



SMALL remains BEAUTIFUL

PRIVATE SECTOR PARTICIPATION
IN FAECAL SLUDGE & SEPTAGE
MANAGEMENT

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SMALL remains BEAUTIFUL



ABOUT THE POLICY BRIEFS

During the first phase of the Swachh Bharat Mission—Urban (SBM-U) in 2014-2019, toilet construction increased manifold. Resultantly, almost all households in India now have access to a toilet. However, the large-scale toilet construction under the SBM-U has not been matched with a concomitant expansion of the sewerage network, that currently caters to about merely one-third of the Indian households. The remaining households are dependent on On-Site Sanitation (OSS) systems such as septic tanks and pits, that are prone to overflow and require timely desludging. Further, instances of direct disposal of faecal sludge into open drains, either directly from toilets lacking an OSS system, or from malfunctioning OSS systems, manifest adverse environmental and public health impacts. Against this background, Faecal Sludge and Septage Management (FSSM) emerges as a fundamental need to manage the problems associated with collection, treatment and disposal of faecal waste.

Over the past few years, under AMRUT and SBM, the state governments have set up a number of treatment facilities or FSTPs (Faecal Sludge Treatment Plants) to address the issues related to treatment of faecal sludge. However, much less attention has been attributed to the collection and conveyance part of the FSSM value chain, creating a significant service gap, that is unviable to be solely addressed by the public sector. To address the service disparities, a host of private enterprises providing FSSM services has emerged in India, predominantly through an informal, small-scale operation. With an increasing recognition of the fundamental role of the private sector in bridging the gap between the availability and requirement of FSSM services, the launch of the National Faecal Sludge and Septage Management (NFSSM) Policy in 2017 further emphasised the need to redress the informality associated with the sector.

As a part of its research programme on urban sanitation, SCI-FI has been researching the nature and scope of private sector participation in urban sanitation services. Based on SCI-FI's interventions and research, a series of five Policy Briefs has been prepared in an effort to summarise the sector characteristics and the gamut of private participation in the collection, conveyance and treatment part of the FSSM sector. The five policy briefs in the series are titled as follows:



1. **PPP experiences of Key Infrastructure Sectors: Learnings for FSSM**
2. **Designing a Framework to Facilitate Private Investments in FSSM**
3. **Characteristics of the FSSM Sector**
4. **Business Needs and Good Practices in the FSSM Sector**
5. **Framework for Finance Flows in the FSSM Value Chain**



DESIGNING A FRAMEWORK TO FACILITATE PRIVATE INVESTMENTS IN FSSM



1 BACKGROUND



National policies thus far have attempted to mobilise private capital on a large scale, aiming to build formal PPPs in Faecal Sludge and Septage Management (FSSM), similar to those in large infrastructure projects like airports, roads or transportation. However, as elucidated in the first policy brief of this series, owing to the small-scale of the sector, mobilising resources at a scale similar to larger infrastructure projects may be unfeasible.

FSSM as a process comprise of three stages: (i) On-site containment in septic tanks or other containment structures e.g. leaching pits, (ii) Collection and conveyance of faecal sludge, and (iii) off-site treatment and disposal of the collected sludge. Among these, the responsibility for on-site containment is primarily with the household or owner of the premises, whereas there

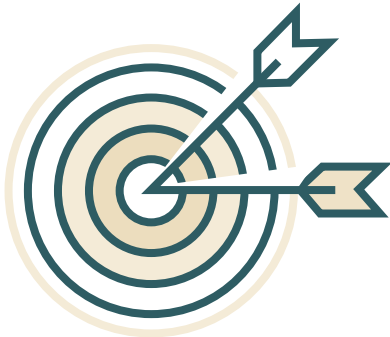
is a relatively greater role for local governments in collection, conveyance and treatment of faecal sludge. In practice, however, the need for de-sludging is driven by the households' need to clean these underground on-site containments and are often served by informal private service providers without any linkages to formal treatment facilities. These informal service providers either sell the collected faecal informally for agricultural use, or dump on open lands and in water bodies, creating huge environmental hazards that result in negative health impacts.

Limited research thus far and the dearth of an adequate and updated database has resulted in a knowledge gap in the sector, which has also been highlighted in the National Faecal Sludge and Septage Management (NFSSM) Policy, 2017. With an increasing

recognition of the fundamental role of the private service providers in addressing the disparities between the availability and requirement of FSM service provision, the launch of the NFSSM Policy in 2017 further emphasised the need to address the dereliction associated with the sector, like disuse of PPE and neglect of standard practices while undertaking business activities.

As FSSM often fails to acquire prioritisation from the ULBs, it is consequently ascribed a smaller share of the municipal budgets, creating little to no incentive for the private players to provide high standard of service in this sector. Towards fostering private sector participation in FSSM, this policy brief outlines a framework to map the various aspects of FSSM service delivery, and the characterises involved for businesses providing the same.

2 OBJECTIVE



The objective of this policy brief is to draw up a Standardised framework for Private Sector Participation at the various stages of FSSM value chain. This framework outlines the needs and characteristics of the business, to arrive at the key points that constitute an enabling environment for the FSSM businesses. It further

aims to segment the FSSM activities on the basis of the ULB attention attributed to them, to emphasise the touchpoints across the value chain of the FSSM sector that require more attention.

This policy brief elucidates the first part of the FSSM framework – “Sector Needs”.

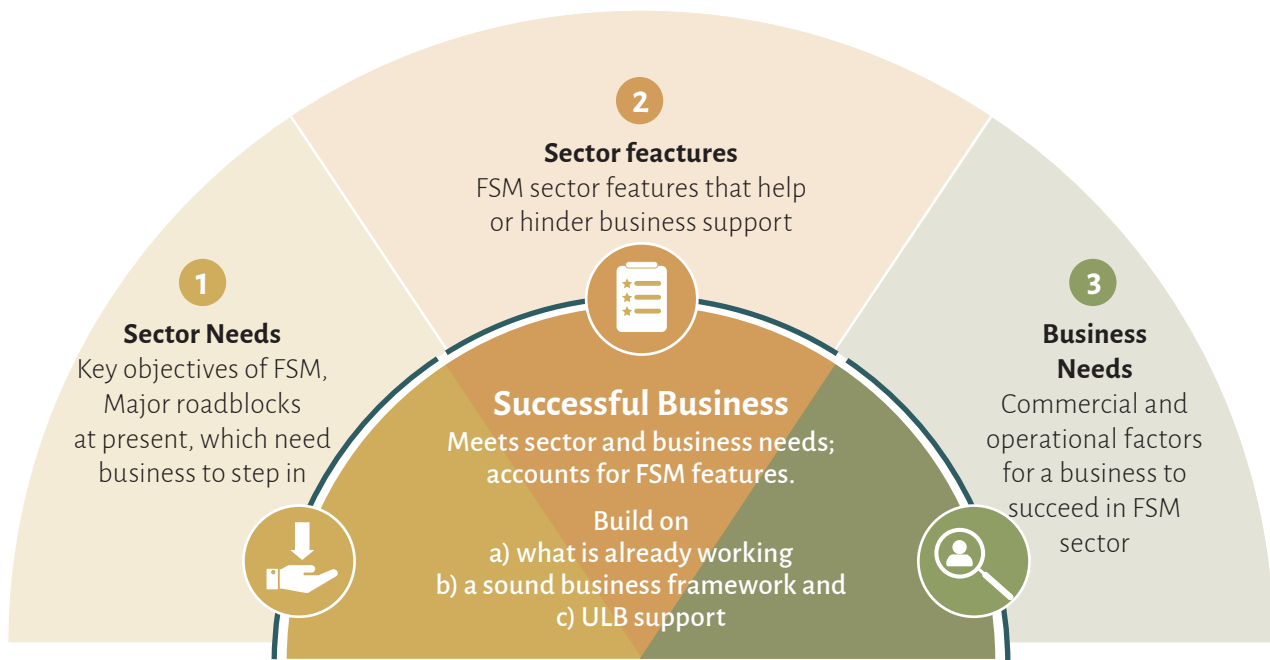
3 FRAMEWORK FOR ASSESSING SCOPE OF PRIVATE INVESTMENT IN THE FSSM SECTOR



Based on learnings from other sectors, the following framework has been used in this assessment (See Figure 1 – Framework for assessment). The framework for assessment is premised on the

identification of the needs of the FSSM sector, the needs of the businesses involvement in FSSM, and the features of the FSSM sector to determine the types of investments needed.

FIGURE 1 - Framework for assessing private sector participation in FSSM



Source: Authors



3.1 Sector Needs

Refers to key requirements of the sector. Private sector involvement in any form should be focused on delivering these requirements. Some of these requirements may be unmet because of inability of public sector (lack of technology) or poor efficiency (service delivery). A business model that promotes private sector involvement in the unmet areas that are critical for the sector has a higher chance of acceptance and success.

The study identified the critical needs of the FSSM sector based on secondary research and consultation with experts.



3.2 Sector Features

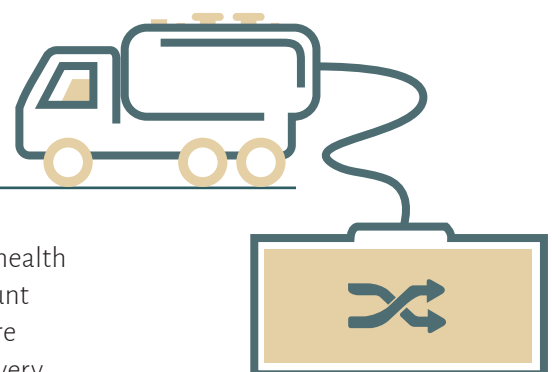
Some sector characteristics are peculiar and they define the extent to which private sector can be involved. These can be related to customer profile (e.g. a single buyer or heavy contribution of business customers. This influences which private sector models can succeed), size of investments or revenues (complex models need bigger project size or revenue to attract capable bidders). The study reviewed several technical and market assessments to understand sector characteristics.



3.3 Business Needs

Business needs certain generic features to succeed – such as access to customers, pricing freedom, ease of clearances, access to finance, etc. The more favorable these factors are, the easier it is for the business to succeed. Some of these needs are independent of the sector (e.g. ease of setting up a unit) and some of them would be sector dependent (e.g. access to customers or pricing freedom). The study developed a framework that took both sector neutral and sector dependent factors into consideration to arrive at key business needs in the FSSM sector.

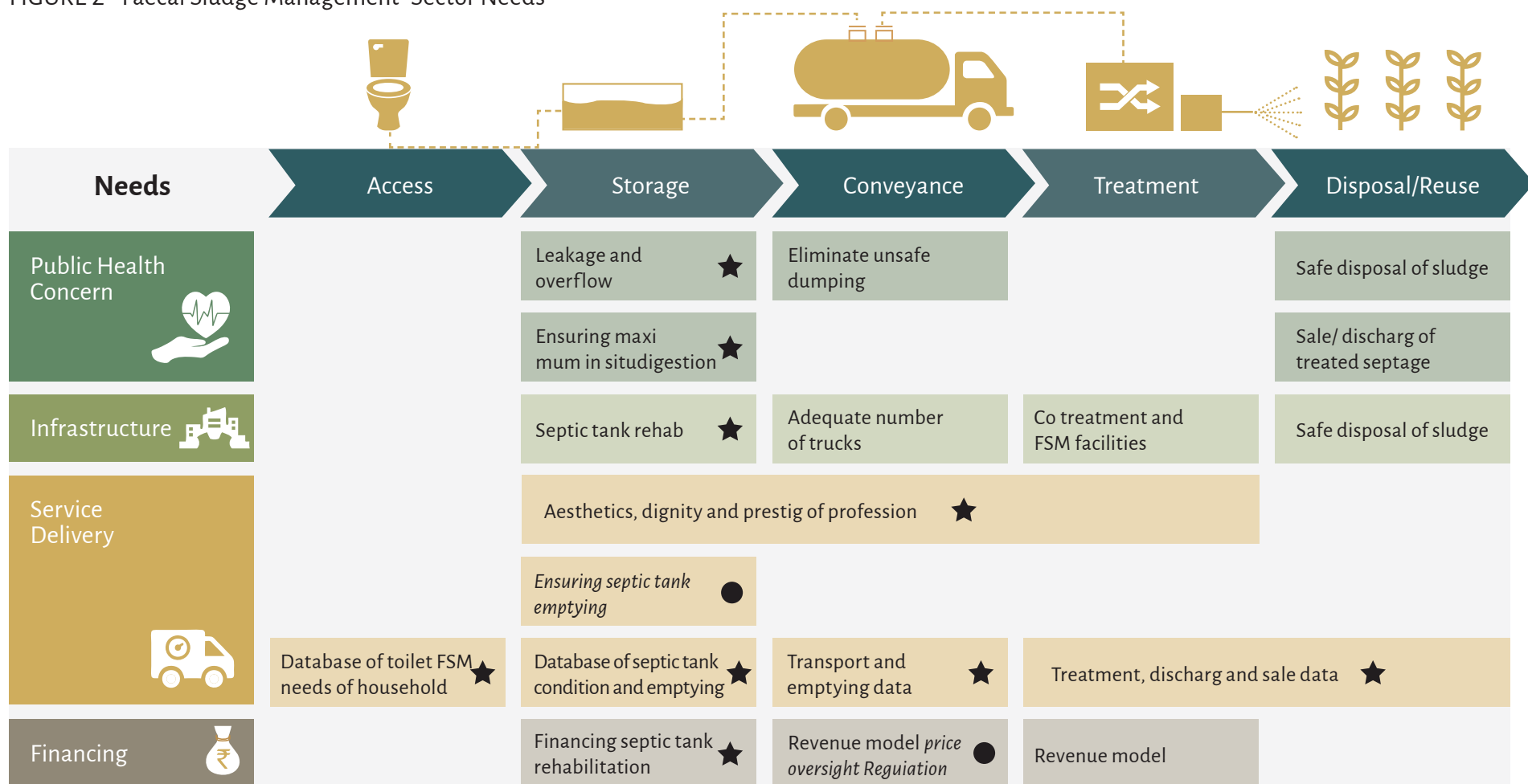
4 NEEDS OF THE FSSM SECTOR



The needs of the FSSM sector are summarized in Figure 1. The horizontal arrows capture the value chain – starting from access to toilets at the household level till disposal or reuse of sludge and septage. The vertical axis captures

the various needs, a) public health concerns which are paramount in the sector, b) infrastructure requirements, c) service delivery requirements and d) financing requirements.

FIGURE 2 - Faecal Sludge Management- Sector Needs



Note: Starred activities do not receive adequate attention. Circled activities receive more attention than necessary

Source: Authors

Public health concern:

The most significant need in FSSM is the public health concern. Any FSSM operation should check leakage and overflow of solids from the septic tank; and ensure maximum in situ digestion. The operation should eliminate unsafe dumping of collected septage; and ensure safe disposal of treated septage and sludge; alternatively safe and productive reuse.

It should be noted that even a well-functioning Septic Tank would have overflow of water. This water can contain pathogens if the users are suffering from any diseases caused by the pathogens. The overflow (and the disease-causing pathogens)

- ▶ Can enter groundwater in case the drainage system is faulty or in case of use of Soak Pits in geographies where they shouldn't be used. This problem

is more significant in areas with high water table.

- ▶ May flow to lakes, rivers or other water bodies if the drain water is connected to them and is not treated
- ▶ May collect in low lying areas in the locality if drainage is not well designed.

Safe treatment, transport and disposal of Faecal Sludge does not take away this risk.

Infrastructure needs:

The sector has some infrastructure requirements that are well recognized - Vehicles and equipment for septic tank emptying; and adequate treatment facilities. Equally important is good quality septic tanks. Studies have revealed that septic tanks are poorly constructed and leak; and some even do not have bottom lining; do not follow baffle design; or are located such that they are impossible to empty safely. Therefore rehabilitation of septic tanks is a critical requirement in the sector.

Service Delivery:

Infrastructure does not ensure service delivery. Ensuring safety, aesthetics and dignity of profession is a critical service delivery requirement. The visual promotions of FSSM plant in Leh demonstrate the importance of this. Staff are well groomed and trained; and exude professionalism. Any FSSM practice should focus on ensuring safety and dignity of profession.

Ensuring regularity of septic tank emptying is also critical. A Septic Tank that has not been emptied for a long time could see caking of the sludge. This makes the vacuum emptying very difficult and can compromise the safety and dignity of the professionals engaged in emptying. Regularity does not mean a standard interval for all customers. The emptying requirement depends on several factors and timely emptying is important.

In addition to service delivery that is visible to customers, there are underlying process requirements that are important. These include maintaining a database of toilet conditions and FSSM needs of each customer, record of emptying, transport; treatment and discharge data.

Financing:

Financing needs are at each stage of the FSSM value chain – for building or rehabilitating septic tanks; fee model for emptying, transportation and treatment. Related issues are also the question of who pays, the

customer or the local body; and whether there should be regulation of price charged by market players.

At present, there are several activities that do not receive required attention; and some that are excessively focused on.

4.1 Activities that require redressal

1. As discussed, the overflow from Septic Tank can contain disease causing pathogens. How can this water be safely transported away from habitations and does not contaminate water supply is a critical public health issue.
2. Infrequent emptying has two effects – improper digestion and caking of sludge at the bottom. One of the key functions of a septic tank is ensuring maximum in situ digestion. Improperly designed tanks impede this. A less than optimal in situ digestion would mean more frequent overflow of solids. This would also lead to caking of sludge at the bottom of the septic tank. Decaking will require manual scavenging in turn affecting safety and dignity of profession.
3. Aesthetics and dignity of the profession is a critical need. While the focus has been on occupational safety and health, it is equally important to raise the profession to a level that carries high dignity and pride.

4. Systems, procedures and database of FSSM activities are important to institutionalize the activity.

4.2 Activities that receive disproportionate attention

1. Ensuring septic tank emptying –

There is an excessive attention to ensuring emptying of septic tank. The benefits of emptying a septic tank are clear, they do clog if not emptied; and delays can cause caking of sludge making emptying difficult later on. However, the emptying cycle is specific to each tank and there is no single interval that is correct. There has been an excessive focus on scheduled de-sludging, to the extent of city Government undertaking to subsidise this activity. As we will discuss this in a different policy note, this approach has more defects than benefits. There is no need for excessive focus, beyond increasing awareness and maintaining data on emptying intervals.

2. Regulation or price control of emptying and transportation

- This is one of the few activities amendable for near free market operation. However, there is a tendency to regulate this activity commercially – fixing of prices or regulating the number of vehicles/operators etc. While there is a need to ensure operational quality and compliance that may require a simple form of licensing and oversight, it does not automatically extend to commercial regulation of prices or market entry.

5 CONCLUSION



To foster optimal PPP models in FSSM, an analysis of the 'sector needs', 'business needs' and 'sector features' is the first step to achieve a thorough understanding of the sector and subsequently build sustainable models.

This policy brief analysed the 'sector needs' segment of the FSSM framework and concludes that, by definition, it is unfeasible for a business to address all sector needs, while those needs that can be technically addressed may not be financially viable for the business. This underscores that private business is not a

panacea for the FSSM sector; it can deliver some results, but the public sector must be prepared to shoulder the responsibilities for the rest. Therefore, the scope for sustainable businesses will always remain a subset of the needs and possibilities.

The third policy brief in the series discusses the next section of the framework i.e. 'characteristics of the FSSM sector' to further attain a deeper understanding of the features of the FSSM sector as a precursor to exploring business models in FSSM.



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