SFD Lite Report

Narayanganj Bangladesh

This SFD Lite Report was prepared by
WaterAid Bangladesh

Date of production/ last update: 26/12/2018

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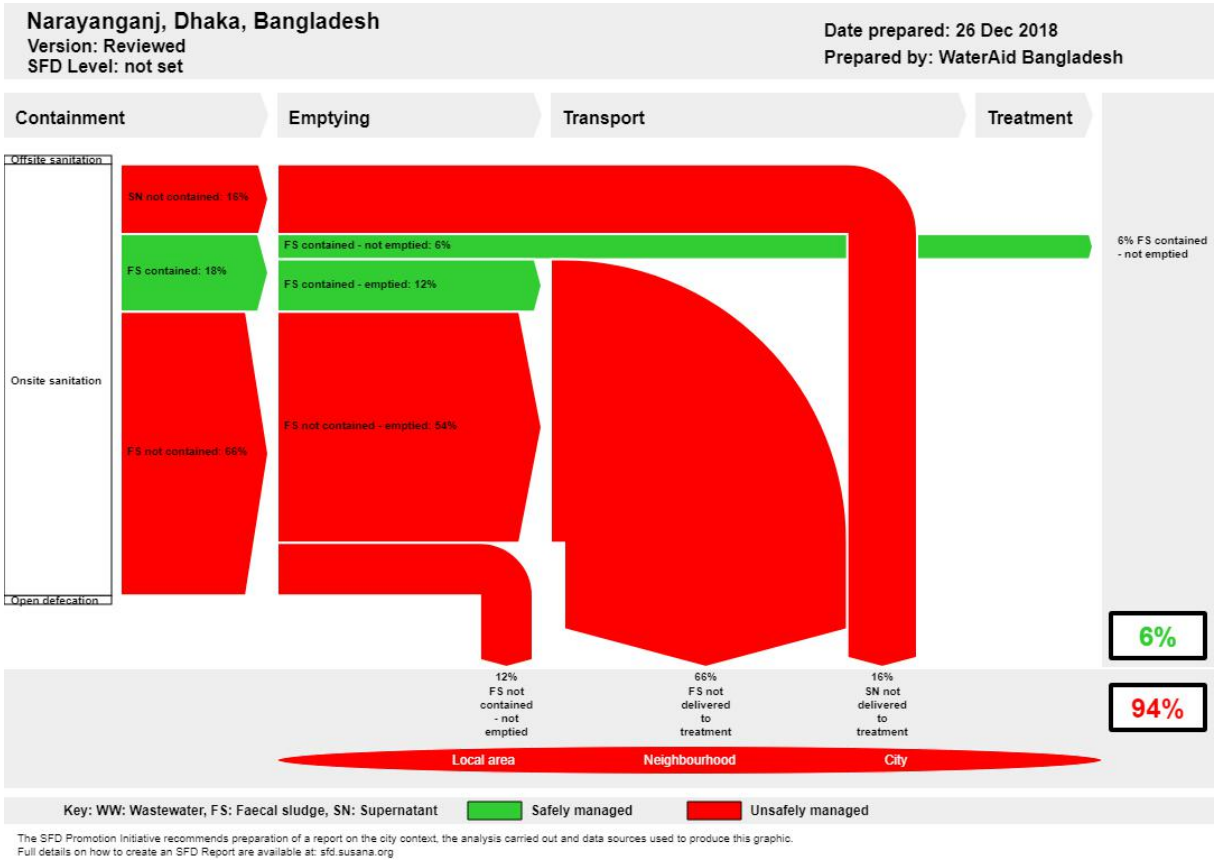
1 The SFD Graphic



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

Collaborating partners:

Narayanganj City Corporation and WaterAid Bangladesh

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3 General city information

Narayanganj City Corporation (NCC) is situated in the south of Dhaka city within the district of Narayanganj, part of Dhaka division. The district is bounded by Gazipur and Narsingdi districts on the north, Munshiganj district on the south, and Dhaka district on the west. Geologically, the area lies on the edge of the Madhupur tract and the Holocene floodplain. It has one of the oldest and the most prominent river ports of the country which makes it the centre of business and industry particularly for jute and textiles.

Narayanganj City Corporation (NCC) is the country's 7th largest city corporation, established on 21st March 2011. Comprised of 27 wards, the city is approximately 72.43 sq. km with population of 709,381, unifying three former municipalities: Narayanganj, Siddhirganj and KadamRasul. Generally, the weather is sub-tropical, with a warm climate all year round. The annual average temperature varies maximum 36°C to minimum 12.7°C and the average annual rainfall is 2,376 mm in NCC area. In Narayanganj City, ground water is a very essential source for drinking and other purposes in households and industry. Dhaka Water Supply & Sewerage Authority (DWASA) and Department of Public Health Engineering (DPHE) both are working jointly for water supply and sanitation in NCC area. According to Bangladesh Bureau of Statistics (BBS) 2011, about 51.29% of households depend on piped water, rest of the households depend on tube well or other available sources.

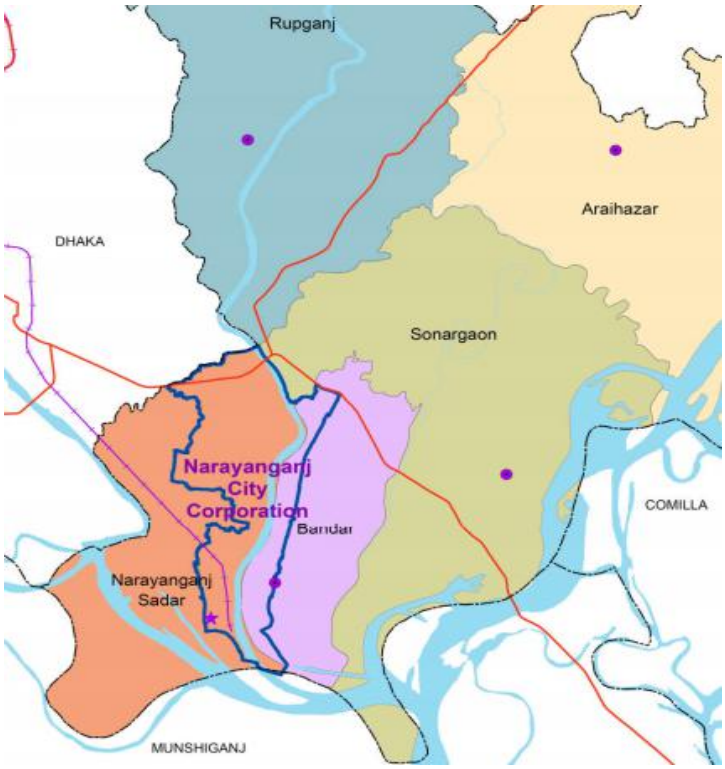

Figure 1: Map of Narayanganj City Corporation (NCC)

(Source: Narayanganj City Corporation Action Area Plan, November 2016)

4 Service outcomes

Narayanganj, Dhaka, Bangladesh, 26 Dec 2018. SFD Level: not set
Population: 900000
Proportion of tanks: septic tanks: 70%, fully lined tanks: 70%, 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
T1A2C5 Septic tank connected to soak pit	15.0	90.0	0.0	0.0		
T1A2C6 Septic tank connected to open drain or storm sewer	45.0	90.0	0.0	0.0	0.0	0.0
T1A2C9 Septic tank connected to 'don't know where'	15.0	90.0	0.0	0.0		
T1A3C6 Fully lined tank (sealed) connected to an open drain or storm sewer	9.0	90.0	0.0	0.0	0.0	0.0
T1A3C9 Fully lined tank (sealed) connected to 'don't know where'	6.0	90.0	0.0	0.0		
T1A4C8 Lined tank with impermeable walls and open bottom, connected to open ground	7.0	90.0	0.0	0.0		
T1A5C10 Lined pit with semi-permeable walls and open bottom, no outlet or overflow	3.0	90.0	0.0	0.0		

Table 1: SFD Matrix for Narayanganj

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

Most of the population uses septic or fully lined tanks (90%), and around 10% use toilets connected to lined tanks or pits. The frequency with which emptying occurs varies depending upon the number of people using the facility, but the minimum time is every 2 years. We have considered the tank or pit as emptied if it has been emptied at least once in last 10 years.

Of the population in NCC who are connected to septic tanks, 45% uses septic tanks connected to open drain or storm sewer (T1A2C6), 15% of the population uses septic tanks connected to soak pits located in areas of low risk of groundwater pollution (T1A2C5) and 15% uses septic tanks connected to 'don't know where' (T1A2C9). Fully lined tanks are used by 15% of the population, out of which 9% uses tanks connected to an open drain or storm sewer (T1A3C6) and 6% uses tanks connected to 'don't know where' (T1A3C9).

Pit latrines are utilized by 10% of the total population of NCC. While many different types of pit latrines are constructed within the city, two common types of containment structure could be identified. The majority of these are lined pits with semi permeable walls and open bottom

with no outlet or overflow (T1A5C10, 3%) and lined tanks with impermeable walls and open bottom (T1A4C8, 7%), connected to open ground.

The SFD assessment has shown that 94% of the excreta generated are “unsafely managed”. 16% of the population’s excreta are composed of supernatant (SN) which is discharged directly to the environment untreated. 66% of the population’s excreta are not contained and 18% are contained in the technology. 12% of the total excreta corresponds to FS not contained and not emptied but eventually enters untreated into the environment. 54% of the total excreta are composed of FS emptied and discharged into the environment without any treatment. Half the population did not require emptying their technology in last 10 years and hence, a proportion of 90% of FS emptied was assumed for all sanitation systems, variable F3. Out of the 18% of FS contained, 12% is emptied but not delivered to treatment and 6% is not emptied. This 6% constitutes the total FS shown in the SFD as “safely managed” as there is a low risk of groundwater contamination. NCC has no sewerage system or treatment plant (FGD, 2018b; KII1, 2018). All faecal sludge is discharged without treatment either locally into the open drains or Shitalakshya River or transported and discharged into the dumpsite. Manual emptying is done by the private sweepers (FGD, 2018a).

The dumpsite 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 (KII2, 2018).

People in Narayanganj City Corporation get their water either from the municipal supply or from their own source. A large amount of water is produced from groundwater sources and it is estimated using the risk of groundwater pollution tool 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 because of the limited availability of data in 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 70% in both cases. For lined tanks with impermeable walls and open bottoms with no outlet or overflow and all types of pits, the recommended value of 100 percent is used as the proportion of the content that is faecal sludge.

6 List of data sources

- District Statistics 2011, Narayanganj, December 2013
- Bangladesh Bureau of Statistics (BBS), 2011.
- Narayanganj City Corporation Action Area Plan, November 2016

- IRF, 2017.Institutional and Regulatory Framework for FSM: Section on municipalities.
- Sector Development Plan (SDP) for Water Supply and Sanitation Sector in Bangladesh (FY 2011-25).
- KII1, 2018. Interview with Mr. Md. Ajgar Hossain, Executive Engineer, NCC.
- KII2, 2018. Interview with Mr. Alamgir hiron, Head of Conservancy Section, NCC.
- KII3, 2018. Interview with Mr. Jahurul Alom, Public Relation Offficer, NCC.
- KII4, 2018. Interview with Mr. Abul Basher, Assistant secretary, NCC.
- FGD, 2018a. Focus group, discussion with sweepers. (manual emptying)
- FGD, 2018b. Focus group discussion with toilet users. (household)