

# CAPACITY BUILDING FOR FSM IN TAMIL NADU

## INTRODUCTION

Capacity building has come to occupy a pivotal position in the water supply and sanitation sector, as a means to achieving overall improvements. Capacity building activities are targeted at different audiences such as communities, institutions and policy-makers, and such efforts are tailored to meet specific capacity and knowledge gaps. Often, such initiatives refer to orientation in systems and procedures, combined with hands-on training in knowledge, skills and competencies. At present, the public sector, and more specifically, the sanitation sector in India today, is fraught with:

- Poor domain knowledge and capacity
- Lack of established precedence for implementation of operational procedures by government agencies
- Lack of systems for orientation and incentives to implement positive changes such as enforcing the full-cycle of sanitation from containment to disposal/re-use on a regular basis instead of engaging in a one-time campaign on sanitation.

The Tamil Nadu Urban Sanitation Support Programme (TNUSSP) that aims at effecting

improvements along the sanitation value chain, conducted a training needs assessment (TNA), to identify the current capacity, gaps and constraints faced by stakeholders in Tamil Nadu on Fecal Sludge Management (FSM).

Since on-site sanitation systems are the most predominant household arrangements in Tamil Nadu, FSM is critical to ensuring improved public health outcomes. Key stakeholders responsible for FSM include masons, de-sludging operators, and the representatives of Urban Local Bodies (ULBs).

**FSM is the process in which fecal sludge or septage generated from on-site sanitation systems are contained, emptied regularly, transported, treated, and disposed of safely or re-used.**

In order to effectively implement FSM and achieve safe sanitation in Tamil Nadu, it is essential that the key stakeholders are equipped with the latest knowledge on FSM, and have institutional, administrative, financial and human resource capacities.



Masons

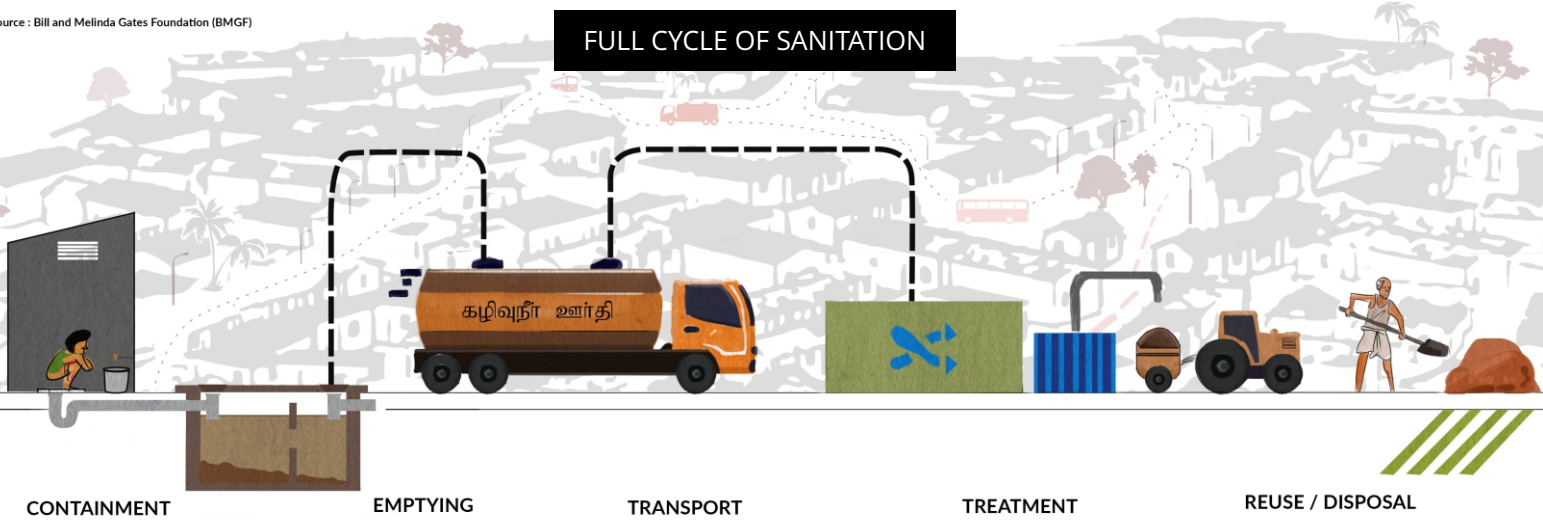


De-sludging operators



Urban Local Bodies

**FULL CYCLE OF SANITATION**



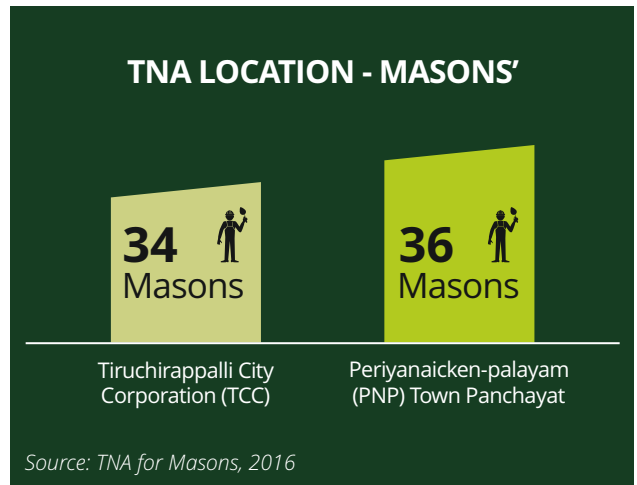
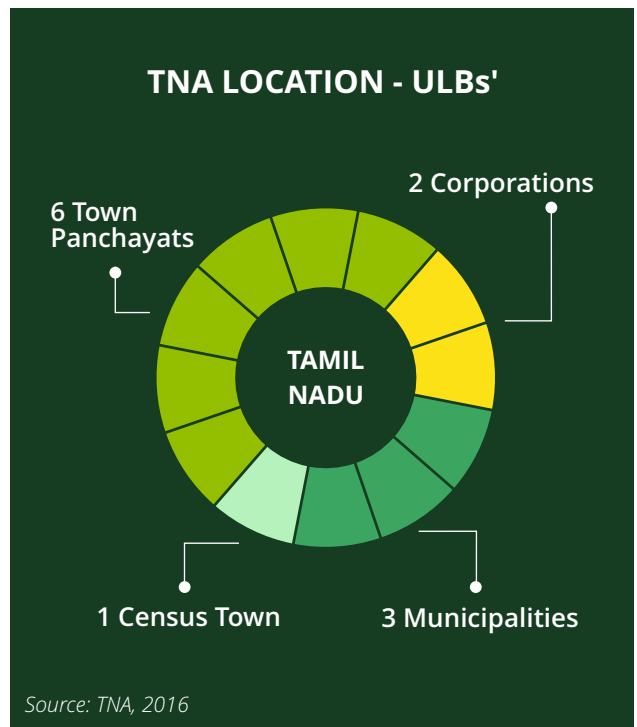
The TNA was aimed at identifying organisational structures, staffing capacity, human resource competencies and training needs in the state's urban institutions to provide 100% safe sanitation and improve public health outcomes. Apart from these, masonry building practices for on-site sanitation systems were also assessed to provide training and build capacity in constructing improved sanitation structures.

**METHODOLOGY**

The methodology for the TNA was adapted from the Capacity Needs Assessment Framework. The likely absence of a precedence in undertaking such an assessment was balanced by relying on established instances and by making certain calculated assumptions. The TNA was meant not only to identify the gaps but also to address these gaps at the individual, institutional, and organisational level.

Before initiating the TNA, a secondary review of institutions that govern urban sanitation in Tamil Nadu was conducted, to assess the existing system of governance, including roles and responsibilities of various institutions, within the ULBs.

Semi-structured questionnaires were used for the survey that was conducted on two different levels. One, for the senior-level officers, technical chiefs, office heads of the ULBs, focusing on institutional, financial, and human resource capacity. Second, for the middle- and junior-level



cadres of the ULBs, focusing on educational qualifications and sanitation-related work experiences. Similarly, the TNA for masons was conducted in the city of Tiruchirapalli (also

known as Trichy) and Periyanaicken-palayam Town Panchayat in Coimbatore District.

Structured questionnaires were prepared to collect details on the masons' demography, occupational experience, and exposure to previous formal training.

## FINDINGS

The stakeholders involved in the implementation of safe sanitation include administrative heads of ULBs, officers from the Public Health and Engineering departments, masons, builders and contractors, and de-sludging operators. The TNA focussed specifically on government officers and masons.

## URBAN LOCAL BODIES

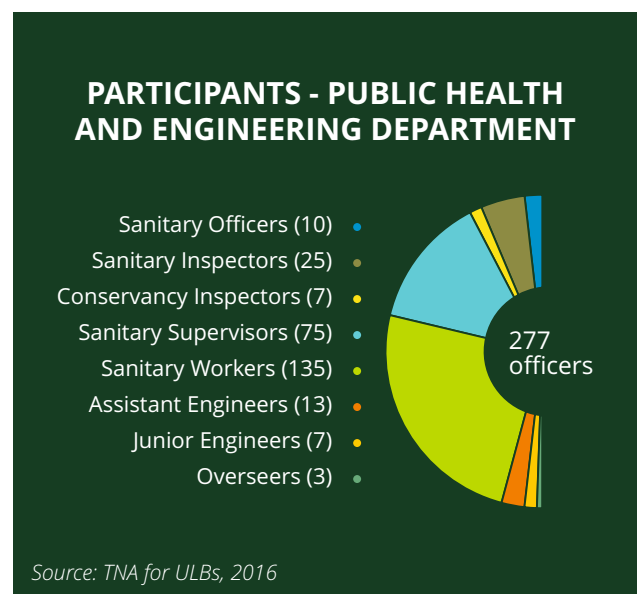
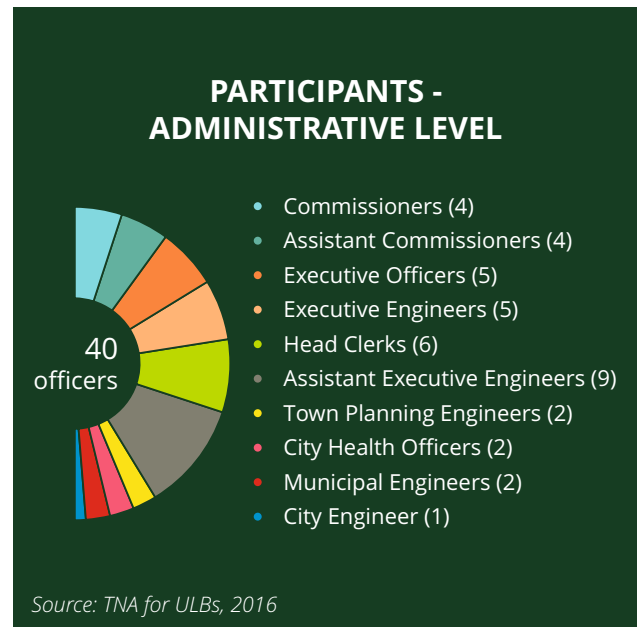
Government officers at the ULB level are key stakeholders in implementing sanitation initiatives in the state. At present, however, the ULBs' focus is more towards solid waste management and does not include sanitation or FSM.

The TNA conducted across 12 ULBs of the state included officers from the administrative level, Public Health and Engineering departments.

The key findings from the TNA were:

- Majority of the officers had limited knowledge with respect to the treatment and re-use of FSM, as the concept of FSM was novel, and the Operative Guidelines for Septage Management was recently introduced in 2014. In locations where sewage treatment plants (STPs) were not available, the officers were either unaware or had limited knowledge on FSM.
- Officers at the frontline and junior cadre level were unaware about the rules and regulations concerning improved septic tank construction and its link to public health.

Based on the findings from the TNA, the capacity building strategy for government officers was



aimed at (i) reorienting the mindset of government officers to the various options that were available to the conventional underground sewerage systems and to introduce the concept of FSM and its implementation, (ii) familiarise government officers with the Operative Guidelines for Septage Management, 2014 by providing orientation and training, and (iii) deepen capacity building efforts for longer-term impacts on FSM by engaging with the same pool of officers in the ULBs.

## ORIENTATION PROGRAMMES

Programmes designed to achieve the above capacity building strategies included activity-based orientation for officers from State-level agencies, ULBs, and select utilities on FSM, in January 2017.



Orientation for Government of Tamil Nadu Officers on FSSM, Chennai

The programme consisted of modules that included:

- Introduction and overview of FSM
- Discussions about international (Malaysia, Senegal) experiences on FSM
- Group work and presentation to suggest recommendations and solutions to problems and issues of urban sanitation in Tamil Nadu, for each part of the sanitation value chain

The programme drew upon international and national examples as well as developments in the state, to help participants engage with the operational/practical aspects of planning, implementing and monitoring the elements of FSM—as a complementary solution for small and medium towns, and complementary solutions for larger urban areas. Moreover, short-term action planning for ULBs and the state in implementing FSM were discussed.

### INTERNATIONAL EXPOSURE VISIT

In order to demonstrate and improve the understanding of successful models of FSM, TNUSSP organised an exposure visit to Malaysia, a country where septage management solutions have been successfully promoted. The key



International Exposure Visit: Malaysia

learning outcomes from this international exposure visit included changes required in rules, regulations and other implementation solutions for government officers to propose and implement septage management in Tamil Nadu.

### DOMESTIC EXPOSURE VISITS

A series of domestic exposure visits to the Fecal Sludge Treatment Plant (FSTP) in Devanahalli, Karnataka, were also organised. These exposure visits provided participants with an understanding of the technology, design and



Devanahalli FSTP Visit by the Government of Tamil Nadu Officers

operations of the FSTP and how to adopt similar options in Tamil Nadu. So far, around 30 government officers, including state personnel and engineers from the Directorate of Town Panchayats (DTP), Commissionerate of Municipal Administration (CMA), Tamil Nadu Water Supply and Drainage Board (TWAD), Chennai Corporation and Metro Water Administration, have visited Devanahalli as part of the exposure visit.

### MASONS

Masons are important stakeholders in the containment aspect of the sanitation value chain, as they advise and construct on-site sanitation systems. The profile of masons in the city of Trichy and Periyanaicken-palayam Town Panchayat in Coimbatore where the field study was carried out, revealed that masons in these areas were informal and consisted of Maistry (Chief Mason), Kothanar (Mason), Manvettialu (unskilled male assistant), and Chittal (unskilled female assistant). Among 70 masons interviewed for the TNA, 33 of them were chief

masons, 33 masons, and 4 unskilled male assistants. The key findings from the TNA were:

- Out of 70 masons (male) interviewed, none of the chief masons or masons had undergone any technical education for masonry and most of them had learned this skill over time, through experience. The reason being, 63 percent of the chief masons had taken up masonry as a family occupation, picking up skills on the job
- Majority of the masons reported that the type of toilet structure or toilet system was influenced by space availability, topography and soil conditions, cultural habits, affordability and availability of water. The type of toilet structure was decided by the home owner, and masons had little or no influence on this decision



Masons Training Programme, Trichy

- 90 per cent of the masons interviewed had experience building septic tanks, while less than 11 per cent had experience in the construction of single-pit or twin-pit toilets
- With respect to construction of on-site sanitation systems, masons were unaware of the standards prescribed by the Central Public Health and Environmental Engineering Organisation (CPHEEO) and therefore failed to follow them. Moreover, 55 out of 70 masons had not undergone any formal training for construction of on-site sanitation systems in their profession

The Focus of the capacity building strategy for masons was the operative environment they work in. Findings showed that the home owners

decided the type and size of the containment structure. Masons had a very small role in deciding the containment structure and were also unaware of the standards set out in the Operative Guidelines. In order to effect improvements in the standards of construction of on-site sanitation systems and equip masons with technical knowledge and skills on the design, four training programmes were conducted in Trichy and Periyanaicken-palayam Town Panchayat in Coimbatore. The training programmes consisted of four modules that included (i) role of masons in safe sanitation, (ii) orientation in FSM concepts, (iii) construction of septic tanks; and construction of twin-pits, respectively. So far, a total of 126 masons have been trained. As part of the training, masons were also given tasks such as constructing



Prototype Designs of On-Site Sanitation Systems

prototypes of twin-pit latrines and bio-toilets using clay and hardboard cutouts. In addition, the masons were also sensitised to the importance of installing vent pipes in septic tanks, gas formation in these tanks, and the containment aspects of FSM, including their role in building safe containment structures that meet the given standards. The training programmes were well-received by the masons as they gained new knowledge related to their profession, and were able to share their experiences with other masons.

## LEARNINGS

Realising the need to sensitise key stakeholders in order to achieve 100% safe sanitation and improved public health outcomes, the capacity building strategy under TNUSSP adopted a multi-pronged approach. Activities were focused on engaging with stakeholders working

at different levels to address gaps related to institutional, financial, technical and human resource capacities for effective implementation of FSM in Tamil Nadu.

The TNAs and the training series for ULB officers showed that while the overall awareness and knowledge on FSM may be low, the capacity building strategies need to be nuanced for different levels within the government. While the senior level staff may be aware of the concepts, front-line staff need inputs to re-orient their thinking on sanitation as well as information on basic concepts of FSM. Capacity building of masons needs a different strategy that involves hands-on training, basic concepts of FSM, and information on guidelines and standards. While engaging with masons, it became clear that it was important to also address FSM-related messages to builders who employ them. Masons must also be well-equipped with information on the dimensions of a septic tank and the CPHEEO standards in order to exert influence on the home owners to adopt safe sanitation practices.

In order to track the effectiveness of training imparted to masons, a training outcomes survey has been initiated to assess the changes in the construction practices being followed by those masons who attended the training programme. A similar survey is proposed for ULB officers as well.

**Reference:** TNUSSP, (2016), Training Needs Assessment for Urban Local Bodies on Septage Management, available at <http://tnussp.co.in/resources/>

TNUSSP, (2016), Training Needs Assessment for Masons on Septage Management, available at <http://tnussp.co.in/resources/>

**Citation:** This document is to be cited as *TNUSSP, 2017, TNUSSP Practice Brief #2, Capacity Building for FSM in Tamil Nadu, TNUSSP, Chennai.*

This practice brief is based on the reports titled 'Training Needs Assessments on Septage Management for Masons' and the 'Training Needs Assessment on Septage Management for Urban Local Bodies'. This brief has been produced as part of the TNUSSP knowledge product series. All practice briefs and the full reports are available in the resources section of the TNUSSP website.

## ORIENTATION OF DE-SLUDGING OPERATORS



*Orientation of De-sludging Operators on FSM, Coimbatore*

De-sludging operators and workers play a crucial role in collection, transportation and safe disposal of fecal sludge, which has implications for public health and the environment.

Providing orientation to the de-sludging operators and workers on their role in FSM can potentially lead to huge improvements in sanitation practices.

Three orientation programmes on the importance of FSM have been held for 68 de-sludging operators and workers in Trichy and in Periyanaicken-palayam. These sessions focused on vehicle design, different kinds of equipment to be used for de-sludging and occupational safety procedures to ensure safe sanitation practices.



What is  
TNUSSP?

The Tamil Nadu Urban Sanitation Support Programme (TNUSSP) supports the Government of Tamil Nadu and cities in making improvements along the entire urban sanitation value chain. The TNUSSP is implemented by a consortium of organisations led by the Indian Institute of Human Settlements (IIHS), in association with CDD Society, Gramalaya and Keystone Foundation.

TECHNICAL SUPPORT UNIT:



IIHS CHENNAI: Floor 7A, Chaitanya Exotica, 24/51, Venkatnarayana Road, T. Nagar, Chennai-600017.

044-6630 5500

[tnussp@iihs.ac.in](mailto:tnussp@iihs.ac.in)

[www.tnussp.co.in](http://www.tnussp.co.in)

[www.facebook.com/TNUSSP](https://www.facebook.com/TNUSSP)