STUDY ON CURRENT PRACTICES OF URBAN SANITATION DATA MANAGEMENT FOR SDG 6.2 IN BANGLADESH

FINAL REPORT

Municipal Association of Bangladesh-MAB
বাংলাদেশ পৌরসভা সমিতি

About UCLG Asia Pacific

UCLG ASPAC is the united voice and advocate of democratic local self-government, which promotes cooperation between governments and within the wider international communities in the Asia-Pacific Region. Envisaging the vision, UCLG ASPAC translates it into concrete actions. In decentralized cooperation, UCLG ASPAC has leveraged collaboration with Konrad Adenauer Stiftung (Manila), TEI and LOGODEF within the framework of DELGOSEA to establish Southeast Asia Standing Committee which contributes to the betterment of living conditions of society in in this sub-region. The effort is also implemented in other sub-regions through South-South Cooperation, North South Cooperation, and Municipal International Cooperation. Regarding advocacy, UCLG ASPAC has continuously encouraged local governments to localize Sustainable Development Goals (SDGs). Other issues included in the long-term agenda of UCLG ASPAC are disaster risk reduction, pursuance of New Urban Agenda; and the creation of integrated and borderless ASEAN mobility.

UCLG ASPAC also focusses on the capacity building of local governments. Every training session is designed to be an insight gaining gathering, by involving experts and practitioners in related fields, stimulating fruitful debates, and provide recommendations for future improvement. In policy and research scope, UCLG ASPAC translates it into tangible projects and programmes: waste to energy, development of knowledge center as well as public spaces in many areas within Asia and the Pacific region. To ensure all members are actively involved, UCLG ASPAC establishes Standing Committees, Committees, and Working Groups. The Standing Committees are dedicated to Southeast Asia, South and Southwest Asia, and Women in Local Government; as for Comittees: Culture, The Belt and Road Local Cooperation, and 21st Century Maritime Cooperation. Members are also encouraged to get involved in various Working Groups: Women in Local Governments, Global Agenda of Development, and Asia-Pacific Local Economy Network.

About MuNASS

MuNASS Project is also called the Municipalities Network Advocacy on Sanitation in South Asia, a regional UCLG ASPAC programme that aims to improve sanitation and good sanitation practices in South Asia. It does this by working with local municipal associations and municipalities to strengthen their capacity to implement sanitation policies and plans. The project also supports the development of financial mechanisms to make sanitation more affordable and accessible.

Here are some of the ways that the MuNASS project can ensure good sanitation in cities:

1. **Strengthening capacity of local municipal associations and municipalities:** This is through training and technical assistance to local municipal associations and municipalities on a range of sanitation issues, including planning, implementation, and monitoring. This helps to build the skills and capacity of local officials, which is essential for ensuring the effective implementation of sanitation policies and plans.
2. **Supporting the development of financial mechanisms:** The MuNASS project also supports the development of financial mechanisms to make sanitation more affordable and accessible. This includes working with governments to develop innovative financing options, such as water charges and sanitation tax, and supporting the development of microfinance schemes for low-income households.
3. **Advocating for improved sanitation policies:** The MuNASS project also advocates for improved sanitation policies at the national and local levels. This includes working with governments to develop and implement national sanitation plans and supporting the development of sanitation bylaws and regulations at the local level.

The MuNASS project has been implemented in Bangladesh and Nepal and has had a significant impact on improving sanitation in these countries. For example, the project has helped to increase access to sanitation facilities, improve the management of faecal sludge, and reduce open defecation.

The project has also supported the development of innovative financing mechanisms, such as water charges and sanitation tax, which have made sanitation more affordable and accessible for low-income households.

The sanitation programme has currently ensured the project's sustainability through partnerships with The Municipal Association of Bangladesh (MAB), the lead institution for the implementation in Bangladesh and the International Training Network at Bangladesh University of Engineering and Technology (ITN-BUET). The signing of the Strategic Partnership Agreement was on 14th June last year at the MAB Office in Dhaka Bangladesh.

The MuNASS project is a valuable example of how regional cooperation can be used to improve sanitation in cities. The project has helped to build the capacity of local officials, supported the development of financial mechanisms, and advocated for improved sanitation policies. THese efforts have had a significant impact on improving sanitation in Bangladesh and Nepal and can serve as a model for other countries in the region.

The MuNASS project is funded by the Bill and Melinda Gates Foundation (BMGF)

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Lastly, acknowledge the financial and logistical support from stakeholders, whose contributions were vital to this study, aiming to enhance FSM systems and improve public health in urban Bangladesh.

EXECUTIVE SUMMARY

This report presents the findings of a study on current practices and challenges related to sanitation data management in municipalities of Bangladesh, with a focus on achieving the Sustainable Development Goal 6.2. The objective of the study was to understand the existing data gathering and reporting system and identify gaps that hinder the effective implementation of the National Action Plan (NAP) for Faecal Sludge Management (FSM) and the Institutional and Regulatory Framework (IRF) for municipalities.

The study involved a comprehensive review of relevant documents, including the Local Government (Paurashava) Act, Institutional and Regulatory Framework for Faecal Sludge. Management (IRF-FSM), National Action Plan (NAP) for Implementing IRF-FSM, and National Water Supply and Sanitation Strategy. Additionally, key informant interviews were conducted with municipal officials responsible for sanitation and waste management, and site visits were conducted to observe data collection processes.

The analysis revealed several key findings. Firstly, the current data gathering and reporting system in municipalities heavily relies on manual processes, lacking a standardized and automated approach. This leads to challenges in data accuracy, timeliness, and accessibility. Secondly, there is a lack of integration between municipal data management and the national dashboard for sanitation, hindering effective monitoring and reporting. Thirdly, there is a need for capacity-building initiatives to enhance data collection, analysis, and reporting skills among municipal personnel.

To address these gaps and challenges, the report provides a set of policy and practice recommendations. It emphasizes the importance of establishing a standardized data collection and reporting system, leveraging digital platforms for efficient data management, and strengthening the capacity of municipal personnel. Furthermore, it recommends closer collaboration between municipalities and the national dashboard to ensure the timely submission of data and enhance coordination.

Implementing the recommended strategies will contribute to improved data management practices in municipalities, enabling evidence-based decision-making, effective monitoring of sanitation indicators, and the achievement of SDG 6.2 targets. By addressing the identified gaps and challenges, Bangladesh can move closer towards its goal of ensuring access to adequate and equitable sanitation for all.

The findings and recommendations of this report provide valuable insights for policymakers, municipal authorities, development partners, and other stakeholders involved in sanitation and waste management. It is hoped that the report will serve as a guide for strengthening data management systems and fostering sustainable sanitation practices in Bangladesh.

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1. INTRODUCTION

1.1 BACKGROUND

Bangladesh, a country situated in South Asia, has experienced a significant shift towards urbanization in recent years. With the urban population reaching 28% in 2011 and projected to continue growing at a rate of 2.8% per year, it is expected that urban areas will encompass 42% of the population by 2035 (Government of Bangladesh, 2018). This rapid urbanization poses various challenges, particularly in managing sanitation and ensuring the well-being of urban dwellers. Sanitation has emerged as a critical priority on Bangladesh's development agenda. Although commendable progress has been made in reducing open defecation from 34% in 1990 to just 1% in 2015, the current rate of improved sanitation remains at 61% with slow annual growth (Sanitation and Water for All, 2020; World Bank Group, 2020). Addressing this issue requires a shift from supply-driven approaches to more comprehensive strategies that account for operation and maintenance considerations. The frequency of waterborne diseases underscores the urgency of improving sanitation infrastructure and practices to safeguard the health and nutrition of communities. To tackle these challenges, the government of Bangladesh has adopted various policies and frameworks. Notably, the National Strategy for Water Supply and Sanitation was introduced in 2014, emphasizing the need to enhance WASH services. Additionally, the Institutional and Regulatory Framework for Faecal Sludge Management (FSM) for Paurashavas was established to guide effective FSM implementation in municipalities. These measures aim to promote sustainable sanitation practices and create a conducive environment for improved health outcomes.

The CWIS-FSM Support Cell of the Department of Public Health Engineering (DPHE) is playing a vibrant role in data management and monitoring for achieving SDG 6. It works in collaboration with stakeholders, including the Municipalities Association of Bangladesh (MAB), WaterAid Bangladesh, and other NGOs, to strengthen the sanitation database known as Sanboard (www.sanboard.gov.bd). By consolidating data from projects funded by the Bill & Melinda Gates Foundation, such as the feasibility study for solid waste and faecal sludge management, Sanboard strives to bridge data gaps and serve as a comprehensive resource for decision-makers. Recognizing the significance of robust sanitation data management, MAB's Advocacy Unit, in partnership with the CWIS-FSM Support Cell, aims to conduct an in-depth study on the existing practices.

The study seeks to identify gaps in data management, propose solutions to bridge those gaps, and provide recommendations for enhancing the overall system. The goal is to empower municipalities in contributing to the achievement of SDG 6.2 targets and fostering sustainable development in Bangladesh. Considering these circumstances, the assignment at hand aims to delve into the intricacies of sanitation data management in Bangladeshi municipalities. By undertaking this study, the Advocacy Unit of MAB and its collaborating partners aspire to shed light on the current situation, understand the challenges faced, and pave the way for improved data-driven decision-making in the realm of sanitation.

1.2 OBJECTIVES

The primary objective of this study is to comprehensively analyze the current practices of sanitation data management in municipalities across Bangladesh. By doing so, we aim to identify existing gaps and challenges that hinder effective data utilization for policy-level decision-making. This study will provide valuable insights into the data management system's strengths and weaknesses, enabling us to explore potential avenues for reducing those gaps and improving data management practices.

Specifically, the objectives of this study are as follows:

1. Review the process of data gathering and reporting related to urban sanitation and waste management services by municipalities in Bangladesh, gaining insights into existing practices.
2. Identify gaps between current practices and the integration of good sanitation data management practices into the national dashboard for Faecal Sludge and Waste Management (FSWM), pinpointing areas requiring improvement.
3. Determine appropriate tools and methodologies to address identified gaps and enhance sanitation data management, enabling effective data utilization.
4. Develop actionable recommendations based on findings to improve the sanitation data gap in municipalities, advocating for improved policies and practices at the national level.

By achieving these objectives, we aim to strengthen the capacity of municipalities in Bangladesh to effectively manage sanitation data, thereby facilitating evidence-based decision-making, policy formulation, and planning in the sanitation sector. Ultimately, this study will contribute to the broader goal of achieving SDG 6.2 targets and promoting sustainable development in Bangladesh.

1.3 METHODOLOGY

To achieve the objectives of this study, a comprehensive methodology incorporating both desk-based research and stakeholder consultations will be employed. The following steps will guide the research process:

1. Literature Review: A thorough review of relevant documents, including government policies, guidelines, reports, and research papers, will be conducted. This will provide a foundation of knowledge and insights into the current practices of sanitation data management in municipalities.
2. Data Collection: Primary data will be collected through key informant interviews with relevant personnel at the national level. These interviews will provide valuable perspectives on the data gathering and reporting processes, challenges faced, and potential opportunities for improvement. The interviews will be conducted using a semi-structured approach to allow for flexibility and in-depth exploration of key themes.
3. Data Analysis: The collected data will be analyzed using a qualitative approach. Thematic analysis will be employed to identify recurring patterns, themes, and gaps in the data management practices of municipalities. This analysis will help in generating a

comprehensive understanding of the current state of sanitation data management and identifying areas for improvement.

4. Tools and Methodologies: A range of methodologies and tools will be employed to ensure an effective assessment of the data gathering and reporting system. The first methodology is document analysis, which involves a thorough review of relevant documents, such as acts, regulations, policies, reports, and guidelines. This analysis will help identify existing frameworks, mandates, and guidelines related to data gathering and reporting in municipalities, providing insights into objectives, indicators, and reporting requirements. Key informant interviews will be conducted with municipal personnel responsible for sanitation and waste management, including officials, data management officers, and sanitation inspectors. These interviews will offer firsthand insights into current data gathering practices, challenges, and potential areas for improvement. Site visits and field assessments will be carried out in selected municipalities to observe data collection and reporting processes in action. This will involve direct interaction with municipal personnel and visits to waste transfer centers, treatment plants, and disposal sites to gain a deeper understanding of operational aspects. A comparative analysis will be conducted to identify best practices and successful case studies from municipalities with effective data gathering and reporting systems, drawing upon experiences from Bangladesh and potentially other countries. Stakeholder consultations will also take place, inviting municipal officials, development partners, NGOs, and community representatives to share their perspectives, experiences, and recommendations for enhancing the data gathering and reporting system. These consultations will serve as a platform for dialogue, knowledge exchange, and collaborative problem-solving.
5. Recommendations: Based on the findings from the data analysis and insights gathered, actionable recommendations will be formulated. These recommendations will aim to bridge the identified gaps, improve data quality and utilization, and enhance the overall sanitation data management system in municipalities. The recommendations will be aligned with the objectives of the National Action Plan for FSM and the broader goals of sustainable development.

Throughout the study, ethical considerations will be paramount. Confidentiality of information provided by stakeholders will be ensured, and the study will adhere to ethical guidelines for research.

By employing this methodology, we aim to gather comprehensive insights into the current practices of sanitation data management in municipalities. The study findings and recommendations will contribute to strengthening the data management system, ultimately supporting evidence-based decision-making, policy advocacy, and sustainable development in Bangladesh.

2. REVIEW OF CURRENT PRACTICES

2.1 DATA GATHERING AND REPORTING SYSTEM

The current data gathering and reporting system in municipalities of Bangladesh relies on manual processes, as they have no digital platform in place. Municipalities collect and maintain various types of data on a daily, monthly, and yearly basis to monitor and manage sanitation and waste-related activities. These data are crucial for decision-making, resource allocation, and assessing the effectiveness of waste management strategies.

The workers and operators report and brief their manager at the relevant office. The data is maintained by municipal personnel. Municipalities diligently collect the following information:

1. Daily Amount of Collected Solid Waste: The quantity of solid waste collected daily is recorded to monitor waste generation patterns and assess the effectiveness of waste collection efforts.
2. Waste Dumping: The location where solid waste is dumped or disposed of is documented to ensure proper waste disposal practices.
3. Dustbins/Waste Transfer Stations: Municipalities keep track of the number of dustbins or waste transfer stations available to the public for waste disposal.
4. Manpower: The total number of personnel engaged in waste management activities is recorded to assess the workforce capacity and allocation.
5. Vehicles: Municipalities maintain data on the number of vehicles dedicated to waste collection, transportation, and disposal.
6. Daily Trips by Operating Garbage Trucks: The number of trips made by each operating garbage truck on a daily basis is recorded to evaluate operational efficiency and schedule adjustments.
7. Transport Capacity of Waste Trucks: The load-bearing capacity of waste trucks is documented to optimize waste collection and transportation operations.
8. Waste Disposal Site: Information on the designated waste disposal site is documented to ensure proper waste management practices and environmental compliance.
9. House-to-House Waste Collection: The number of wards that receive full or partial house-to-house waste collection services is recorded to assess the coverage and effectiveness of waste collection programs.
10. Medical Waste Collection and Treatment: Municipalities track the quantity of medical waste collected and the methods employed for its treatment or disposal to ensure proper handling of hazardous waste.
11. Storm Drains Cleaning: The status of storm drain cleaning activities is monitored to prevent flooding and maintain proper drainage systems.
12. Number of Public Toilets: Municipalities keep records of the number of public toilets available to the public to assess sanitation infrastructure.
13. Volume of Sewage Removal: The quantity of sewage removed from the sewerage system by municipalities is documented to monitor wastewater management efforts.

14. Sewage Disposal: Information on the dumping or treatment sites for sewage is recorded to ensure proper disposal practices and prevent environmental pollution.
15. Private Company Involvement: If the municipality has hired any private company for sewage management, data regarding their involvement and responsibilities are maintained.
16. Sewage Transport Vehicles: The number of vehicles used for the transportation of sewage is recorded to assess fleet capacity and optimize operational efficiency.
17. Mapping: Municipalities create and update maps that contain information about the total number of wards, road systems, open spaces, water bodies, educational institutions, hospitals/clinics, and important government and private institutions within their jurisdiction.

Currently, municipalities compile and prepare reports based on the manually collected data when requested by higher authorities. The absence of a preferred reporting system or digital platform poses challenges in streamlining data analysis and dissemination.

On the contrary, DPHE has established a national dashboard for sanitation (www.sanboard.gov.bd) incorporating data from the project 'Feasibility for Implementing of Solid Waste and Faecal Sludge Management System in 54 District Level Municipalities and 8 City Corporations'. The government is currently engaged in various projects at the municipality level to gather information that can enrich the national dashboard. Collaborative efforts involving organizations like WaterAid are aimed at contributing valuable data to the national dashboard. These initiatives recognize the importance of comprehensive and up-to-date information for effective monitoring and decision-making in the sanitation sector. By actively engaging in data collection and sharing, stakeholders are working together to enhance the accuracy and completeness of the national dashboard, ultimately supporting evidence-based policymaking and resource allocation for improved sanitation services nationwide.

2.2 Document Review

To gain a comprehensive understanding of the current practices and policies related to sanitation data management, a thorough review of relevant documents has been conducted. These documents provide valuable insights into the institutional frameworks, guidelines, and strategies that govern data gathering and reporting in municipalities of Bangladesh. The review encompasses acts, regulations, policies, reports, and guidelines pertaining to sanitation and waste management at the national and municipal levels.

Local Government (Paurashava) Act

The Local Government (Paurashava) Act, 2009 serves as the primary legal framework for municipal governance in Bangladesh. It outlines the roles, responsibilities, and functions of municipalities, including their obligations related to sanitation and waste management. The act specifies the authority of municipalities in collecting data on sanitation facilities, waste collection, and disposal methods. It also provides guidance on the coordination mechanisms with relevant stakeholders and the reporting requirements for municipalities.

Institutional and Regulatory Framework for Faecal Sludge Management (FSM)

The Institutional and Regulatory Framework for FSM establishes guidelines and regulations for the effective management of faecal sludge in municipalities. This framework provides insights into the institutional arrangements, roles, and responsibilities of different stakeholders involved in FSM data collection and reporting. It may outline specific requirements for municipalities to gather data on faecal sludge management practices, treatment facilities, disposal sites, and related indicators. Additionally, the framework may address issues such as capacity-building, monitoring, and reporting mechanisms to ensure the sustainable management of faecal sludge.

National Action Plan (NAP) for Implementing IRF-FSM

The NAP serves as a strategic roadmap for implementing the Institutional and Regulatory Framework for FSM at the municipal level. It provides specific guidelines and action plans for municipalities to strengthen their data-gathering and reporting systems in line with national priorities and targets. The NAP may highlight the importance of standardized data collection methodologies, quality assurance processes, and data-sharing mechanisms. It may also address the integration of FSM data into the national dashboard or reporting systems to enhance coordination and monitoring at the national level.

National Water Supply and Sanitation Strategy

The National Water Supply and Sanitation Strategy document outlines the overall strategic direction for water supply, sanitation, and hygiene in Bangladesh. While not solely focused on data management, the strategy includes sections or chapters that address monitoring, reporting, and data collection requirements. It may guide aligning data gathering methodologies, reporting formats, and indicators with national and international standards. The strategy document may also emphasize the need for regular data updates, data quality assurance measures, and the integration of data into decision-making processes.

Reports and Studies

Various reports and studies conducted by government agencies, research organizations, and development partners have been reviewed. These reports provide valuable insights into the current state of data management practices, challenges, and potential solutions. They may offer detailed analyses of existing data gathering and reporting systems, identify gaps or weaknesses, and propose recommendations for improvement. These reports may highlight best practices from other contexts or countries, innovative data collection methods, or case studies showcasing successful data management approaches in sanitation and waste management (Abdullah et al., 2019; World Bank, 2018; World Bank Group, 2019).

The document review aims to identify key provisions, gaps, and areas for improvement in the existing data-gathering and reporting system. By synthesizing the information gathered from these documents, this study aims to develop comprehensive recommendations to strengthen the data gathering and reporting system in municipalities.

3. FINDINGS AND ANALYSIS

In this section, the findings of the data analysis conducted as part of the study will be presented and analyzed. The analysis aims to provide a comprehensive understanding of the current state of data gathering and reporting in municipalities, highlighting strengths, weaknesses, and areas for improvement. The following key areas have been examined:

3.1 Individual Municipalities

Through field observation and KII, it is found that the municipality manually collects the data and stores them. Additionally, there is no fixed schedule for reporting.

Data Collection Processes: The analysis revealed that the data collection processes in municipalities primarily rely on manual methods. Municipal personnel are responsible for collecting data on various aspects of sanitation and waste management, such as solid waste collection, waste transfer centers, manpower, vehicles, sewage removal, public toilets, and storm drain cleaning. However, the absence of an automated system poses challenges in terms of data accuracy, timeliness, and standardization.

Reporting Mechanisms: The study found that municipalities currently lack a preferred reporting system for data submission. In the absence of a centralized digital platform, reporting is typically done through manually prepared reports when required by higher authorities. This decentralized approach hampers data sharing, coordination, and the ability to monitor progress effectively.

Data Quality and Standardization: The analysis revealed variations in data quality and standardization among municipalities. Without standardized data collection methodologies and reporting formats, there are inconsistencies and discrepancies in the data collected. This poses challenges in aggregating and comparing data across municipalities, hindering evidence-based decision-making at the national level.

Figure 1: KIIs with Executive Engineer (Left) and Sanitary Inspector (Right) at Betagi Municipality. (Source: Field study 2023/O.CREEDS_WaterAid Bangladesh)

Data Utilization: The study found that there is untapped potential in utilizing data for evidence-based decision-making in sanitation and waste management. While data is being collected, its utilization for planning, monitoring, and policy formulation remains limited. The lack of effective data utilization mechanisms hampers the ability of municipalities to address emerging challenges and make informed decisions.

3.2 National Dashboard (sanboard.gov.bd)

In addition to the analysis conducted earlier, insights from sanboard.gov.bd were reviewed to further understand the current state of data gathering and reporting in municipalities. The analysis of the platform provides additional perspectives on the status of sanitation and waste management, institutional capacity, and progress toward Sustainable Development Goal 6.2 in Bangladesh. This national dashboard has all kinds of data from the angle of FSM and SWM. There is also CWIS-related data from which you can get an idea of how a city stands regarding CWIS. One of the most exciting features of this dashboard is the city profile. From here, the status of the registered town can be known easily on the dashboard briefly. The findings from sanboard.gov.bd are as follows:

The City Profile section on sanboard.gov.bd offers a comprehensive overview of each city's indicators for sanitation, including faecal sludge and solid waste management. It provides information on general city profiles, infrastructure availability, and status, solid waste management life cycle, threat to groundwater contamination, and FSM & SWM infrastructure maps. While this section provides valuable insights into the infrastructure and sanitation situation of each city, it is important to critically review the data for accuracy, reliability, and completeness.

1. Overview: The overview section presents general information about each city or district, including population size and density, economic activities, and climatic conditions. This contextual information is useful for understanding the unique challenges and opportunities in each area.

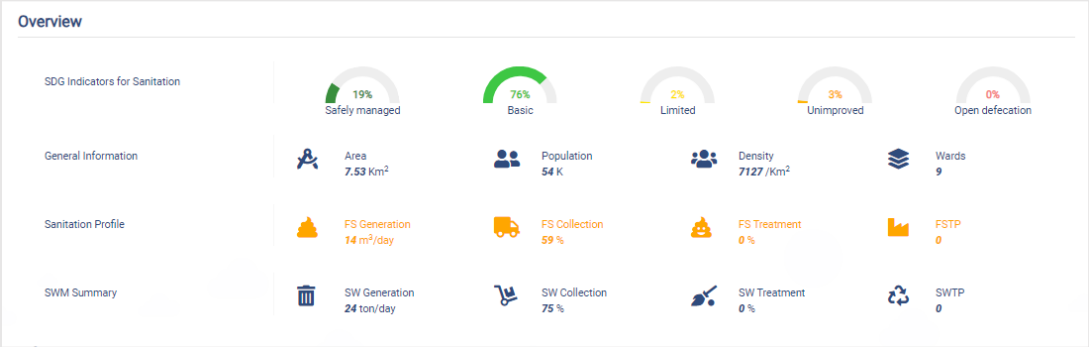

Figure 2: Bagerhat Paurashava Overview, 2020

2. Infrastructure: This showcases the availability and status of faecal sludge and solid waste management facilities and equipment in each city or district. This includes treatment plants, transfer stations, disposal sites, desludging vehicles, and collection vehicles. While this information offers a glimpse into the existing infrastructure, further analysis is needed to assess the adequacy, functionality, and coverage of these facilities to meet the sanitation and waste management needs of the respective areas.

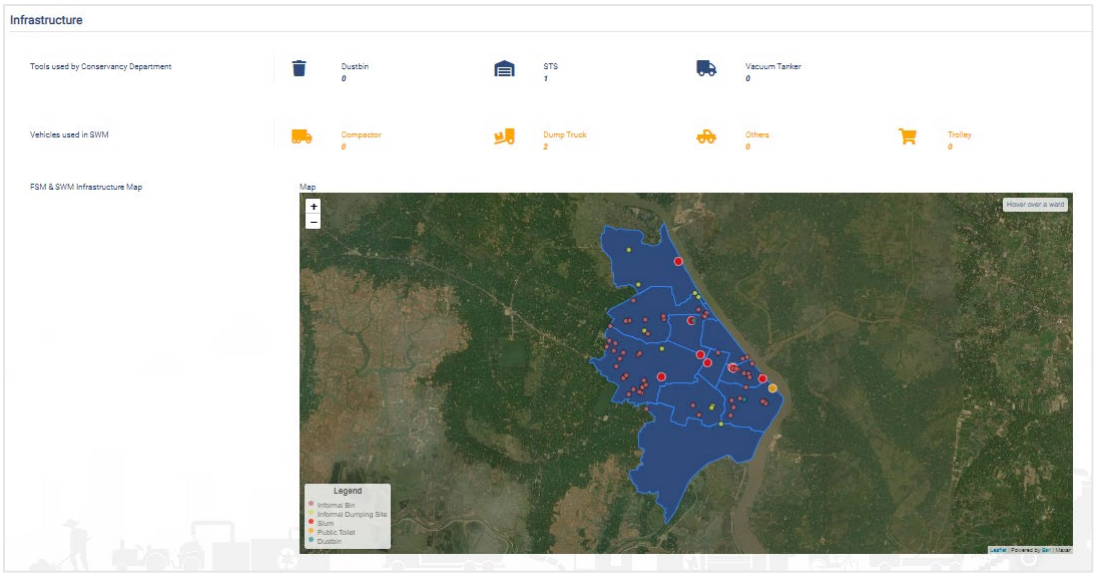

Figure 3: Bagerhat Paurashava Infrastructure and Map, 2020

3. Institutional Capacity: The institutional capacity section assesses the readiness and performance of each city or district in faecal sludge and solid waste management. It examines factors such as the existence of policies and regulations, availability of human resources and budget allocation, implementation of monitoring and evaluation systems, and stakeholder participation. While this section provides an overview of institutional capacity, a deeper analysis is required to understand the effectiveness and efficiency of the institutional frameworks and their impact on data gathering and reporting.

Figure 4: Bagerhat Paurashava Institutional Capacity, 2020

4. Solid Waste Management: The solid waste management section on sanboard.gov.bd provides a summary of the solid waste management life cycle for each city or district. It includes data on waste generation, collection, treatment, and disposal, as well as waste segregation at the source and disposal practices. While this data offers insights into the overall solid waste management practices, it is crucial to critically review the methodology of data collection and the reliability of the reported figures.

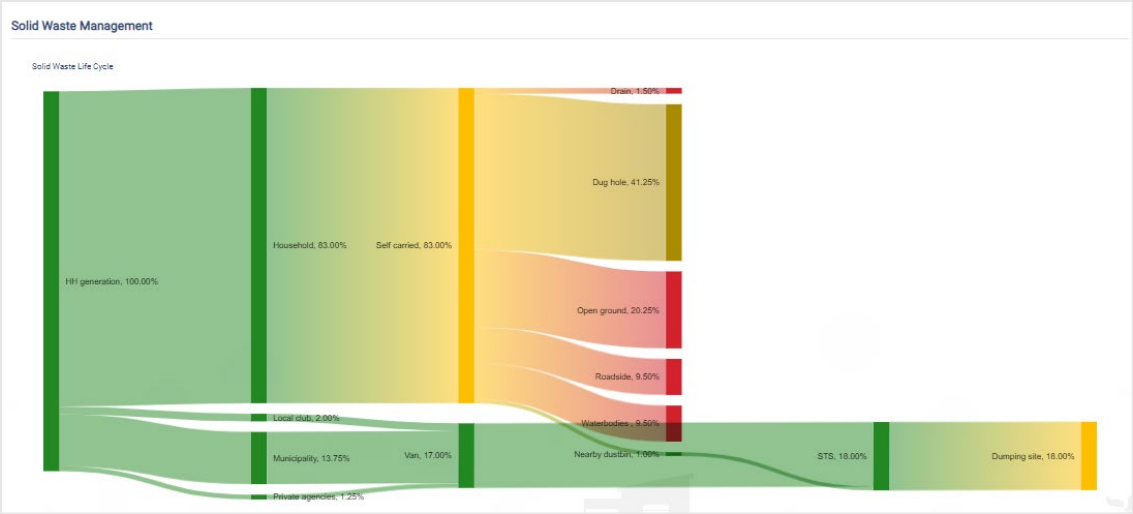

Figure 5: Bagerhat Paurashava SW Life Cycle, 2020

5. Sanitation: The sanitation section showcases the profile of the sanitation situation in each city or district, presenting data on various indicators such as access to improved individual toilets, containment accessibility, desludging services, and water contamination compliance. This data provides valuable information on the status of sanitation facilities and services. However, a critical assessment of the data's accuracy, representativeness, and relevance to the entire population is necessary.

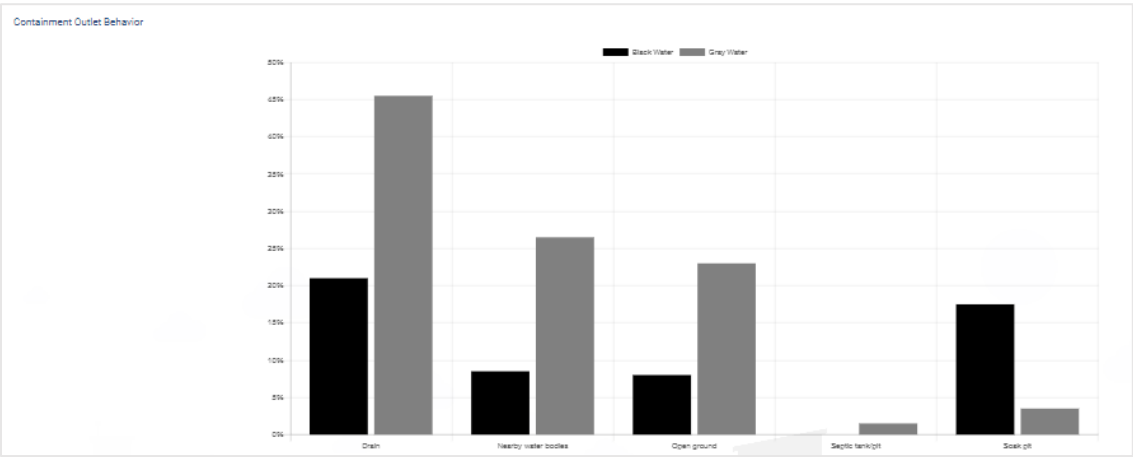

Figure 6: Bagerhat Paurashava Containment Outlet Behavior, 2020

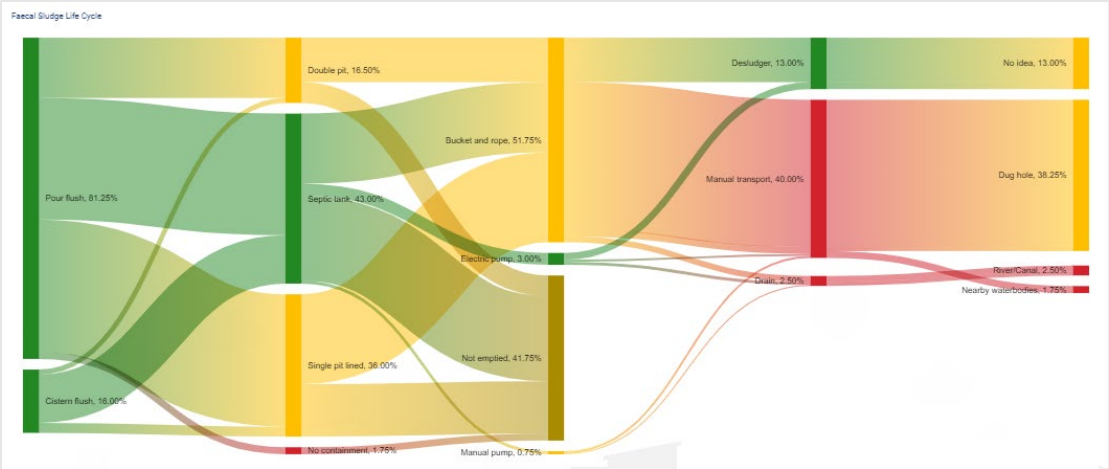

Figure 7: Bagerhat Paurashava FS Life Cycle, 2020

6. Indicators: This part shows where the municipality stands in terms of Citywide Inclusive Sanitation (CWIS) and Solid Waste Management (SWM).

Figure 8: Bagerhat Paurashava CWIS and Solid Waste Management (SWM) indicators, 2020

The platform also highlights Bangladesh's progress towards achieving Sustainable Development Goal 6.2, which aims to ensure access to adequate and equitable sanitation and hygiene for all. This section indicates the country's efforts and achievements in addressing sanitation challenges. However, a critical assessment of the data sources, methodologies, and limitations is essential. The charts and graphs provided in the platform visualize various aspects of faecal sludge and solid waste management in Bangladesh. These visual representations offer insights into faecal sludge and solid waste generation, collection, treatment, and disposal. Careful consideration should be given to the data sources and the representativeness of the presented information. The national dashboard is incorporating the findings from the excreta flow diagram (SFD) as well.

3.3 SFDs in sfd.susana.org

The published SFDs of Bangladesh are available on the SFD Promotion Initiative website (www.susana.org), which are funded by several international donor organizations and the government of Bangladesh, and implemented through the local government, DPHE, and I/NGOs. It provides valuable insights into the sanitation and waste management situation in different cities and districts of the country. These SFDs offer a comprehensive visual representation of the flow and management of human excreta throughout the sanitation value chain.

1. Sanitation Service Coverage: The SFDs depict the coverage of sanitation services, highlighting the percentage of the population with access to different types of sanitation facilities. This information helps identify areas where access to improved sanitation is high, as well as areas where there is a significant need for improvement.
2. On-Site Sanitation Facilities: The SFDs showcase the prevalence of on-site sanitation facilities such as septic tanks, pit latrines, and other types of containment systems. This data helps understand the distribution and usage of these facilities across different areas in Bangladesh.
3. Faecal Sludge Management: The SFDs provide insights into the management of faecal sludge generated from on-site sanitation facilities. They illustrate the pathways through which faecal sludge is collected, transported, treated, and disposed of in different cities and districts. This information is crucial for assessing the effectiveness of existing faecal sludge management systems.
4. Excreta Disposal and Treatment: The SFDs outline the methods and facilities used for the disposal and treatment of human excreta. This includes the proportion of excreta that is safely managed, as well as any gaps in the disposal and treatment processes. The SFDs help identify areas where improvements are needed to ensure safe and environmentally sound excreta management.
5. Challenges and Opportunities: By analyzing the SFDs, it is possible to identify common challenges and opportunities in the sanitation and waste management sector in Bangladesh. This can include issues such as inadequate containment facilities, insufficient collection and transport services, limited treatment capacity, or the potential for resource recovery from faecal sludge.

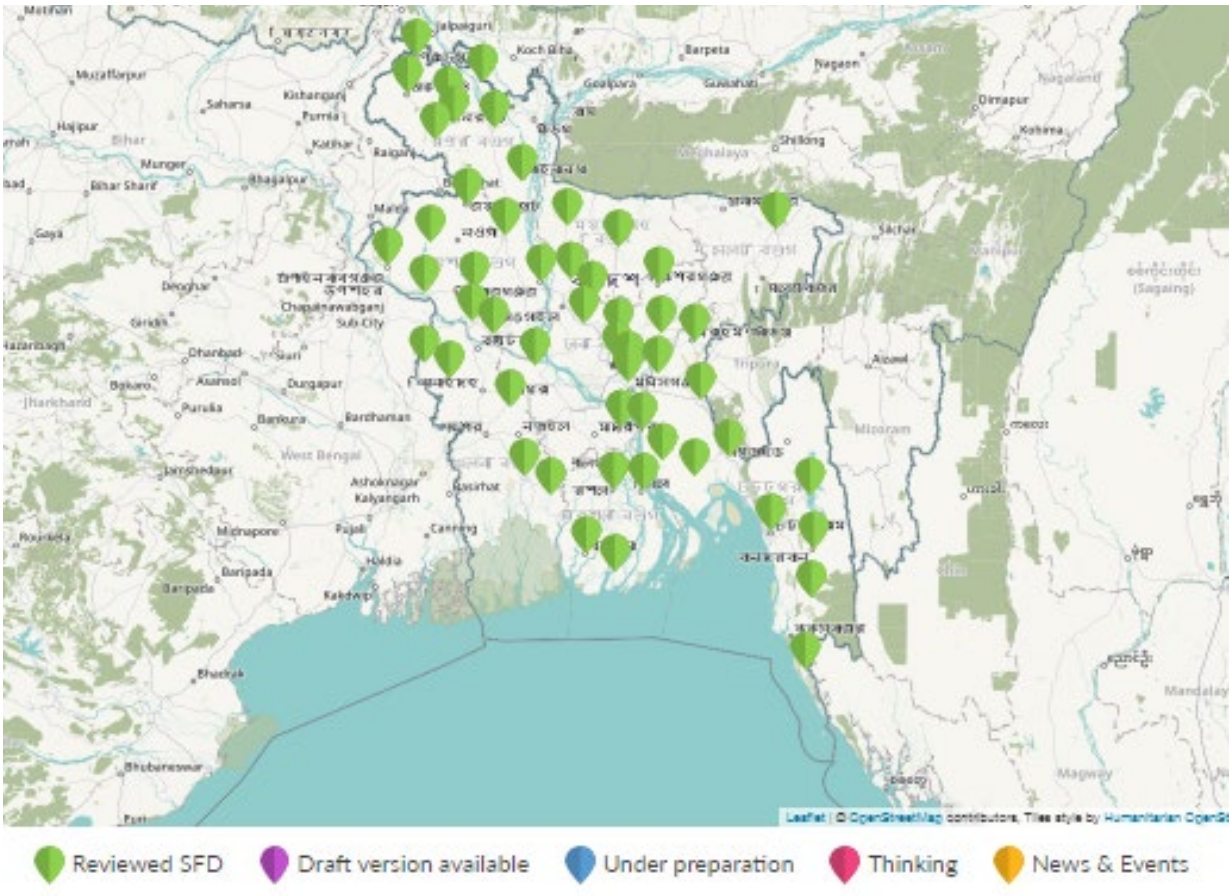

Figure 9: Published SFDs of Bangladesh in sfd.susana.org

Overall, the published SFDs on the website provide a valuable resource for understanding the sanitation and waste management situation in Bangladesh. By analyzing these SFDs, policymakers, practitioners, and researchers can gain insights into the current state of sanitation services, identify gaps and challenges, and develop targeted interventions to improve sanitation and waste management practices in different cities and districts.

3.4 Analysis of Sanitation Data from Multiple Platforms

The analysis of sanitation data from multiple platforms, including JMP (2022), the national dashboard, and the survey of 50 municipalities, reveals significant disparities in the percentage of safely managed and unsafely managed sanitation in Bangladesh.

According to JMP (2022), in lower population areas, approximately 28% to 36% of sanitation is considered safely managed, while around 25% to 55% in higher population areas. Additionally, in lower population areas, approximately 64% to 72% and around 67% to 75% in higher population areas are categorized as safely managed.

According to the 2020 data from the national dashboard, the proportion of safely managed sanitation in areas with higher populations ranges from 10% to 18%, while in areas with lower populations, it varies from 13% to 21%. Conversely, unsafely managed sanitation in higher

populated areas ranges from 90% to 82%, and in lower populated areas, it fluctuates between 87% and 79%.

In contrast, the team's survey indicates that in higher populated areas, the percentage of safely managed sanitation is estimated to be between 14% and 22%, and in lower populated areas, it ranges from 16% to 24%. The survey also suggests that unsafely managed sanitation in lower populated areas is approximately between 16% and 24%, while in higher populated areas, it is estimated to be between 76% and 84%.

From the discussion above, it is found that the average percentage of safely managed sanitation in lower populated areas stands around 19% to 27%, while unsafely managed sanitation reaches around 73% to 81%. In areas with higher populations, the average percentage of sanitation considered safely managed ranges from approximately 16% to 32%, with unsafely managed sanitation comprising about 68% to 84%. These findings highlight a substantial gap in the operation and maintenance of sanitation facilities, leading to a majority of sanitation services falling under the unsafely managed category. Key gaps include the lack of a standardized data collection methodology, resulting in difficulties comparing and analyzing data. Strengthening institutional capacity for data management is crucial, and capacity-building initiatives can help address this gap. To achieve SDG 6.2 goals and bridge data management gaps, Bangladesh needs to establish a unified data collection system with standardized indicators and invest in digital tools for real-time reporting.

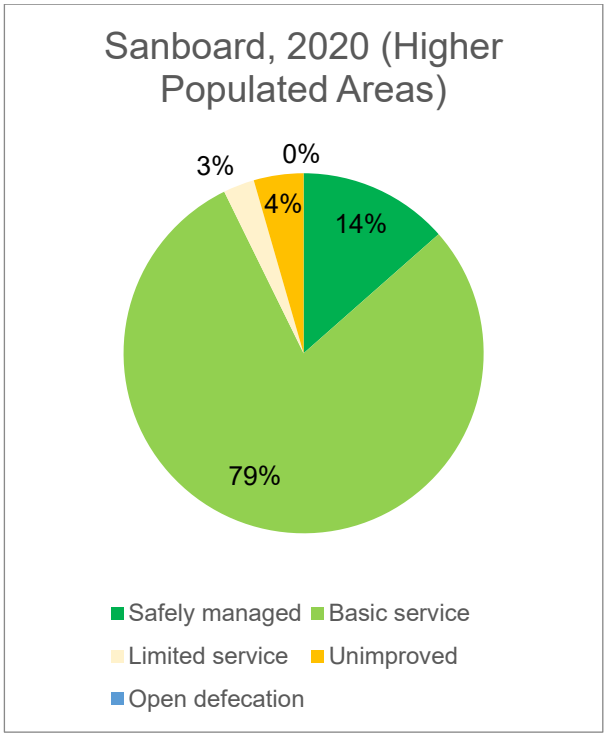

Figure 10: Bangladesh sanitation situation; Sanboard, 2020 (Higher Populated Areas)

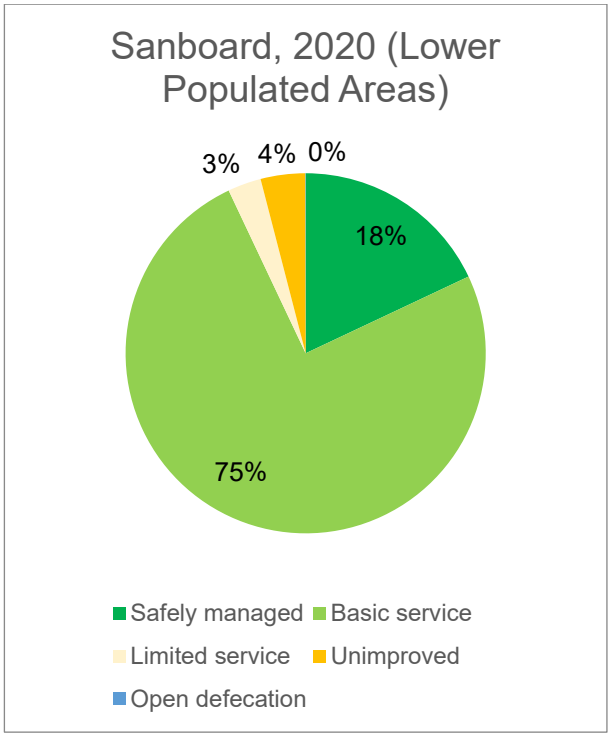

Figure 11: Bangladesh Sanitation situation; Sanboard, 2020 (Lower Populated Areas)

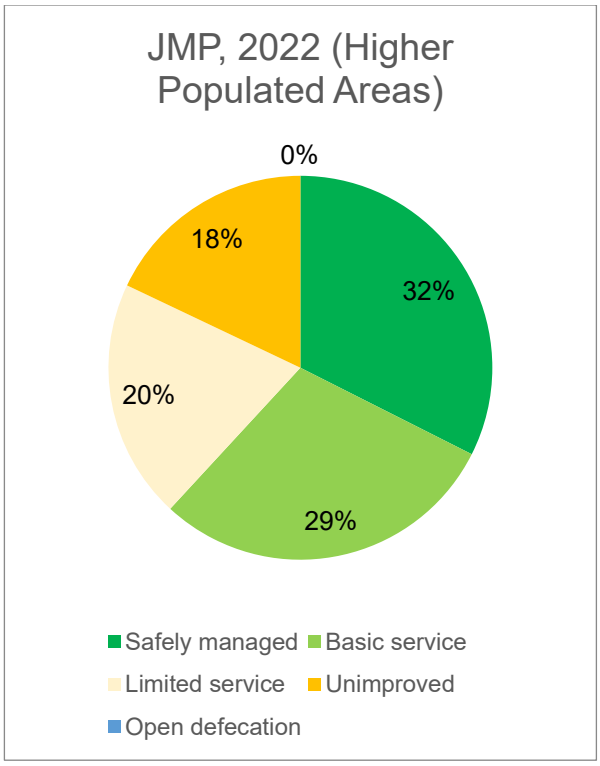

Figure 12: Bangladesh sanitation situation; JMP, 2022 (Higher Populated Areas)

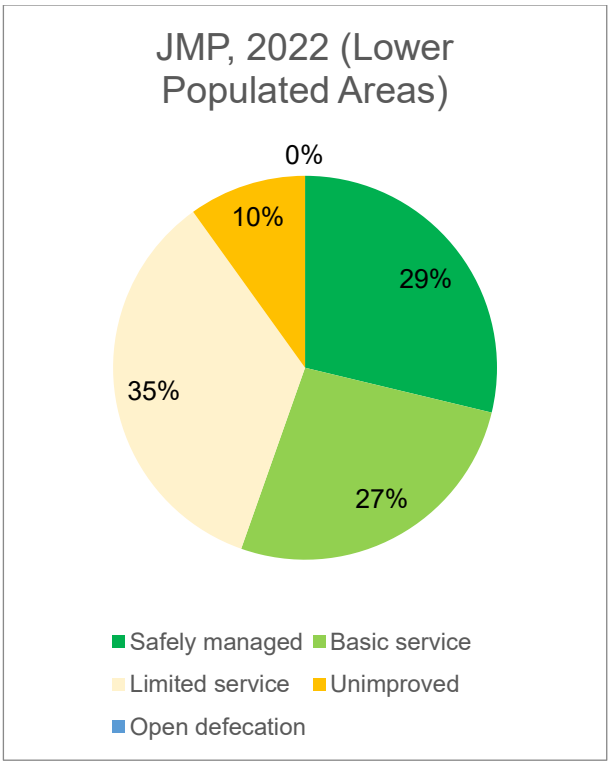

Figure 13: Bangladesh sanitation situation; JMP, 2022 (Lower Populated Areas)

Figure 14: Bangladesh sanitation situation, average

4. GAPS AND CHALLENGES

4.1 IDENTIFICATION OF GAPS

During the review of the municipality's data management system, the national dashboard, and the publication of Shit Flow Diagrams (SFDs) on the Susana platform, several gaps were identified. A significant gap identified is the frequency of data collection and submission to the national dashboard by the municipality. Currently, municipalities lack a standardized practice of collecting and submitting data regularly. While some municipalities may collect and report data periodically, others may not adhere to a consistent schedule. This inconsistency in data collection and reporting hampers the ability to obtain a comprehensive and up-to-date understanding of the sanitation situation across municipalities. Establishing a standardized requirement for yearly data collection and submission to the national dashboard would ensure a more consistent and reliable flow of information, enabling better monitoring, analysis, and policymaking in the sanitation sector. These gaps highlight areas where improvements are needed to enhance the data gathering and reporting system in municipalities.

Limited Automation: One of the significant gaps observed is the limited use of automated systems for data collection and reporting. Currently, data-gathering processes in municipalities heavily rely on manual methods, which can be time-consuming, prone to errors, and less efficient. The absence of digital platforms or automated systems hinders real-time data availability and limits the ability to generate timely and accurate reports.

Lack of Standardized Reporting: Another critical gap is the absence of a standardized reporting system across municipalities. The lack of uniformity in reporting formats and indicators makes it challenging to compare data between different areas or track progress consistently. This variation in reporting practices hampers the aggregation and analysis of data at a broader scale, hindering effective decision-making and monitoring of sanitation initiatives.

Limited Data Integration: There is a need for better integration of data from different sources and stakeholders. Currently, data related to sanitation and waste management may be scattered across various departments, agencies, and organizations. This fragmented data landscape creates challenges in consolidating and harmonizing the information for comprehensive analysis and reporting. Efforts should be made to establish mechanisms for data integration and collaboration among relevant stakeholders.

Insufficient Capacity: The lack of adequate capacity, both in terms of human resources and technical expertise, is a significant gap in effective data management. Municipalities often face challenges in terms of trained personnel, data analysis skills, and technical infrastructure to support robust data collection, storage, and analysis. Strengthening the capacity of municipalities to manage and utilize data effectively is crucial for improving the overall data gathering and reporting system.

Limited Accessibility and Transparency: Another gap lies in the accessibility and transparency of sanitation-related data. While efforts have been made to develop the national dashboard and publish SFDs on the Susana platform, there is a need to ensure that the data is easily accessible

to all stakeholders, including policymakers, researchers, and the public. Enhancing transparency in data sharing can foster greater accountability and facilitate evidence-based decision-making.

Addressing these identified gaps is essential to strengthening the data gathering and reporting system in municipalities. By implementing measures to automate data collection, establish standardized reporting mechanisms, integrate data sources, enhance capacity, and improve accessibility and transparency, municipalities can enhance their data management practices and facilitate evidence-based decision-making in the sanitation sector. However, the CWIS-FSM Support Cell of DPHE is playing a crucial role in bringing all the sanitation and waste-related projects under one umbrella.

4.2 Data Gap Analysis

In analyzing the data gathering and reporting system in municipalities, several gaps were identified. The data gap analysis sheds light on areas that require attention and improvement to strengthen the overall data management practices.

Policies: The analysis revealed a gap in aligning data gathering and reporting practices with existing policies, such as the Paurashava Act, NAP, and IRF-FSM. Although these policies provide a framework for data management, there is a need to ensure their effective implementation and adherence at the municipality level. Strengthening the alignment between policies and data management practices is crucial for establishing a robust and standardized approach to data collection and reporting.

Frequency of Data Collection: Another identified gap is the inconsistency in the frequency of data collection. While some municipalities may collect data periodically, others may not have a consistent schedule or may only collect data on an ad hoc basis. Establishing a standardized requirement for regular and systematic data collection, preferably on a yearly basis, is essential to ensure the availability of up-to-date and reliable information.

Data Submission to the National Dashboard: It was found that there is a gap in the systematic submission of data to the national dashboard. As per the responsibility of municipalities, they must collect and submit the necessary information to the national dashboard regularly. However, the current practices vary across municipalities, and some may not consistently fulfill this responsibility. Strengthening the accountability and monitoring mechanisms to ensure timely and accurate data submission is necessary for enhancing the overall data management system.

Data Integration and Reporting: The analysis also identified a gap in data integration and reporting. Currently, data related to sanitation and waste management may be scattered across different departments and stakeholders. There is a need for improved coordination and collaboration among relevant entities to integrate and consolidate data from various sources. Enhancing data integration and establishing standardized reporting mechanisms would enable a more comprehensive and cohesive analysis of the sanitation situation.

Addressing these data gaps requires a concerted effort to ensure the effective implementation of policies, establish standardized data collection and reporting schedules, enhance data submission processes to the national dashboard, and improve coordination and integration of

data sources. By bridging these gaps, municipalities can strengthen their data management practices and contribute to a more robust and reliable information system for evidence-based decision-making and monitoring in the sanitation sector.

Bangladesh has made significant progress in improving sanitation over the years, but there are still challenges and gaps in ensuring proper sanitation for all its citizens. Some of the key points regarding the sanitation situation in Bangladesh include:

Access to Improved Sanitation Facilities: Bangladesh has made progress in increasing access to improved sanitation facilities, such as toilets and latrines. The government and various NGOs have been working on initiatives to promote sanitation facilities in both rural and urban areas.

Open Defecation: Open defecation was a significant issue in Bangladesh, particularly in rural areas. Efforts have been made to reduce open defecation through campaigns promoting toilet use and constructing community and household toilets.

Sanitation-Related Diseases: Inadequate sanitation can contribute to the spread of diseases like diarrhea and cholera. Efforts to improve sanitation aim to reduce the incidence of these diseases and improve public health.

Gender Disparities: Women and girls often face challenges related to sanitation, including privacy and safety concerns when there are no proper facilities. Providing gender-sensitive sanitation facilities is an important focus.

Urbanization Challenges: Rapid urbanization in Bangladesh has led to challenges in providing adequate sanitation facilities in urban slums and informal settlements.

Hygiene Promotion: Promoting good hygiene practices, such as handwashing, is a critical component of improving overall sanitation and reducing the spread of diseases.

Waste Management: Proper management of solid waste and wastewater is essential for maintaining clean and hygienic environments. Inadequate waste management can lead to environmental pollution and health risks.

Government Initiatives: The Bangladeshi government, in collaboration with international organizations and NGOs, has implemented various programs and policies to improve sanitation access and raise awareness about its importance.

To get the most recent and detailed information on the current sanitation situation in Bangladesh and any data gaps that might exist, I recommend consulting reports and studies from sources such as:

World Health Organization (WHO): They often provide comprehensive data and reports on sanitation and health issues in countries, including Bangladesh.

United Nations Children's Fund (UNICEF): UNICEF works on various programs related to water, sanitation, and hygiene in Bangladesh.

Bangladesh Bureau of Statistics: The national statistical agency of Bangladesh might have updated data on sanitation indicators.

Non-Governmental Organizations (NGOs): Organizations like BRAC, WaterAid, and others working in Bangladesh often publish reports and updates on sanitation initiatives.

Academic and Research Institutions: Universities and research institutions might conduct studies and publish papers on sanitation in Bangladesh.

Remember that tackling data gaps often requires collaboration between government agencies, NGOs, researchers, and international organizations to conduct comprehensive surveys and studies that can provide a clear picture of the current situation.

5. RECOMMENDATIONS

5.1 Policy and Practice Recommendations

Municipalities will be responsible for submitting their data regularly to the national dashboard, and in some cases monthly or yearly, in a standardized format and within specified timelines. Strengthening the technical infrastructure and support systems for data integration will ensure the timely and accurate assimilation of municipality-level data into the national dashboard. This integration will not only enhance the overall data management system but also enable policymakers, researchers, and stakeholders at the national level to access and utilize reliable and up-to-date data for evidence-based decision-making and policy formulation. It will also foster transparency, accountability, and effective coordination between municipalities and the national government, promoting a holistic approach to sanitation management at the national level. Strengthening the capacity of municipalities in data management is crucial for effective data gathering and reporting.

Training programs should be conducted to enhance the skills of municipal personnel in data collection, analysis, and utilization. Technical support and resources should be provided to upgrade the infrastructure and technical capabilities necessary for managing data effectively. This will ensure that municipalities have the necessary skills and resources to collect, analyze, and utilize data for evidence-based decision-making. Encouraging collaboration and integration among relevant stakeholders is vital for improving the data management system. Establishing mechanisms for data sharing, coordination, and collaboration between municipalities, government agencies, development partners, NGOs, and research institutions will facilitate data integration, harmonization, and comprehensive reporting. This will enhance the overall reliability, completeness, and relevance of data in addressing sanitation challenges. Emphasizing the importance of data dissemination and accessibility is crucial for transparency and accountability. Efforts should be made to develop user-friendly platforms, such as the national dashboard, where sanitation-related data can be easily accessed by policymakers, researchers, civil society organizations, and the public.

Promoting open data initiatives and engaging in data-driven dialogue and knowledge sharing will foster transparency, encourage innovation, and support evidence-based decision-making. Establishing a robust monitoring and evaluation framework is essential for tracking progress, identifying gaps, and evaluating the effectiveness of data gathering and reporting practices. Regular monitoring of data quality, coverage, and timeliness should be conducted to ensure the reliability and accuracy of reported information. Continuous evaluation will enable timely interventions, adjustments, and improvements in the data management system. Strengthening compliance and enforcement mechanisms is necessary to ensure the timely and accurate submission of data by municipalities to the national dashboard.

By adopting standardized protocols, embracing automation and digitalization, enhancing capacity, promoting collaboration, ensuring data dissemination and accessibility, and establishing effective monitoring and evaluation mechanisms, municipalities can strengthen their data management

practices, facilitate evidence-based decision-making, and drive sustainable progress in the sanitation sector.

Specific recommendations are as below:

1. Instead of traditional JMP Data flow or management, we could use the Shit Flow Diagram (SFD) in horizontal scale to monitor the sanitation situation all through the municipalities.
2. We recommend integrated data information management system for all municipalities connecting to SanBD. (Coordination between local data and national data)
3. All municipalities relevant officials could be oriented on Shit Flow Diagram and its execution and usage.
4. We strongly recommend that DPHE should develop a web-based portal for the municipalities and cities with access to updating data for local information flow on sanitation data management.
5. Last but not the least, National Institute of Local Government (NILG) would be connected in regard to train up/orient/ the municipalities/city officials to incorporate, include and also to disseminate the updated sanitation data management system through institutional capacity building methods.
6. Evaluate the effectiveness and challenges of the Integrated Municipal Information System (IMIS) implemented in Faridpur Municipality. This assessment will provide insights into the practicality and impact of digital data management systems in local governance.
7. Conduct a comparative study between municipalities using digital data management systems and those relying on manual processes.

5.2 Implementation Strategies

To effectively implement the recommended policies and practices for enhancing the data gathering and reporting system in municipalities, the following strategies are proposed:

- Capacity Development Programs: Develop and implement capacity development programs targeting municipal personnel involved in data management. These programs should provide training and workshops on data collection methodologies, data analysis techniques, digital tools, and reporting standards. Emphasis should be placed on building technical skills, promoting data literacy, and fostering a data-driven culture within municipalities.
- Technology Adoption and Infrastructure Enhancement: Facilitate the adoption of technology solutions for data collection, management, and reporting. Encourage municipalities to invest in digital platforms, mobile applications, and data management systems to streamline data processes. Provide technical support and resources to upgrade existing infrastructure, ensuring reliable internet connectivity, hardware, and software compatibility for effective data management.
- Collaboration and Partnership Building: Foster collaboration and partnerships between municipalities, government agencies, development partners, NGOs, and research institutions. Facilitate knowledge-sharing platforms, workshops, and forums to promote dialogue, learning, and experience exchange. Encourage the establishment of collaborative networks and communities of practice to enhance coordination, data integration, and the sharing of best practices.
- Monitoring and Evaluation Framework: Develop a comprehensive monitoring and evaluation framework to assess the progress and effectiveness of data management practices in municipalities. Establish key performance indicators (KPIs) and benchmarks to track data quality, timeliness, and completeness. Conduct regular assessments, audits, and reviews to identify gaps, challenges, and areas for improvement. Use evaluation findings to refine strategies and ensure continuous enhancement of the data gathering and reporting system.
- Advocacy and Awareness Campaigns: Launch advocacy and awareness campaigns to emphasize the importance of data management in achieving sanitation goals. Engage policymakers, municipal officials, and stakeholders through workshops, seminars, and public campaigns to highlight the benefits of reliable and accurate data for evidence-based decision-making. Promote the use of data-driven narratives and success stories to communicate the impact of improved data management on sanitation outcomes.
- Regulatory Support and Enforcement: Strengthen regulatory support for data management in municipalities. Establish clear guidelines, reporting frameworks, and accountability mechanisms to ensure compliance with data collection, reporting, and submission requirements. Institute penalties for non-compliance to enforce accountability and adherence to data management protocols. Regularly review and update regulations to align with evolving technological advancements and best practices in data management.
- Continuous Learning and Adaptation: Foster a culture of continuous learning, adaptation, and innovation in data management practices. Encourage municipalities to share lessons learned, success stories, and challenges faced in data gathering and reporting. Facilitate platforms for cross-learning and peer-to-peer knowledge exchange to support municipalities in addressing

common data management issues. Promote a culture of data-driven decision-making and a willingness to adapt strategies based on emerging trends and evolving needs.

- Develop guidelines for maintaining and updating data even after the completion of projects.
- Recommend the integration of sanitation data into a national data board to improve accessibility. This strategy will ensure that the data is not only updated but also easily accessible to all relevant stakeholders.

By implementing these strategies, municipalities can enhance their data gathering and reporting system, improve data quality and accessibility, and strengthen evidence-based decision-making in the sanitation sector. These strategies will enable municipalities to leverage data as a powerful tool for effective planning, monitoring, and evaluation, ultimately contributing to sustainable sanitation outcomes and improved public health in communities.

6. CONCLUSION

In conclusion, the analysis of the current data gathering and reporting system in municipalities has revealed significant gaps and challenges that need to be addressed for improved sanitation management. The reliance on manual processes and the absence of automated systems or digital platforms hinders efficient and accurate data collection and reporting. This leads to delays, inaccuracies, and limited access to timely information for decision-making. The lack of a standardized reporting system and limited integration with the national dashboard further exacerbate the challenges. This hampers comprehensive data analysis, monitoring, and evaluation at the national level, impeding effective policy formulation and resource allocation. There is a pressing need to bridge these gaps and enhance the overall data management framework.

The analysis of the national dashboard and the published Shit Flow Diagrams (SFDs) has provided valuable insights into the current state of sanitation infrastructure, solid waste management, and institutional capacity. However, it is important to critically examine the data presented and acknowledge certain limitations. In some cases, there may be gaps in data completeness, timeliness, and standardization, which compromise the reliability and usefulness of the information for decision-making. To address these challenges, several key recommendations have been proposed. These recommendations include the adoption of digital technologies to streamline data collection and reporting processes, the implementation of capacity development programs to enhance the skills and knowledge of municipal personnel, and the establishment of collaborative networks to foster knowledge exchange and best practice sharing. Additionally, the development of robust monitoring and evaluation frameworks, advocacy campaigns, and regulatory support will contribute to improving data quality and compliance.

It is crucial to emphasize that the successful implementation of these strategies will require strong commitment and cooperation from all stakeholders involved. This includes municipalities, government agencies, development partners, NGOs, and community representatives. Effective coordination and communication among these entities will be essential to ensure the integration of municipality-level data with the national dashboard, fostering transparency, accountability, and informed decision-making.

In conclusion, addressing the identified gaps in data gathering and reporting is imperative to achieve Sustainable Development Goal 6.2 and improve sanitation outcomes in Bangladesh. By critically examining the existing practices, identifying challenges, and implementing the recommended strategies, municipalities can enhance their data management systems, promote evidence-based decision-making, and pave the way for effective sanitation management. This will contribute to the well-being and sustainable development of communities across the country.

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