



SFD Report Savar, Bangladesh

prepared by:

Waste Concern

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Savar Municipality was established in 1992. It has an area of 14.08 sq.km consisting 9 Wards with a population of 665,687. It is located at about 24 kilometers to the northwest of Dhaka, the capital of Bangladesh.

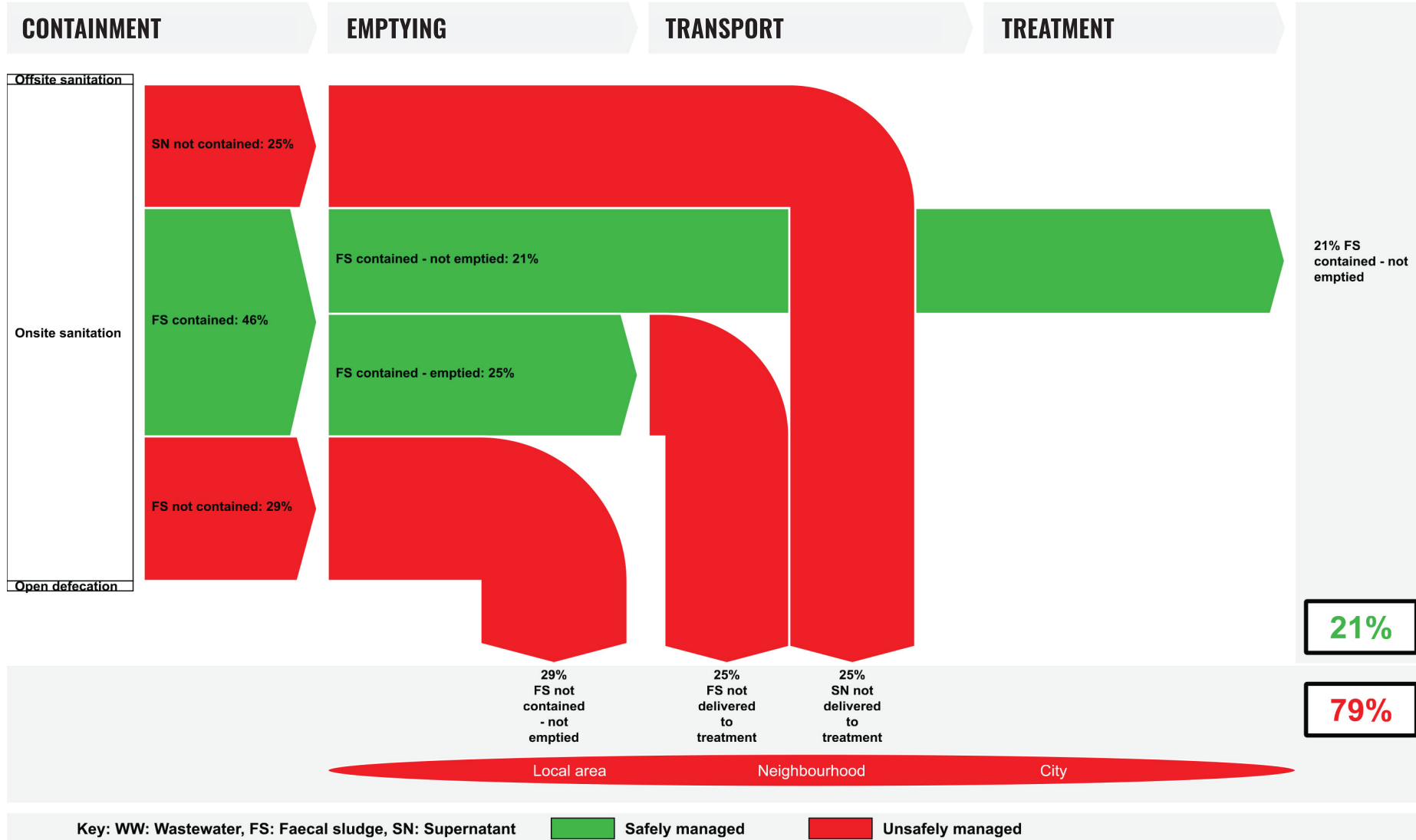
SFD GRAPHIC

Savar, Dhaka Division, Bangladesh

Version: Draft
SFD Level: SFD Lite

Date prepared: 28 Aug, 2021

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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

The SFD generated shows that 21% of the wastewater is being safely treated/disposed, while 79% of the wastewater is not being safely treated or disposed.

SERVICE OUTCOMES

SFD MATRIX FOR SAVAR

Tabulated form of the grid selection for data entry

Savar Municipality, Dhaka Division, Bangladesh, 28 Aug 2021. SFD Level : not set Population : 665687						
Proportion of Tanks : Septic Tanks : 20%, Fully Lined Tanks : 16%, Lined, Open Bottom Tanks : 47%						
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	20.0	100.0	0.0	0.0		
T1A3C10 Fully lined tank (sealed), no outlet or overflow	16.0	100.0	0.0	0.0		
T1A4C10 Lined tank with impermeable walls and open bottom, no outlet or overflow	10.0	100.0	0.0	0.0		
T1A4C6 Lined tank with impermeable walls and open bottom, connected to an open drain or storm sewer	47.0	0.0	0.0	0.0	0.0	0.0
T2A6C10 Unlined pit, no outlet or overflow, where there is a 'significant risk' of groundwater pollution	7.0	0.0	0.0	0.0		

OFFSITE SANITATION SYSTEM

Savar Municipality does not have sewerage network and sewage treatment plant installed within its municipal area. Wastewater from disperse homesteads of the fringe area is drained and discharged into adjacent ditches or open drains. Wastewater and runoff from buildings, streets, parking lots, driveways, lawns and other areas are collected by tertiary drains and discharged into rivers and khals.

ONSITE SANITATION SYSTEM

CONTAINMENT:

Savar Municipality has about 20% of properly designed septic-tanks having two chambers and connected to soak pits and 16% of fully lined tank (one chamber) with no outlets or overflows. 47% of lined tanks with impermeable walls and open bottoms are connected to drains/water bodies/open ground and 10% do not have outlet or overflow. The twin pits and lined single pits are considered as lined tank



User Interface (toilets) in Savar Municipality

with impermeable walls and open bottom. 7% are unlined pits with no outlet or overflow with significant risk to groundwater.

Majority of the toilets are connected to drain and water bodies, only 20% of the toilets have soak wells. Containment units are not designed as per the Building Code. 26% of the containment units have no outlet or overflow. As such, 46% of the containment units require desludging.

EMPTYING:

At present manual emptying of pits and septic tanks is widely practiced in the municipality. There is only one vacuum truck for the municipality which is remain unused for most of time, unless any emergency situation arises. There is no faecal sludge treatment plant (FSTP). Currently all the generated faecal sludge in the municipalities is collected by manual sludge cleaners and discharged in the open environment. The demand for faecal sludge collection is low as it is estimated that 54% of the toilets are connected to drains or water bodies.

TRANSPORTATION:

Based on the population of the town, it is estimated that 46,598 KL of faecal sludge is generated per year. Currently, there is one vacuum truck available in the municipality which is not used due to lack of training for O&M of the truck. All the generated faecal sludge in the municipalities is collected by manual sludge cleaners and discharged in the open environment.



Vacuum Truck for Emptying of FS



TREATMENT/DISPOSAL:

Savar Municipality has no FSTP. Moreover, the municipality has not been able to locate any suitable land for construction of the FSTP. Sweepers use manual emptying methods to clean the pits or septic tanks and dispose the sludge in low-lying areas and water bodies.



Discharge into open drains

RISK TO GROUND AND SURFACE WATER:

During the monsoon period which lasts for five months in a year, the ground water table becomes high. Also the high percentages of the toilets discharging waste water to the open environment is a high risk of ground and surface water pollution.

GENERAL CITY INFORMATION

Savar Municipality was established in 1992. It has an area of 14.08 sq.km consisting of 9 Wards. It is in the Savar Upazila of Dhaka under Dhaka Division. The municipality lies between 23°44' and 24°02' N latitude and 90°11' and 90°22' E longitude. It is located at about 24 kilometers to the northwest of Dhaka city.



Dhaka district has a tropical humid climate condition with about 74% humidity, an average temperature of 25.3 °C (77.5°F), and average annual rainfall less than 1900 millimeters.

According to Bangladesh Bureau of Statistic (BBS) 2011, the total area was 14.08 sq.km. The administrative area of this Municipality has been extended consisting of 9 wards. As a result, the population of this Municipality increased to 2,86,008 (in 2011) according to the Municipality and estimated present population in 2021 is 6,65,687 where the growth rate is 8.8 and base year is 2011.

The population density is 47,278 persons per km². Density varies in different wards. Highest population lives in ward no. 7 (116,499) and the lowest in ward no. 2 (47,144).

Savar is one of the fastest growing Municipality of Bangladesh with a potential to develop as an industrial urban center. The average growth of this Municipality is 8.8.

Land use of Savar Paurashava is mixed land use which consists of residential, commercial, industrial, agricultural and institutional land use, open space, water bodies and road network. Most of the area of the municipality is used for residential use (54.85%) and agricultural use (24.55%). In the municipality, major status of the inhabitants is the result of migration from other areas of Bangladesh. These people mostly migrate for employment purpose.



DETAILS OF POPULATION, SAVAR MUNICIPALITY

Ward No.	No. of Households*	Population*
1	8,638	81,291
2	5,171	47,144
3	7,861	70,300
4	3,424	34,047
5	6,858	66,039
6	12,399	101,352
7	13,192	116,499
8	7,944	71,929
9	9,028	77,087
Total	74,515	665,687

Source: * BBS. Population Census 2011, LGED

DATA AND ASSUMPTIONS

- Savar Municipality has a significant slum population which is 4% of the municipality's total population. SFD analysis includes the entire population living in the municipal area including the slum population.
- Based on a field survey conducted by Waste Concern in 2021, 20% of the population have access to septic tanks 16% have access to lined tank and 47% of the population have access to lined tanks with open bottoms. The remaining 17% of the population does not have access to proper containment system.
- Although containment structures are being utilized by 83% of the population, in terms of containment outlets 54% are directly connected to drains, water bodies, or the ground.
- Only 20% of the containment structures are connected to soak wells and 26% of containment structures have no outlets. In the analysis, it is assumed that these 46% containment structures lacking outlets are properly storing the faecal sludge which is collected by the manual emptying system.
- As per the Bangladesh National Building Code (1993), the faecal sludge generation rate varies between 0.04 cum/person/year to 0.07 cum/person/ year. Assuming per capita faecal sludge rate of 0.07 cum/person/year, the total faecal sludge generated in Savar is estimated at 46,598 KL/year. Based on the field survey, 46% of the containment structures have no outlets. As such, the total maximum daily demand for faecal sludge collection and treatment is 58.72 cum/day. Since there is no FSTP in the town all the manually emptied faecal sludge is disposed in the open environment.

LIST OF DATA SOURCES

- Bangladesh Population & Housing Census 2011 (Bangladesh Bureau of Statistics)
- Town planner, Savar Municipality
- WASH Baseline Assessment Report Savar Municipality 2021 (Waste Concern-BORDA)

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The Shit Flow Diagram was created
using the **SFD Lite Graphic Generator**
on the Susana website
<https://sfd.susana.org/>