

SFD Lite Report

Chattogram Bangladesh

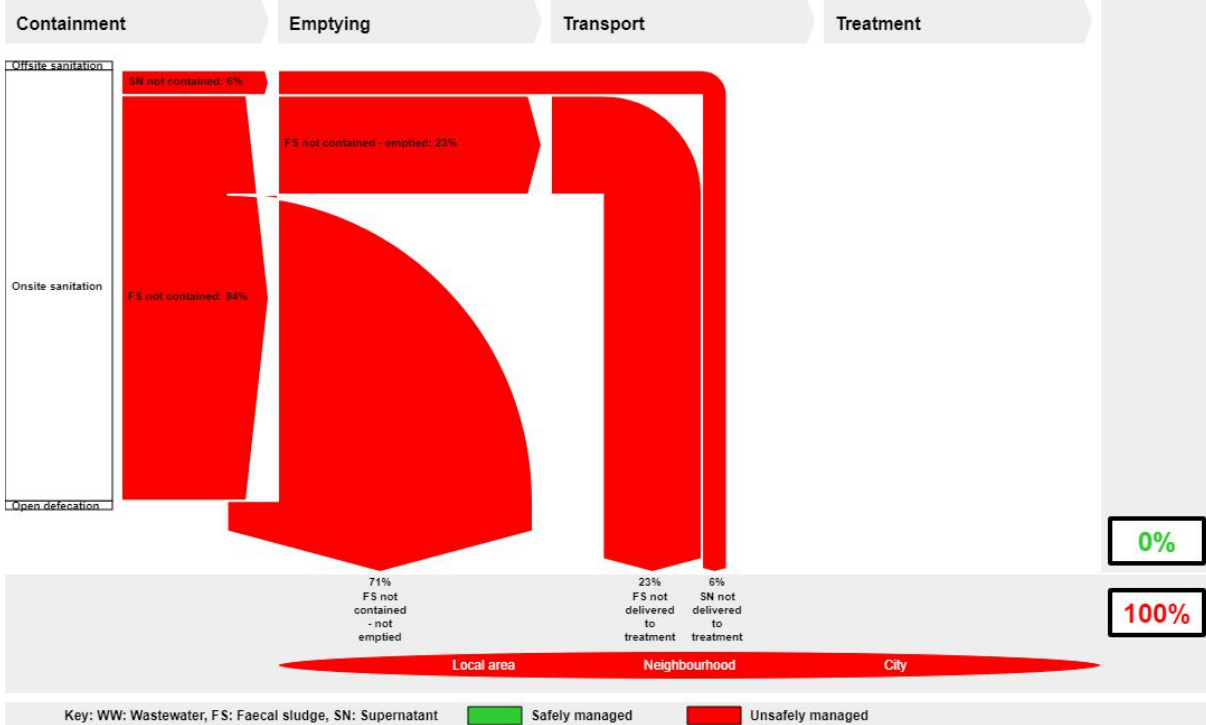
This SFD Lite Report was prepared by WaterAid
Bangladesh

Date of production/ last update: 04/11/2018

1 The SFD Graphic

Chattogram City Corporation, Chattogram, Bangladesh
Version: Reviewed
SFD Level: not set

Date prepared: 4 Nov 2018
Prepared by: WaterAid Bangladesh



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 Chattogram was created through desk-based research by the WaterAid country programme in Bangladesh using the SFD Graphic Generator on the SuSanA website.

Collaborating partners:

Chattogram City Corporation and WaterAid Bangladesh

Date of production: 04/11/2018

3 General city information

Chattogram City Corporation is the Commercial Capital and second largest city in Bangladesh. The city corporation is divided into 41 wards. On July 31, 1990, it was named as Chittagong City Corporation. Later, in 2018, Chittagong was renamed as Chattogram. Chattogram City Corporation area is 160.99 sq km. It is bounded by Sitakunda, Hathazari and Raozan upazilas in the north, Anowara upazila in the south, Raozan and Boalkhali upazilas in the east, and Sitakunda upazila and the Bay of Bengal in the west.

The city corporation has a total population of 2,582,401, of which 1,360,695 are male and 1,221,706 are females. The total number of households in the city is 556,451 (BBS, 2011). People of different occupation live in this city corporation. Most of the population are service holders along with businessmen, small traders and other occupations. Average standard of living of these people is higher than the average of the country (DSK, 2016). Chattogram has a tropical monsoon climate. Being adjacent to the Bay of Bengal, it is prone to cyclones and other disaster related to sea level rise.

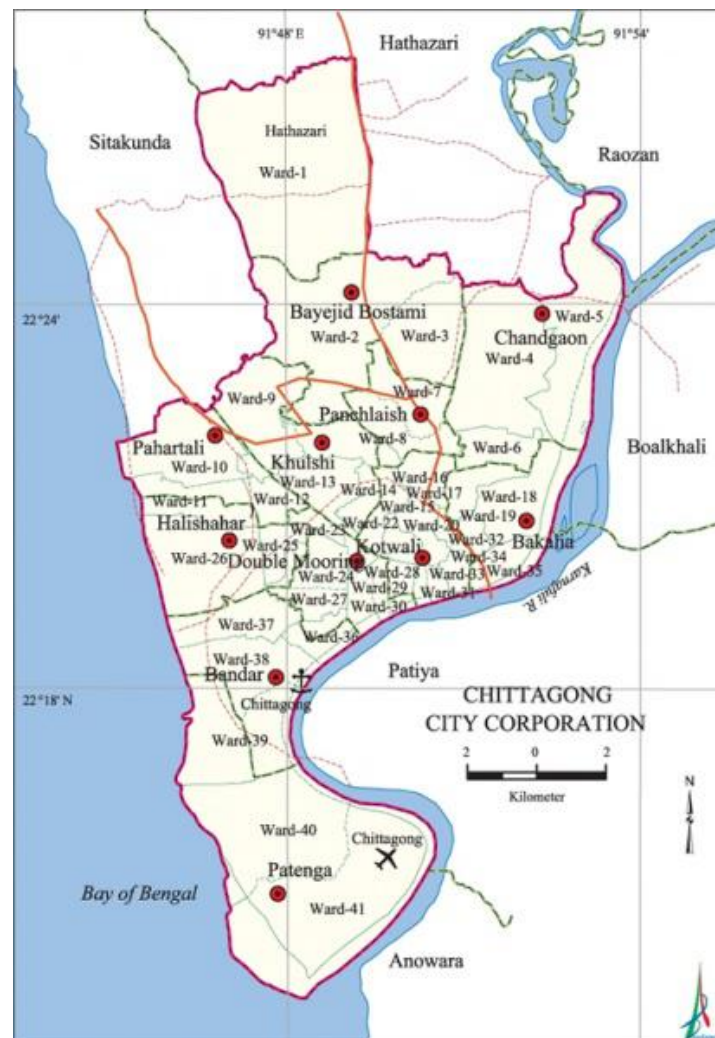


Figure 1: Chattogram City Corporation

4 Service outcomes

Chattogram City Corporation, Chattogram, Bangladesh, 4 Nov 2018. SFD Level: not set

Population: 2582401

Proportion of tanks: septic tanks: 80%, fully lined tanks: 83%, lined, open bottom tanks: 100%

System label	Pop	F3	F4	F5	S4e	S5e
System description	Proportion of population using this type of system	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
T1A2C6 Septic tank connected to open drain or storm sewer	25.0	27.0	0.0	0.0	0.0	0.0
T1A2C9 Septic tank connected to 'don't know where'	5.0	27.0	0.0	0.0		
T1A3C6 Fully lined tank (sealed) connected to an open drain or storm sewer	5.0	27.0	0.0	0.0	0.0	0.0
T1A3C9 Fully lined tank (sealed) connected to 'don't know where'	1.0	27.0	0.0	0.0		
T2A2C5 Septic tank connected to soak pit, where there is a 'significant risk' of groundwater pollution	32.0	27.0	0.0	0.0		
T2A3C5 Fully lined tank (sealed) connected to a soak pit, where there is a 'significant risk' of groundwater pollution	7.0	27.0	0.0	0.0		
T2A5C10 Lined pit with semi-permeable walls and open bottom, no outlet or overflow, where there is a 'significant risk' of groundwater pollution	25.0	27.0	0.0	0.0		

Table 1: SFD Matrix for Chattogram

The percentages presented in Table 1 and discussed in this section are based on data collected from the Baseline Survey Report on Faecal Sludge Management in Chittagong City Corporation in February, 2016.(DSK, 2016).

There is no centralised sewer in Chattogram City Corporation: 75% of on-site containment systems in Chattogram are septic tanks. Of these, 62% are two chamber, 17% are one chamber and 14% are three chamber. 7% of people do not know about the number of chambers in their septic tanks. For our convenience, we have assumed that this 7% is proportionally distributed among single, double and triple chamber septic tanks according to their original percentage. Two chamber and three chamber tanks are considered here as septic tanks and single chamber is considered here as lined tanks. There is also a significant amount of pit latrines. Almost half of these containment systems are connected to city corporation storm sewer. There is currently no functioning treatment plant in this area. Sludge is disposed of to distant places, open drains, water bodies etc. This portion of the sludge finally ends up in the ocean. Sometimes, the emptied sludge is buried by digging

holes in nearby open fields. This is done by the households itself. Negligible portion of the pit latrines that are not emptied are covered with soil and abandoned (KII1, 2018).

People in Chattogram City Corporation mainly get their water from the city corporation supply line. Some people also use their own source. The city corporation supply is available for most of the population. Soil type here is medium sand, depth of groundwater table is greater than 10 metres throughout the area. Percentage of sanitation facilities located less than 10 metres from groundwater sources are less than 25%. Whereas, percentage of sanitation facilities located uphill of groundwater source are greater than 25%. Almost all the people use groundwater as their water source. Considering all these factors and using the 'Groundwater Pollution Risk Estimation Tool', significant risk of groundwater pollution in the city was found.

The proportion of FS in tanks and pits 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, fully lined tanks (sealed) and lined tanks with impermeable walls and open bottom and all types of pits was set to 80%, 83% and 100%, respectively.

The SFD graphic shows that 100% of the excreta is unsafely managed. All 100% of the excreta not properly managed originates from: supernatant not contained and not delivered to treatment (6%) and FS not contained from tanks and pits located in areas of high risk of groundwater pollution (94%), out of which 23% consists of FS emptied but not delivered to treatment and 71% of FS not contained and not emptied.

5 Data and assumptions

The availability of quantitative data on sanitation services in Chattogram is limited. The SFD relied on data from a baseline survey conducted in 2016 on Chattogram City Corporation. Some major assumptions were made to calculate the percentages. The rate of emptying was not available for each individual containment type but the overall emptying percentage is 27%, and this is therefore used for all types of containment. As mentioned above 7% people are unaware about the number of chambers of their septic tanks. This percentage is distributed among percentages of single, double and triple chamber septic tanks according to their original share.

6 List of data sources

A list of all data sources used for the production of the SFD Lite:

- *Reports and literature*
 - *BBS, 2011. Census of Bangladesh Bureau of Statistics.*
 - *Dushtha Shasthya Kendra (DSK), 2016. Baseline Survey Report on Faecal Sludge Management in Chittagong City Corporation*
- *Key informant interviews*
 - *KII1, 2018. Interview with Mr. Md Tawhidur Rahaman, Programme Officer-Engineer, WaterAid Bangladesh.*