

Building awareness on appropriate containment systems-There is a continuing need for a large-scale sensitisation campaign for households, masons and local government officers on containment technologies, their characteristics, benefits and operation mechanisms. This could be led by the government, building on existing structures, processes and funds of the Swachh Bharat Mission-Gramin (SBM-G). Ideally, these sensitization efforts should be planned based on an in-depth study to understand the drivers of current technology choices. Possible questions for this could be: What drives the preference for septic tanks? Who is shaping that decision? Why are well-constructed twin leach pits not the default designs of choice? What leads to the faulty construction of pit latrines and septic tanks?

Upgrading containment systems A nation-wide containment technology upgradation drive is needed for:

- i. Converting single pit latrines to twin pit, by adding an additional pit
- ii. Correcting defective septic tanks (e.g. adding soak pit for discharge, adding the chamber separation wall, sealing the bottom, etc.)
- Improving twin pits (e.g. ensuring functional junction chamber, honeycombing or perforations in pit wall, adequate distance between pits, safe distance from water sources, etc.)
- iv. Installation/retrofitting of alternative twin pit diversion mechanisms which are easy and safe to install and use, for example SATO V-trap connection system which makes switching between the twin pits easy and safe (as it does not require any physical contact with the outlet pipe for diverting flow into the other pit, and is thus aseptically operated)
- v. Improving technologies and replacing leachpit latrines with appropriate technologies in challenging geographies such as high water table, rocky areas, etc. (example bio toilets, composting toilets, raised toilets, etc.)

Some possible strategies for implementing a drive led by the government for improving containment systems could include:

- i. Providing incentives for Gram Panchayat functionaries' involvement and leadership, as part of open defecation free - sustainability efforts
- ii. Enabling access to funds, with special provisions for the needy and vulnerable households (banks/self-help groups providing micro loans, self-help groups)
- iii. Ensuring availability of service providers and service delivery mechanisms, such as specialised masons, entrepreneurs, efficient supply chains

It is also advisable to include some kind of certification/standards for masons to ensure that they have adequate knowledge/information to construct adequate sub-structures.

Regulation and monitoring There is a further need for creating and enforcing regulations for faecal containment structures, including aspects such as technical standards- especially ensuring they do not discharge sludge in drains or in open environment, and periodic desludging. There is also a need to initiate and institutionalise monitoring and verification systems linked to Swachh Bharat Mission for

- Including sub-structure details and picture for any toilets under construction
- Including data on sub-structure technology and emptying practices as part of the ODF verification and ODF-sustainability surveys
- Explore monitoring indicators for groundwater contamination, especially in high risk areas, such as high water table and/ or flood prone areas, where groundwater is used for drinking purposes

The other priority will be to devote necessary human resources and invest in their capacity building. Responsibilities would need to be defined at every level of institutional mechanisms, with skilled human resources for collection, transport and treatment of faecal sludge.

Private operators involved in emptying/desludging septic tanks and transportation: In both rural areas, the local authorities can outsource such activities to the private sector. Private players can be involved in emptying of FS from households and transporting it to the FSTPs.

- Public-private partnership model can be one option where costs of construction, operation and maintenance of the plant is shared with the government authorities. One such example is in the state of Andhra Pradesh for FSTP construction and operations is the Hybrid Annuity Model (HAM) on a Design, Build, Operate and Transfer (DBOT) basis. Even as 50% of the capital investment comes from the private player, the remaining 50% is paid by the government to the player in form of annuity payments along with fixed O&M costs.