

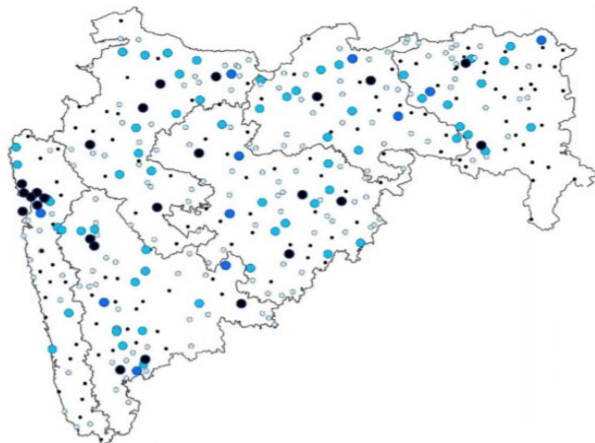


Co-treatment of Faecal sludge at STPs for Safe Sanitation in Maharashtra

Aasim Mansuri
Senior Program Lead

Co-authors: Omkar Kane, Dhruv Bhavsar, Jigisha Jaiswal, Prof. Meera Mehta, Prof. Dinesh Mehta and CEPT Team

Maharashtra is having about 60 million urban population residing in 412 Urban Local Bodies (ULBs) . . .



49%

Urban population

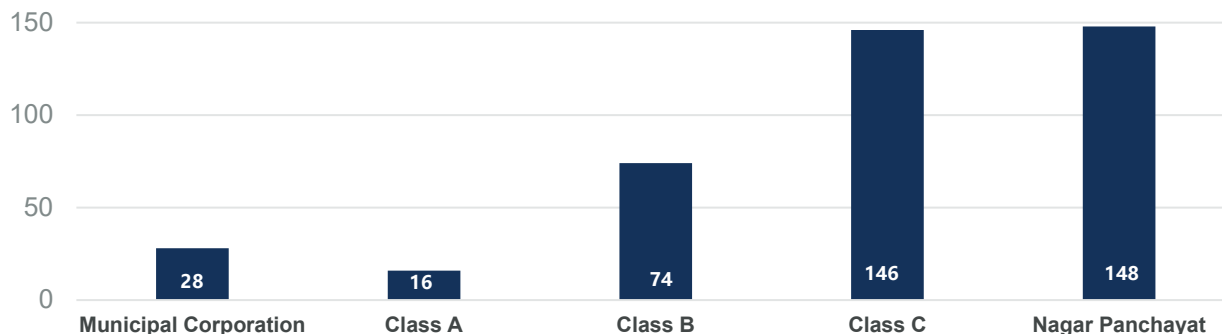
412

Cities

Maharashtra is one of the most urbanised states in the country, with 49% of the population in urban areas.

Across the state a majority of the population is **dependent on on-site sanitation systems**. Especially in Municipal Councils and Nagar panchayats a total of **384 ULBs are dependent on on-site sanitation**.

Average percentage of Household dependent on onsite sanitation



Maharashtra_ULBs

Class

- Class A
- Class B
- Class C
- Municipal Corporation
- NP

GoM launched its sustainability charter launched on 1st Oct 2017, which emphasizes on managing the entire sanitation value chain beyond toilets . . .



Urban Maharashtra
was declared
Open Defecation Free on 1st October 2017 in the
presence of the Hon' ble President of India

सप्तपदी स्रातत्याची Sustainability Charter

We are committed towards the vision of Swachh Bharat. We shall ensure ODF sustainability in Maharashtra by:

- #1 Achieving universal access to Individual Household Level Latrines (IHHL), which is a leading development priority.
- #2 Ensuring adequate, clean and reliable access to public/ community toilets across urban Maharashtra, wherever IHHL are not possible.
- #3 Ensuring ODF sustainability through effective participation of government, elected representatives, schools, donors, implementers, NGOs, SHGs, CBOs and the communities.
- #4 Continuing and institutionalizing rigorous ODF validation and monitoring process through "OD Watch" and "ODF sustainability tracker"
- #5 Auditing the performance of community/ public toilet and encouraging development of OD spots into usable public spaces.
- #6 Recognizing and awarding sustained performance
- #7 Moving towards ODF+/++ by ensuring effective collection and adequate treatment of human fecal waste

#7 Moving
towards
ODF+/++ by
ensuring
collection and
adequate
treatment of
human fecal
waste

Mr. Devendra Fadnavis
Chief Minister, Maharashtra

Focus on Fecal Sludge and Septage Management (FSSM) by Government of Maharashtra . . .



- Maharashtra government, after the 2017 ODF sustainability charter, began statewide planning for fecal sludge management, aiming for ODF++ cities.
- The state issued guidelines for Urban Local Bodies (ULBs) to implement FSSM plans, distributed through various manuals and books.
- Government has issued various Government Resolutions:

- To move towards ODF+/++
- To utilize Incentive grant and 14th FC Funds for sanitation/ODF+/++ activities
- Co-treatment of FS at own/nearby STP
- Build individual FSTPs

GR on ODF, ODF+ & ODF++ framework

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

Septage Management Guidelines

Guidelines for Septage Management in Maharashtra

February, 2020

Swachh Maharashtra Mission (Urban)

Urban Development Department, Government of Maharashtra

GR on use of 14th FC & Incentive Funds

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

समाज कल्याण अधिनियम (सोनी) अर्थात सारणी सारणी २००१ वरून सारणी सारणी २००१.

Step by Step Guide for ODF+

Guidebook for Urban Local Bodies to Implement Septage Management Plan

Swachh Maharashtra Abhiyan

Urban Development Department

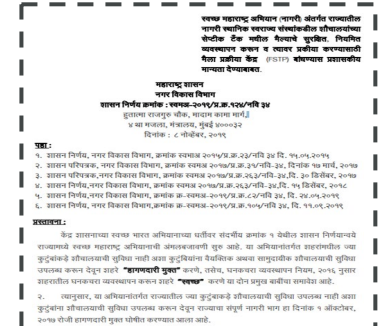
Government of Maharashtra

A steps towards making all ULBs in Maharashtra ODF++..



Independent FSTPs . . .

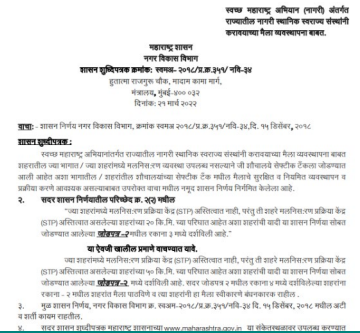
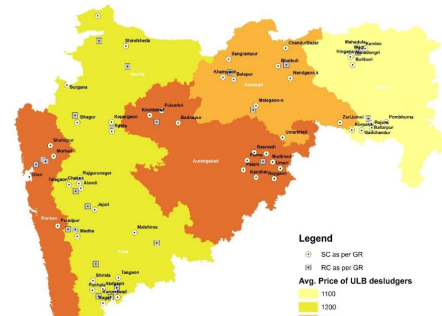
- UDD plans to establish independent FSTPs in over **300+ ULBs** **reliant on onsite sanitation**, without near-future sewerage projects.
- Identified ULBs dependent on on-site sanitation for the installation of independent FSTPs in Urban Maharashtra.
- UDD, GoM passed a resolution on November 8, backing the construction of **FSTPs in 311 ULBs**.



FSTP GR by GoM dated 8th Nov 2019

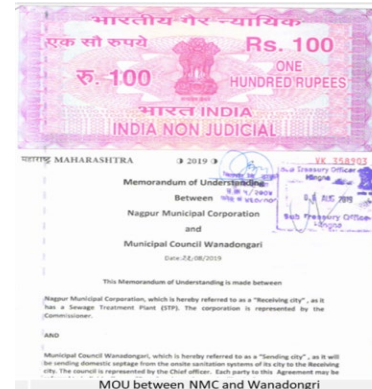
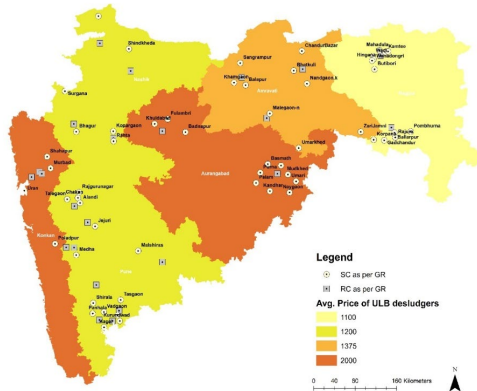
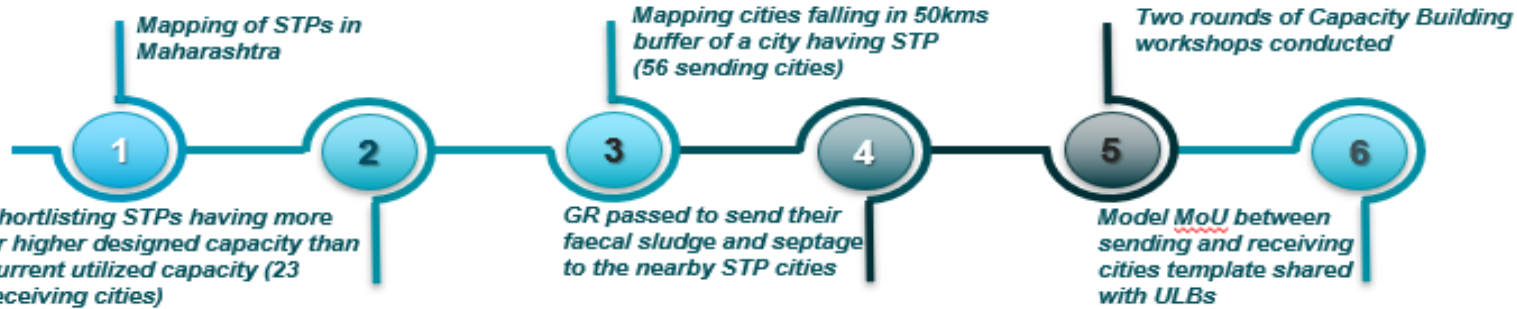
Co-treatment of Septage - Own STP and Cities within 50 km of a nearby STP city

- **GR issued** for co-treatment of faecal waste in government and nearby STPs.
- ULBs **with operational STPs** but incomplete sewerage coverage can treat onsite septage in their STPs.
- UDD identified ULBs capable of co-treating septage in nearby ULB's STPs within a **50km radius** after MoHUA's circular (**initially 20km**).



Government Resolution dated 15 Dec 2018 and 21 Mar 2022

Steps taken by the state to implement the initiated co-treatment strategy statewide . . .



Institutionalization of Co-treatment practices through MoU between sending and receiving cities . . .



As per the state guideline, both the sending and receiving cities have to sign memorandum of agreement (MoU). MoU clearly defines the roles and responsibilities of sending and receiving cities.

The following are the components of a MoU:-

1. Roles and responsibilities of receiving cities
2. Roles and responsibilities of sending cities
3. Amendments process
4. Validity Period
5. Settlement of disputes and Arbitration

The receiving cities were asked to give directives to STP operator, to allow discharge of faecal sludge of sending cities at the STP, to identify a suitable location for discharge i.e. designated inlet point near the STP, wet well or pumping station.

Cities were also guided about maintaining records of the no. of trucks that discharge faecal sludge at identified locations, maintaining quality records of incoming septage and outlet quality of STP.

Memorandum of Understanding

Between

Name of Receiving City

and

Name of Sending City

Date: _____, 2018

This Memorandum of Understanding is made between

Name of receiving city _____ along with Address, which is hereby referred to as a "Receiving city" as it has a Sewage Treatment Plant (STP). The corporation/council is represented by the Commissioner / Chief officer,

AND

Name of Sending city _____ along with Address, which is hereby referred to as a "Sending city" as it will be sending domestic septage from the onsite sanitation systems of its city to the Receiving city. The corporation/ council is represented by the Commissioner / Chief officer. Each party to this Agreement may be referred to individually as a "Party" and together as the "Parties"

The parties now do hereby record their understanding as follows with the intention of implementing the same:

In alignment with Government of India's "Swachh Bharat Mission", the Government of Maharashtra has been implementing Swachh Maharashtra Mission (Urban) with effect from 2015. The State Government of Maharashtra (GoM) achieved its goal of making all its cities ODF in October 2017 and has declared the sustainability charter for ODF, wherein Government of Maharashtra has recognized Faecal sludge and Septage Management (FSSM) as the critical next step after cities are declared ODF. This has been articulated in the ODF sustainability charter launched by Honourable Chief Minister of Maharashtra on 1st October, 2017. In this context, the state has state issued a GR: SMU-2018 /Cr No. 351/UD-34 on 15th December, 2018 for Co-treatment of septage at own and nearby STPs.

Cities discharging FS at designated location for Co-Treatment . . .



1

Discharge @ Wet well / Pumping Station



Collection well where FS is received



Screen Chambers



Grit Chambers



Pumping Well



Decanting of Septage in Progress at Jayanti Nallah pumping station, Kolhapur, Maharashtra, India

2

Discharge @ Manhole



Tanker Decanting Septage

Septage volumes are not significant in relation to the full-fledged STP volumes even if the STP is functioning at design capacity, volume wise, it will not be a problem to add even up to 5% of flows.

STP is functioning at design capacity, volume wise, it will not be a problem to add even up to 5% of flows.

However, there is a need for proper management of Biosolids . . .

Monitoring Mechanisms in Co-treatment process . . .

Type of monitoring mechanism



- In a majority of cities, whether they function as sending or receiving entities, the prevailing practice involves the utilization of logbooks for manual monitoring.



- It's noteworthy, however, that some cities have embraced a more advanced approach, employing GPS and App based digital monitoring tools to effectively manage and record data pertaining to septage load reception.

दिनांक	वेळ	स्थान	वर्णनात्मक नोंद	संख्या
15/05/2018	10:30 AM	कोल्हापूर	कोल्हापूर	10
16/05/2018	11:00 AM	कोल्हापूर	कोल्हापूर	10
17/05/2018	11:30 AM	कोल्हापूर	कोल्हापूर	10

Ex: Vadgaon – Pune, Mudkhed & Ardhapur - Aurangabad.

दिनांक	वेळ	स्थान	वर्णनात्मक नोंद	संख्या
15/05/2018	10:30 AM	कोल्हापूर	कोल्हापूर	10
16/05/2018	11:00 AM	कोल्हापूर	कोल्हापूर	10
17/05/2018	11:30 AM	कोल्हापूर	कोल्हापूर	10

Ex: Ballarpur - Nagpur

All the cities are maintain logbooks although there is a need to prepare uniform logbook formats for easier verification.

Conclusion ...

- 1. Cost-Effective Setup:** No [need for new investments](#) in **upgrading the facility** for managing septage for co-treatment at STPs. Identify [available treatment facilities](#) with their capacities.
- 2. Incentivizing desludging operators:** [Identifying business models](#) to incentivize private operators to bring sludge to STP.
- 3. Efficient Treatment Facility Operations:** [Multiple location of treatment facility in a city](#) can ensure reduction in transportation cost. Identify [potential town](#) for desludging within radius of [10-20 km of each STP](#).
- 4. Optimizing Treatment Facility Load:** Identify [unutilized capacity](#) of treatment facility. Depending on this [accept load from respective towns](#). [Treatment quality as per ground tests, shows no ill impact of incoming septage load in operations.](#)
- 5. Data Centralization for Improved Management:** [Efficient data collection of multiple towns](#) can be deployed through online monitoring system [including GPS and SaniTrack](#) to allow permitted [vehicles only at treatment facility](#)
- 6. Biosolids Management :** [Need for proper management of bio-solids and exploring treatment solutions for the same.](#)

Partnerships and Collaboration to attain Scale . . .



BILL & MELINDA
GATES *foundation*



Government of
Maharashtra

CWAS CENTER
FOR WATER
AND SANITATION

CRDF CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY

NFSSM
ALLIANCE

CWAS CENTER
FOR WATER
AND SANITATION

CRDF CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY

aasim.mansuri@cept.ac.in
cwas@cept.ac.in



**Thank
you**

About us

The Center for Water and Sanitation (CWAS) is a part of CEPT Research and Development Foundation (CRDF) at CEPT University. CWAS undertakes action-research, implementation support, capacity building and advocacy in the field of urban water and sanitation. Acting as a thought catalyst and facilitator, CWAS works closely with all levels of governments - national, state and local to support them in delivering water and sanitation services in an efficient, effective and equitable manner.



cwas.org.in
pas.org.in



cwas@cept.ac.in
tiny.cc/pasenews



CEPT_CWA
S



cwas.cept



cwas.cept



cwas.cept