SFD Lite Report

Sylhet
Bangladesh

This SFD Lite Report was prepared by
WaterAid Bangladesh

Date of production/ last update: 23/12/2018

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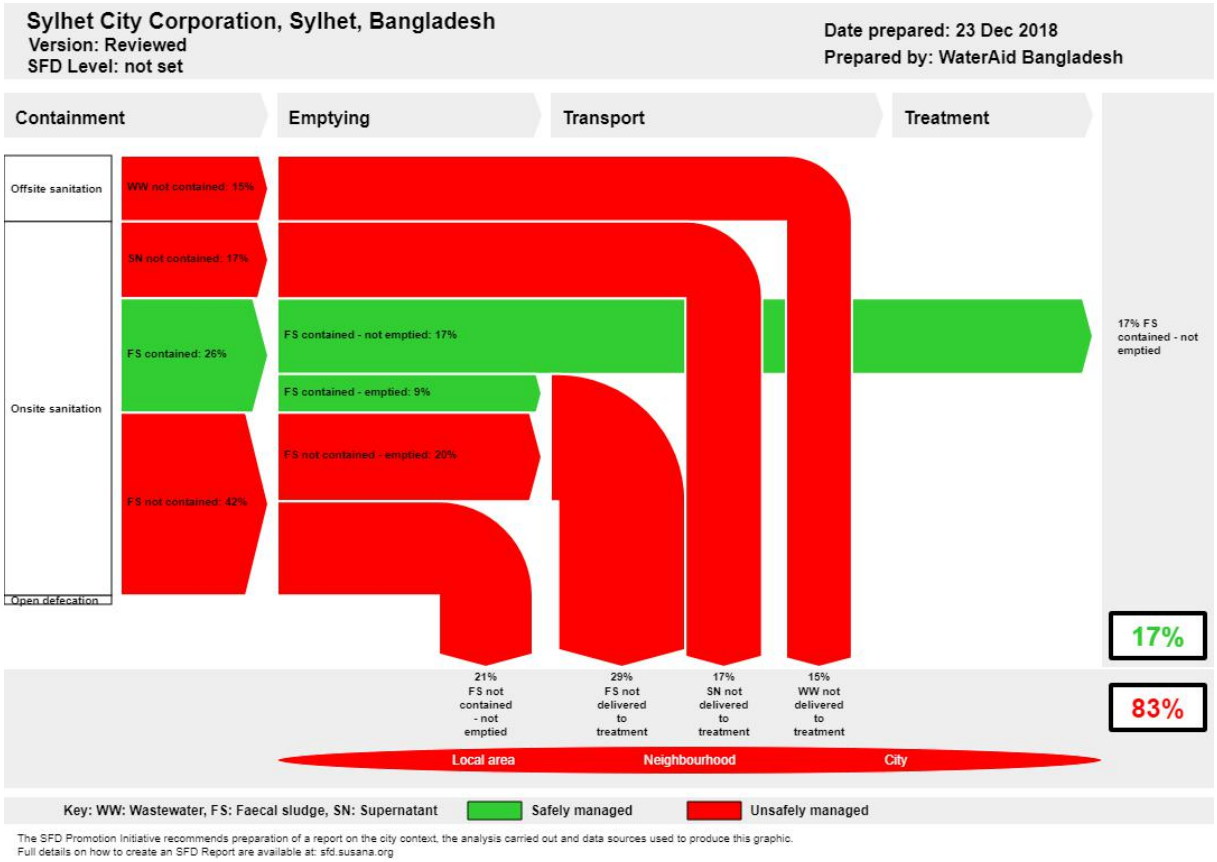
1 The SFD Graphic



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

2 SFD Lite information

Produced by:

The Flow Diagram (SFD) for Sylhet was created through desk-based research by the WaterAid country programme in Bangladesh using the SFD Graphic Generator on the SuSanA website.

Collaborating partners:

Sylhet City Corporation and WaterAid Bangladesh

Date of production: 23/12/2018

3 General city information

Sylhet, is a major city in north-eastern Bangladesh. It is the capital of Sylhet Division and was granted metropolitan city status in March 2009. Sylhet is located on the banks of the Surma River and is surrounded by the Jaintia, Khasi and Tripura hills. The Sylhet district is bounded on the north and east by India, on the south by Maulvibazar district and on the west by Sunamganj and Habiganj districts. It is the largest hub of tea production of Bangladesh.

Sylhet City Corporation (SCC) was established in 2002. It comprises of 27 wards and total area is 26.50 sq. km with population of 270,606. It is bounded by Sylhet Sadar upazila on the north, dakshin surma upazila on the south, Sylhet Sadar upazila on the east, Dakshin Surma and Sylhet Sadar upazila on the west. Average minimum temperature of Sylhet town is 12.9°C and the average highest temperature is around 31.6°C. Sylhet is in an area of relatively high rainfall with an average annual rainfall of 4,200 mm. The city corporation is supplying water in almost all the 27 wards but the residents of Sylhet are still suffering from water crisis in many areas, where they are meeting their demands through deep tube wells.

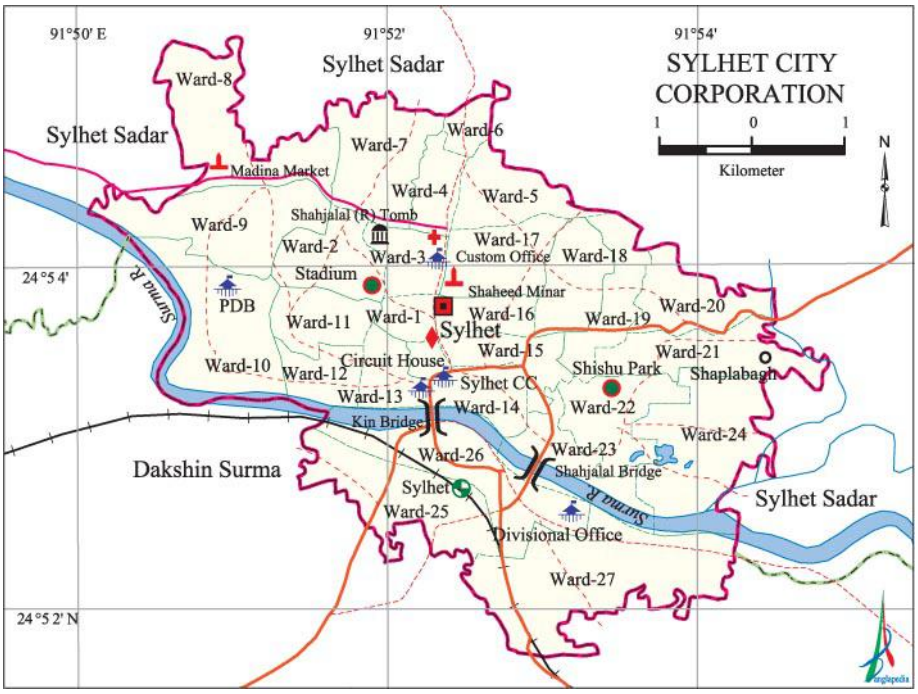


Figure 1: Map of Sylhet City Corporation (SCC)(Source: Banglapedia, National encyclopedia of Bangladesh. Retrieved from: http://en.banglapedia.org/images/1/17/SylhetCityCorporation.jpg).

4 Service outcomes

Sylhet City Corporation, Sylhet, Bangladesh, 23 Dec 2018. SFD Level: not set
Population: 500000
Proportion of tanks: septic tanks: 66%, fully lined tanks: 100%, lined, open bottom tanks: 75%

System label	Pop	W4c	W5c	F3	F4	F5	S4e	S5e
System description	Proportion of population using this type of system	Proportion of wastewater in open sewer or storm drain system, which is delivered to treatment plants	Proportion of wastewater delivered to treatment plants, which is treated	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
T1A1C6 Toilet discharges directly to open drain or storm sewer	15.0	0.0	0.0					
T1A2C5 Septic tank connected to soak pit	21.0			50.0	0.0	0.0		
T1A2C6 Septic tank connected to open drain or storm sewer	44.0			50.0	0.0	0.0	0.0	0.0
T1A4C6 Lined tank with impermeable walls and open bottom, connected to an open drain or storm sewer	10.0			50.0	0.0	0.0	0.0	0.0
T1A4C8 Lined tank with impermeable walls and open bottom, connected to open ground	5.0			50.0	0.0	0.0		
T1A5C10 Lined pit with semi-permeable walls and open bottom, no outlet or overflow	5.0			50.0	0.0	0.0		

Table 1: SFD Matrix for Sylhet

The percentages presented in Table 1 are based on data collected through key informant interviews and focus group discussions.

The majority of the population use septic tanks (65%), around 20% uses toilets connected to lined tanks and pits and the rest (15%) use toilets discharging directly to open drains or storm sewers (T1A1C6). About 15% of the population has no onsite containers. A small portion of population living on streets and railway station practice open defecation which is less than 0.1%. The frequency at which emptying occurs varies on the number of people using the facility, but the minimum time is every 6 months up to more than 5 years. 18% of the population did not require emptying their technology in last 5 years. This is shown in the SFD as “safely managed” excreta.

Within the 65% of the population in SCC that is connected to septic tanks, 44% of the population are connected to open drains (T1A2C6) and 21% are connected to soak pits located in areas of high risk of ground water pollution (T1A2C5). The 20% of toilets connected to lined tanks and pits consists of: 10% of lined tanks connected to an open drain or storm sewer (T1A4C6), 5% of lined tanks connected to open ground (T1A4C8) and 5% of lined pits with semi-permeable walls and open bottom, no outlet or overflow (T1A5C10).

The SFD assessment has shown that, 83% of the excreta generated are “unsafely managed”. As can be seen on the SFD graphic, 15% of the wastewater not contained in the technology is discharged into the open drain or storm sewer. Of the excreta generated, 17% is supernatant (SN) not contained which is discharged directly into the environment untreated. 17% of the FS generated is safely managed since it comes from FS contained in pits and tanks but not emptied. A proportion of 50% of FS emptied was assumed for all sanitation systems, based on the conducted FGDs. All FS emptied (29%) ends up in the environment

not treated since there are no treatment facilities in the city (KII2, 2018). This FS emptied consists of 9% of FS contained and 20% of FS not contained. FS not contained and not emptied corresponds to 21% of the total excreta generated.

In SCC, the emptying of pits and septic tanks is undertaken by private sweepers through a manual process (KII1, 2018). SCC has no sewer system or sewerage treatment plant. Faecal sludge is discharged at the open drain or surrounding ditches or transported and discharged into the dumpsite. The dumpsite of 4 acre (16,187m^2) in Lalmatia receives all wastes from the city (organic, inorganic, solid and faecal sludge) coming from industries, households, public and private institutions. It is simply an open field, with no protection or appropriate design details for the handling of wastes.

People in Sylhet City Corporation get their water either from the municipal supply or from their own source. As per groundwater risk calculation tool, it is estimated that there is low risk of groundwater pollution in the city.

5 Data and assumptions

A variety of data sources were used to determine the most reasonable estimates of percentages of excreta flow for the SFD matrix. In addition to the published national level WaSH policy and implementation documents, transect walks, observations, key informant interviews and focus group discussions were used for data collection purpose as there were limited data available in the secondary sources.

The proportion of FS in tanks was selected based on the relative proportion of the people using those systems according to the guidance given in the FAQ section of the SuSanA Webpage. That means that the FS content in septic tanks and fully lined tanks (sealed) was set to 66% and 100%. For lined tanks with impermeable walls and open bottom with no outlet or overflow and all types of pits, a recommended value of 75 percent is used as the proportion of the content that is faecal sludge.

6 List of data sources

- Population and Housing Census 2011, Community Report: Sylhet.
- KII1, 2018. Interview with Mr. Md. Hanifur Rahman, Conservancy Supervisor, SCC.
- KII2, 2018. Interview with Md. Faruq Ahmed, Conservancy Inspector, SCC.
- KII3, 2018. Interview with Md. Jubukul Kayes, Health Officer, SCC.
- KII4, 2018. Interview with Md. Ashraful Haque Chowdhury, Town Planner, SCC.
- FGD, 2018a. Focus group, discussion with sweepers. (manual emptying)
- FGD, 2018b. Focus group discussion with toilet users. (household)