

SFD Lite Report

Bakshi Ka Talab India

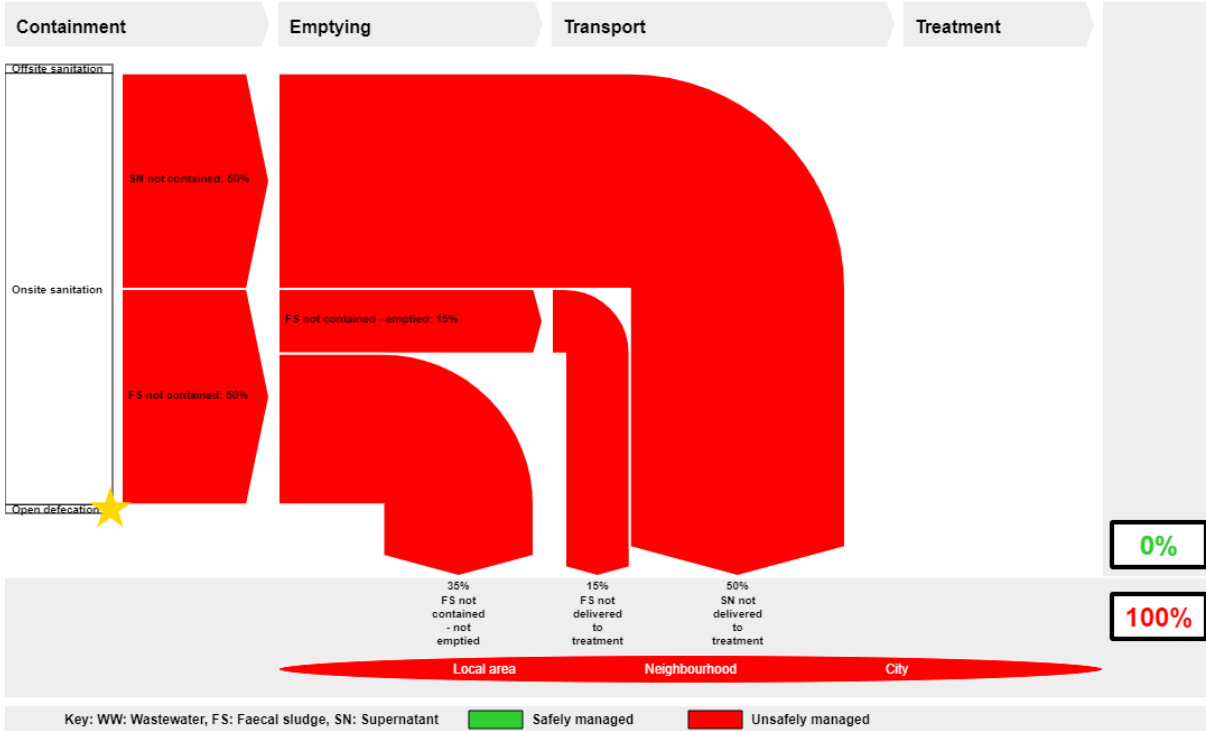
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Date of production/ last update: 17/09/2020

1 The SFD Graphic

Bakshi Ka Talab, Uttar Pradesh, India
Version: Draft
SFD Level: SFD Lite

Date prepared: 26 Aug 2020
Prepared by: Nida Ahmed



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:

- Centre for Science and Environment, New Delhi
- This report was compiled as part of the SFD Promotion Initiative project funded by Bill and Melinda Gates Foundation (BMGF). We would like to thank Mr Shishir Mishra, Executive officer, Mr Yogendra Rajpoot, Computer Operator, Mr Vikas Singh, Computer Operator and Mr. Lalit Gupta, Sanitation Supervisor, Nagar Panchayat Bakshi Ka Talab for providing all the required secondary data and cooperating for Key Informant Interviews (KIIs) & Focussed Group Discussions(FGDs).

Collaborating partners:

- Nagar Panchayat, Bakshi Ka Talab, Uttar Pradesh

Date of production: 17/09/2020

3 General city information

Bakshi Ka Talab Nagar Panchayat is a city under the Bakshi Ka Talab sub district of Lucknow district in the state of Uttar Pradesh in India. City is an organised settlement developed by Lucknow Development Authority (LDA). The city gets its name as Bakshi Ka Talab, which was constructed in 1807 by King Tripuresh Chandra Bakshi, while enroute to Nepal and took a halt in the area.

The population of the city, as per the Census of India, 2011 is 49,166. Population density of the city is 1173 persons per sq.km, which is relatively high, when compared to that of Uttar Pradesh, i.e. 828 persons per sq.km. The current population (2019) as per ULB data is 54,082. The urban local body governing the town is Bakshi Ka Talab Nagar Panchayat (BKTNP). BKTNP has an administrative area of 41.9 sq.km which is divided into 19 wards.

The geographical coordinates of Bakshi ka Talab are 26.590°North and 80.530°East. The topography of Bakshi Ka Talab is majorly plain. The average rainfall is 963 mm. Temperature rises to 45°C and drops to 5°C. The soil type is clayey and sandy with occasionally silty. Table 1 shows the population growth in Bakshi Ka Talab in past two decades.

Census Year	Population	Growth Rate (%)	Source
2011	49,166	-	Census 2011
2019	54,082	5	BKTNP

Table 1: Population Growth rate Bakshi Ka Talab (Source: BKTNP, 2020, Census, 2011)

4 Service outcomes

Bakshi Ka Talab, Uttar Pradesh, India, 26 Aug 2020. SFD Level: SFD Lite						
Population: 54082						
Proportion of tanks: septic tanks: 50%, fully lined tanks: 50%, lined, open bottom tanks: 50%						
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	10.0	40.0	0.0	0.0	0.0	0.0
T1A3C6 Fully lined tank (sealed) connected to an open drain or storm sewer	40.0	40.0	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	50.0	20.0	0.0	0.0	0.0	0.0

Table 2: SFD Matrix for Bakshi Ka Talab

Overview on technologies and methods used for different sanitation systems through the sanitation service chain is as follows:

4.1 Offsite Systems

According to Census 2011, there was a sewerage network in the city which covered about 0.5% of the population, but the field-based study revealed that there is no functional sewerage network in the city.

4.2 Onsite Systems

In absence of any kind of sewerage system in the city, 100 % of the population is dependent on onsite sanitation systems in Bakshi Ka Talab. There is no wastewater treatment plant in the city.



Figure 1: Overflowing containment system (Nida, CSE, 2020)

Containment: Based on sample household survey, KIIs and FGDs with relevant stakeholders it is estimated that 100% population is dependent on the On-site Sanitation Systems (OSS). The type of OSS prevalent in Bakshi Ka Talab is Lined tank with impermeable walls and open bottom (T1A4C6), 50%). Fully lined tank (FLT) connected to open drains (T1A3C6, 40%) and Septic tanks connected to open drains (T1A2C2, 10%) . Whether it's a fully lined tank or septic tank both are locally known as septic tank.



Figure 3: Septic Tank constructed under PMAY



Figure 2: 2 chambered septic tank

According to the KII with ULB officials (KII-1,2), 4978 Individual Household Latrines (IHHL) have been provided to households having no toilets or access to community toilets in the vicinity or to households with insanitary toilets as of August 2020, under Swachh Bharat Mission (SBM). Fully Lined Tanks (FLT) in Bakshi Ka Talab are either square or rectangular in shape whereas septic tanks are mostly 2 chambered tanks. Most of the containment systems constructed even under SBM are Fully Lined Tanks. Tanks not conforming to BIS code are considered as Fully Lined Tanks. Many toilets constructed before and during Swachh Bharat Mission are open from bottom such that tanks to not fill-up quickly.

Community Toilets/Public Toilets: There are 19 community toilets and 3 public toilets in Bakshi Ka Talab



Figure 4: Occasionally used Public toilet

which have Septic Tanks connected to Open Drain as their containment system. The average size of septic tanks in public toilet / community toilets is 15 x 10 x 7 ft. As majority of the CT/PTs have been recently constructed under SBM and hence have not yet reached at stage where emptying is required which would be further stretched due to low number of people actually using these facilities and every household in the city having its own functional toilet.

Even though Bakshi Ka Talab has been declared as an Open Defecation Free city the instances of open defecation can still be observed. According to BKT NP, the rare case of open defecation can be attributed to behavioural issue and was evident by field observation as well, despite having access to a community toilet or individual household latrine.

Emptying: The city is dependent on both public and private desludging service provider for emptying faecal sludge (FS). The city has narrow and congested roads. During FGD with sanitation workers (FGD-3), it was observed that manual scavenging still happens in some situations. The urban local body has one vacuum tanker of 5,000 liters capacity. It makes around one to two trips per week.



Figure 5: Occasionally used Public toilet

In general, frequency of emptying of containment systems by households is around 10 to 15 years. The fees for mechanical emptying by ULB is INR 1500. The vacuum tanker are equipped with a motorised pump, storage tank of 5000 litres capacity and a 250 ft long hose pipe to access containment systems in narrow roads and congested areas. There is variation in fees charged by private operators depends upon the size of the containment system and the extent of solidification of sludge at the bottom and can go as high as INR 2500. The private operator who provides desludging services in Bakshi Ka Talab operates from Purnia, which is around 9 kilometres from the city. Emptying of containments in Bakshi Ka Talab is done on demand basis and on an average they complete 10 trip per months. Advertisements of emptiers could be seen on electric poles, wall paintings, etc.

Since the frequency of emptying is very high i.e. 10 to 15 years, it is considered that the majority of households have containment systems which are not emptied. The population using their systems with emptying is taken as 40%.



Figure 6: Drain in Ward 5



Figure 7: Drain in Ward 13

Transportation: The emptied faecal sludge is transported using a tractor mounted vacuum tanker. These vehicles cover a distance of 5-6 km per trip on an average after desludging from the households and they decant the emptied FS in the nearby agricultural fields. In the KII with the private emptier it was revealed that time taken for emptying and discharge of FS is 1-2 hours on an average. None of the FS getting emptied is delivered to the treatment facility. However, the supernatant from the septic tanks and fully lined tanks flows in the open drains which poses a threat to health in the area.

Treatment/Disposal: BKTNP has no designated site for the disposal of FS. Therefore in the absence of such provision the government and private emptiers discharge the faecal sludge in nearby agricultural fields. Usually local farmers allow them to discharge the FS on their farm lands, which is later used by farmers as a soil fertiliser.

The faecal sludge treatment plant of 25 KLD capacity is under construction. There is no treatment of the supernatant and the grey water is flowing in the open drains. Depending upon the irrigation requirement of the crops, farmers often draw this mixture of supernatant and grey water from the big and small ponds in city to their agriculture fields. Of the 52 major ponds, most of them eventually outflows to the agriculture fields.

5 Data and assumptions

Census 2011 was considered as the baseline and the data for all the stages of sanitation chain were updated based on the data collected from field through KII, FGDs, observations, secondary data collected from relevant stakeholders. Following assumptions were made for developing the SFD for Bakshi Ka Talab.

- 50% of the contents of tanks and pits is Faecal sludge

6 Context adapted SFD Graphic

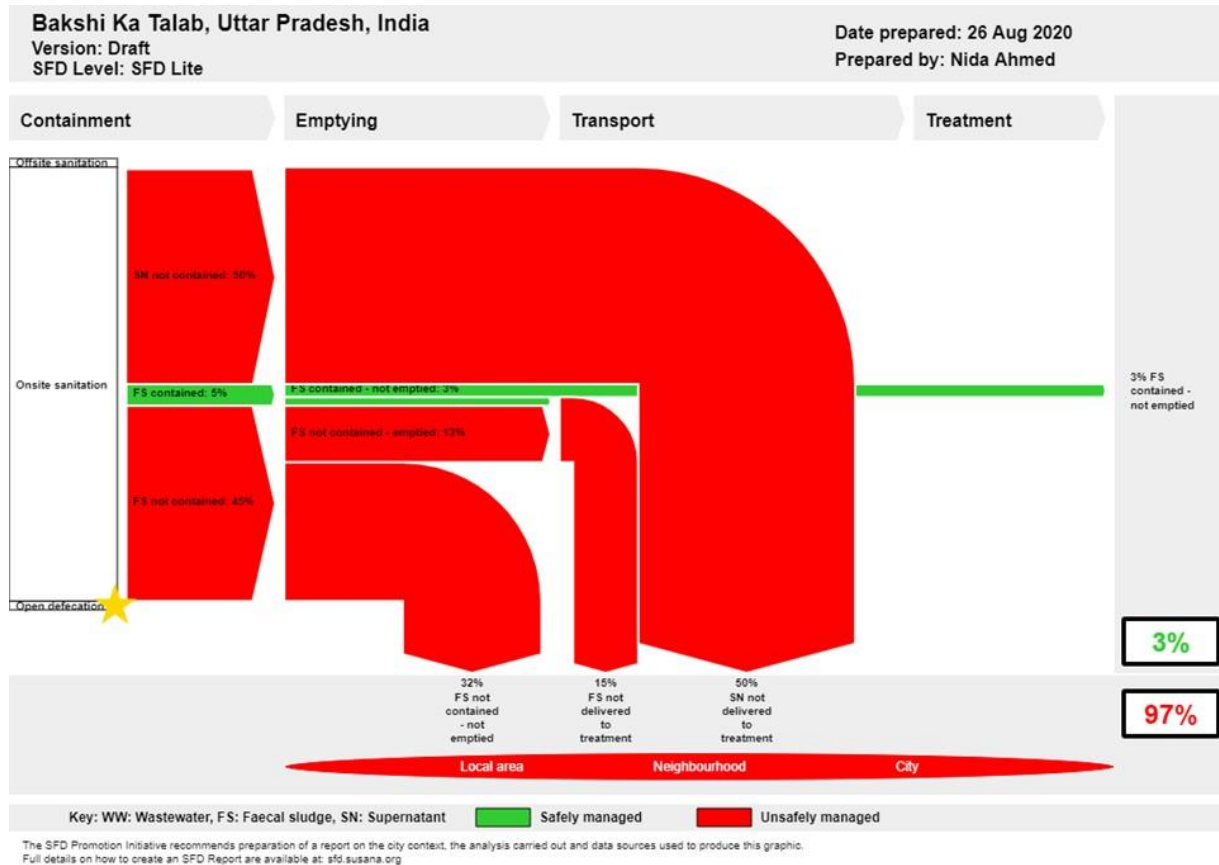


Figure 8: Context adapted SFD for Bakshi Ka Talab

The only difference suggested in the context adapted SFD Graphic is at containment stage for correctly designed septic tanks, though connected to open drains. With an earlier assumption of 50% of the proportion of the content of the septic tank which is solid FS, generated and collected inside the septic tanks. 50% of the content is supernatant which attributes to be 50% of the population flows through open drains hence, not contained. The solid FS collected in the septic tank is considered to be contained and hence 5% of FS is contained (represented green in colour at containment stage). Followed by this, 2% FS contained is emptied, remaining 3% is FS remains in the tank which is contained and never emptied. The supernatant generated from the septic tank connected to open drain is not contained and hence considered to be unsafely managed (represented red in colour). Overall, excreta of 97% population is not managed according to the context adapted SFD.

7 List of data sources

Reports and literature

- District Census Handbook 2011 for Bakshi Ka Talab (Houses and household amenities and assets table HH-08: percentage of households by availability of the type of Latrine Facility <http://censusindia.gov.in/DigitalLibrary/MFTableSeries.aspx>)
- District Census Handbook 2011 (Population Census Abstract Data Table (India & State/UTs-Town/Village/WardLevel) http://censusindia.gov.in/2011census/population_enumeration.html)
- Detailed Project Report of Faecal Sludge Treatment Plant in Bakshi Ka Talab, 2020
- IHHL, SBM data, Bakshi Ka Talab, U.P (2018-2019).
- MoSJE. 2014. The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 [18th September, 2013]. Ministry of Social Justice and Empowerment.
- MoUD. 2017. National Policy on Faecal Sludge and Septage Management. Ministry of Urban Development

- MoUD. 2014. Guidelines for Swachh Bharat Mission.: Ministry of Urban Development. Government of India.
- MoUD. 2013. Septage Management in Urban India. Ministry of Urban Development, Government of India.

Key Informant Interviews (KII)

- KII-1: Executive Officer, BKTNP
- KII-2: Computer Operator, BKTNP
- KII-3: Vacuum Tanker Operator
- KII-4: Public Toilet Operator

Focus Group Discussions (FGD)

- FGD-1: Masons
- FGD-2: Ward members
- FGD-3: Sanitation Workers

Field Visits

- Public and Community toilets
- Open Drains
- Random household survey

Bakshi Ka Talab, India, 2020

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