

# Training OF Trainers ON

## Faecal Sludge and Septage Management



## Workshop Report

August 2017

CEPT  
UNIVERSITY

p a s performance  
assessment  
system

C-WAS  
Center for Water  
and Sanitation

niu  
National Institute of Urban Affairs



**Training of Trainers**  
**On**  
**Faecal Sludge and Septage Management**

**17-18<sup>th</sup> August 2017**

**Ahmedabad**

**Workshop Report**

## **Introduction**

Sanitation is an important national priority. The Government of India has launched Swachh Bharat Mission and AMRUT where the emphasis is on eradicating open defecation and also on providing proper infrastructure in cities. The National Policy on Faecal Sludge and Septage Management (FSSM), 2017 focuses on the nationwide implementation of FSSM across urban India.

It was in this background that Center for Water and Sanitation (CWAS) at CEPT University under NIUA Sanitation Capacity Building Platform (SCBP) organized two days training of trainers on FSSM in Ahmedabad on 17-18<sup>th</sup> August 2017. The training faculties from AMRUT nodal training agencies were trained an important aspect of Faecal Sludge and Septage Management for cities to become ODF+. The key objective of this workshop was to increase the capacity of trainers in FSSM planning and implementation, who will further disseminate this knowledge to the wider audience in different states and cities under their ongoing AMRUT/ State/SBM training.

### **Highlights:**

- The training examined the need of FSSM in the present context of sanitation situation in the country and state; bring forth the factors that enable implementation of citywide FSSM services and overall understanding of components of FSSM service chain.
- The participants were engaged in the discussion on challenges and opportunities related to faecal sludge and septage management in their related states.
- The training proved to be catalyst for the participants, enabling comprehensive understanding of FSSM and its need in improving current sanitation situations.

## Day-1 Session details

The Training of trainers (TOT) began with quick round of introduction of all participants and understanding their expectations from the two-day training program. The brief introduction about Centre for Water and Sanitation(C-WAS) under CEPT University and NIUA Sanitation Capacity Building Platform (SCBP) under which this TOT was organized was shared with participants.

### Session-1: FSSM- Need of the hour

This session focused on setting the context of training program and gave overview of FSSM situation in India. It highlighted the emerging recognition of FSSM in National FSSM policy and national Programs of SBM and AMRUT. Sanitation service chain for FSSM was explained in detailed Access> Collection> conveyance>treatment >reuse.

### Group Discussion: Challenges and Opportunities of FSSM

The session emphasized the present practices that are being followed for each part of sanitation service chain and highlighted various challenges that are encountered for proper implementation of FSSM services. The presentation was followed by group discussion, where participants were asked to reflect on following questions:

- What are current practices and challenges from your state perspective?
- What are institutional and monitoring challenges in FSSM?
- Divergent Challenges faced by different stakeholders
  - Households,
  - Private emptier,
  - City government
  - End Users
- Any specific issues related to sanitation that you want to highlight. Links with SBM / AMRUT
- Are there any opportunities in FSSM?

### Key points from Discussion:

- Discussion on Pros and cons of onsite sanitation system versus sewerage system.
- Challenges in emptying of onsite sanitation system and prevalence of manual scavenging.
- Issues related to land and finance availability for construction of onsite sanitation system and construction of treatment plant.
- Discussion on roles and responsibility of different stakeholders for better implementation on FSSM in cities.

- State specific issues were also discussed. For eg: in Rajasthan the soil strata make it difficult for septic tank construction, which resulted in high prevalence of single pit toilets.

### **Session-2: Introduction to the FSSM process**

Main objective this session on Citywide FSSM process is to help users identify key areas of assessment and points that need to be kept in mind while planning for FSSM activities. The Participants were introduced to FSSM toolkit developed by CEPT University. The five stages of service performance, institution-regulation-policy, technology options, private sector providers and financial assessment and the various available tools in the FSSM toolkit to facilitate the FSSM planning process was explained in detailed.

### **Session-3: Assessing Service Performance across the service chain**

The session gave the brief overview on how and what information needs to be collected to assess existing FSSM services in the city. It emphasized that assessment is an important exercise, which provides an initial sense of the state of FSSM in the city, help in understanding the context and identifying key stakeholders before developing proposals. The session also provided guidance on SaniTab tool, that aid in data collection for FSSM assessment. Later the participants were asked to install the SaniTab app from play store and browse through it. The session ended with the discussion on different methods through which data can be collected like the inclusion of onsite sanitation related questions in property tax survey, involving solid waste sweepers in data collection and full city scale survey using SaniTab.

### **Session-4: Introduction to SAN Benchmark and online platform**

The session aimed to introduce the San Benchmark framework of revised service level benchmarks for sanitation that assess the performance of citywide sanitation, capturing on-site sanitation systems and sewage management. San Benchmark is adopted in National Policy on FSSM for monitoring and Evaluation of Cities' performance. The participants were also introduced to PAS-SLB online platform in which San Benchmark is included. The PAS-SLB online framework is already adopted by six state governments to track and report SLB and monitor the performance of various cities.

### **Session-5: Planning and Technology selection for FSSM**

In designing a citywide FSSM services, it is important to plan and assess technology options for each link in the service chain. This ranges from appropriate toilets and onsite systems such as septic tanks to conveyance as well as treatment and reuse. The session gave a brief overview on how to plan FSSM services in the city. Demand versus scheduled desludging was explained in detailed. The

session also provided guidance on various parameters that need to be considered to select appropriate technology across sanitation service chain based on local conditions.

The session ended with participants discussing the issues related to demand based desludging of onsite sanitation system. They also discussed the possibility of co-composting of FSM with solid waste, cluster-based fecal sludge treatment plant and reuse market of treated septage and wastewater.

### **Group Exercise: Planning for septic tank emptying services**

A small group exercise was conducted, wherein participants were given basic information of sample city and were asked to calculate a number of septic tanks to be emptied daily, number of suction emptying trucks required and volume of septage to be treated daily.

The day-1 concluded with each training organization presenting their next year training calendar to NIUA.





Photo Plate Day 1

## Day-2 Session details

### Session-6: Financing FSSM

To ensure financial sustainability of FSM services, it is important to assess capacity for financing of both capital and O&M expenditure over the plan period. The session gave a brief overview on how to do an assessment of financial requirements for both capital and O&M expenditures for implementation of FSSM in the city. It provided guidance on potential sources of finance for meeting these expenditures through external grants, private sector investments, user contributions, external debt or through local government internal resources. The case study of the successful implementation of Sanitation tax in Wai and Sinnar cities of Maharashtra was discussed with participants.

### Group Exercise: Estimating O&M requirements and tariff requirements for FSSM services

A group exercise was conducted, wherein participants were asked to calculate operational and maintenance (O&M) cost for schedule septic tank emptying service and septage treatment facility and based on this calculate tariff requirement for septage management. At the end of the exercise, participants realized that tariff requirement per property is coming to be minimum (around INR 500-600). They were convinced that the implementation of septage management is not as expensive as the conventional system and in this case, they will be able to convince end-users to pay for it.

### Session-7: SaniPlan

In this session, participants were introduced to the SaniPlan model. SANIPLAN is a decision support tool that provides a structured approach to planning for urban sanitation. SANIPLAN was developed at the CEPT University under the Performance Assessment System (PAS) Project. It was used for the preparation of several City Sanitation Plans in Maharashtra by the CEPT team. It has also been used by other agencies working in India. The aim was to orient participants towards having an integrated approach of looking at service performance with a detailed assessment of finances while planning FSSM.

### Session-8: Private sector Participation in FSSM services

Traditionally, the responsibility to provide IFSM services in towns and cities rests with the local ULBs. In addition to the financing constraints that ULBs face, providing the recommended sanitation service levels also requires technical skills/ expertise and institutional capacity, providing which may be challenging for the ULB on a standalone basis. In this context, a session on private sector participation (PSP) was presented as a potential solution for the ULBs to ensure quality sanitation provision in the city.

The session aims to understand ULB needs, interest and concerns for PSP. Learning was presented about key challenges encountered before, during and after awarding the contract. Key highlights from the model contract document prepared for scheduled emptying service and DBOT tender of septage treatment plant prepared for Sinnar city of Maharashtra was presented to the participants.

### **Group Discussion: Design of Training Module**

At the end of Workshop, trainers from different training institute were asked to prepare an FSSM training module based on their understanding from two-day TOT workshop. The aim of this exercise was to urge participants to start thinking about the inclusion of FSSM module in their ongoing training agenda. Participants presented training agenda for different target groups of elected representatives for 1-day training program and ULB officials for 3-day training program.

The workshop concluded with feedback from participants and certificate distribution.

### **Site Visit**

The participants visited RTI toilet at CEPT University. This innovative on-site waste treatment and toilet prototype processes, disinfects, and recycles human waste. The RTI toilet does not require sewer, water, or electricity infrastructure. The waste treatment system is designed to disinfect human liquid waste, dry and burn human solid waste and convert the resulting combustion energy into stored electricity. CEPT University and RTI International (USA) have developed the WiC Sanitation Lab site on the CEPT campus as a site for prototype testing and related user studies. They were amazed to see the technology used in this toilet.





**Photo Plate Day 2**

## Annexure

### Annexure 1: Workshop Agenda

CEPT University  
Center for Water and Sanitation

#### Training of Trainers for Faecal Sludge and Septage Management

Venue: Hotel Starottel, Ahmedabad  
17-18<sup>th</sup> August, 2017

Time	Session
9:30 – 10:00	Registration
<b>Day 1</b>	
10:00-10:30	<b>Welcome and Introduction</b> <ul style="list-style-type: none"> <li>• Overview of training objectives</li> <li>• Introduction of participants</li> <li>• Expectation from the training</li> </ul>
10:30-11:00	<b>FSSM: Need of the hour</b> <ul style="list-style-type: none"> <li>• Brief overview of sanitation situation at National level</li> <li>• Overview of Sanitation situation in few states (Maharashtra, Gujarat)</li> <li>• National level policies (FSSM, NUSP) and Programmes (SBM, AMRUT) that emphasis FSM</li> <li>• Divergent challenges and opportunities across states and cities</li> </ul>
11:00-11:45	<b>Discussion: Challenges and Opportunities of FSSM</b> <ul style="list-style-type: none"> <li>• What are current practices and challenges in different states?</li> <li>• What are institutional challenges in FSSM?</li> <li>• Divergent Challenges faced by different stakeholders (Households, Private emptier, City government)</li> <li>• What are monitoring Challenges in FSSM?</li> </ul>
11:45-12:30	<b>Introduction to the FSSM process</b> <ul style="list-style-type: none"> <li>• Introduction to stages of FSSM process</li> <li>• Brief overview of different stages of FSSM</li> <li>• Walk-through the FSM toolkit: look through various tools and resource materials present in the toolkit</li> </ul>
12:30-13:15	<b>Assessing service performance across the service chain</b> <ul style="list-style-type: none"> <li>• Assessment across the sanitation service chain</li> <li>• Introduction to SaniTab</li> <li>• Q&amp;A</li> </ul>
13:15-14:00	<b>Lunch</b>
14:00-14:45	<b>Introduction to San Benchmark and online platform</b>
14:45-15:30	<b>Planning and Technology selection for FSSM</b> <ul style="list-style-type: none"> <li>• Access and collection system</li> <li>• Conveyance system (Demand versus Schedule emptying)</li> <li>• Treatment technologies</li> <li>• Q&amp;A</li> </ul>
15:30-16:00	<b>Networking Break</b>

Time	Session
16:00-17:00	<b>Group Exercise</b> <ul style="list-style-type: none"> <li>Planning for Septic tank emptying services</li> </ul>
17:00-18:00	<b>Presentation on Training calendar – Each Institution</b> <ul style="list-style-type: none"> <li>Each institution representative will present about their training calendar for this year</li> </ul>
<b>DAY 2</b>	
09:15-09:30	<b>Recap of Day 1</b>
09:30-10:00	<b>Financing FSSM</b> <ul style="list-style-type: none"> <li>Describing assessment of financial requirements and potential sources for capital/ O&amp;M expenditures for FSM</li> </ul>
10:00-10:45	<b>Group Exercise</b> <ul style="list-style-type: none"> <li>Estimating O &amp; M requirements and Tariff levels for FSSM services</li> </ul>
10:45-11:15	<b>SaniPlan</b> <ul style="list-style-type: none"> <li>Overview and browse-through SaniPlan</li> </ul>
11:15-12:15	<b>Private Sector Participation in FSSM services</b> <ul style="list-style-type: none"> <li>Understanding ULB capacity for FSSM</li> <li>Need for PSP and procedures for engaging the private sector for FSSM</li> </ul>
12:15-13:00	<b>Group Discussion : Design of Training Module</b> <ul style="list-style-type: none"> <li>Develop training agenda according to different target groups? Eg: Elected representatives, executive wing, Consultants (2 days/ 1 days)</li> <li>What are the key takeaways?</li> <li>How to translate lessons further?</li> <li>How to tweak this workshop model according to time constraints?</li> </ul>
13:00-13:30	<b>Feedback from the participants</b> <b>Certificate Distribution</b>
13:30-14:30	Lunch and Departure
14:30-17:00	<b>Discussion of participants with CEPT and NIUA</b>

**Annexure 2: List of Participants**

Sr. No	Name of Participants	Designation	Name of Organization	Email ID
1	Dr. Sunil Dhapte	Director	YASHADA, PUNE	<a href="mailto:sunil.dhapte@yashada.org">sunil.dhapte@yashada.org</a> ; <a href="mailto:director.suid@yashada.org">director.suid@yashada.org</a>
2	Mr. Dhawal Patil	General Manager	Ecosan Services Foundation	<a href="mailto:dhawal.patil@ecosanservices.org">dhawal.patil@ecosanservices.org</a>
3	Mr. Jaswant Singh	Town Planner, Sr. Vice President	ISPER, Panchkula	<a href="mailto:isperonline@gmail.com">isperonline@gmail.com</a>
4	Mr. Arvind Kumar	GIS Analyst	ISPER, Panchkula	<a href="mailto:isperonline@gmail.com">isperonline@gmail.com</a>
5	Mr. Kaushik Ghosh	Assistant Professor	ATI, West Bengal	<a href="mailto:urbanmanagementcentre.ati@gmail.com">urbanmanagementcentre.ati@gmail.com</a>
6	Ms. Reshmi Nandi	Faculty	ATI, West Bengal	<a href="mailto:nandi_reshmi@rediffmail.com">nandi_reshmi@rediffmail.com</a>
7	Mr. Kingsuk Roy	Executive Engineer	Municipal Engineering Directorate	<a href="mailto:kingshookroy@gmail.com">kingshookroy@gmail.com</a>
8	Mr. A.K. Gupta	Additional Director,	RCUES, Lucknow	<a href="mailto:ad.rcueslko@gmail.com">ad.rcueslko@gmail.com</a>
9	Dr. Alka Singh	Deputy Director	RCUES, Lucknow	<a href="mailto:alka.rcueslko@gmail.com">alka.rcueslko@gmail.com</a>
10	Mr. Ajit Mishra	Assistant Director	RCUES, Lucknow	<a href="mailto:ajit.rcueslko@gmail.com">ajit.rcueslko@gmail.com</a>
11	Mr. Himanshu Chandra	Assistant Director	RCUES, Lucknow	<a href="mailto:himanshu.rcueslko@gmail.com">himanshu.rcueslko@gmail.com</a>
12	Dr. Himani Tiwari	Director	CMAR, Rajasthan	<a href="mailto:cmar.rajasthan@gmail.com">cmar.rajasthan@gmail.com</a>
13	Dr. V. Deepa Nair	Director	MCRHRD, Hyderabad	<a href="mailto:valathai@gmail.com">valathai@gmail.com</a>
14	Mr. C.Ram Babu	Urban Planner	MCRHRD, Hyderabad	<a href="mailto:ram060207@gmail.com">ram060207@gmail.com</a>
15	Ms. Sushmitha Ramoji	Urban Planner	MCRHRD, Hyderabad	<a href="mailto:sushmitha.ramoji34@gmail.com">sushmitha.ramoji34@gmail.com</a>
16	Mr. Depinder Singh Kapur	Senior Domain Expert	NIUA, Delhi	<a href="mailto:dkapur@niua.org">dkapur@niua.org</a>
17	Ms. Chandni Nair	Programme Manager	NIUA, Delhi	<a href="mailto:cnair@niua.org">cnair@niua.org</a>
18	Mr. Chandra Naik	Faculty	ATI, Mysore	<a href="mailto:chandranayaksiud@gmail.com">chandranayaksiud@gmail.com</a>
19	Shweta Nagarkar	Research Associate	AIIISG, Mumbai	<a href="mailto:shwetanagarkar13@gmail.com">shwetanagarkar13@gmail.com</a>
20	Utkarsha Kavdi	Director	ALISG, Mumbai	<a href="mailto:utkarshakavdi@yahoo.com">utkarshakavdi@yahoo.com</a>
21	Mr. Nayan Deshmukh		AIIISG, Mumbai	<a href="mailto:nayandeshmukhss@gmail.com">nayandeshmukhss@gmail.com</a>
22	Mr. Hemant Khosla	Independent Consultant	Independent Consultant, Ahmedabad	<a href="mailto:hemant2804@gmail.com">hemant2804@gmail.com</a>
23	Mr. Jay Shah	Project Coordinator	Urban Management Centre, Ahmedabad	<a href="mailto:jau@umcasia.org">jau@umcasia.org</a>
24	Ms. Janumi Rathod	Project Associate	Urban Management Centre, Ahmedabad	<a href="mailto:janumi@umcasia.asia.org">janumi@umcasia.asia.org</a>

Sr. No	Name of Participants	Designation	Name of Organization	Email ID
25	Dr. Dinesh Mehta	Joint Director	C-WAS, CEPT University	<a href="mailto:dineshmehta@cept.ac.in">dineshmehta@cept.ac.in</a>
26	Dr. Meera Mehta	Joint Director	C-WAS, CEPT University	<a href="mailto:meeramehta@cept.ac.in">meeramehta@cept.ac.in</a>
27	Dhruv Bhavsar	Senior Research Associate	C-WAS, CEPT University	<a href="mailto:dhruv.bhavsar@cept.ac.in">dhruv.bhavsar@cept.ac.in</a>
28	Aasim Mansuri	Senior Research Associate	C-WAS, CEPT University	<a href="mailto:Aasim.Mansuri@cept.ac.in">Aasim.Mansuri@cept.ac.in</a>
29	Jaladhi Vavaliya	Senior Research Associate	C-WAS, CEPT University	<a href="mailto:Jaladhi.Vavaliya@cept.ac.in">Jaladhi.Vavaliya@cept.ac.in</a>
30	Dhara shah	Sr. Project Executive	C-WAS, CEPT University	<a href="mailto:shah.dhara@cept.ac.in">shah.dhara@cept.ac.in</a>
31	Upasana Yadav	Research Associate	C-WAS, CEPT University	<a href="mailto:Upasana.yadav@cept.ac.in">Upasana.yadav@cept.ac.in</a>
32	Aditi Dwivedi	Research Associate	C-WAS, CEPT University	<a href="mailto:Aditi.dwivedi@cept.ac.in">Aditi.dwivedi@cept.ac.in</a>
33	Jigisha Jaiswal	Research Associate	C-WAS, CEPT University	<a href="mailto:jigisha.jaiswal@cept.ac.in">jigisha.jaiswal@cept.ac.in</a>
34	Yugasha Bakshi	Research Associate	C-WAS, CEPT University	<a href="mailto:yugasha.bakshi@cept.ac.in">yugasha.bakshi@cept.ac.in</a>
35	Dhwani shah	Research Associate	C-WAS, CEPT University	<a href="mailto:dhwani.shah@cept.ac.in">dhwani.shah@cept.ac.in</a>
36	Nilesh Parmar	Research Associate	C-WAS, CEPT University	<a href="mailto:Nilesh.Parmar@cept.ac.in">Nilesh.Parmar@cept.ac.in</a>
37	Urvi Patel	Research Associate	C-WAS, CEPT University	<a href="mailto:Urvi.Patel@cept.ac.in">Urvi.Patel@cept.ac.in</a>
38	Panini Vaidya	Research Associate	C-WAS, CEPT University	<a href="mailto:panini.vaidya@cept.ac.in">panini.vaidya@cept.ac.in</a>



C-WAS has focused its work on urban sanitation. It has developed Indicators for measuring on-site sanitation and a framework for citywide sanitation planning.

C-WAS also supports cities in implementing city sanitation plans that focus on making cities open defecation free (ODF) and Faecal sludge and septage management (FSSM) plans. In support of these efforts, the team is also working on developing innovative sanitation financing mechanisms.