



SFD Description

A Sanitation (or Shit) Flow Diagram presents a clear picture of how excreta flows are managed within the city. The diagram clearly depicts how excreta flows from user interface to the final disposal. It has the following stages:

1. Containment

- Three main types of containment systems found in Bodhgaya are:
 1. Lined pit with semi-permeable walls and an open bottom (honeycomb structure) - 12% of the population is attributed to be dependent on such a system.
 2. Fully lined tank connected to an open drain is attributed to 25% population.
 3. Septic tank connected to an open drain or storm sewer is attributed to 25% population.
 4. 38% population is still practicing open defecation.
- The pit latrine with honeycomb structure is mainly observed in the slums. This is open at the base and does not have an outlet

- The structure of fully lined tanks observed during the field survey is cylindrical in shape (refer fig: 1). It is sold in the sets of three. It is locally considered and known as septic tank
- Three fully lined tanks are connected to each other through PVC pipes. The average height of the tank is about 5-6 ft and diameter is around 3 ft. A vent pipe of 10 ft height is attached to the first tank and an outlet pipe is attached to the 3rd tank. The outlet pipe is connected to an open drain which further flows into a bigger drain or open field
- The total cost for installation of the 3 fully lined tanks with the pipes is around Rs 16,000
- The well-constructed septic tanks are generally found in city's public toilets which are also connected to open drain
- Bodhgaya is a religious site and place of pilgrimage for Buddhists. The floating population is around 10,000 per day which is considered to be dependent on public toilets and hotels. The



Figure 1: Fully lined tank



Figure 2: Septic tank in public toilet

containment of such establishments is considered as septic tanks connected to open drains.

- Under SBM, 349 toilets have been constructed. The containment system of the toilets provided under this scheme has lined pit with semi-permeable walls and an open bottom (honeycomb structure). During the field research, it was found that the toilets provided under this scheme to urban poor are misused as cattle's food store room
- There are 23 community toilets built in Bodhgaya and have the containment system of a septic tank connected to an open drain

2. Emptying:

- Impying service of OSS provided by municipality
- There are two vacuum tankers run by ULB each having a capacity of 4000 liters, out of which only one tanker is frequently used. The other tank is used only occasionally due to low demand of emptying service
- The total no. of people involved during the emptying operation is 2 laborers, 1 driver, and 1 supervisor
- The emptying charge for making one trip to empty containment is Rs. 4000. In case the emptying of a septic tank requires another trip, then it would



Figure 3: Emptying operation carried out from a septic tank in a public toilet



Figure 4: Truck mounted tanker used for the emptying operation.

- cost an additional Rs. 4000 for per trip
- In total, around 3-4 trips are generally made in a month by the emptying vehicle
- Sometimes, if the sludge in the containments becomes hard to pump out, acid and water are added to dilute the sludge in order to make the emptying process easy
- FS not contained is attributed to be from 37% population out of which 28% FS is emptied and 9% FS is not emptied. 25% SN is attributed to be from septic tanks and fully lined tanks with an outlet connected to open drains



Figure 5: Septage getting discharged from tanker.

- Major issue encountered during the process of emptying is the air leakage during suction from the hose pipe due to lack of proper maintenance and non availability of spare parts of suction machine

3. Transportation

- A truck (Tata 407) mounted suction machine is used for emptying and transportation of FS
- Collected FS from containment systems are transported 3-4 kms away from the city and disposed at the outskirts of the city

4. Treatment and Disposal

- No treatment facility for faecal sludge and wastewater is present in Bodhgaya
- Collected faecal sludge from the containment systems is disposed into open fields in Katorba. The sludge mostly flows through the fields and is used for irrigation
- During the field survey, it was observed that many young children work and play in the fields at a small distance from the site of disposal



Figure 6: Sewage getting discharged into open field.d.

SFD Promotion Initiative

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für Internationale
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