SFD Lite Report

Bakshi Ka Talab
India

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1 The SFD Graphic

Bakshi Ka Talab, Uttar Pradesh, India
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Collaborating partners:
- Nagar Panchayat, Bakshi Ka Talab, Uttar Pradesh

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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.

<table>
<thead>
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<th>Census Year</th>
<th>Population</th>
<th>Growth Rate (%)</th>
<th>Source</th>
</tr>
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<tbody>
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<td>2011</td>
<td>49,166</td>
<td>-</td>
<td>Census 2011</td>
</tr>
<tr>
<td>2019</td>
<td>54,082</td>
<td>5</td>
<td>BKTNP</td>
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</tbody>
</table>

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

4 Service outcomes

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.

**Containment:** Based on sample household survey, KILs 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 1: Overflowing containment system (Nida, CSE, 2020)

Figure 2: 2 chambered septic tank

Figure 3: Septic Tank constructed under PMAY

According to the KII with ULB officials (KII-1,2), 4978 Individual Household Latrines (IHH) 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 which have Septic Tanks connected to Open Drain as their containment system. The average size of septic tanks in public toilets/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.

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%.

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
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

- Detailed Project Report of Faecal Sludge Treatment Plant in Bakshi Ka Talab, 2020

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