

Lesson Plan: Local and Global Issues



40 minutes

Lesson Description



This lesson provides an overview of global faecal sludge management (FSM) issues. Participants also identify and discuss local faecal sludge management issues. Participants explore the challenges that contribute to these faecal sludge management issues. An understanding of these issues and challenges prepares the participants to better understand the technologies and solutions they learn in the rest of the workshop.

Learning Outcomes



At the end of this session participants will be able to:

1. Discuss the local and global issues around faecal sludge management.
2. Identify key challenges that contribute to poor faecal sludge management.

Materials



- Flip chart paper
- Markers
- Tape

Optional:

- Faecal Sludge Management Challenges Activity (1 per pair)
- Video: Innovation in Urban Sanitation: FaME and U-ACT Research in Sub-Saharan Africa <https://www.youtube.com/watch?v=9avo-Y4DLy0>
- PowerPoint: Local and Global FSM Issues
- Computer, projector, and speaker

Preparation



- Review Chapter 1: The Global Situation and Chapter 18: The Way Forward in the book *Faecal Sludge Management: Systems Approach for Implementation and Operation*
- Research any relevant local faecal sludge management information and photos, and add to the PowerPoint under the local issues slides. Delete extra slide in the PowerPoint if there are no local issues to add.
- Optional: Print and cut out the Faecal Sludge Management Challenges activity cards (1 set per pair)
- Optional: Write the headings “*Stakeholders and Planning*”, “*Accessibility*”, “*Affordability*”, “*Investment*”, “*Policy, Legislation, and Regulation*”, and “*Knowledge and Skills*” on individual flip chart papers
- Optional: Write the learning outcomes on flip chart paper
- If using PowerPoint: Local and Global FSM Issues

- Review the PowerPoint presentation
- Print the speaker's notes
- Check that the projector is working
- Cue the PowerPoint on the computer

Introduction
3 minutes

1. Ask the participants to imagine a town. The people of this town all have pit latrines. When the pits are full, they empty them manually. The sludge is dumped into the nearby river.
2. Ask: "How is this different to open defecation?" Share responses with the large group.
3. Explain to participants that one sludge truck illegally dumping is potentially the equivalent of 5,000 people open defecating.
4. Present the lesson description or learning outcomes.

Local and Global Issues
10-20 minutes**Option A:**

1. Explain that it is important to understand the global context of faecal sludge management. This is a global issue across low-, middle-, and high-income countries.
 - *2.7 billion people around the world are in need of faecal sludge management services, this is nearly 40% of the population.*
 - *By 2030, this will rise to 4.9 billion people in need of faecal sludge management. This is due to population growth. It is also due to the push to end open-defecation - meaning more on-site sanitation technologies are built.*
 - *30% of the population in Japan has on-site sanitation technologies. They are called "Johkasou".*
 - *25% of the population in USA has on-site sanitation technologies.*
2. Explain that faecal sludge management is not only an issue in low- and middle-income countries. Some cities in high-income countries also have issues with managing their excreta. For example, as of 2016 Victoria (Canada), still discharges wastewater directly to the ocean without proper treatment. The city is in the process of approving a new CAN\$1 billion wastewater treatment plant. In recent history, many cities in Europe only had primary treatment of wastewater and discharged the effluent into rivers. Wastewater management is also an issue in low- and middle-income countries where there is a lack of treatment or the treatment facilities do not work properly.
3. Explain that the most important reason we need faecal sludge management services is to protect human health. 88% of diarrheal deaths are attributed to lack of access to safe sanitation, unsafe drinking water, and inadequate availability of water for



hygiene (Prüss-Üstün A., et al., 2008). Ask participants, “What are some other reasons why it is important to have proper faecal sludge management services?”

- Environmental contamination
- Reduce smells
- Aesthetics
- Economy
- Tourism

Option B:

1. Use PowerPoint: Local and Global FSM Issues to present the global and local context. Tell participants to ask questions and share their local knowledge throughout the presentation. If a Shit Flow Diagram (SFD) exists for the local context, present it here (www.sfd.susana.org).

Option C: (20 minutes)

1. Show Video: Innovation in Urban Sanitation: FaME and U-ACT Research in Sub-Saharan Africa.
2. Ask participants to discuss:
 - *What challenges were identified in the video?*

Local and Global Challenges

20 minutes



1. Explain we are now going to discuss the main challenges of faecal sludge management. We have picked six challenges that are seen globally, but we are going to consider them for the local context.



This activity should be focused on local faecal sludge management challenges, particularly with participants that are working or plan to work on local faecal sludge management projects.

2. Encourage participants to think about their local context and what that challenge means to them.



Option A: Divide the participants into pairs. Provide the Faecal Sludge Management Challenges Activity to each pair. They will have 6 minutes to discuss the challenges in pairs (1 minute per challenge).

Option B: Graffiti Wall – Explain that the groups will have 1 minute to write their description of the challenge on the flip chart. After 1 minute, groups will move to the next challenge flip chart. Repeat until all the challenges are covered. Ask the groups to return to their first challenge. Each group should summarize what has been written on their flip chart. After the explanation, divide participants into 6 groups. Ask each group to choose one challenge flip chart.

Note: Place a timer that everyone can see. Participants will want to stay longer than one minute. To overcome this challenge, make a loud noise when the one minute is over (for example, clap, use a squeaky ball, whistle).

3. After 6 minutes, discuss each challenge as a large group. Ask participants to be brief. Explain that we will explore these challenges in more depth throughout the workshop.

<i>Stakeholders and Planning</i>	<ul style="list-style-type: none"> • <i>There are a large number of stakeholders involved in faecal sludge management at different levels.</i> • <i>There is poor communication amongst the stakeholders.</i> • <i>Faecal sludge management is rarely planned with the involvement of all the stakeholders, which leads to more challenges during implementation.</i>
<i>Accessibility</i>	<ul style="list-style-type: none"> • <i>The roads can be too narrow and poorly constructed for collection vehicles (like vacuum trucks) to reach on-site sanitation technologies.</i> • <i>People constructing on-site sanitation technologies do not take into account the collection and transport component of the sanitation system. It can be difficult to have direct access to the pit or chamber. It can also be dangerous to empty (for example, unlined pits can collapse).</i> • <i>On-site sanitation technologies and treatment plants can be located too far for a service provider to make a profit. Trucks will drive surprisingly long distances to collect faecal sludge (empty truck = not heavy), however, if the treatment plant is then too far away (full truck = heavy), they will illegally dump the sludge nearby.</i>
<i>Affordability</i>	<ul style="list-style-type: none"> • <i>Households cannot afford emptying fees.</i> • <i>Collection and transport services cannot afford capital costs, transport costs, operation and maintenance costs, and discharge costs.</i>
<i>Investment</i>	<ul style="list-style-type: none"> • <i>Faecal sludge treatment plants are expensive. There is a need for investment in construction, and also very importantly, ongoing operation and maintenance.</i> • <i>Collection and transport capital costs are expensive. There is a need for investment in vehicles and pumps.</i>
<i>Policy, Legislation, and Regulation</i>	<ul style="list-style-type: none"> • <i>Many policy makers are not aware of the need for faecal sludge management. Many focus on sewerred systems because that is the only example they know. On-site sanitation technologies can be sustainable solutions, if the entire sanitation service chain is managed properly, and it can also be much more affordable.</i> • <i>Many countries are lacking policy on faecal sludge management. As a result, faecal sludge management is often unplanned, unreliable, and operated by informal private services. This leads to illegal dumping of untreated faecal sludge into the environment.</i> • <i>Regulations need to protect public health, but if faecal sludge management regulations are too strict, it does not allow for innovation.</i> • <i>There is frequently a lack of enforcement of faecal sludge management regulations.</i>

<p><i>Knowledge and Skills</i></p>	<ul style="list-style-type: none"> • <i>Compared to 100+ years of wastewater management, faecal sludge management is only recently gaining acknowledgement.</i> • <i>Stakeholders in the sanitation sector and general population lack knowledge on the importance of faecal sludge management.</i> • <i>There is an important gap in knowledge on how to ensure faecal sludge is safe to dispose or use. There is less research and lessons learned in this field.</i> • <i>There is a need to incorporate faecal sludge management in university programs.</i>
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4. Explain that one of the most important things to realize is that faecal sludge management is about technology and people. This is why we are discussing planning and management together with technology. We need both to work together to address the faecal sludge management crisis.

5. Explain that despite all these challenges, things are moving very fast in faecal sludge management.
 - *The Sustainable Development Goals (SDGs), Goal 6: Ensure availability and sustainable management of water and sanitation for all. The Sustainable Development Goals include the whole sanitation system. This is a move from the Millennium Development Goals (MDGs) that focused on access to improved sanitation. The term faecal sludge management is not directly used in Goal 6, but it is covered by “safely managed sanitation services”. This is defined as excreta that is safely disposed in situ or transported and treated off-site (definition of faecal sludge management).*
 - *Governments and nongovernmental organizations (NGOs) are getting more involved.*
 - *There are leading research institutions involved in research such as the Swiss Federal Institute of Aquatic Science and Technology (Eawag-Sandec) and the University of Kwazulu-Natal in South Africa.*
 - *There is an important online discussion platform called SuSanA (Sustainable Sanitation Alliance).*
 - *There is a global faecal sludge management conference that takes place once every two years. The first took place in 2011. There have been three conferences so far.*
 - *There is a Massive Open Online Course (MOOC) planned for Spring 2017, called “Introduction to Faecal Sludge Management” by Eawag-Sandec. It will be a five-week course with a focus on what can actually be done to work toward solutions to faecal sludge management in developing countries.*

Review**2 minutes**

1. In pairs, ask the participants to discuss the most important faecal sludge management challenge for their context.
 2. Optional depending on time: Ask some pairs to share their discussion with the larger group.
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Reflections on Lesson

Activity: Faecal Sludge Management Challenges

Challenge	Description
Stakeholders and Planning	
Accessibility	
Affordability	
Investments	
Policy, Legislation, and Regulation	
Knowledge and Skills	