.

Significant planning is needed to ensure that emptying services will be able to make enough money to continue operating while also providing safe services to LICs. Important considerations include:

→ setting tariffs that will cover service expenses but remain affordable to the poorest customers

→ marketing the services and creating demand for them amongst community members (see Module 3)

→ deciding which technologies to use and which areas they should be located in

→ ensuring a treatment site is available for receiving human waste

→ regulations to enforce laws, or provide rewards, so emptiers adopt safe practices (see Module 3c) and do not illegally dump human waste.

The city- and ward-level sanitation strategies (Module 1) should include commitments to develop business models for emptying services if these do not exist in the city yet.

II. Treatment and Disposal/Re-use– Making the human waste safe

All human waste should be treated to make it safe before it is disposed of or used for another purpose. There are two parts of human waste that need to be treated: the mostly solid part (faecal sludge) and the mostly liquid part (wastewater or effluent). Sometimes, some stages of this treatment can be done within LICs. In other cases, all of the treatment is done at a facility designed for the whole city or town.

A. Faecal sludge treatment and disposal

Faecal sludge is dangerous and contains high amounts of pathogens. If faecal sludge is dumped straight into a river or on the land, it can contaminate drinking water supplies and food supplies and cause diseases to spread. It can also cause damage to the environment which can hurt fishing and farming businesses.

Faecal sludge treatment means processing the sludge to make it less dangerous so that the sludge can be safely disposed of into a body of water or onto the land.

Large treatment facilities

Faecal sludge treatment and disposal often occurs at a large treatment facility that services part or all of a city or town. The planning and management of large treatment facilities needs to be done at the city scale and goes beyond just LICs.

There are different technologies and processes for faecal sludge treatment. One example is the planted gravel filter bed faecal sludge treatment plant for the city of Khulna (Figure 2.14).

At the Khulna faecal sludge treatment plant, Vacutugs dump faecal sludge into a container with a screen, as shown in the foreground of the above picture. The screen removes large items from the sludge, such as plastics and other rubbish, so they do not clog the system. The sludge is discharged over the planted bed and slowly filters through the gravel to the bottom where it is collected in drainage pipes. The beds are lined so wastewater does not leak into the soil. This process slowly removes the pathogens and nutrients from the sludge. At the other end, the treated liquid leaves the system and flows into a stream and the solids slowly build up on the surface and will need removing every few years.

Figure 2.14

Large treatment facilities (continued)

Another example is the co-composting faecal sludge plant in the district of Kushtia (Figure 2.15).

At this plant, the faecal sludge is poured into a settling chamber (seen at the bottom of Figure 2.15. The gate is opened to allow the liquid sludge to flow onto the drying beds (seen here with an unsealed brick base) where the sludge stays on the surface to dry and the liquids filter down to pipes under the bricks. The liquids are pumped to a filter filled with coconut shells for further cleaning before discharge to the river. The dried sludge is removed weekly and added to organic waste like food scraps and plants also disposed at this site. These are mixed with sawdust and over time due to natural heat and drying the dangerous pathogens die off. Once the mixture has been safely treated, it can be used as fertiliser.

These are two examples of faecal sludge treatment plants that are successful in Bangladesh, but there are many other types of designs. Other treatment plant designs can use more complex technology to more quickly treat waste, but these are more expensive and require better trained staff to operate. Experts need to be consulted about how to properly construct and maintain any type of treatment plant.

Figure 2.15

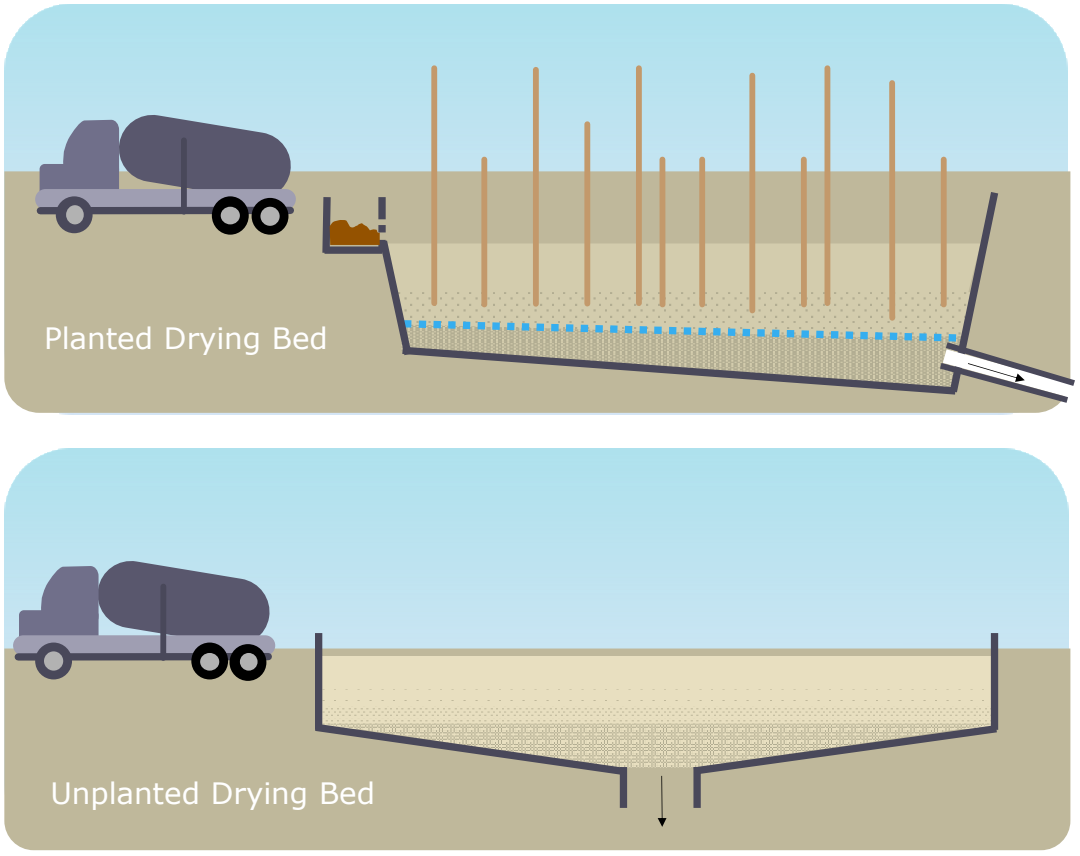
Small-scale faecal sludge treatment

In some cases, small amounts of faecal sludge can be treated at the community or ward level. However, this is often not possible for LICs because of a lack of available space.

One possible option is a community or ward-scale planted **drying bed** which consists of layers of gravel, sand and sometimes plants (planted and unplanted drying beds are both possible) with pipes underneath. Faecal sludge is spread on top of the bed and over time the sludge dries out. The liquids from the sludge soak into the sand and gravel and are collected by the pipes at the bottom.

Trained staff are needed to operate and maintain the drying bed. The liquid that comes out of the bottom of the bed still requires further treatment.

Figure 2.16



3

Module 3

Behaviour change and demand creation

Module 3

Behaviour change and demand creation

The overall objective of this module is to guide strategies to create demand for sanitation and change behaviours related to sanitation in LICs. Building sanitation infrastructure alone will not ensure that human waste is safely managed. Sanitation users and latrine emptiers must also develop hygienic practices and awareness of the importance of properly managed sanitation facilities.

The activities targeted at people living in LICs focus on demand for safe sanitation, handwashing with soap, menstrual hygiene management, and regular emptying of full pits and tanks. Promotion of professional behaviours and practices for emptiers focuses on occupational health and safety. This module focuses on important hygiene behaviours in relation to sanitation. It provides a template for terms of reference to contract a local organisation or individual to partner with government to design and implement the behaviour change approach, and refers a training module on occupational health and safety for emptiers. Activities for increasing the awareness of, and demand for, improved sanitation directed at a city and ward leader audience are included in Module 1.

Objectives

The specific objectives of this module are to give guidance to local government authorities for facilitating processes to:

- Promote safe sanitation containment for households
- Promote handwashing with soap amongst toilet users at critical junctures
- Promote safe menstrual hygiene management practices
- Raise demand for regular pit and tank emptying services
- Promote good occupational health and safety practices amongst emptiers

Expected Outcomes

It is expected that implementation of this this module will:

- Provide local government authorities with adequate knowledge on the need to accompany implementation of sanitation infrastructure (Module 2) and services with good hygienic practices
- Help local government authorities to: understand a general process for a behaviour change approach, proactively take steps to arrange for experts from local organisations to support communities in improving hygienic behaviours in relation to sanitation, and train latrine emptiers in occupational health and safety.

3a

MODULE 3a

Sanitation
behaviour
change
communication

Module 3a.
Sanitation behaviour change communication

This module starts with the Bangladesh policy context and the importance given to behaviour change communication at the national level. It then identifies four important sanitation behaviours and describes the meaning of 'behaviour change communication' and key local government responsibilities. The last section explains the need for formative research to understand behaviour and key elements in designing behaviour change communication programs.

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Understand the policy context for sanitation and hygiene behaviour change communication.
2. Understand the importance of behaviour change communication and what it involves.

SUMMARY

Information on sanitation and hygiene behaviour change communication is provided to give local government officials an understanding of why it is needed. The local government sanitation expert(s) are to read through this section. There are no activities to undertake

I. Bangladesh national policy context

The Bangladesh national government recognises that behaviour change is a critical part of any sanitation program. The **National Hygiene Promotion Strategy (NHPS) 2011 – 2025** outlines the Government's commitment to hygiene promotion and behaviour change. The following excerpts highlight this clearly:

> *"It gives me pleasure to see that the National Hygiene Promotion strategy (NHPS), 2012 has been an integral part of the Sector Development plan 2011–25. Furthermore, 'Hygiene Promotion' has integrally been related to water supply and sanitation practices which determine the health-conscious behavior of people enabling them to make an informed and adequate choice."*[1]
>
> *- Abu Alam Md. Shahid Khan, Secretary – Local Government*

The NHPS also supports and encourages the development of behaviour change communication (BCC) approaches:

> *"Effective hygiene promotion … calls for an effective communication strategy to be in place, containing a set of methods and tools to identify behavioral gaps in hygiene practice, develop messages to communicate and provide a diversified channel of communicating targeted behavioral practices and negative social norms to change."*[2]

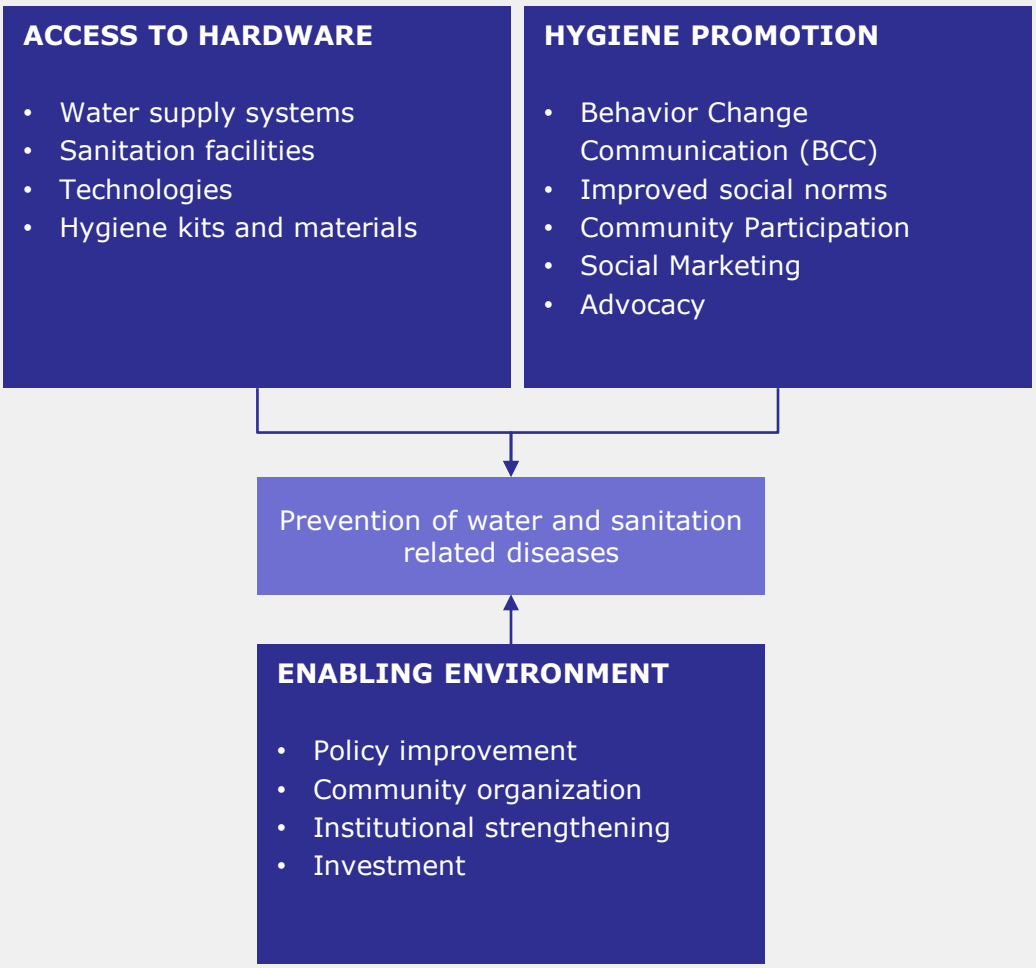
1 Government of People's Republic of Bangladesh (2012) National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh, Ministry of Local Government, Rural Development and Cooperatives, Local Government Division, preface

2 Government of People's Republic of Bangladesh (2012) National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh, Ministry of Local Government, Rural Development and Cooperatives, Local Government Division p.14

The NHPS further emphasises the importance of BCC in its "Framework for prevention of water & sanitation related diseases" (see Figure 3.1).

Figure 3.1

Framework for prevention of water & sanitation related diseases from National Health Promotion Strategy



II. What are some key sanitation behaviours?

In relation to sanitation, behaviours are practices or actions that people do regularly when they use (or fail to use) or maintain sanitation facilities. Behaviours are important to consider because if people develop hygienic behaviours, they are more likely to receive the health benefits that come from upgraded sanitation facilities, and to take care of the facilities. Therefore, it is not enough just to build the sanitation infrastructure – activities must also be carried out to ensure people also practise hygienic behaviours.

This module focuses on four sanitation behaviours:

1. **Demand for safe sanitation:** It cannot be assumed that households will automatically be motivated to improve their sanitation situation. Therefore demand creation activities to raise awareness and interest to address poor sanitation are needed alongside infrastructure planning processes.

2. **Handwashing with soap at key times**: Everyone must wash their hands with soap after using the toilet, before food preparation, before eating, and before feeding babies and children. Handwashing with soap prevents the spread of diseases that are associated with human waste.

Box 3.1

Useful references for planning BCC approaches in Bangladesh

1. Devine J (2009), Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviours to Design
2. Effective Sanitation Programs, World Bank Water and Sanitation Programme. http://www.wsp.org/wsp/sites/wsp.org/files/publications/GSP_sanifoam.pdf
3. Government of People's Republic of Bangladesh (2012) National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh, Ministry of Local Government, Rural Development and Cooperatives, Local Government Division. https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/2012_lgd_nationalhygienepromotionstrategywss.pdf
4. SNV (2016), Behaviour Change Communication Guidelines, SNV. http://www.snv.org/public/cms/sites/default/files/explore/download/snv_behaviour_change_communication_guidelines_-_april_2016.pdf
5. WHO (2018), Guidelines on Sanitation and Health, WHO. https://www.who.int/water_sanitation_health/publications/guidelines-on-sanitation-and-health/en/

3

Menstrual hygiene management: Women and girls should be able to access clean menstrual hygiene materials, wash themselves, and dispose of menstrual materials properly. Their community must enable them to do these practices. Women and girls often use toilet facilities as a private place to manage their menstrual hygiene, but they frequently face challenges in doing this due to feelings of embarrassment and shame. The community should help ensure that women and girls do not feel embarrassed or ashamed about properly managing menstrual hygiene.

Watch the Menstrual Hygiene Management educational video created by SNV Bangladesh to learn more about the problems facing women and girls as result of a lack of awareness of menstrual hygiene management: https://www.youtube.com/watch?v=oF6SXKDiCio

4

Regular emptying of pits and tanks: Toilet users should understand that pits and tanks must be emptied regularly and demand services to have them safely emptied. If the community, including landlords, does not recognise when the containment is full, or does not understand why it must be emptied in a safe way, then they may not be willing to pay for emptying services. Regular emptying is necessary in order to keep sanitation infrastructure working properly and to avoid containment units from overflowing into public places and spreading disease.

Watch the drama entitled "The Poo Journey", which tells a story of how regular safe emptying of pits and tanks can benefit people: https://www.youtube.com/watch?v=Kr5BYdr-O1Q

Although some community members already practise these behaviours, many others require support to change their current sanitation-related behaviours so that they are more hygienic. Often, it is not easy to change existing attitudes and behaviours, and specialised skills are important.

III. What is sanitation behaviour change communication?

Sanitation behaviour change communication (BCC) is an approach to persuading people to improve their sanitation-related practices by understanding their current behaviours. There are many factors that influence people's sanitation-related behaviours including costs, beliefs, household responsibilities, and habits. BCC is used to learn about these factors in a community in order to develop a strategy to persuade people to take up more hygienic behaviours.

BCC is used because experience shows that simply providing knowledge or telling people what they should do is often not an effective way of changing their behaviour[1]. One of the reasons for this is that every community has different factors that influence their behaviours. BCC is used to develop a strategy, based on evidence about these factors, that is specifically designed for one area (such as one ward or one city) and target group.

Designing a BCC approach requires trained experts. If local government does not have trained experts on their staff, a local WASH organisation will need to be hired to help local government design a BCC approach (see Module 3b).

If there are any hygiene promotion events occurring in your area (e.g. led by NGOs or the national government), it could be helpful to attend one of these to experience what it looks like.

A. Who is responsible for behaviour change communication?

Under the NHPS, local government authorities have responsibility for ensuring that hygienic practices are promoted to change people's behaviours. Strategy 2 of the NHPS states the city corporations and paurashavas have responsibility for implementing hygiene promotion activities in urban areas:

> *"City Corporations and Paurashavas are to coordinate and implement all water, sanitation and hygiene promotion activities (hardware and software) in their jurisdictions, together with other WASH service providing agencies and individuals…"*

1 SNV (2016), Behaviour Change Communication Guidelines

The NHPS also has a strategy for hygiene promotion in "hard-to-reach areas". This includes a section on urban slums and squatters in which responsibility is given to Ward WATSAN (water and sanitation) committees:

> *"Awareness campaign by Ward WATSAN committees on practicing proper hygiene behavior among slum dwellers."*

Therefore, it is clear from the NHPS that city corporations and paurashavas, through the appropriate ward-level committees, must ensure that proper hygienic behaviours are promoted amongst people living in LICs. More information on the coordination of national and local actors for implementing hygiene promotion is included in the NHPS.

Government is also the critical stakeholder in the coordination and implementation of sanitation behaviour change and should provide leadership and adequate funding[1]. The NHPS states the funding and leadership role of the Local Government Division:

> *"The Local Government Division (LGD) of MoLGRD&C is mandated to provide policy guidelines and coordination to the [water supply and sanitation] sector. The National Forum for water supply and sanitation (NF-WSS) under LGD is to coordinate, provide guidance and resource allocation for hygiene promotion activities at the national level."*
>
> Section 5.3 of the NHPS on "Actions of Key Actors" identifies the following actions for the Local Government Division (LGD):
> - *"Integrate regulation of the hygiene promotion interventions including financing."*
> - *"Provide guidance and support for the departments concerned through proper planning and adequate budgetary allocation."*
> - *"Provide separate budgetary provision for hygiene promotion activity."*

Although the NHPS states that city corporations, paurashavas, and WATSAN committees are responsible for ensuring that hygienic behaviours are promoted, it also acknowledges that NGOs, the private sector, and development partners "*can also play a key role in extending support to implement Hygiene Promotion Strategy and prompting hygiene behaviour as an integral part of [water supply and sanitation] projects*."

1 WHO (2018). Guidelines on Sanitation and Health. XIV

IV. BCC must be evidence based: Doing formative research

Understanding how people **think** and **feel** is essential for creating a good BCC strategy. Factors that influence people's behaviour are different in different contexts so these need to be identified before designing the BCC approach[1].

The NHPS states[2]

"…formative research and in-depth studies on community perceptions and behavior change requirements, as well as systematic design of promotional interventions are to be undertaken to secure the desired public health impacts."

Formative research is used to create evidence of the barriers and motivators and the supportive environment that influences how people adopt hygienic behaviours. This evidence is needed to design a good BCC approach.

It is important to use a clear framework to organise formative research. A common framework used in sanitation development work is the 'FOAM' (or SaniFOAM)[1] framework:

Focus: define the target population and define the desired behaviour

Opportunity: does the individual have the chance to perform the behaviour?

Ability: is the individual capable of performing the behaviour?

Motivation: does the individual want to perform the behaviour?

It is recommended that the FOAM framework (or an equivalent) be used to guide the formative research needed to inform the BCC approach.

1 SNV (2016), Behaviour Change Communication Guidelines

2 Government of People's Republic of Bangladesh (2012) National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh, Ministry of Local Government, Rural Development and Cooperatives, Local Government Division, p.15

V. Designing a strong BCC approach: What to do and what not to do

To implement a BCC approach, local government can partner with organisations including different government bodies (e.g. ward-level water and sanitation committees), water and sanitation service providers, NGOs, and community-based organisations (e.g. sanitation management committees). Whom to involve might depend on which social group is being targeted. For example, if the BCC targets mothers of newborn babies, the local government may need to work with a health agency that has experience working with mothers. The following questions should be asked when thinking about whom to work with when implementing a BCC approach:

- Who should be the main implementing organisation(s)?
- Who should lead and steer?
- Who should be supporting?

Designing a strong BCC approach is not simple and requires skilled experts – the next section provides information on finding a local WASH organisation to work with. Some of the steps that should be included in the BCC approach, and what should be avoided, are listed below.

A good BCC approach should involve the following steps:[1]

1. Define the behavioural objectives.
2. Review existing information and research on the behaviour being changed.
3. Conduct formative research to inform hygiene promotion activities.
4. Design the BCC approach, including the communication materials, objectives and target audiences.
5. Pre-test multiple creative ideas and products.
6. Finalise the BCC approach.
7. Develop a local BCC strategy that suits the context of the LIC.
8. Implement the strategy.
9. Monitor and evaluate the outcomes, and adapt the approach as needed.

1 SNV (2016), Behaviour Change Communication Guidelines

The BCC approach should also avoid making common mistakes:

The BCC approach should not focus too much time and resources on producing materials: Often, most of the time and resources go into the design of communication materials (e.g. posters and leaflets) rather than the research and development of a strategy[1]. Substantial time and resources are needed for formative research, planning the intervention, and monitoring and evaluating the approach.

The focus should not only be on health benefits: Messages based only on spreading knowledge about pathogens and health are usually ineffective. Often, people are not motivated by a desire for better health. Instead, they are often motivated by more emotional drivers such as disgust with dirty hands, wanting to care for children, comfort, and wanting to conform with the rest of the community[2]. Activities should include demonstrations and appeal to people's emotions in addition to providing knowledge.

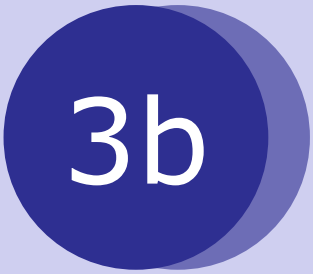
The focus should not only be on women: Women are often seen as primarily responsible for hygiene in the family. However, targeting women can burden them with this responsibility and fails to recognise that they may have limited ability to influence the behaviour of their male relatives[1]. In addition, both women and men should be involved in decision-making about investing in sanitation (either for safe containment, or emptying services). Therefore, the BCC approach should clearly define target audiences, including men, and seek to not reinforce gender stereotypes.

Do not try to change too many behaviours at once: Trying to address too many behaviours across different target groups at once can limit the effectiveness of the BCC approach. If other behaviours are to be addressed aside from the four identified in this module, they will require another BCC approach to be designed specifically for them.

Be timely: The same strategy conducted at different times can have drastically different levels of success. Schedule strategies for when people are most receptive (e.g. promoting the purchase of latrine when people have money or when new sanitation services are launched), and when services are available.

1 SNV (2016). Behaviour Change Communication Guidelines

2 Curtis, V. A., Danquah, L. O., & Aunger, R. V. (2009). Planned, motivated and habitual hygiene behaviour: an eleven country review. Health education research, 24(4), 655-673.



MODULE 3b

Example Terms of Reference (ToR) for BCC partners

Module 3b.
Example Terms of Reference (ToR) for BCC partners

Designing a BCC approach is critical to changing behaviours to maximise the beneficial impacts of upgraded sanitation infrastructure, but it requires skilled experts. If local government authorities do not have BCC experts on their staff, then an individual or organisation will need to be contracted as a BCC partner.

Below is a template that can be used to create a terms of reference (ToR) for hiring a WASH organisation or individual to partner with local government in designing and implementing a BCC approach. The text in purple needs to be updated to fit the details of the city/town where the partner will be working. The contents of the template are suggestions. Modifications or additions can be made to the template to suit the needs of the city corporation/paurashava.

The ToR template can also be split into separate ToRs (e.g. one for formative research, one for design of the BCC strategy) if the volume of work is too large for a single individual or organisation.

AUDIENCE

- External consultant

OBJECTIVES

1. Identify an individual or organisational consultant to work with local government on developing a behaviour change communication approach to improve sanitation demand and behaviours in LICs.
2. In partnership, the consultant and local government design, plan, implement, and monitor a behaviour change communication approach.

SUMMARY

A Terms of Reference template is provided that can be modified as needed and used to hire a sanitation and hygiene behaviour change consultant. This consultant should work in partnership with local government to design, plan, implement, and monitor a behaviour change communication approach.

Template for Terms of References for BCC partner

This template is spread over four pages

Reports to: [Contact point within city corporation or paurashava]

Location: [Name of city/town]

Timeframe: [The date the assignment will begin]

Duration: [Identify how long the partner has to complete the assignment – this could be approximately 4 months for formative research and design of the BCC approach]

Good hygienic behaviours are critical to ensuring that sanitation facilities adequately protect the health of low-income urban communities. Handwashing with soap, menstrual hygiene management, demand for safe sanitation containment and demand for latrine emptying services are four behaviours that must be instilled in community members and understood as necessary to improve health outcomes. As described in the National Hygiene Promotion Strategy, behaviour change communication (BCC) approaches are needed to ensure that hygienic behaviours are promoted and taken up by everyone.

The [name of city corporation or paurashava] therefore seeks an individual or organisation to design a BCC approach in [name of city/town or specific wards] to improve sanitation-related behaviours.

Overview of the assignment

The assignment will require the design of an effective BCC approach to promote the uptake of hygienic behaviours related to sanitation amongst low-income urban community members. It is expected that this will be done in close consultation with [name of city corporation or paurashava]. The design of the approach should be guided using the 'FOAM' (also known as SaniFOAM) framework or an equivalent, which includes:

Focus: define the target population and define the desired behaviour

Opportunity: does the individual have the chance to perform the behaviour?

Ability: is the individual capable of performing the behaviour?

Motivation: does the individual want to perform the behaviour?

1 SNV (2016), Behaviour Change Communication Guidelines - http://www.snv.org/public/cms/sites/default/files/explore/download/snv_behaviour_change_communication_guidelines_-_april_2016.pdf

The work will include formative research to build an evidence base, design of a BCC strategy, pre-testing of behaviour change activities, strategy implementation and monitoring and evaluation (M&E). Four key target behaviours have been identified for inclusion in the approach:

- **Demand for sanitation:** Community members understand that safe sanitation containment is needed (either household or shared) and express demand to improve any unsafe containment infrastructure or practices to a 'safe' standard, where humans are protected from exposure to faecal matter.
- **Demand for safe latrine emptying**: Community members understand that sanitation containment units (e.g. pits and tanks) must be regularly emptied, and demand affordable professional services that safely remove human waste and transport it to a safe place for treatment and disposal.
- **Handwashing with soap at critical times:** Community members wash their hands after using the toilet, before food preparation, before eating, and before feeding babies and children.
- **Menstrual hygiene management:** Women and girls practise safe menstrual hygiene management, and their families and communities create an environment where they can do this without feeling ashamed or embarrassed.

Objectives of the assignment

The ToR seeks to engage an individual or organisation to carry out this work, in line with the following objectives:

1. Complement the construction of upgraded sanitation facilities in low-income communities with a robust behaviour change approach for the four target behaviours listed above;
2. Work in close consultation with [name of city corporation or paurashava] to design, implement and monitor the strategy;
3. Provide findings, advice and recommendations to [name of city Corporation or paurashava] on the outcomes of the BCC approach, how to monitor sustained changes in behaviour, and how to build on the successes of the approach.

Scope of work and steps involved

For each of the target behaviours outlined above, the implementing individual or organisation will be expected to carry out the following steps, based on the FOAM framework (or an equivalent):

1. Develop project plan

- Work together with relevant staff in [name of city corporation or paurashava] to develop a feasible approach for the government to deliver an effective behaviour change approach that links to other elements of local government engagement in sanitation and builds government capacity in behaviour change communication.

2. Conduct formative research based on a literature review and stakeholder consultations

- Assess water, sanitation and hygiene (WASH) conditions in the target area.
- Assess current practice and barriers and motivations for the four target behaviours.
- Identify and define target groups with particular attention to more vulnerable groups.
- Identify trusted and effective communication channels.
- Review existing materials and tools.
- Debrief local government authorities on findings.

3. Design a strategy based on evidence gathered in step 1

- Define the behavioural objective (what must change within the target audience before they can adopt the desired behaviour?).
- Define target audience (which groups are to be targeted with the campaign?).
- Define the communication objectives (what is to be communicated to the target audience).
- Develop campaign concepts and materials (option: engage a creative agency to develop campaign concepts and materials).
- Identify roles and responsibilities pertaining to each of the tasks in this ToR.
- Lead discussions on points 2.1 – 2.5 with local government and other stakeholders, and ensure the strategy aligns with government programs and initiatives as closely as possible.

4. Pre-test the campaign

- Select 2-3 campaign concepts to test with a small sample of the target audience.

5. Implement the campaign and activities

- Coordinate the implementation behaviour change activities in line with campaign.
- Design and implement training (or sub-contract) for relevant organisations or individuals, including those within local government, to carry out campaign activities where necessary.

6. Monitor, measure and adapt

- Set up simple and effective M&E strategies to monitor the outreach and effectiveness of messages and materials.
- Engage relevant government staff in assessing progress.
- Adapt messages or materials based on results of monitoring.

7. Report findings and recommendations

- In a final report of no more than 30 pages, document the design and implementation process, findings and outcomes, advice and recommendations. Advice and recommendations should relate to how local government authorities and other stakeholders can monitor, sustain, and build on the success of the BCC approach in alignment with the National Hygiene Promotion Strategy.

The consultant also must schedule periods throughout the work to debrief the [name of city corportion or paurashava] on the status and progress of the work, and to receive its feedback.

Selection criteria

1. Individual or organisation based in Bangladesh.
2. Knowledge and experience in designing, implementing and monitoring evidence-based behaviour change communication approaches.
3. Knowledge and experience working in low-income urban areas.
4. Experience establishing strong working relationships with community leaders, service providers and local government stakeholders.
5. Experience in sanitation programming.

Submission requirements

Interested candidates and organisations are invited to submit expressions of interest addressing the following:

- An outline of the proposed process and timeline to complete all steps in the "scope of work and steps involved" section of this ToR.
- Responses to the selection criteria including an outline of all team members to be involved in the evaluation.
- A detailed budget indicating fixed and indicative costs, including an outline of any proposed sub-contracts.
- Details of at least two referees for whom the candidate has performed similar work.

3c

MODULE 3c

Occupational health and safety for emptiers

Module 3c.
Occupational health and safety for emptiers

Hygienic, safe practices and appropriate equipment are needed in order to prevent health risks to the people emptying septic tanks and pits ("emptiers") and to the community. Septic tanks and pits need to be emptied regularly in order for them to work properly over the long term. Emptiers carry out this important role, but they often do not have the proper knowledge, training or equipment to do it safely. This section describes how to train emptiers to work safely.

AUDIENCE

- Latrine emptiers

OBJECTIVES

1. Understand the need to provide occupational health and safety training for emptiers.
2. Implement a workshop for latrine emptiers in the city on occupational health and safety.

SUMMARY

Information on occupational health and safety for emptiers is provided for the local government sanitation expert(s) to read. A reference to an online guide to developing a workshop on occupational health and safety is provided which local government can use to conduct trainings for emptiers.

PART I PART II

I. Why provide health and safety training to emptiers?

Module 2 explains why emptying services are a critical link in making sanitation systems function properly over the long term. Manual emptying (emptying using buckets and hand tools) should be discouraged, and city- and ward-level sanitation strategies should support the development of professional emptying services using mechanical technologies (see Module 1).

Professional, mechanical emptying services are the safest way to remove human waste, but the emptiers still require training to minimise health risks to themselves and others. These risks include:

→ Emptiers becoming sick due to catching diseases from human waste;

→ Human waste accidently being spilled during emptying and creating a health hazard for the community;

→ Rmptiers being killed or becoming sick by accidently breathing in gas from septic tanks or pits;

→ Emptiers being injured by breathing in chemicals from cleaning products, or spilling chemicals onto their skin;

→ Emptiers being injured in accidents such as falling down, dropping heavy equipment, falling into pits, or getting cut by sharp objects; and

→ An increase in all of these risks if emptiers drink alcohol while working.

Emptiers are required to conduct their operations safely as mandated by the Health and Safety Guidelines in the Bangladesh Labour Act 2006 and the National Occupational Health and Safety Policy 2013.

Further, emptiers and their families in Bangladesh are often stigmatised by the public, which causes them stress and humiliation, and discourages people from becoming emptiers. Providing occupational health and safety training, and certification, will help to make them appear more professional and increase the respect given to them by the public.

II. Occupational health and safety workshop

According to the Bangladesh Institutional and Regulatory Framework for Faecal Sludge Management, city corporations and paurashavas have responsibilities for ensuring health and safety of emptying services:

> ***Institutional and Regulatory Framework for Faecal Sludge Management, Section 4.2.3:***
>
> The city corporation/paurashava "*shall introduce and promote mechanical pit emptying (desludging) services for ensuring health and safety of emptiers and protection of the public health and environment*"
>
> The city corporation/paurashava "*shall follow/enforce appropriate health and safety guidelines for emptying services*."

First, the emptiers to receive the training must be identified:

→ Some emptiers may already be formally registered with the city, paurashava, or CDC Federation and can be identified through existing records.

→ Informal emptiers or entrepreneurs wishing to start a business may need to be identified through key informants such as ward councillors or CDC leaders.

Once the emptiers have been identified, sanitation experts at the city corporation or paurashava should contact them and invite them to the occupational health and safety workshop.

Materials on conducting 1.5-day occupational health and safety workshops, entitled "Occupational Safety and Health Guidelines for Faecal Sludge Management", are available from the Department of Public Health Engineering. The city corporation/paurashava should arrange to hold these workshops annually if there are new emptiers that need to be trained. Local government authorities may request the assistance of NGOs in Bangladesh to facilitate these workshops.

Local government is responsible for keeping records of individuals who have completed an occupational health and safety workshop.

4

Module 4

Review, approval and support processes

Module 4
Review, approval and support processes

The overall objective of this module is to guide local government authorities on supporting communities to design, implement and manage safe sanitation options in alignment with LIUPC processes. It is unlikely that the CDC alone will be able to develop and manage an appropriate sanitation system, and CDCs will require government expertise on technical and institutional aspects, both initially and ongoing.

The activities in this module should be carried out alongside the activities in Module 5 because the outputs of the activities in each module support one another. The figure below shows the order in which each section of Modules 4 and 5 should be followed.

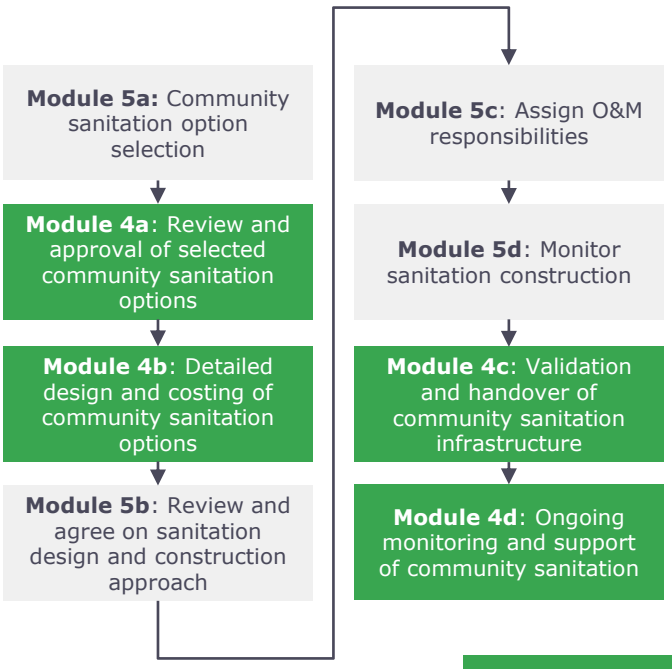


Figure 4.1

Objectives

The specific module objectives are to guide local government authorities on facilitating processes to:

- Review the preferred sanitation option in the Community Action Plan (CAP) to ensure that it aligns with the city/ward sanitation strategies (see Module 1)
- Support the CDC in designing and costing the selected sanitation option
- Provide ongoing support to ensure the sanitation option works over the long term.
- Ensure the constructed sanitation infrastructure is working properly and formalise ownership and management arrangements.

Expected Outcomes

It is expected that implementation of this this module will:

- Help the relevant local government authorities identify where their support is needed in designing, implementing and managing a safe sanitation option in alignment with LIUPC processes; and
- Enable local government authorities to provide the support needed to ensure sanitation systems are constructed, operated and maintained properly.

4a

MODULE 4a

Review and approval of selected community sanitation option

Module 4a.
Review and approval of selected community sanitation option

Implementing an appropriate sanitation option is about more than just ensuring it is suitable for the local community context. It is also about ensuring that it is suitable for the ward and the city/town. If there is a mismatch between the sanitation option and the city/ward sanitation strategies, this can create problems for the design of the larger-scale services needed to support sanitation. This section provides guidance on how to check that sanitation options in the Community Action Plan (CAP) are in alignment with the city and ward sanitation strategies.

All CAPs are reviewed by ward leadership as part of standard LIUPC processes. The activity described in this section should be integrated into existing LIUPC processes for reviewing CAPs.

AUDIENCE

- Local government sanitation expert(s) (e.g. in City Corporation or Paurashava).

OBJECTIVES

1. Ensure that the sanitation options selected in the Community Action Plans are appropriate and provide any necessary feedback

SUMMARY

Questions are provided for assisting the local government sanitation expert in assessing whether a chosen sanitation option in a Community Action Plan is appropriate and in alignment with ward- and city-level sanitation strategies.

After the CDC has identified sanitation as one of the prioritised infrastructure improvements in their CAP (see Module 5a, Part 2), the CAP is reviewed at the ward level following Phase 1, Steps 2.6 and 2.7 of the LIUPC Settlement Infrastructure Fund (SIF) Guidelines.

SIF Guidelines Phase 1, Step 2.6: Ward-level Infrastructures List is Prioritised and Finalized

"The Councillor convenes a Ward-level meeting…All participants will discuss which infrastructure are the most urgent and the decision will be taken in consensus amongst CDC leaders who will then finalize the list."

Where sanitation infrastructure has been prioritised for implementation, the local government sanitation experts should review the sanitation option in the CAP to ensure that it aligns with the city sanitation strategy and the ward sanitation strategy (see Module 1).

Overall, the sanitation option should contribute to the broader ward- and city-level strategies, and should not conflict with these strategies. Some aspects that can be checked are shown in Box 4.1.

Box 4.1

Questions to check if the preferred sanitation option aligns with the ward and city sanitation strategies

- → Will the emptying services as planned in the city/ward strategies be able to service the selected option(s)?
- → If the selected option requires special external support from local authorities (e.g. technical assistance for large septic tanks), will this be available according to the city/ward strategies?
- → Is any external financing (e.g. to subsidise emptying, help with major repairs, support expansion, eventually connect to sewers, etc.) needed to support this option? Do the city/ward strategies plan for this type of financing to be offered?
- → Is the sanitation option(s) in line with technology and service choices suggested for the overall ward or city?
- → Does the option take into account agreed objectives for gender equity and inclusivity of services formulated at the ward or city level?
- → Does the city/town expect to install sewers in this area the near future? Can the selected sanitation option(s) be connected to a sewer if sewerage is constructed?
- → Does the selected sanitation option meet the criteria/requirements for desirable sanitation as set out in the city/ward strategy (e.g. no wastewater discharged to open drains)?
- → Does the selected sanitation option contribute to targets set out in the city/ward strategies (e.g. 50% of communal toilets have bathing facilities by 2021)?

If it is found that the proposed sanitation option in the CAP requires adjustments to align better to the city or ward sanitation strategies, the design should be modified as needed before the SIF proposal is submitted (SIF Guidelines Phase 2, Step 1; Module 5b). The local government sanitation experts can discuss the necessary modifications with the CDC during the 'option design review' activity in Module 5b.

MODULE 4b

Detailed design and costing of community sanitation option

Module 4b.

Detailed design and costing of community sanitation option

Clear design and costing of the sanitation option is key to making an informed choice on the best option for a community, and for planning successful implementation. This section describes key considerations that local government should keep in mind when assisting CDCs to design and cost a sanitation option.

Design and costing of infrastructure is part of standard LIUPC processes. This section provides additional guidance that is specific to sanitation.

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Develop a detailed technical design of the selected sanitation option for the community.
2. Provide a cost estimate for the construction and ongoing maintenance of the sanitation option.

SUMMARY

Information on important considerations for designing and costing a sanitation option are provided. The manual is also accompanied by standard technical designs for different types of sanitation containment units.

Once the ward leadership group has included the sanitation option in the 'priority list of infrastructure' (SIF Guidelines Phase 1, Step 2.6), the local government sanitation expert should assist the CDC with developing their SIF Proposal. The SIF Proposal is a detailed plan for how the selected infrastructure will be implemented.

According to SIF Guidelines Phase 2, Step 1, the CDC must include technical designs and costing of the selected infrastructure in their SIF proposal. It is unlikely that the CDC will have enough technical expertise to do this on its own. Therefore, support from government is required.

I. Technical design

Standard technical designs for different types of sanitation infrastructure are provided with this manual. The standard technical designs may need to be modified based on the local conditions of the community. Important considerations for technical designs are show in Box 4.2.

Box 4.2

Considerations for designing latrines

Designing the containment unit

→ The containment unit (the pit or tank) needs to be sized to match the number of users and needs to be suitable for the physical location of the site. Consider population growth and the possibility that many people will be attracted to the new facility.

→ Relevant information about the community can be taken from the CAP (e.g. the proposed location, how many people will use the toilet).

→ It may be necessary to visit the proposed site to collect more information on local conditions such as the spatial dimensions of the site, the soil conditions, the groundwater level, susceptibility to flooding and the availability of a water or electricity supply.

Designing the user interface

→ Information on some of the community needs (e.g. the need for design features to cater for people with disabilities) should have been captured during the transect walk and community consultations as described in Module 5a, and recorded in the CAP.

→ Refer to the section on 'general design features' in Module 2a for more information on what should be included in the design of the toilet facility (e.g. handwashing station, menstrual hygiene management facilities, etc.).

Considering the need for faecal sludge and wastewater management

→ The sanitation infrastructure must be designed so that faecal sludge can be safely removed from the pit or tank(s). Ensure that emptiers will be able to access the pit or tank(s).

→ The sanitation infrastructure must be designed so that people are not exposed to wastewater (liquid effluent coming out from the containment unit).

→ Module 2 identifies emptying and wastewater management considerations including designing containment units with access hatches, locating the containment where emptiers can access it, and designing for the safe management of wastewater.

→ The design should include improvement to drains (e.g. covered drains) if this is needed and construction of infrastructure for wastewater treatment (e.g. soak wells or constructed wetlands – see Module 2).

II. Costing

SIF Guidelines Phase 2, Step 1 also state that local government should provide support in costing the infrastructure:

> SIF Guidelines Phase 2, Step 1
>
> "– city corporation/ Municipal Engineer will prepare the detailed drawing specifications and costing."

The community needs to know the upfront cost of the sanitation infrastructure because they are required by the LIUPC to contribute funding equal to 10% of the upfront costs.

An engineer should also provide an estimate of the recurring or ongoing costs of the sanitation option. This is the cost that is required to keep the infrastructure working properly over the long term after it has been built. It can be difficult to calculate this cost, but an estimate should be provided to communities so they can decide whether it is affordable, and so that an appropriate user fee can be calculated. Box 4.3 shows costs that should be considered.

The **technical design and budget** should be documented and discussed with the CDC. Once the CDC has agreed on the sanitation option, the design and budget should be included in the CDC's SIF proposal that is submitted to LIUPC (see Module 5b).

Box 4.3

Latrine cost considerations

Upfront costs

→ Material costs can be determined from the bill of quantities for each design. These costs should include the materials needed to construct pits and tanks, the above-ground toilet facilities, pathways to the toilet, drains, and wastewater management infrastructure.

→ Labour costs should include the costs associated with excavation, transport of materials, and construction.

→ Expert rates may need to be determined where experts outside of the community are needed to design or construct infrastructure (e.g. for a composting toilet). These rates can be obtained by asking vendors for quotes.

→ Costs to acquire land may need to be accounted for if it is not a contribution from the landowner or the community.

Recurring costs

→ Minor repair and maintenance costs include costs associated with cleaning the toilets and repairing or replacing small parts like valves and taps. These are usually small costs, but become higher and more frequent if the toilet design becomes more complex.

→ Major repair and maintenance costs are large but infrequent. For example, the costs to repair a broken pipe in a condominium sewer or to restart a large septic tank that is not functioning properly. Major repair costs will be higher for more complex technical designs.

→ Water and electricity bills need to be included if the design includes a piped water supply or electric grid connection. These costs can be estimated based on water supply and electricity rates in the area.

→ Emptying service costs can vary depending on the type of containment unit. These costs can be obtained by getting quotes from local emptiers if they are available. On average, pits and tanks will need to emptied once per year, and septic tanks approximately once every three years, however the frequency will depend on the number of users and the capacity/size of the system.

4c

MODULE 4c

Ongoing monitoring and support of community sanitation

Module 4c.
Ongoing monitoring and support of community sanitation

Local government must provide ongoing support to ensure that the sanitation systems work properly over the long term. Experience around the world shows that communities are usually unable to maintain sanitation on their own for long periods of time without any external support. This section explains responsibilities for government authorities in monitoring and providing support for sanitation in LICs.

The SIF Guidelines do not provide guidance on local government support for the infrastructure after it has been constructed. Therefore, this section is additional to LIUPC processes.

AUDIENCE

- Local government sanitation expert(s) (e.g. in city corporation or paurashava).

OBJECTIVES

1. Understand local government responsibilities for monitoring and providing ongoing support to community sanitation.

SUMMARY

Information on local government responsibilities for monitoring and providing ongoing support to community sanitation, including recommendations for actions that should be taken, are provided for the local government sanitation expert(s) to review.

The role of local government authorities in providing ongoing support to the CDCs after the sanitation option has been constructed depends, in part, on what was agreed following Module 5c. However, research suggests that there are some responsibilities that local government should fulfil regardless of the management approach[1]. These are shown in Box 4.4.

The CDC and the community may be responsible for day-to-day operation of communal sanitation systems, but local government should take up the four responsibilities detailed above to ensure the community has the support it requires to successfully manage the sanitation system over the long term. If the relevant local government departments do not have the staff or processes in place to perform these responsibilities, local government authorities may need to work with NGOs to develop them, or advocate to central government to provide the needed resources.

1 This research was based on communal sanitation in Indonesia. Although the context is different, these findings are also relevant for Bangladesh. See the research report at: https://www.uts.edu.au/sites/default/files/article/downloads/Isf-sanitation-indonesia-1_0.pdf

Box 4.4

Local government responsibilities for supporting community sanitation

Monitor and maintain records

Communities often struggle to keep records of their sanitation services, partly because they usually do not have offices and computers. Local government authorities should monitor and maintain records of all communal sanitation systems including regular technical assessment of performance and damages and the financial status of the O&M fund. Local government should also inform the CDC of any immediate concerns, and share data with relevant stakeholders to ensure corrective follow-up actions:

→ Identify what data to collect and how often it will be collected. Keep it simple and collect data on only a few key things like operational and financial status.

→ Data collection should also include a check of whether everyone in the community can access a hygienic latrine, including people with disabilities and other vulnerable groups.

→ Decide who will collect the data and how it will be recorded. Standardised reports should be used.

→ Decide what will be done with the data. For example, if a CDC is found to have poor financial status, what will local government do?

→ Set a budget for collecting data.

Provide technical and social support: Local government should proactively offer technical and social support to the communities in managing shared and communal sanitation (rather than just wait for requests for assistance to come). This includes regular checks with CDCs to see if there are any technical issues with the operation and maintenance of the infrastructure, or social issues such as problems with fee collection. Local government should provide assistance for addressing the identified issues where possible.

→ Decide how frequently the communities should be visited.

→ Develop a standard list of potential technical and social issues to check in the field.

→ Document issues that communities are facing and options for providing assistance.

Formalise fee setting and collection: Households will be more likely to pay their fees for maintenance of the sanitation system if they see it as a formalised requirement rather than a voluntary contribution. Following the activities in Module 5c, the CDC should decide who is responsible for setting the fee and collecting it. Local government can help formalise this by signing an MoU (Memorandum of Understanding) (see Module 4d) that lists the fee amount, how often it will be collected, and who will collect it.

→ Include the rules for fee collection in the MOU and have the ward councillor and other government authorities sign it.

Fund major costs: Although the CDC has an O&M fund, and should collect monthly fees, some major costs will likely be greater than the community can afford. These include costs to do major repairs after a disaster and major maintenance (e.g. if a large pipe or tank is damaged). Local government should help CDCs access funding to cover major costs that are too large for the community to afford.

4d

MODULE 4d

Validation and handover of community sanitation infrastructure

Module 4d.

Validation and handover of community sanitation infrastructure

Once the sanitation infrastructure has been constructed (see Module 5d), control of the system can be transferred to the community. Transferring control of the sanitation system to the community is an important step and should be formalised. Communities should start with a new system that is in excellent condition and understand what is needed to keep it operational over the long term. This section explains how to check that the newly constructed sanitation infrastructure is working properly and how to formalise the ownership and management of the system.

The SIF Guidelines describe a process for validating the completion of construction, but not for validating the quality of the infrastructure and formally handing it over to the community. This section describes activities additional to the LIUPC processes.

AUDIENCE

- CDC

OBJECTIVES

1. Validate that new sanitation infrastructure in the community has been constructed properly.
2. Formally hand over ownership of the sanitation infrastructure to the group that will be responsible for owning or managing the assets.

SUMMARY

A checklist is provided that can be used to assess whether new sanitation infrastructure has been constructed properly. Advice on signing a memorandum of understanding to document ownership and management of the sanitation infrastructure is also included.

Following the successful submission of the SIF Proposal, funds for the implementation of the sanitation option are allocated as described in SIF Guidelines Phase 2, Steps 2–4.

Once construction of the sanitation infrastructure is complete, steps should be taken to verify completion of the project and to hand over the sanitation assets.

I. Verification of sanitation infrastructure construction

SIF Guidelines Phase 4, Step 1 states that the city's or town's technical team must certify the completion of construction work and report it to the Town Project Board. Phase 4, Step 2 of the Guidelines provides a template for the completion report.

In addition to filling out the template, testing should be carried out on the sanitation infrastructure to ensure every part functions properly and is in good condition. The local government sanitation expert, together with a CDC leader, should inspect each of the items in the following checklist. Some of these items should be also checked before construction is complete – see Module 5d for a checklist that local government authorities should use to monitor construction.

Construction completion checklist	
☐	No significant cracks are present.
☐	The painting, joinery, bricklaying, pipelaying and other areas of craftsmanship are of good quality.
☐	Doors and locks work properly.
☐	Valves and taps turn on and off properly.
☐	The toilet flushes correctly into the pit or tank or sewer pipe to treatment.
☐	Any Y-junctions (if present) divert waste to each channel properly.
☐	Lights (if present) turn on and off.
☐	Wastewater flows through drains (if applicable) to treatment and does not stagnate anywhere (this may need to be tested by pouring fresh water into the drain and observing). Drains do not overflow during the rainy season.
☐	Greywater from handwashing stations and bathing facilities does not stagnate anywhere.
☐	Access hatches to pits, tanks, and covered drains are lockable and can be opened for cleaning and maintenance.
☐	All sanitation facilities are built as per the design drawings.

The city's Development Authority may be mandated to approve any new sanitation infrastructure to ensure that it complies with the Bangladesh National Building Code. Where this is applicable, the Development Authority should be contacted to do its own review of the sanitation infrastructure and provide approval.

II. Signing a memorandum of understanding

It is important that it is clear who owns the sanitation asset and who is responsible for its management. Clearly documenting these roles and asking key stakeholders to sign the document will encourage the community and government to view the management group as legitimate and formal, and avoid future conflicts.

A **memorandum of understanding (MoU)** between the government, the CDC, and (if possible) the landowner should be created. The MoU should contain the following details:

- The name of the individual, groups, or organisation that owns the sanitation assets. For example, this could be the CDC, the landowner, or a government department.
- The roles and responsibilities of each stakeholder for managing, operating, and maintaining the sanitation system. These can be taken from the agreement made after carrying out the activities in Module 5c and from the list of government responsibilities provided in Module 4c.
- The signatures of the CDC leader, ward councillor, and (if possible) the landowner.

5

Module 5

Community sanitation option selection, implementation and O&M

Module 5

Community sanitation option selection, implementation and O&M

The overall objective of this module is to support communities in contributing to the development, implementation and management of a safe sanitation solution, recognising that participation in decision-making strengthens ownership and builds skills.

This module contains activities that primarily involve CDCs and communities. The sections of this module should be carried out along with the sections of Module 4. The figure below shows the order in which each section of Module 4 and 5 should be followed.

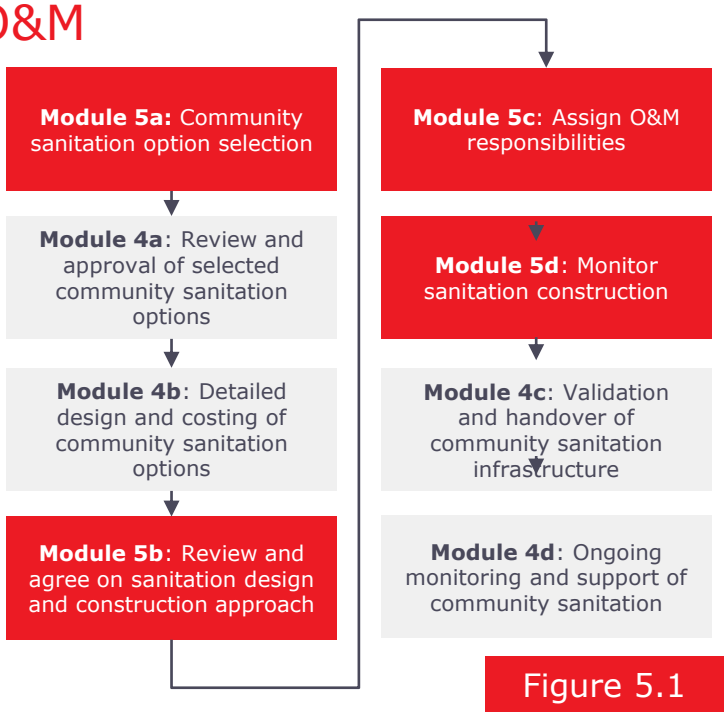


Figure 5.1

Objectives

The specific module objectives are to guide local government authorities on facilitating processes to:

- Assess and select sanitation options, including the design of sanitation facilities and operation and maintenance (O&M) plans, which are suitable for the local context and socially inclusive.
- Plan and construct the selected sanitation option.
- Set up a management structure for ongoing O&M and management of the sanitation facility.
- Monitor the quality of the sanitation infrastructure construction.

Expected Outcomes

It is expected that implementation of this module will:

- Provide local government authorities with the knowledge and tools to guide CDCs and communities through a thoughtful, informed process for selecting a suitable and inclusive sanitation option; and
- Enable local government to understand the necessary steps to planning and implementing sanitation options in alignment with LIUPC processes and to enable local government to communicate them effectively to CDCs.

MODULE 5a

Community sanitation option selection

Module 5a.

Community sanitation option selection

This section provides guidance on how to collect information to inform the selection of a suitable sanitation option in alignment with the LIUPC SIF Guidelines Community Action Plan (CAP) process. It assumes that sanitation has been identified by community leaders and city leaders as a priority following SIF Guidelines Phase 1, Step 1.5. Two primary activities for informing the community selection of a suitable sanitation option are described: a transect walk and a participatory community workshop.

LIUPC processes already include a transect walk. The sanitation transect walk described in this section can be integrated into the LIUPC transect walk, or carried out separately. LIUPC processes also include a community-level meeting to select small-scale infrastructure. The community workshop described in this section can be integrated into this meeting or held separately.

AUDIENCE

- CDC Members
- Other community representatives

OBJECTIVES

1. Ensure that the implemented sanitation system is suitable to the community location and needs.
2. Increase community ownership and commitment to its long-term operation through involvement in decision-making

SUMMARY

Part 1 – Transect walk to assess the current sanitation, infrastructure and environment conditions, discuss equality and accessibility, and considerations for improving sanitation.

Part 2 – Participatory sanitation option development: after considering improvement priorities, a range of sanitation options will be presented to the community. The community will discuss and select a preferred option considering technical, operational, social and financial factors.

Module 5a.

Part 1 – Transect walk to assess sanitation status

A first step in choosing a sanitation solution is to understand the local context and needs. This can be done through a transect walk as proposed in Phase 1, Step 2.3 of the SIF Guidelines. The transect walk involves having a group of people walk through the community to assess and discuss local conditions. The objective of the transect walk is to understand the conditions in the community that will inform the selection of sanitation improvement options and which households will use them.

"CDCs conduct a transect walk of their settlement to observe the conditions and identify problem areas. During the transect walk, they should observe the sanitation conditions, drainage systems, the condition of safe drinking water, the condition of the solid waste management system, paths and walk ways, and bathing facilities for women and adolescent girls."

SIF Guidelines Phase 1, Step 2.3

Box 5.1

Preparing for the transect walk

Timing: The walk should occur before the community workshop (Module 5a, part 2). It can be immediately before the workshop or another day / week before. Preferably it will not be held more than a week before the workshop because some of the knowledge gained during this activity may be forgotten.

Materials: The template accompanying this module should be printed out for each participant of the transect walk. Each participant will also need a pen or pencil.

Duration: It is expected to take 1 – 1.5 hours to conduct the introduction, transect walk and debrief.

Participants: The SIF Guidelines states that the CDC conducts the transect walk. However, with respect to sanitation, it will be beneficial if the transect walk group also includes:

- **Sanitation expert** – It is recommended that a sanitation expert from local government is involved in the transect walk to support in observing and discussing conditions related to sanitation. The transect walk will also help the local government sanitation expert decide which sanitation technologies could be considered as options for the community as part of the community workshop (Module 5a, Part 2).
- **Women** – Women should be included in the transect walk to ensure that their perspectives are included in assessing the community conditions. However, if gender relations do not allow the involvement of women and men to speak freely together, the transect walk could be conducted in separate groups.
- **People with special needs** – People with special needs (e.g. people with disabilities, elderly, or other vulnerable groups) should be considered in the assessment of current conditions. If possible, they should be included in the transect walk. If this is not possible, representatives (e.g. their caretakers or family members) should be included on their behalf.

The three steps below explain how to conduct the transect walk to observe community conditions related to sanitation. The sanitation transect walk can be done as part of the general transect walk for the LIUPC project, or it can be done separately.

Step 1 – Introduction to the activity

The CDC leader or local government sanitation expert will explain the transect walk and its objectives:

- A transect walk is a group walk across the community area together to explore the sanitation conditions, other infrastructure and environment. As the group walks around the community, they take notes about what they see and discuss sanitation problems and opportunities for improvement.
- The group will be guided in discussion by the local government sanitation expert.
- The objectives of the walk are to understand the current status of sanitation in the community, the sanitation problems facing men, women, children, elderly people and vulnerable groups, and opportunities for improvement.
- This first-hand experience will help inform the community workshop (Module 5a, Part 2) that follows the transect walk.

Step 2 – Decide with path to take

The local government sanitation expert should explain to the participants why sanitation systems require containment for human waste, and why they need emptying services to remove the waste and take it somewhere to be safely treated (see Module 2 for more information).

The facilitators should then share background information on sanitation in the ward and the community. This can include information from:

- The city and ward sanitation strategies, including their safe sanitation targets.
- The LIUPC poverty indexing activity (SIF Guidelines Phase 1, Step 1.3).
- Notes taken during the transect walk (Module 5a, Part 1).

Step 3 – Conduct the transect walk and take notes

The group should walk along the planned path and take notes along the way. The template accompanying this module can be used to take notes. Each participant can take their own notes or participants can share templates. Table 5.1 gives example questions to consider when filling out the template.

The local government sanitation expert should point out key observations to the group about sanitation conditions.

At the end of the walk, the group should compare their notes and discuss what they observed. All of the notes should be saved so that they can be referred to during the community workshop (Module 5a, Part 2).

Additional considerations – input from special needs groups: The CDC leader should ensure that information from people with special needs who could not attend (and women if a meeting is conducted separately) is also recorded. Where possible, women and special needs groups or their representatives should be included in the main transect walk. However, if this is not possible, individual meetings may be required to discuss their needs.

While it is important to assess sanitation conditions in the community, talking about which households are very poor or have bad sanitation facilities may be embarrassing for people living in these households. The local government sanitation expert should try to avoid making any embarrassing remarks.

Collect the **note-taking templates** that were filled out by the participants for reference in the following sections.

Accompanying Materials

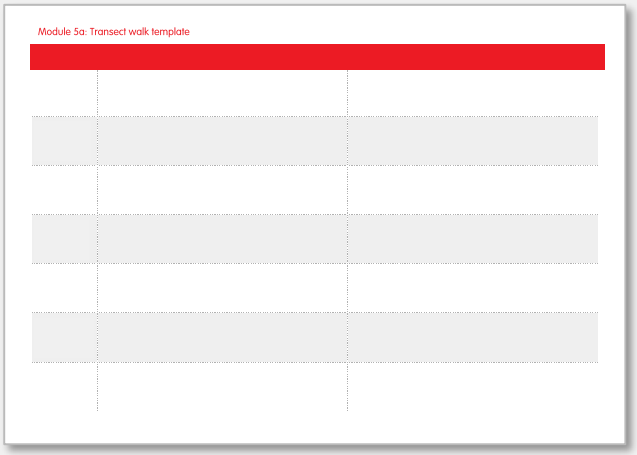

Module 5a: Transect walk template

Table 5.1 Questions to consider while conducting transect walk

Category	Example questions to consider
Existing toilet conditions and waste coming out of toilet	→ What types of toilets are used in different parts of the community? (e.g. shared toilets, household toilets.) → Are all toilets and tanks in good condition? What are the issues? (e.g. smells, functionality, damaged parts, not enough privacy, etc.) → Where does human waste from the toilet go? (e.g. into a septic tank, drain, or waterway.) → Are the toilet facilities suitable to meet the needs of women? (e.g. Are they safe at night? Do they enable menstrual hygiene management? Do they allow women to enter the toilet with children?) → Are the toilet facilities suitable for people with special needs (e.g. Can people with disabilities and children enter the facility and use the toilet?) → Are shared pits and tanks emptied when they become full? Is this the same for all sanitation facilities in the community?
Water supply and electricity	→ Is there electricity and a piped water supply available in all areas of the community? → Do community toilets have a water supply and a place for handwashing nearby?
Flooding problems	→ Is flooding a problem? Do certain areas have more flooding than others? → Is the groundwater level deep down or near the surface? Does it change over the year or depending on the tide?
Land availability	→ Is there any land available in the community to build new toilets? Is there any land available around the community to build wastewater treatment infrastructure? → Is there enough space for trucks to get close enough to empty pits and tanks safely? → Are some households located far away from existing toilets?
Examples of good sanitation	→ Are there some toilets that are already in good condition and are emptied regularly? Who manages these toilets?
Other	→ Other observations that are relevant and not included in the above categories.

Module 5a.

Part 2 – Participatory sanitation options development

A first step in choosing a sanitation solution is to understand the local context and needs. This can be done through a transect walk as proposed in Phase 1, Step 2.3 of the SIF Guidelines. The transect walk involves having a group of people walk through the community to assess and discuss local conditions. The objective of the transect walk is to understand the conditions in the community that will inform the selection of sanitation improvement options and which households will use them.

SIF Guidelines Phase 1

Step 2.4: *"CDC members should then organize a community-level meeting to discuss and better understand the causes of those problems and explore the 'root causes'. The exercise will help the group to get a deeper understanding of their settlement, its problems, and ways to solve them."*

Step 2.5: *"The CDC will then meet with primary group members to discuss the SIF selection criteria for small-scale infrastructure. During this meeting, they should identify the small-scale infrastructure needed to address their community problems and prioritize them based on SIF infrastructure selection criteria."*

Facilitator	The workshop should be facilitated by the local government sanitation expert, or alternatively, someone skilled in facilitation with the sanitation expert providing technical support. Another person (e.g. a CDC member) should provide support in recording notes and agreements.
Timing	The community workshop should occur after the transect walk and before the CAP is filled out and submitted.
Materials	Pen and paper for note-taking; Diagrams of sanitation infrastructure to show to participants (can be printed from Module 2)
Duration	2–2.5 hours
Participants	Representatives from each Primary Group and other community leaders. Women and representatives of vulnerable groups in the community should also be present.

Step 1 – Welcome and Introductions

The facilitators should introduce themselves and explain that the purpose of the workshop is to discuss and select a suitable sanitation system for the community. Each participant should also introduce himself or herself. If the facilitator knows any icebreaker activities to encourage open conversations, they can facilitate one.

Explain any rules regarding the workshop facilitation – such as ensuring only one person speaks at a time and providing equal opportunity to all participants to voice their views to ensure open and fair participation.

Step 2 – Share background information on sanitation in this community

The local government sanitation expert should explain to the participants why sanitation systems require containment for human waste, and why they need emptying services to remove the waste and take it somewhere to be safely treated (see Module 2 for more information).

The facilitators should then share background information on sanitation in the ward and the community. This can include information from:

→ The city and ward sanitation strategies, including their safe sanitation targets.

→ The LIUPC poverty indexing activity (SIF Guidelines Phase 1, Step 1.3).

→ Notes taken during the transect walk (Module 5a, Part 1).

Step 3 – Community to discuss current practices and needs for improvement

The facilitators should ask the participants to discuss a) the current status of sanitation in their community and b) improvements to sanitation that are most needed. Key topics that the participants can discuss include:

→ **Sharing**: Are the toilets in the community private (used by only one household), shared between a few households, or shared by the whole community? How many people are using each toilet? Does this create issues like long queues? How do the participants want to improve this?

→ **Access:** Is it safe to go to the toilet, including for women and children at night? Are the toilets open all day and night or are they closed sometimes? Can everyone get to the toilet during the rainy season, including the elderly and people with disabilities? Are some houses located a long distance away from the toilet they use? How should these issues be addressed?

→ **Features:** Do the doors on the sanitation facility have locks? Are there lights? Is there a water supply? Are there facilities for handwashing or bathing?

→ **Design:** Do the toilets have tanks/pits or does the waste go straight to the drain? What materials is the sanitation facility made out of (e.g. metal sheets, cement block, etc.). Does this need improvement?

→ **Maintenance:** Are the toilets usually clean or unclean? Who cleans them? How are damage to the toilet and other problems fixed? Do families pay fees to help pay for cleaning and repairs? How is the pit/tank emptied when it becomes full? What improvements are needed to help with the maintenance of the sanitation facilities?

Review and summarise the issues that the participants have identified. Also summarise the improvements that the participants identified. Have them discuss and decide which issues are the biggest problems and which improvements are most needed.

Step 4 – Sanitation infrastructure options presented

The local government sanitation expert should then explain the sanitation options that he/she feels are possibilities for the community. The sanitation options that could be presented to the group are listed in Module 2. Some options may not be appropriate for the community if:

→ It is not compatible with the city or ward sanitation strategy – e.g. if the ward sanitation strategy states that pit latrines should not be used, pit latrines should not be presented as an option.

→ It is unlikely that the option can be built or managed in the community– e.g. if there is no DEWATS expert available in the area, then DEWATS should not be presented as an option.

The sanitation expert should present diagrams or photos of each possible option and explain:

- how the sanitation option works
- the advantages and disadvantages
- operation and maintenance requirements
- how frequently the containment will need to be emptied
- how wastewater (liquids from the containment) will be addressed.

The facilitator should ask the participants if they have any questions or need any clarifications about each presented option.

Step 5 – Community discussion on preferred sanitation infrastructure

After presenting each option, the facilitators should guide the community to discuss their thoughts on the following topics.

→ The most **beneficial aspects** of the sanitation options.

→ The **biggest concerns** that participants have.

→ Preferences regarding **shared vs. private household toilets**, taking into account the number of people using the toilet and the available land.

→ **Location and availability of land** to construct the sanitation option. Consideration should be given to potential pollution of water supplies and access for emptiers. The LIUPC SIF guidelines (Phase 1, Step 2.1) also state that the sanitation options should prioritise access for the poorest families, women-headed households, families with orphans, and families with people with disabilities.

→ **Environmental conditions** that might affect the sanitation option, such as flooding or how the groundwater level changes during the wet season.

→ Whether the necessary **operation and management requirements** can be met, or whether this may be difficult for the community to do.

The sanitation options should also be discussed against the LIUPC SIF selection criteria (SIF guidelines Phase 1, Step 2.5).

Based on the discussions, the CDC members, in consultation with representatives from each primary group, should identify the community sanitation priorities to go into the CAP. These priorities should include:

→ the type of containment option preferred by the community (e.g. single pit, twin pit, septic tank, DEWATS)

→ the number and location of toilets

→ the desired features of the toilet (e.g. a ramp or wider door so that people with disabilities can access the toilet).

The **CAP** should then be submitted to LIUPC following procedures laid out in the SIF Guidelines. According to SIF Guidelines Phase 1, Steps 2.6 and 2.7, the CAP will be reviewed at the ward level (See Module 4). Once CDCs have received approval, they can proceed with Module 5b of this manual which aligns with Phase 2 of the SIF Guidelines (Proposal development, revision and approval).

MODULE 5b

Review and agree on sanitation design and construction approach

Module 5b.

Review and agree on sanitation design and construction approach

According to Phase 1, Steps 2.6 and 2.7 of the SIF Guidelines, the sanitation options put into the CAP, along with other infrastructure options, will be reviewed at the ward level by representatives of CDCs, councillors, LIUPC town staff and others. In this review, it will be decided which infrastructure options will be given the highest priority for implementation.

Where sanitation options have been prioritised for implementation, relevant local government authorities should provide support in the detailed design, costing, and implementation of the option. Following the guidance in Module 4, local government sanitation experts should develop a detailed design and costing for the preferred sanitation option (Module 4b).

This section describes steps for the CDC to: review and provide feedback on the design of the preferred sanitation option, agree on an approach for how the sanitation option will be constructed, and plan to assemble the necessary documents to submit a full proposal to LIUPC in line with the SIF Guidelines. These activities are already a part of the general LIUPC processes, but this section provides additional detail specific to sanitation.

AUDIENCE

- CDC Members

OBJECTIVES

- Ensure that the implemented sanitation system is suitable for the community location and meets community needs.
- Formally agree to the proposed sanitation design.

SUMMARY

Following the approval and design (Module 4a and 4b) of the community's sanitation system, a meeting is held to review and finalise the design and the LIUPC proposal. It involves both informing the CDC of the approval process and design, and discussion of the design, construction, operation and maintenance requirements, and

Once the preferred sanitation option in the CAP has been prioritised by the ward-level leadership, the local government sanitation expert should prepare a detailed design and costing of the option as described in Module 4b of this manual. A meeting between the CDC and the local government expert should then be held to review the detailed design and costing, agree on a construction approach, and develop a full proposal for sanitation infrastructure as described in Phase 2, Step 1 of the SIF Guidelines.

The following steps explain how to carry out each part of the meeting.

Step 1 – Welcome and Introductions

The facilitators should introduce themselves and explain that the purpose of the meeting is to review the detailed design of the sanitation infrastructure and agree on a construction approach.

Step 2 – Present and review design

The local government sanitation expert should present the detailed design and costing of the system as determined from the steps in Module 4b. Some points that can be presented to the CDC include:

- **Drawings/diagrams**: Any design drawings, diagrams, or pictures should be presented to show what that infrastructure will look like.
- **The site(s) where the infrastructure will go**: Location and size, connection to existing toilets, connection to existing water points or drains, and changes to be made to other infrastructure (e.g. covering of drains or removal of a building).
- **Design of the toilet facility**: Features like the number of stalls, the design of the entrance, handwashing station and menstrual hygiene management facilities, and other features requested by the community during the activities described in Module 5a, Part 2
- **Considerations for operation and maintenance**: For example, whether the facility has any special parts that will need to be cleaned or fixed regularly.
- **Cost**: The total cost of constructing the facility and the cost of the community contribution. SIF Guidelines state that the community must contribute 10% of the estimated construction cost. Also, if possible, provide estimates of ongoing operation and maintenance costs.

Give the CDC time to ask questions and provide feedback on the proposed design. Consider if any minor modifications can be made to the design based on feedback from the CDC. The ability of the community to pay the proposed contribution within the time required should also be discussed.

Step 3 – Review construction requirements

The local government sanitation expert should explain the general construction requirements of the proposed system (e.g. how much excavation will be needed, what major components of the system need to be built, and if any demolition is required). The sanitation expert should also state whether external support will likely be needed (e.g. to construct a DEWATS).

The CDC should then discuss with the sanitation expert their approach to construction. This includes:

- The availability of labourers within the community;
- The availability of local vendors/suppliers or materials and parts; and
- The need to source external construction support (e.g. from an NGO) and how this can be done.

The CDC should also refer to SIF Guidelines Phase 3, Steps 1–2 about LIUPC requirements regarding the construction approach.

Record the agreed construction approach and have each participant sign the agreement.

According to Phase 3, Step 1 of the SIF Guidelines, the CDC will form a Project Implementation Committee (PIC) which will include 5–7 community members. The PIC will be responsible for the implementation of the sanitation option. The PIC should be formed at this point, following the procedures laid out by LIUPC, so that the PIC can be involved in the subsequent capacity building activities (Module 5c).

Step 4 – Formal agreement of sanitation infrastructure and finalise documentation

To finalise the proposal, the CDC must prepare multiple documents which are outlined in the LIUPC SIF Guidelines Phase 2, Step 1. The local government sanitation expert should support the CDC in arranging these for the sanitation component of the proposal. The documents include (but are not limited to):

- The total budget for the proposed sanitation infrastructure
- A list of the proposed sanitation infrastructure improvements/installations
- The work plan for implementation of sanitation infrastructure
- Designs/drawings and estimates of the proposed sanitation infrastructure
- A layout plan/sketch map of where the sanitation infrastructure will be located.

The meeting should discuss who will be responsible for creating the necessary documents for the proposal.

Once the **proposal** has been finalised and reviewed by the PIC, it is submitted to the Town Project Board (Phase 2, Step 2 of SIF Guidelines). After approvals are granted following the LIUPC process, funds for implementation are disbursed (Phase 2, Steps 2–4 of SIF Guidelines).

MODULE 5c

Assign O&M responsibilities

Module 5c.

Assign O&M responsibilities

To ensure the sustainability of the sanitation infrastructure, it is essential that an operation and maintenance (O&M) approach be agreed to before construction starts. The minor and major O&M activities and their financing needs to be clearly explained and understood by the beneficiaries and the CDC. This section gives guidance on facilitating a meeting to decide who is responsible for each O&M task and to develop an O&M action plan.

LIUPC processes already include steps for assigning O&M responsibilities. According to the SIF Guidelines, these steps occur after construction of the infrastructure. However, in the case of sanitation, assignment of O&M responsibilities should occur before construction.

AUDIENCE

- CDC Members

OBJECTIVES

Develop a plan for carrying out critical O&M tasks to ensure the sanitation infrastructure works properly over the long-term

SUMMARY

A meeting to go over the various O&M tasks needed to maintain the sanitation infrastructure, then decide who will be responsible for each task and formulate a plan for regularly carrying out the O&M tasks.

According to SIF Guidelines Phase 4, Step 3.1, a CDC Infrastructure O&M Committee should be formed to take care of the constructed infrastructure and shall comprise five members taken from the CDC:

- 1 Chairperson
- 1 Caretaker
- 1 Cashier
- 2 General Members

For sanitation, there are many O&M tasks and the CDC members might not be able to carry out all of them. There are different options for assigning sanitation and management responsibilities. The most suitable option depends on the type of sanitation system being implemented and the local context. The CDC, Ward Councillor, and local government sanitation expert should hold a meeting to decide who is responsible for carrying out each O&M responsibility.

The following steps will help the CDC assign sanitation management responsibilities and come up with an action plan. This meeting can be held on the same day as the meeting Module 5b or on a different day.

Step 1 – Welcome and Introductions

The facilitator should welcome the participants and explain that the purpose of the meeting is to decide who will fulfil various management and O&M responsibilities for the proposed sanitation infrastructure.

Step 2 – Present the common sanitation O&M activities

The local government sanitation expert should explain the general O&M requirements for the sanitation system, and options for how these can be managed. Module 2b provides information on O&M activities and management options, but these will need to be adapted to suit the specific sanitation infrastructure being proposed and the local context.

The PowerPoint slides accompanying this module can be used to present the different O&M activities.

Step 3 – Facilitate the assignment of responsibilities

The ward councillor or other facilitator, with support from the local government sanitation expert, should lead a discussion with the CDC on the following topics:

→ How has the community previously managed shared facilities (e.g. water supply points, toilets, rubbish collection)? What worked well? What was challenging?

→ What operation and maintenance activities (for any infrastructure or service) has the community done well in the past? Which ones have been challenging?

→ Looking at the O&M activities required for the proposed sanitation infrastructure, who should be responsible for each activity?

The PowerPoint slides that accompany this module can be used to guide the discussion on who should be responsible for each management activity. The slides contain a list of potential O&M activities and a list of people/groups that could be responsible for each task.

Print out the list for the CDC participants and ask them to discuss who will be responsible for each O&M task for the sanitation infrastructure.

Step 4 – Develop an action plan for implementing the management option

The CDC, with support from others at the workshop, will develop an action plan for implementing the agreed operation and maintenance approach. The CDC should refer to the SIF Guidelines Phase 4, Step 3.4 when forming the action plan. In addition to the points in the SIF Guidelines, the action plan should also address the following points specifically for sanitation:

O&M responsibilities

1. When will each sanitation O&M task be carried out? How often will it be carried out? How will each person or group be told about their responsibility? (See Table 7 under Phase 4, Step 3.4 of the SIF Guidelines for a template)
2. Who will be responsible for making sure all of the O&M tasks are being carried out? What happens if someone does not fulfil his or her responsibility?
3. If the government or another external organisation has some responsibility to provide support, how to make sure they will do it?

Financial management

How will user fees be collected? What happens if a household cannot pay? How will payments be recorded?

How much of the budget will be allocated toward:

- Minor repairs and maintenance
- Major repairs and maintenance
- Electricity or water supply bills
- Emptying services
- Wages and materials for cleaners
- Soap for handwashing

Supervision

- If a caretaker or cleaners are to be hired, who will hire them?
- What exactly will the caretaker or cleaner do?
- How will they be paid?
- How will they get the materials (e.g. cleaning products) to do their job?
- How will they be supervised?
- Will the caretaker require special training on the operation and maintenance of the infrastructure?

Record all of the agreements in a document so that you can refer to it later and share it with others. Have community leaders, and ideally the ward councillor, sign the agreements for the proposed O&M approach.

MODULE 5d

Monitor sanitation construction

Module 5d.

Monitor sanitation construction

After the CDC and other relevant stakeholders have agreed to an O&M approach, preparations for the construction of the sanitation option can commence. The general requirements for construction, including procurement, contracts, supervision and finance management, are detailed in the SIF Guidelines Phase 3.

The SIF guidelines state that the LIUPC, government engineers and the CDC should monitor construction. This section provides specific guidance on how to monitor construction of sanitation infrastructure.

AUDIENCE

- CDC Members

OBJECTIVES

CDC members and local government or LIUPC engineers monitor ongoing sanitation construction to ensure infrastructure is being constructed properly.

SUMMARY

Qualified engineers or sanitation experts, and CDC members, use monitoring checklists to ensure that sanitation infrastructure is being constructed properly

According to SIF Guidelines Phase 3, Steps 1 – 2, the CDC will procure construction materials and identify suppliers, vendors, masons and labourers. The local government sanitation expert and LIUPC Town Engineer should assist the CDC in identifying suitable construction materials. Engagement of suppliers, vendors, masons and labourers should follow the agreement made in Module 5b.

The SIF Guidelines state that the CDC, Project Implementation Committee (PIC), LIUPC Town staff, and City Corporation/Paurashava technical staff have roles in monitoring construction of infrastructure:

SIF Guidelines on monitoring construction of infrastructure

Phase 3, Step 3: *"CDC will be oriented to detail procedures for community contracting and monitor the construction work to ensure the quality. Thereafter CDC will provide regular supervision and report monthly and quarterly to the PIC…"*

Phase 4, Step 1: *"LIUPC Town Team in association with the Municipality Engineers and Slum Development Officer will supervise the construction works and control the proper quality of the infrastructure in the settlement area."*

It is important that the people in charge of monitoring the construction of sanitation infrastructure know what they should be considering. The SIF Guidelines provide some general guidance on what should be monitored during construction (Phase 4, Step 1). The below checklists provide more specific guidance on assigning monitoring responsibilities for sanitation construction.

Monitoring checklist for Government and LIUPC engineers and sanitation experts

- ☐ The purchased materials are the required quality and properly used during construction
- ☐ Construction followed per approved design and specification
- ☐ If drains receive wastewater, they are covered and have the required slope
- ☐ Cement is good quality and is being mixed and poured properly
- ☐ Curing of cement is being done properly and regularly
- ☐ Validation of construction quality occurred prior to covering/burying all major components (e.g. tank walls watertight, correct ABR upflow pipes, anaerobic filter filter media installed)
- ☐ Pit or tanks have access hatches for easy emptying, but do not allow rainwater, solid waste or animals to get inside
- ☐ Wastewater flows through drains (if applicable) to treatment and does not stagnate anywhere (this may need to be tested by pouring water into the drain and observing). Drains do not overflow during the rainy season.
- ☐ Unexpected problems are documented and construction plans modified accordingly

Monitoring checklist for CDC

- ☐ Construction is being done at the approved site
- ☐ Construction site has appropriate warnings and barriers to keep people from falling into open holes
- ☐ The painting, joinery, bricklaying, pipelaying and other areas of craftsmanship are of good quality
- ☐ All toilets/households are connected to the system as per the design
- ☐ Problems with construction are documented and reported to the PIC and Government/LIUPC engineers

Government and LIUPC engineers and sanitation experts should check each item in its checklist at the appropriate times during construction (e.g. the slope of the drains should be checked once they are being constructed/rehabilitated). Local government authorities should also take photos of the construction (including underground parts) so there is a record of how the different parts were built.

CDC members should check each item in its checklist weekly.

Once construction is completed, the local government sanitation expert and CDC leader should inspect the infrastructure to ensure everything is working properly. A memorandum of understanding (MoU) that indicates who is responsible for maintaining the infrastructure should also be signed by the relevant local authorities. Guidance on these steps is shown in Module 4c.

When the sanitation infrastructure is ready to be used, the O&M approach that was agreed to in Module 5c should be put into practice. Module 4d describes the local government's role in providing ongoing monitoring and support to ensure the sanitation infrastructure works properly and problems are addressed.