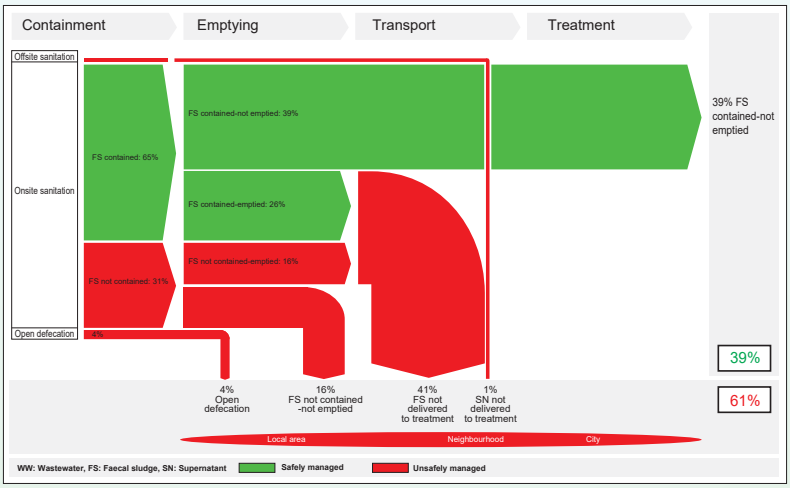
Freshwater Action Network South Asia

Freshwater Action Network South Asia-Bangladesh

SFD Report

Muktinagar Union
Saghata, Gaibandha



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SKS

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Muktinagar Union, Saghata, Gaibandha Bangladesh

Final Report

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SFD Report Muktinagar Union, Saghata, Gaibandha

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This Executive Summary and SFD Report are available from:

www.sfd.susana.org.

Foreword

The government and development organizations are promoting city-centered facilities to meet Bangladesh's need for rapid urbanization. Being an advocacy network in the WASH sector, the FANSA-Bangladesh is running its advocacy for the promotion of safely managed sanitation services (SMSS) following the city-wide inclusive sanitation (CWIS) approach. Being the FANSA-Bangladesh Secretariat, SKS Foundation has been implementing the project *Rising for Rights for Strengthening Civil Society Networks in South Asia to Achieve SDG 6 (Rising for the Rights Project)* alongside other members of the network. The Project covers the cities/towns under 3 geophysical locations namely Barishal City Corporation, Barishal; Sreemangal Municipality, Moulvibazar; and Gaibandha Municipality & Muktinagar Union, Gaibandha.

FANSA-Bangladesh realizes that to effectively promote SMSS following the CWIS approach through the duty-bearers, an analysis of the existing sanitation situation of the target city/town is imperative. Concerning this, SKS Foundation along with the Women Development Program (WDP), the implementing FANSA-Bangladesh member in Muktinagar Union conducted a comprehensive study to dig out and understand the overall sanitation situation of the union.

The study focused on assessing the sanitation situation and preparing a Shit Flow Diagram (SFD) for the Muktinagar Union. The study also focused on the sanitation system based on the analysis of the existing sanitation facilities covering the service provision & standards. The study found that being a union, most households in Muktinagar rely on traditional pit latrines without proper fecal sludge management (FSM). Sanitation services are largely informal, with no organized treatment facilities. The absence of service standards and regulations leads to environmental contamination and health risks. Planning for sanitation improvements is minimal, with no specific targets or substantial investments, which are mostly driven by external NGOs. Equity is a major concern as low-income communities depend on unsafe latrines.

The study assessed that the community is aware of the sanitation challenges but faces limited resources and inadequate support for the construction & maintenance of hygienic systems. There is an urgent need for comprehensive solutions to address these sanitation gaps, including introducing fecal sludge treatment plants and promoting improved latrine technologies, especially in urban settings. Concerning this, the study mapped the duty-bearers, service providers and relevant stakeholders within the union and underscored their roles & responsibilities. The SFD was designed following the model from www.sfd.susana.org that will help the respective duty-bearers for informed decisions to prioritize their efforts and resources to accelerate the safely managed sanitation actions accordingly and will contribute towards achieving SDG 6.2 within a given timeline.

I express my heartfelt thanks & gratitude to Dr. Md. Mujibur Rahman, Professor, Department of Civil Engineering & Director, CSIRS-UIU, and his team members for conducting the Study & sharing the results through this SFD Report.

I appreciate WDP and my colleagues at SKS Foundation for their efforts in initiating and supporting the conduction of the study by organizing the community people & stakeholders consulted to make the study informative and resourceful.

Rasel Ahmed Liton
Chief Executive
SKS Foundation

Abbreviations

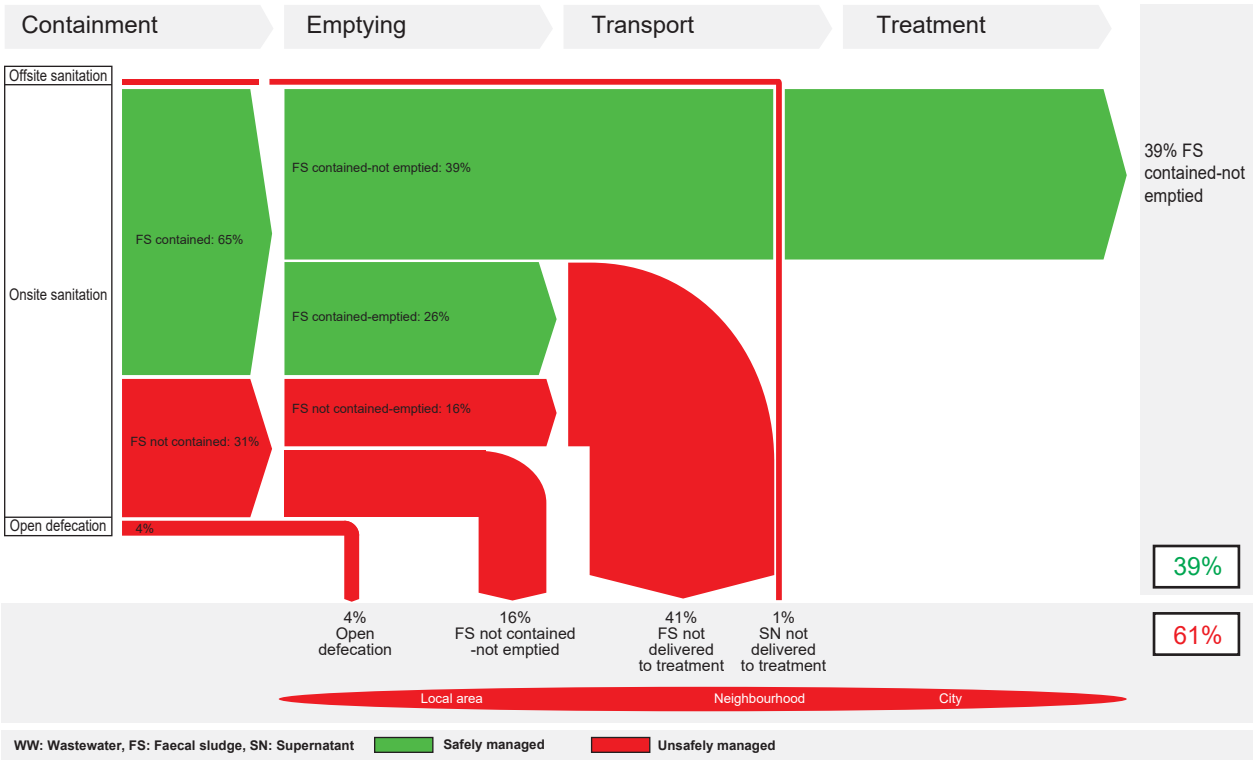
DPHE	Department of Public Health Engineering
FGD	Focus Group Discussion
FS	Faecal Sludge
FSM	Faecal Sludge Management
KII	Key Informant Interviews
LGED	Local Government Engineering Department
NGO	Non-Government Organization
SFD	Shit Flow Diagram

1. The SFD Graphic

Muktinagar, Gaibandha, Bangladesh

SFD Level: 2 Intermediate SFD

Date prepared: 15 Sep 2024
Prepared by: SKS Foundation & CSIRS-UIU



The SFD Promotion Initiative recommends preparation of a report on the city context the analysis carried out and data sources used to produce this graphic.
Full details on how to create an SFD Report are available at sfd.susana.org

2. Diagram information

SFD Level:

Intermediate-Level 2 Report

Produced by:

- Center for Smart Infrastructure Resilience and Sustainability (CSIRS) of United International University (UIU)

- This report is a part of the project “Rising for Rights for Strengthening Civil Society Network in South Asia to Achieve SDG 6” of SKS Foundation (The FANSA-Bangladesh Secretariat)

Collaborating partners:

Muktinagar Union played vital roles in collecting and sharing data, and producing this SFD graphic and SFD report.

Status:

Final SFD Report
Date of production: 11/09/2024

3. General city information

Muktinagar Union, located in Saghata Upazila, Gaibandha District, Rangpur Division, Bangladesh, is a rural area with a population of 43,881 and an annual growth rate of 1.18%. The flat, low-lying landscape is fertile due to alluvial soil from nearby rivers, but is prone to flooding, especially during the monsoon season. This flooding disrupts transportation and exacerbates sanitation issues.

The tropical climate features a hot, humid summer, a rainy monsoon from June to October, and a cooler winter. The sanitation infrastructure is underdeveloped, primarily relying on pit latrines and septic tanks that are vulnerable to contamination during floods. Most roads are unpaved and become impassable during the monsoon, complicating waste management and access to sanitation services. The lack of formal waste management systems leads to untreated waste often contaminating local water sources, posing significant public health risks.

4. Service outcomes

Muktinagar Union, Saghata, Gaibandha reveal a complex sanitation landscape with significant challenges. The union lacks any offsite sanitation system. Majority of the population rely on onsite sanitation systems (96%). A high proportion (80%) of onsite sanitation systems are various types of pit latrines. Around 10% of the households use septic tanks that are connected to soak pits (8.1%) or drains or water bodies. Septic tanks have a high emptying rate but lack subsequent transport or treatment. Open defecation is still a major problem in Muktinagar, as the survey found that 4% of the people still resort to this type of practice. The SFD graphic illustrates that only 39% of fecal sludge is safely managed, with 61% being unsafely managed. This situation, characterized by onsite sanitation technologies that inadequately contain fecal sludge and the absence of proper transport and treatment facilities, poses a significant risk of groundwater contamination. This risk is particularly alarming if groundwater serves as a primary drinking water source in the area, highlighting the urgent need for improved sanitation infrastructure and management practices.

5. Service delivery context

Muktinagar Union faces significant challenges in sanitation, guided by national policies that are not fully localized or effectively implemented due to limited awareness and resources. Most households rely on traditional pit latrines without proper fecal sludge management (FSM), and while local authorities, led by Union Chairman Ahsan Habib Lion, collaborate with NGOs, there is a lack of structured institutional roles to manage the entire sanitation service chain.

Sanitation services are largely informal, with no formal FSM system, organized transport, or treatment infrastructure. The absence of service standards and regulations leads to environmental contamination and health risks. Planning for sanitation improvements is minimal, with no specific targets or substantial investments, which are mostly driven by external NGOs. Equity is a major concern as the low income communities depend on unsafe latrines, with no financial support to upgrade facilities.

The union's capacity to meet service needs is limited, lacking FSM facilities and resources to expand services. Monitoring and reporting mechanisms are also insufficient, hampering the understanding of sanitation challenges. Expansion efforts are inadequate, though demand for improved services is growing. To address these issues, local authorities and NGOs need to raise awareness, stimulate demand for better sanitation, and strengthen service provider roles through coordinated efforts and increased collaboration, ensuring more comprehensive and equitable access to sanitation.

6. Overview of stakeholders

The regulatory framework for Muktinagar Union involves the Union Council and the Ministry of Local Government. The Union itself plays a crucial role in service delivery, with local NGOs, community-based organizations, and private sector entities actively involved in sanitation-related activities. There is a need for better coordination among stakeholders to address service gaps effectively.

Table 1: Key Stakeholders

Key Stakeholders	Institutions / Organizations
Public Institutions	Muktinagar Union, DPHE, Ministry of Local Government
Non-governmental Organizations	Local NGOs, Community-Based Organizations, SKS Foundation
Private Sector	Private Waste Emptier & Collectors
Development Partners, Donors	N/A
Others	N/A

Overall, Muktinagar Union needs increased investment in sanitation infrastructure, better policy implementation, and improved stakeholder coordination to tackle its sanitation challenges effectively.

7. Process of SFD development

The SFD (Shit Flow Diagram) for Muktinagar Union was developed through a combination of household surveys, Key Informant Interviews (KIIs), and Focus Group Discussions (FGDs). Data was collected using the mWater tool for household surveys, which provided quantitative data on sanitation

practices, access to facilities, and service provision across various wards. Additionally, KIIs and FGDs with key stakeholders such as Union Chairman, community leaders, and sanitation service providers gave critical qualitative insights into the real challenges and gaps in the sanitation service chain.

The standard SFD methodology may not fully capture the complex sanitation realities in Muktinagar Union, especially in its rural context where sanitation practices can be highly variable and difficult to quantify precisely. The reliance on traditional pit latrines and the absence of formal fecal sludge management systems makes it challenging to depict the entire sanitation service chain accurately.

Muktinagar Union is prone to seasonal variations that can significantly impact sanitation practices and infrastructure effectiveness, especially during the monsoon season. The SFD represents an average annual situation, which may not fully reflect these temporal variations.

The distinction between contained systems that are emptied versus not emptied can be difficult to understand, as emptying practices vary widely among households. While the SFD provides an essential overview of Muktinagar's sanitation situation, it represents a simplified model of a complex system. Local officials and sanitation experts should use this SFD as a starting point for discussion and further investigation, rather than as a definitive representation of on-the-ground realities.

8. Credibility of data

- Household Surveys: Conducted using the mWater tool for capturing data on sanitation facilities, waste management practices, and access to services.
- Key Informant Interviews (KIIs): Interviews were conducted with key stakeholders, including government officials, municipal workers, NGOs, and private sector actors.
- Focus Group Discussions (FGDs): FGDs were conducted with community members, local leaders, local community and NGO workers to capture the lived experiences of residents regarding sanitation services, highlighting both the gaps and areas for improvement.

example, assumptions on septic tank use in newer buildings were based on KIIs and city infrastructure reports, as there was no comprehensive database.

The availability of data varied across sectors:

- Gaps: Information regarding faecal sludge emptying schedules and overall waste disposal practices was difficult to obtain due to the absence of a formal tracking system.
- Assumptions: To account for this and other gaps, assumptions were made regarding open defecation rates, and faecal sludge management based on historical trends and estimates from union council.

Overall, the report draws from multiple data sources to provide a thorough analysis of Muktinagar's sanitation services, despite the constraints faced in collecting fully comprehensive data.

9. List of data sources

- CWIS- FSM Support Cell. (2022). শহরব্যাপী অন্তর্ভূক্তিমূলক স্যানিটেশন পরিষেবা প্রবর্তনে সহায়ক নির্দেশিকা. Department of Public Health Engineering, Government of the People's Republic of Bangladesh.
- Local Government Division. (2017). Institutional and Regulatory Framework for Faecal Sludge Management (FSM) Rural Areas. Ministry of Local Government, Rural Development and Co-operatives, Government of the People's Republic of Bangladesh.
- Local Government Division. (2021). The revised 'National Strategy for Water Supply and Sanitation. Ministry of Local Government, Rural Development and Co-operatives, Government of the People's Republic of Bangladesh.

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1 City context

Muktinagar Union, located in the Saghata Upazila of Gaibandha district in the Rangpur division of Bangladesh, is a rural region characterized by its agrarian economy and unique geographic features. The population of the Union stands at 43,881, with a growth rate of 1.18% annually. The region experiences modest seasonal fluctuations in population due to migratory labor movements, particularly during the agricultural season. The monsoon season also causes temporary displacements as residents move to safer areas in response to seasonal flooding. Despite these variations, the overall population remains relatively stable.

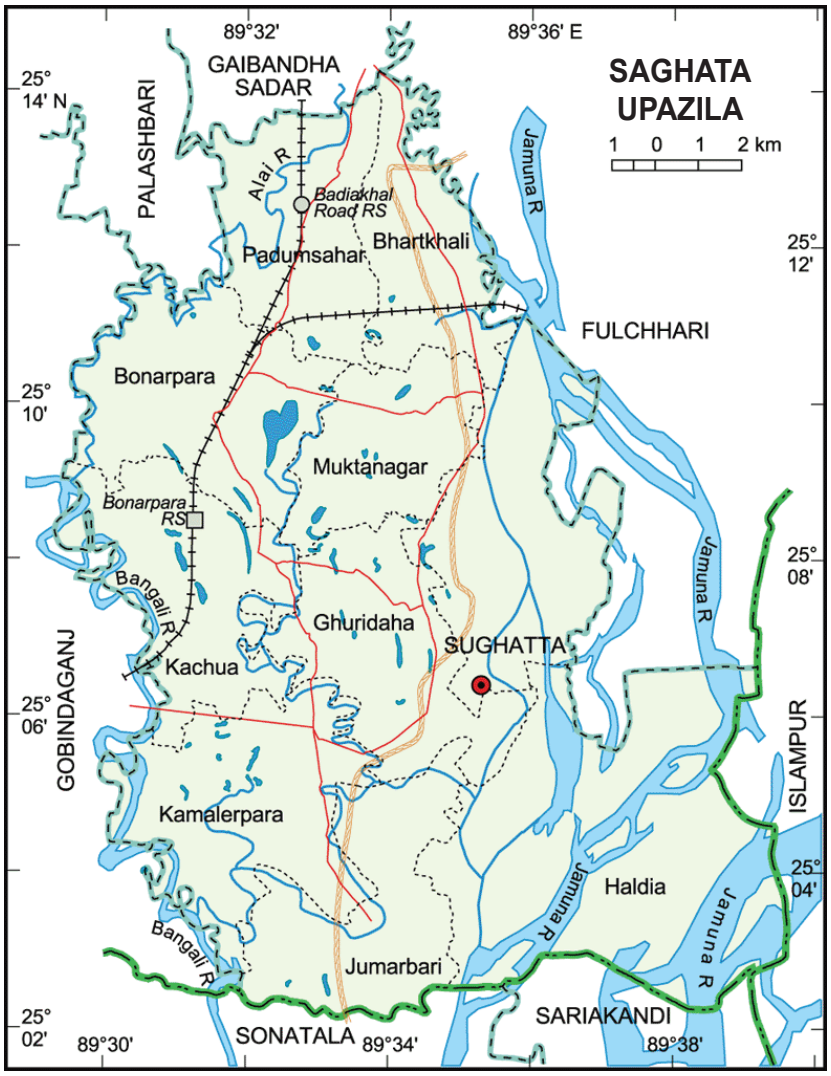
The topography of Muktinagar Union is shaped by its location within the Bengal delta, which lends itself to a flat, low-lying landscape that is highly fertile due to the deposition of alluvial soil from nearby rivers. Agriculture is the primary economic activity in the region, with rice and other staple crops being the main products. However, the area's proximity to major rivers, particularly the Jamuna River, presents significant challenges, especially in terms of water management and infrastructure development. The frequent flooding during the rainy season severely impacts local infrastructure and has a direct bearing on sanitation services.

The climate of Muktinagar Union is tropical, with three distinct seasons: a hot and humid summer, a monsoon season, and a cooler winter. The monsoon season, from June to October, brings heavy rains that result in extensive flooding across the region. This flooding not only disrupts transportation and daily life but also complicates the management of sanitation systems. The region's sanitation infrastructure is underdeveloped, largely due to its rural setting and the challenges posed by its geography and climate.

Sanitation services in Muktinagar Union are largely informal and insufficient to meet the needs of the growing population. The lack of a robust sewage system, combined with the area's reliance on basic pit latrines and septic tanks, creates numerous challenges for waste management. Most households use on-site sanitation facilities, which are often poorly constructed and vulnerable to contamination during the rainy season. The frequent flooding exacerbates this problem, as overflow from latrines and septic tanks can seep into the surrounding environment, increasing the risk of waterborne diseases.

The region's road infrastructure further compounds these sanitation challenges. Most roads in Muktinagar Union are unpaved and become impassable during the monsoon season due to waterlogging and mud. This hampers access to sanitation services, making it difficult for waste to be collected or for improvements to be made to existing sanitation systems. Additionally, the region lacks a formal waste management system, and much of the human waste is discharged untreated into the environment, either through open defecation or through rudimentary containment systems that are not adequately maintained.

Industrial activity in Muktinagar Union is minimal, and the area is largely rural and agrarian. However, the proximity to rivers means that untreated waste from households can end up in water bodies, contaminating water sources that are critical for both drinking water and agricultural irrigation. The spread of contamination during the monsoon season poses serious public health risks, especially in areas where open defecation is practiced or where pit latrines and septic tanks overflow into local water sources.



Union: Muktanagar (Land)
Upazila: Saghatta
District: Gaibandha
Country: Bangladesh

Data Source: The Bangladesh Network
URL: https://www.thebangladesh.net

Created on: November, 2019.

Figure 1: Map of Muktinagar Union

2 Service Outcomes

2.1 Overview

Data on sanitation situations were collected through a household survey. Further details are presented in Appendix 2. The results obtained after the triangulation and validation of the data with all the data sources including literature reviews, Key Informant Interviews (KIIs) and a validation workshop is presented in this section.

List A: Where does the toilet discharge to? (i.e. what type of containment technology, if any?)	List B: What is the containment technology connected to? (i.e. where does the outlet or overflow discharge to, if anything?)									
	to centralised combined sewer	to centralised foul/separate sewer	to decentralised combined sewer	to decentralised foul/separate sewer	to soakpit	to open drain or storm sewer	to water body	to open ground	to 'don't know where'	no outlet or overflow
No onsite container. Toilet discharges directly to destination given in List B					Significant risk of GW pollution Low risk of GW pollution					Not Applicable
Septic tank					Significant risk of GW pollution T1A2C5	T1A2C6	T1A2C7			
Fully lined tank (sealed)					Significant risk of GW pollution T1A3C5		T1A3C7			
Lined tank with impermeable walls and open bottom	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	T1A4C6	T1A4C7	T1A4C8	T1A4C9	Significant risk of GW pollution Low risk of GW pollution
Lined pit with semi-permeable walls and open bottom	Not Applicable									T2A5C10 T1A5C10
Unlined pit										Significant risk of GW pollution Low risk of GW pollution
Pit (all types), never emptied but abandoned when full and covered with soil										Significant risk of GW pollution T1B7C10
Pit (all types), never emptied, abandoned when full but NOT adequately covered with soil										T1B8C10
Toilet failed, damaged, collapsed or flooded									T1B9 C1 TO C10	
Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded										
No toilet. Open defecation	Not Applicable						T1B11 C7 TO C9			Not Applicable

Figure 2: Muktinagar Union SFD Selection Grid

Muktinagar Union, located in Saghata Upazila, Rangpur, has a population of 43,881. The sanitation situation in the union is characterized by the widespread use of traditional, unimproved sanitation systems, primarily direct pit latrines. A small proportion of the population has access to septic tanks, but these are limited to the wealthier households.

The primary sanitation systems used include:

- Various types of pit latrines (more than 80% of households).
- Septic tanks connected to soak pits or open drains or water body (approx. 10%).
- Fully lined tanks (approximately 2%).
- Open defecation (approximately 4%)

Figure 3: Pour Flush Latrines in Muktinagar

Figure 4: Septic Tank and Fully Lined Tank in Muktinagar

Figure 5: Offset Pits in Muktinagar

Figure 6: Toilets in poor condition in Muktinagar

Due to the lack of a formal faecal sludge management (FSM) system, most of the faecal sludge remains untreated. Many households either abandon their filled pits or directly discharge waste into nearby water bodies or open drains. This practice has led to significant environmental and health risks, particularly in areas like Ward-4, where sanitation issues are exacerbated by proximity to the river.

The community is aware of the sanitation challenges but faces barriers such as limited resources, lack of awareness about proper FSM, and inadequate support for the construction and maintenance of hygienic systems. There is an urgent need for comprehensive solutions to address these sanitation gaps, including the introduction of faecal sludge treatment plants and promotion of improved latrine technologies.

2.2 SFD Matrix

The SFD matrix for Muktinagar Union outlines the various sanitation systems used and the extent to which fecal sludge is managed. The matrix reflects the population's reliance on direct pit latrines, which are largely unmanaged, and the low percentage of septic tanks that are properly emptied and maintained.

Table 1: SFD Matrix for Muktinagar Union

Muktinagar, Gaibandha, Bangladesh, 15 Sep 2024. SFD Level: 2 - Intermediate SFD
Population: 43,881
Proportion of tanks: septic tanks: 95%, fully lined tanks: 100%, lined, open bottom tanks: 100%

Containment						
System type	Population	FS emptying	FS transport	FS treatment	SN transport	SN treatment
	Pop	F3	F4	F5	S4e	S5e
System label and description	Proportion of population using this type of system (p)	Proportion of this type of system from which faecal sludge is emptied	Proportion of faecal sludge emptied, which is delivered to treatment plants	Proportion of faecal sludge delivered to treatment plants, which is treated	Proportion of supernatant in open drain or storm sewer system, which is delivered to treatment plants	Proportion of supernatant in open drain or storm sewer system that is delivered to treatment plants, which is treated
T1A2C5 Septic tank connected to soak pit	8.1	87.1	0.0	0.0		
T1A2C6 Septic tank connected to open drain or storm sewer	1.0	100.0	0.0	0.0	0.0	0.0
T1A3C7 Septic tank connected to open water body	0.5	100.0	0.0	0.0		
T1A3C5 Fully lined tank (sealed) connected to a soak pit	2.1	37.5	0.0	0.0		
T1A3C7 Fully lined tank (sealed) connected to a water body	0.3	100.0	0.0	0.0		
T1A4C6 Lined tank with impermeable walls and open bottom, connected to an open drain or storm sewer	0.8	100.0	0.0	0.0	0.0	0.0
T1A4C7 Lined tank with impermeable walls and open bottom, connected to a water body	10.6	26.8	0.0	0.0		

Containment						
System type	Population	FS emptying	FS transport	FS treatment	SN transport	SN treatment
	Pop	F3	F4	F5	S4e	S5e
System label and description	Proportion of population using this type of system (p)	Proportion of this type of system from which faecal sludge is emptied	Proportion of faecal sludge emptied, which is delivered to treatment plants	Proportion of faecal sludge delivered to treatment plants, which is treated	Proportion of supernatant in open drain or storm sewer system, which is delivered to treatment plants	Proportion of supernatant in open drain or storm sewer system that is delivered to treatment plants, which is treated
T1A4C8 Lined tank with impermeable walls and open bottom, connected to open ground	4.4	23.5	0.0	0.0		
T1A4C9 Lined tank with impermeable walls and open bottom, connected to 'don't know where'	7.5	100.0	0.0	0.0		
T1A5C10 Lined pit with semi-permeable walls and open bottom, no outlet or overflow	51.2	35.5	0.0	0.0		
T1B11 C7 TO C9 Open defecation	3.6					
T1B7C10 Pit (all types), never emptied but abandoned when full and covered with soil, no outlet or overflow	3.6					
T1B8C10 Pit (all types), never emptied, abandoned when full but NOT adequately covered with soil, no outlet or overflow	0.8					
T1B9 C1 TO C10 Toilet failed, damaged, collapsed or flooded, connected to sewer, soak pit, open drain or storm sewer, water body, open ground or 'don't know where'	0.3					
T2A5C10 Lined pit with semi-permeable walls and open bottom, no outlet or overflow, where there is a 'significant risk' of groundwater pollution	5.2	35.0	0.0	0.0		

Containment: Table 1 shows the SFD Matrix for Muktinagar Union. The results of the household survey are reflected on the SFD matrix. We can see that, only 9.6% of the people have septic tanks either connected to soak pit (T1A2C5) or open drain (T1A2C6) or water body (T1A2C7). 2.1% of the population uses fully lined tank (sealed) that are connected to soak pits (T1A3C5), and only 0.3% have fully lined tank (sealed) connected to a water body (T1A3C7). Majority of the population uses various types of pit latrines. 51.2% of people have lined pit with semi-permeable walls and open bottom with no outlet or overflow (T1A5C10). 5.2% of people have a similar system but there is a "significant risk" of groundwater pollution (T2A5C10).10.6% of the containments are lined tank with impermeable walls and open bottom which are connected to a water body (T1A4C7). 0.3% of the toilets are damaged (T1B9C1 TO C10) and 3.6% population in the Union have no toilets within their premises and resort to open defecation (T1B11C7 TO C9). A total of 3.6% of the containments have never been emptied but was abandoned when full (T1B7C10 and T1B8C10).

Emptying and Transport: Faecal sludge is mostly emptied manually in Muktinagar Union. The survey finds, 58% of the containments have never been emptied, and 42% of containments consisting of 32% pit, 1% fully lined tanks and 9% of septic tank systems have emptied at least once manually or mechanically.

The survey finds that, 35.5% of pits with low risk of groundwater pollution and 35% of pits with significant risk of groundwater pollution have been emptied. Although Muktinagar Union has a small amount of septic tanks, but it is well maintained. 100% of the septic tanks that are connected to drain or water body have been emptied and 87.1% of septic tanks that are connected to soak pits have been emptied. 37.5% of the fully lined tanks connected with soak pits have been emptied.

Among the emptied containments, 25% was emptied in less than 6 months ago, 26% is emptied in 6 months to 1 year, 19% in 1-2 years, 12% in 2-3 years and 13% in more than 3 years. 4% of the people could not specify containment emptying year.

Treatment: Currently, there is no dedicated treatment plant or sludge dumping zone in Muktinagar Union.

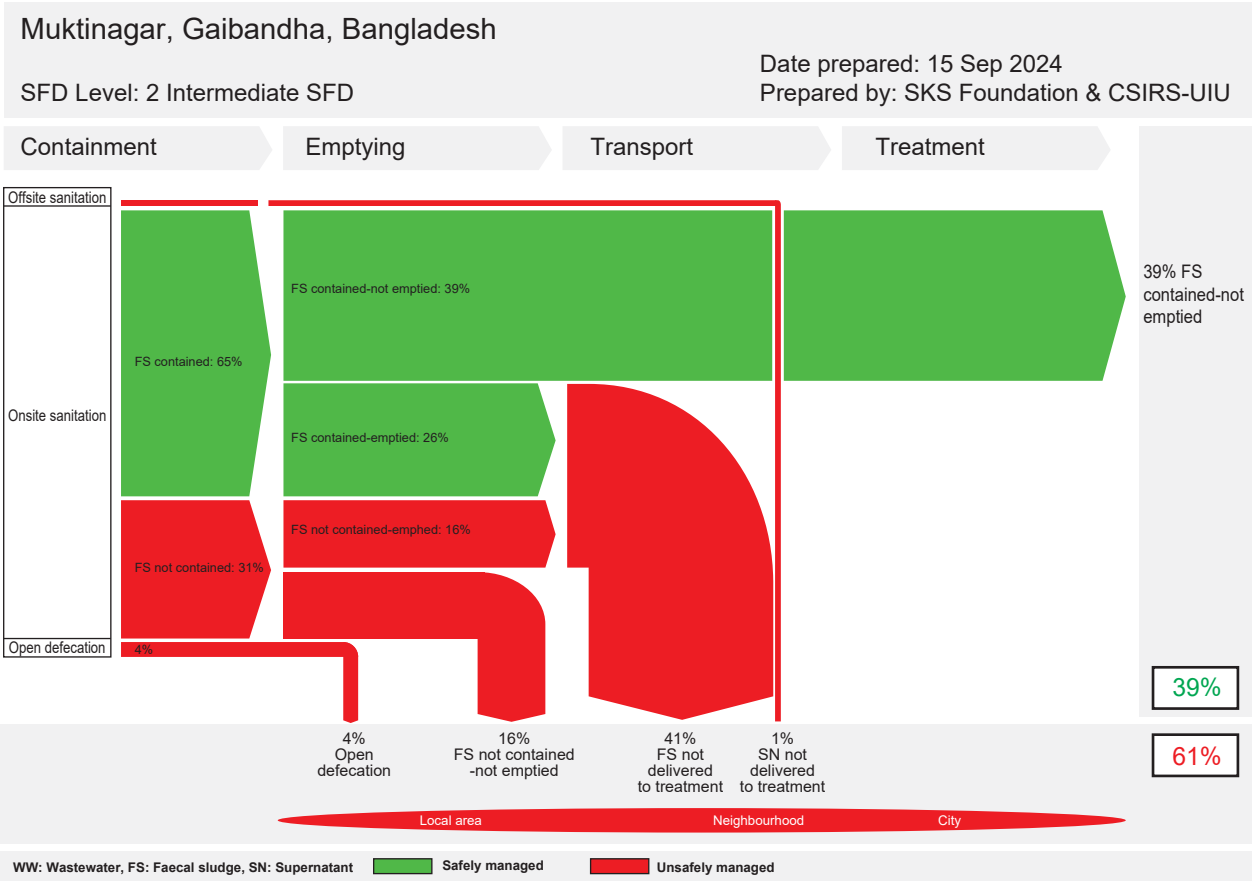
Assumptions:

The data used in the SFD Matrix comes from various sources, including field surveys, Key Informant Interviews (KII) and Focus Group Discussion (FGD). The following assumptions are made for developing the SFD for Gaibandha Municipality:

- Estimate of population growth are based on extrapolations from available census data and may not fully capture recent changes.
- From the household surveys, if the respondents could state that the GW level at the time of construction of containment was relatively close to containment bottom, then it is considered that there is "significant risk" of GW pollution.
- The field survey found that, pit latrines are in some cases connected to open drains or water bodies. Usually, this containment technology should not have any outlet. So, in such instances, it is defined as Lined tank with impermeable walls and open bottom.

Overall, the matrix provides a clear representation of the lack of fecal sludge treatment and the high proportion of untreated waste in Muktinagar Union, emphasizing the immediate need for improved FSM strategies.

2.3 SFD Graphic



The SFD Promotion Initiative recommends preparation of a report on the city context the analysis carried out and data sources used to produce this graphic.
Full details on how to create an SFD Report are available at sfd.susana.org

Figure 7: SFD Graphic of Muktinagar Union

The SFD graphic visually represents the flow of fecal sludge in Muktinagar Union, showing the various stages from containment to emptying, transport, and treatment. The graphic highlights the stark reality that the majority of fecal sludge is either abandoned or directly discharged into the environment without any treatment (61%). Although 39% of the excreta is shown as safely managed in the SFD, it should be noted that the proportion of safely managed excreta mostly originates from pits that have never been emptied, which might pose groundwater risk in the future.

Key points from the SFD graphic include:

- 39% of excreta is safely contained, which mostly comes from pit latrines and have not been emptied yet.
- 41% of FS is not delivered for treatment.
- 16% FS not contained - not emptied
- 4% open defecation
- 1% supernatant not delivered to treatment

The graphic underscores the urgent need for infrastructural improvements and better sanitation management systems to address the sanitation crisis in Muktinagar Union.

3 Service delivery context

3.1 Policy, legislation and regulation

3.1.1 Policy

According to the Local Government (Union Parishad) Act, 2009 (amended in 2010) (hereinafter referred to as “UP Act 2009”), UPs and Ward committees have been given important roles with regard to water supply and sanitation. Union Parishads shall form a committee on “Sanitation, Water Supply and Drainage” for effectively performing its activities in the WASH sector which includes participating as well as supporting DPHE in raising awareness on WASH; coordinating the activities with relevant stakeholders and implementing WASH related components of projects being implemented under LGD. Additionally, according to UP Act 2009, the Ward Committees of Union Parishads are responsible for supporting officials and employees involved with sanitation programs, and creating awareness regarding environmental preservation and cleanliness (IRF-FSM, 2017).

The sanitation policy in Muktinagar Union is governed by national sanitation policies set by the government of Bangladesh. However, these policies are not fully localized or implemented effectively due to the lack of awareness and resources at the local level. The government’s aim is to provide universal access to improved sanitation, but in rural areas like Muktinagar, the majority of households still use direct pit latrines without proper management of faecal sludge. NGOs and local governments are increasingly playing a role in advocating for better sanitation practices, but the shift to sustainable sanitation solutions remains a challenge.

3.1.2 Institutional roles

The responsibility for sanitation in Muktinagar Union falls under the jurisdiction of local authorities such as the Union Parishad, led by the Union Chairman, Ahsan Habib Lion. Key members from different wards, including Md. Panna Sheikh (Ward-1) and Md. Mahbubur Rahman (Ward-2), also play roles in identifying local sanitation challenges and advocating for improvements. These local authorities work in collaboration with national agencies and NGOs, but there is a need for more structured institutional roles to oversee the entire sanitation service chain, from containment to treatment.

3.1.3 Service provision

Currently, sanitation services in Muktinagar Union are limited and largely informal. There is no formal faecal sludge management system, and most households rely on traditional pit latrines, which are either abandoned when full or emptied by manual means. There is no organized transport or treatment infrastructure for faecal sludge, and in many cases, pits are emptied into nearby ponds or waterways. The union does support the installation of simple latrines and tube wells with assistance from NGOs, but more comprehensive services for containment, emptying, and sludge treatment are lacking.

3.1.4 Service standards

There are no established service standards for sanitation in Muktinagar Union, particularly regarding faecal sludge management. The informal nature of the existing sanitation services means that households largely rely on self-provision of sanitation, with varying degrees of safety and hygiene. Without proper regulation, there is no oversight on the construction quality of latrines or the proper disposal of sludge, which leads to widespread environmental contamination and health risks.

3.2 Planning

3.2.1 Service targets

There are no specific, measurable targets for improving sanitation services in Muktinagar Union. However, the local government acknowledges the need for improved sanitation, as highlighted in Key Informant Interviews (KII) with local leaders. The Union Parishad aims to introduce more hygienic latrines and reduce the prevalence of direct pit latrines through local initiatives and partnerships with NGOs, but formal service targets have yet to be defined.

3.2.2 Investments

Current investments in sanitation infrastructure in Muktinagar Union are minimal, and most are supported by external NGOs or local funding. There has been some investment in installing basic latrines and tube wells, but there is little to no investment in faecal sludge management facilities or treatment plants. The lack of funding and government support hampers any large-scale improvements in sanitation services.

3.3 Equity

3.3.1 Current choice of services for the urban poor

Sanitation services in Muktinagar Union do not adequately cater to the low income communities. The poorest households rely on traditional pit latrines, often located close to water sources, which increase health risks due to groundwater contamination. Wealthier households have been able to install septic tanks, but such systems are beyond the financial capacity of most residents. There is no financial support or subsidy program in place to help the poor afford better sanitation facilities.

3.3.2 Plans and measures to reduce inequity

There are currently no formal plans to reduce inequity in sanitation services in Muktinagar Union. The Union Parishad has recognized the need to address the gap in access to improved sanitation for poorer households, but this issue is primarily addressed through temporary NGO programs, which provide basic latrines and water services. A long-term plan, backed by financial and technical support, is needed to ensure equitable access to improved sanitation facilities.

3.4 Outputs

3.4.1 Capacity to meet service needs, demands and targets

The capacity to meet sanitation service needs in Muktinagar Union is extremely limited. There is no formal faecal sludge treatment facility, and the local government lacks the resources to expand sanitation services on its own. The existing pit latrine infrastructure is not sufficient to manage the growing population, and there are no formal FSM services in place to handle the increasing demand for sanitation solutions. As such, the Union is not able to meet the sanitation needs or any service targets that may be set in the future.

3.4.2 Monitoring and reporting access to services

There is currently no formal mechanism for monitoring and reporting access to sanitation services in Muktinagar Union. Data on sanitation is collected informally through local authorities and NGOs, but there is no comprehensive system to track which households have access to improved sanitation or how sludge is being managed. Improved monitoring and reporting systems are crucial to understanding the full extent of the sanitation challenges and ensuring accountability in service provision.

3.5 Expansion

3.5.1 Stimulating demand for services

The demand for improved sanitation services in Muktinagar Union is increasing, especially among households that recognize the health risks associated with poor sanitation. However, there is a need to further stimulate demand by raising awareness of the benefits of improved latrines and proper faecal sludge management. Local authorities, with the help of NGOs, need to undertake community-based campaigns to promote sustainable sanitation practices and encourage households to invest in septic tanks and other improved systems.

3.5.2 Strengthening service provider roles

Strengthening the roles of service providers, including the Union Parishad and NGOs, is essential for expanding sanitation services in Muktinagar Union. The local government needs to develop a more coordinated approach to FSM, while also empowering the private sector to provide sludge emptying and transport services. Collaboration between local authorities, NGOs, and private enterprises will be critical to improving service delivery and expanding access to better sanitation across the union.

4 Stakeholder Engagement

4.1 Engagement Process

Throughout the implementation of the sanitation project in Muktinagar Union, various stakeholders were engaged through Key Informant Interviews (KII) and Focus Group Discussions (FGD). These interactions were crucial in gathering insights into the current sanitation challenges, service delivery gaps, and the needs of the local population.

Key Informant Interviews (KII) were conducted with key figures from the Muktinagar Union, including the Union Chairman, Ahsan Habib Lion, and representatives from different wards. These interviews allowed for a comprehensive understanding of the local sanitation context, including infrastructure, service provision, and the prevalent use of direct pit latrines. The Chairman, along with Ward members, provided valuable insights into the state of sanitation in their respective areas and highlighted the challenges they face in implementing sustainable solutions.

In addition to KIIs, Focus Group Discussions (FGD) were conducted with a diverse group of stakeholders, including local volunteers, Pourashova workers, and sanitation experts from Edifice Consultancy Ltd. These FGDs facilitated open dialogue on the various issues surrounding sanitation in Muktinagar Union. Participants shared their experiences, concerns, and suggestions for improving sanitation services, with a particular focus on the prevalent use of pit latrines and the health risks associated with poor sanitation infrastructure.

4.2 Key Findings from KII

During the KII process, Chairman Ahsan Habib Lion highlighted the significant reliance on direct pit latrines, which accounts for nearly 80% of sanitation solutions in the area. He emphasized the urgent need to transition to more sustainable and hygienic alternatives, but noted the financial and logistical barriers to achieving this. Local members from various wards also echoed these concerns:

- Ward-1: Md. Panna Sheikh pointed out the lack of resources and education on sanitation practices, stressing the need for better access to improved latrines.
- Ward-2: Md. Mahbubur Rahman discussed the slow progress in shifting away from pit latrines and called for more support from the Union Parishad to build hygienic sanitation facilities.

- Ward-4: Ahsan Ali reported a slight improvement in sanitation, with 3-5% of households installing septic tanks, but the majority still relied on pit latrines.
- Ward-6: Md. Razu Ahmed highlighted severe sanitation issues, including open defecation and the dumping of pit contents into nearby water bodies, posing serious health risks.

These interviews helped identify key challenges, such as the lack of awareness about proper faecal sludge management and the financial constraints preventing households from transitioning to improved sanitation systems.

Figure 8: KII with Muktinagar Union Chairman and Member

4.3 Key Findings from FGD

The FGDs provided a broader perspective on the sanitation challenges facing Muktinagar Union. Participants included Simu Akter (SKS Volunteer), Afia Asma (Pourashava worker), Mohammed Azad (Assistant Officer), and sanitation experts Shahriar Ahmed Shaiket and S.M. Tariquzzaman from Edifice Consultancy Ltd. The discussions revealed that the majority of households rely on direct pit latrines, with wealthier families being the only ones able to afford septic tanks.

A critical observation made during the FGD was the risk of groundwater contamination, particularly in areas near the river, such as Ward-4. The proximity of pit latrines to water sources exacerbates the environmental hazards posed by poor sanitation. Participants collectively emphasized the need for more robust sanitation infrastructure, improved sludge management, and the provision of resources to help the poorer sections of the population transition to better sanitation practices.

Figure 9: FGD with Muktinagar Union officials and local community

4.4 Direct Observations and Cross-Verification

During the stakeholder engagement process, direct observations were made to cross-check and verify the information gathered from KIIs and FGDs. The observation of service providers, including local authorities and NGOs, revealed that most interventions are focused on providing basic sanitation facilities, such as latrines and tube wells, but there is little attention given to faecal sludge management.

Data on sanitation coverage was verified through field visits, which confirmed that pit latrines remain the dominant form of sanitation across Muktinagar Union. The conditions of these latrines, especially in poorer households, were inadequate, posing significant health and environmental risks. These observations reinforced the need for targeted investments in sanitation infrastructure, particularly in areas with high groundwater contamination risk.

5 Acknowledgements

We would like to express our sincere gratitude to all those who contributed to the development of this report. Our heartfelt thanks go to the local authorities of Muktinagar Union and the Ministry of Local Government for their support and collaboration throughout the process.

We appreciate the efforts of local NGOs and community-based organizations for their invaluable input and assistance in data collection and fieldwork. Special thanks to the private sector partners who provided critical insights into waste management practices and challenges.

Finally, we thank all the community members who participated in the surveys, key informant interviews, and focus group discussions, providing essential information and perspectives that shaped the findings of this report.

Your collective efforts and support have been instrumental in addressing the sanitation challenges faced by Muktinagar Union, and we look forward to continued collaboration in future endeavors.

6 References

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7 Appendix

7.1 Appendix 1: Stakeholder identification

Table 2: Stakeholder Identification

Name	Designation
1. Ahsan Habib Lion	Union Chairman
2. Md. Panna Sheikh	Member, Ward-1
3. Md Mahbubur Rahman	Member, Ward-2
4. Md Halim Molla	Member, Ward-3
5. Ahsan Ali	Member, Ward-4
6. Md Razu Ahmed	Member, Ward-6
7. Sri Parimal Chandra	Member, Ward-8
8. Md Faruk Hossain	Member, Ward-9
9. Simu Akter	SKS Volunteer
10. Afia Asma	Pourashava Worker
11. Mohammed Azad	Assistant Officer-Pourashava

7.2 Appendix 2: Tracking of Engagement

Household survey in-depth information and data were collected for the towns which included project documents, master plans and baseline reports from town and national levels, statistical data like population and household income expenditure, satellite images and Open Street Maps (OSM). Traditional paper questionnaire was not used rather android powered tab was deployed to collect household information. Questions were converted to appropriate format to use in mWater. Data collected through mWater are directly stored in a web-based database which is connected online with a website designed for this study.

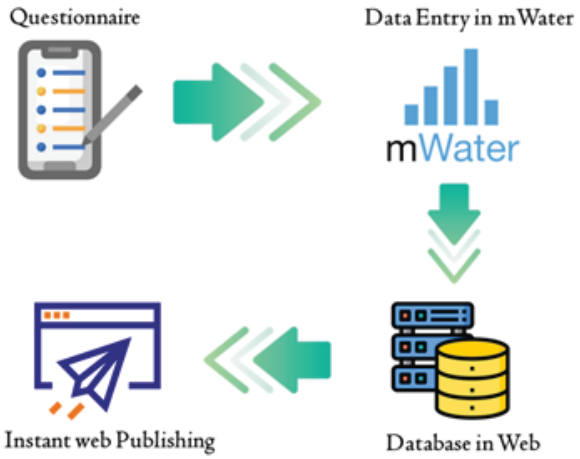

Figure 10: Workflow of mWater on HH survey.

mWater has been used for several reasons. It ensures the quality of data collection. It saves time and error in data entry. Moreover, for data analyst and field supervisor, it is convenient to examine data in real-time. It helps to prepare maps and visualize the spatial pattern of any phenomena. Extensive household questionnaire surveys were conducted for 385 households for Muktinagar Union. This sample size ensures, at least, a confidence level of 95% with a margin of error of 5%. Different type of information is collected like demographic, socio-economic, household characteristics, status of water supply, existing practices of sanitation including faecal and solid waste management at the household and town levels, gender, financial and environmental status. In addition to the total calculated samples, about 10% more samples were allocated to some grids based on factors like diversity of houses and business and potential rapid future growth. The steps in field survey consist of downloading the mobile App. for the questionnaires and the town map from the database, then conducting the questionnaire survey and finally transferring data to the central server. During the time of the questionnaire survey, geo-coordinates of the household and a photograph of the respondent (with her/his permission) were taken and uploaded.

In addition to ensure the field data quality, the data collection team (8-10 enumerators) for were properly trained. A set of different questions were asked during the survey on the full sanitation value chain. Few of the relevant questions on sanitation were: 1) User interface of the toilet, 2) Type of containment, 3) Type of building, 4) Outlets from the septic tanks, 5) Desludging of septic tanks and latrine pits, 6) Desludging frequency, 7) Responsibility of desludging, 8) Desludging process, 9) Location of sludge disposal, 10) Water supply source and risk of contamination and 11) Transportation, treatment and reuse of faecal sludge.

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