

Scaling up Citywide Inclusive Sanitation from Cities to State and National level in India

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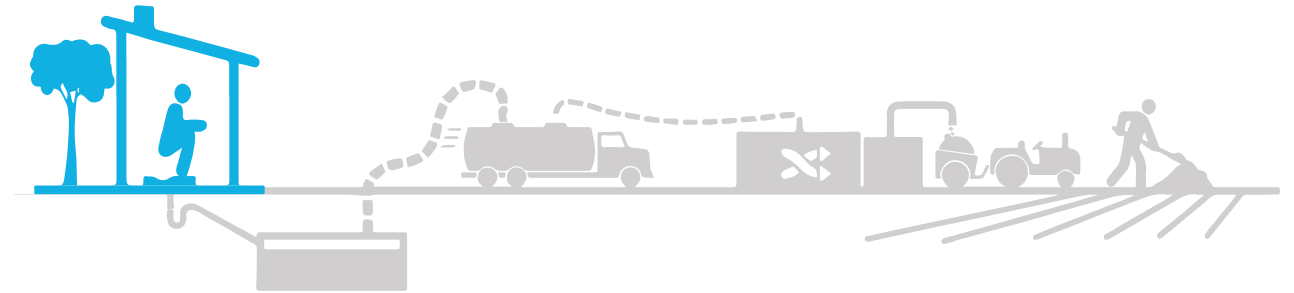
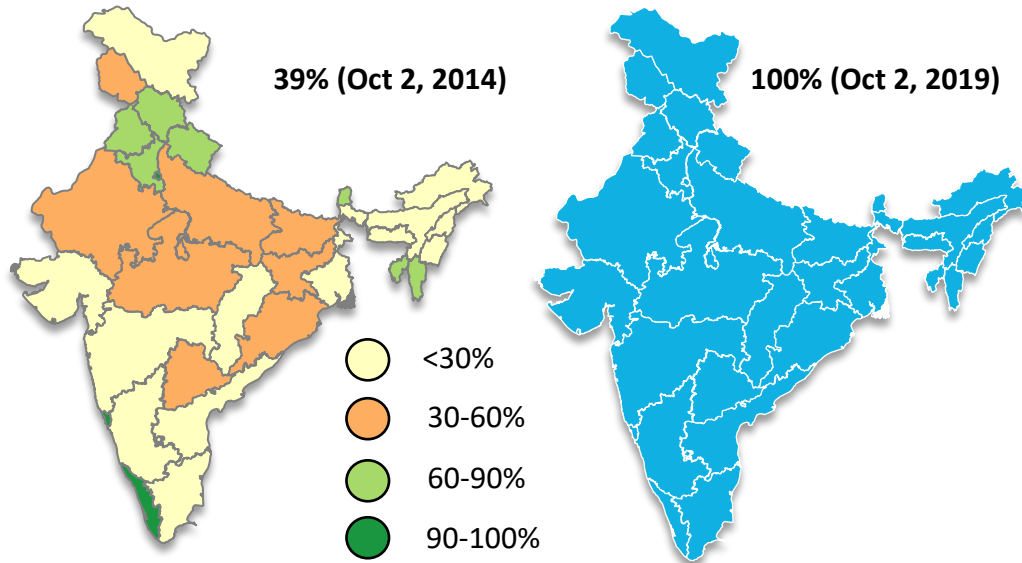
Session name: Sanitation and waste water management in sanitation-focused operator partnership

23rd May, 2023

The **Swachh Bharat Mission (2014-2019)** achieved **significant success** to make India . . .



Open Defecation Free



In the next stage, India is focusing on the entire sanitation value chain with safe collection, treatment and reuse – AMRUT 2.0 and SBM 2.0

Wai and Sinnar... From **URBAN LABORATORIES** (in 2013) to **LIGHT HOUSE** (in 2023) cities . . .

- Wai and Sinnar are cities in Maharashtra having 52,000 and 100,000 population respectively.
- **These cities are representative of 4000+ small and medium cities of India.**

FSSM activities undertaken from 2013. . .



Scheduled emptying
of septic tanks



Faecal Sludge and
Septage treatment
facility (FSTP)



Municipal council
commitment and
leadership



Equitable Services for
Slums and Vulnerable
areas



Levying a Sanitation tax
to support operations

& many more...



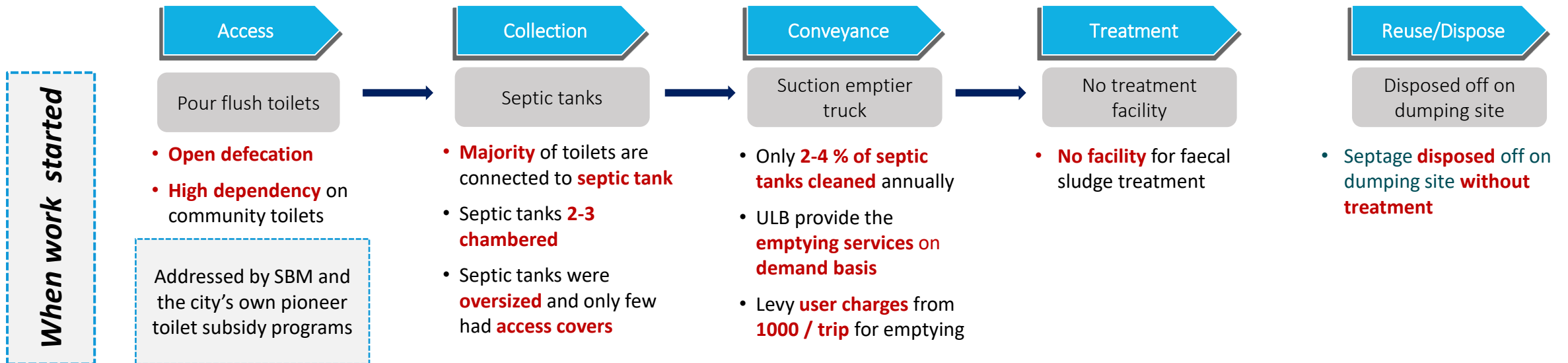
Sinnar



Wai

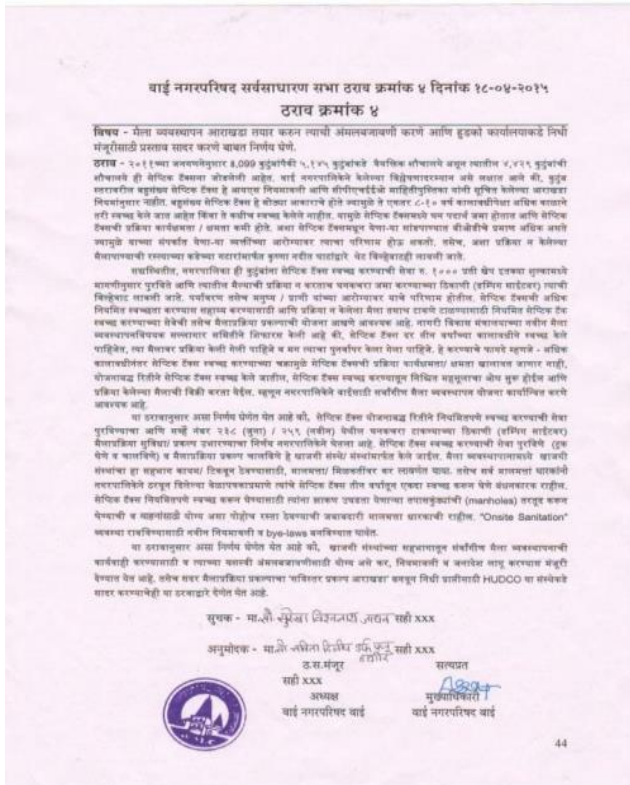


Addressing the full sanitation value chain . . .



Government ownership of improvement planning . . .

Wai and Sinnar resolved to implement FSSM plan in the city through a council resolution



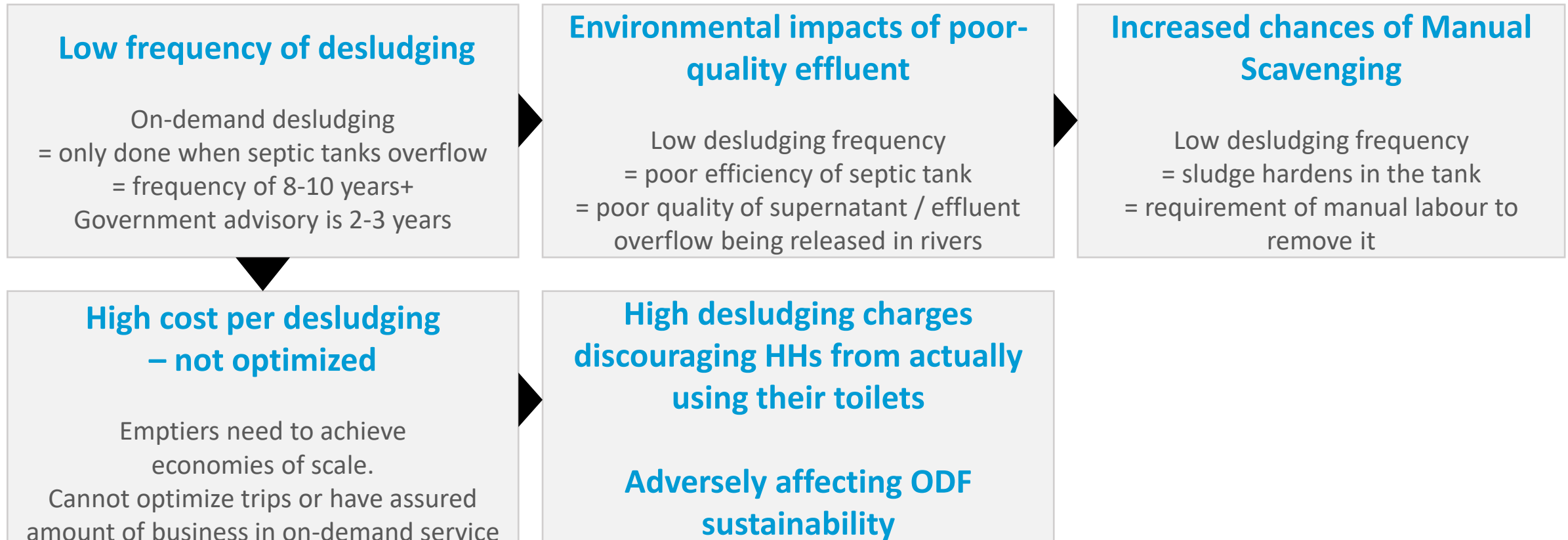
The resolution covers aspects like:

- Citywide Faecal sludge and Septage Management (FSSM)
- Involving Private sector
- Scheduled cleaning
- Land for treatment facility
- Taxes to be levied

1st Cities in INDIA
to have passed such a resolution . . .

Recognizing the **need for systemic change** . . .

Current practice of desludging in Indian cities is of complaint redressal and NOT a public service the way sewerage and SWM are!



Introduced **scheduled desludging** . . .

Moving from **complaint redressal on-demand system** to

inclusive scheduled service

Desludging frequency



Service on receiving call by HHs, who do not see the need for regular cleaning. Usually only when septic tank overflows in 8-10 years (2% annually).

Infrastructure optimization, Efficiency, Equity and affordability



ULB has one truck for desludging individual as well as CT/PT septic tanks.



Emptying charge of Rs 1000/trip levied by the ULB to cover the cost of operations. This was a high price to pay in an emergency situation for households.



Any future treatment facility would receive septage of varying quality. Also cannot predict quantity of daily load.

Desludging done for all septic tanks on a fixed cycle of 3 years and predetermined schedule (33% annually) based on city zoning.

Private operator given contract for servicing individual tanks and using the ULB truck for CT/PTs.

A “**sanitation tax**” of be **paid along with property tax** and **all provided service** without emptying charge. Private operator quotes lower price per tank due to trip optimization with clustered service visits and assured business.

More **predictable load quantities** for **treatment facility**. Better quality loads once desludging completes one cycle.

Inclusive services . . .



Includes those not connected
to sewer networks



Mandatory desludging service
but not linked to “user
charges” – service to ALL



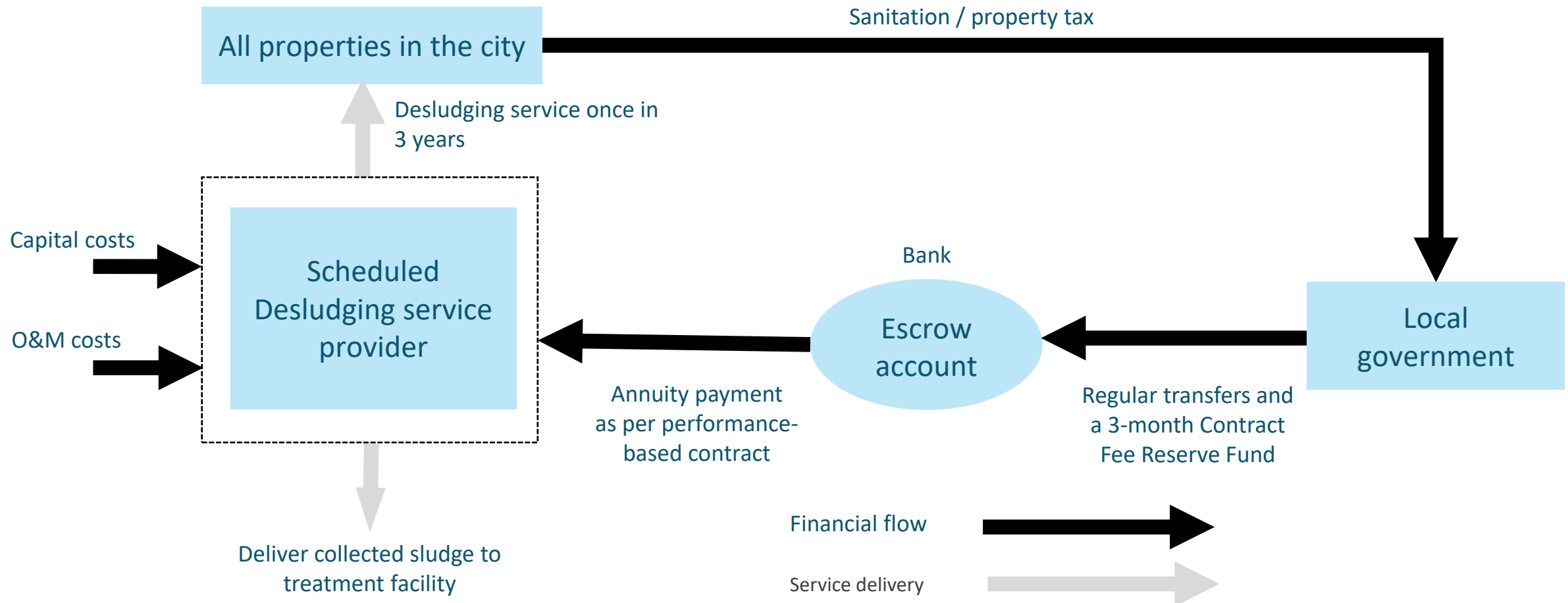
Special care to **service
vulnerable areas** – long pipes
for narrow lanes



Equitable - no charges at time
of desludging - benefiting low
income areas - **sustainably
financed through equitable
“sanitation tax”**



Financing model : Performance Linked Annuity Model (PLAM) for scheduled desludging . . .



Eco-sensitive FSTPs setup at Wai and Sinnar to treat collected septage. . .



24 Million litres of FS treated*



30 Million litres of FS treated**



*FS treated from 2018 to 2023



**FS treated from 2019 to 2023



Sinnar FSTP and Urban Forest... Like Oasis in a Desert...

- **8000 square** meters of urban forest and landscaped area in midst of barren land
- **1400 trees of 16+ species** planted
- Treated **water** is used for **watering the plants** through a **drip irrigation system**
- **Sludge** used as **fertilizers** at the urban forest or taken away by farmers.
- The **quality** of the treated products are **regularly monitored** through testing the samples.
- **SMC engaged a SHG** for maintenance of garden and urban forest through a contract and paid on a monthly basis.
- **Attracting 10+ bird species and butterflies** – previously not seen

Before



After

30 million+ litres
water reused

25,000 kg CO2
sequestered



Performance linked Monitoring Mechanism. . .

Daily report on septic tanks emptied by private emptier to council



सैनितिक टैंक नाशक केवलाया फार्म 101

Govt's copy



सैनितिक टैंक नाशक केवलाया फार्म 101

Property holder's copy



सैनितिक टैंक नाशक केवलाया फार्म 101

Treatment plant's copy



सैनितिक टैंक नाशक केवलाया फार्म 101

Private enterprise copy

- ✓ Payments based on achieving agreed targets of septic tanks emptied
- ✓ Clauses to ensure safety standards - use of PPE and vigilance against manual scavenging
- ✓ Fines on non-achievement of targets

Escrow mechanism to reduce payment risk

- ✓ An Escrow account is held by a third party bank.
- ✓ ULB needs to maintain a fixed balance in it = 3 months of payment
- ✓ Payments are released on approval of performance linked monitoring forms

Add-on IT enabled monitoring systems for FSSM . . .

“Real time” monitoring
No need to process data
for results



Easy to Operate,
Reduce paper work,
Minimize human error



Monitors performance
of FSSM services



Photo stamping,
Geo stamping,
Signatures



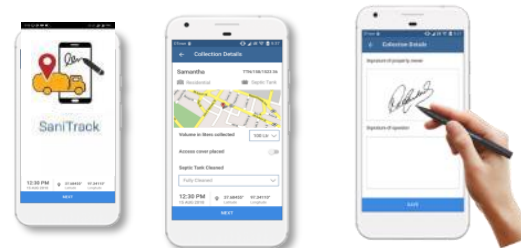
Unique database



SaniTab



SaniTrack



SanQ



Logged in User: CEPT Logout

CONSOLIDATED PROGRESS REPORT

3835 Septic Tanks Remaining To Be Desludged	2165 Desludged	1974 Scheduled	191 Emergency
2318 Service Visits	184 Properties Refused	4487 Properties Covered	6552 KL Volume Desludged

SPATIAL VIEW

- Property Details
- Nature of Service
 - Type of properties visited
 - Vulnerable areas covered



Desludging Details

- Last time ST was emptied
- Opened covers for service
- Problems faced during emptying
- Household's plan to reuse ST

Performance Metric

- PPE usage
- Two-inch septage left

Charts: Nature of Service



Awareness generation a key feature for success of high uptake of FSSM services . . .



Household visits by deslugger with info. leaflets

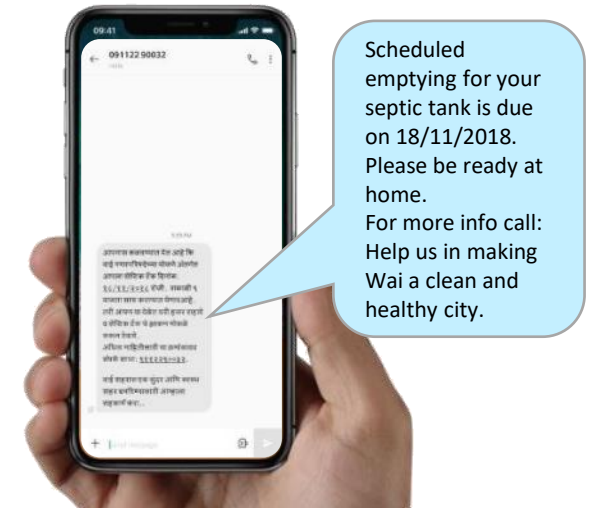


Paintings / banners in the city by WMC

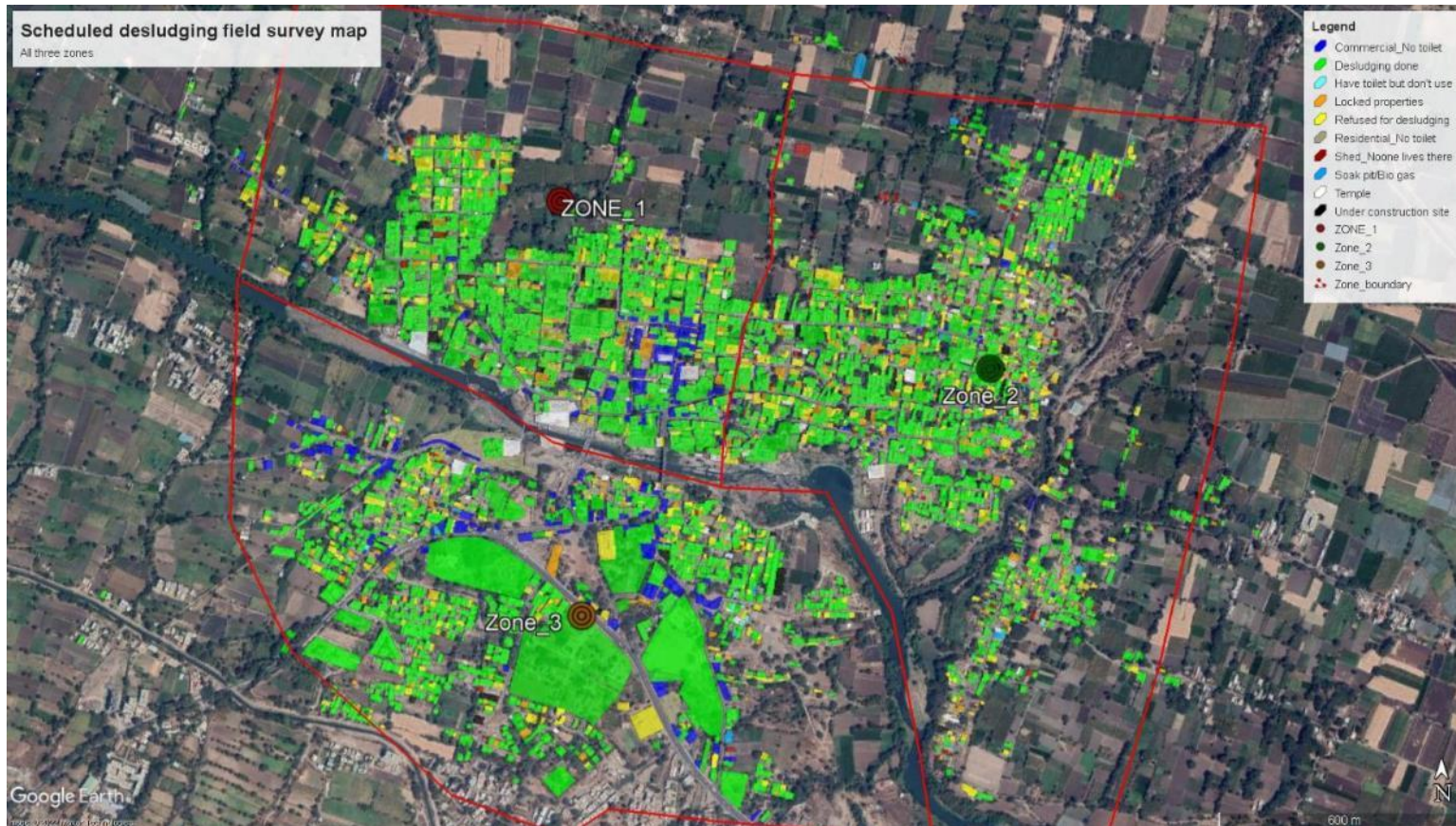
Cities circulated small videos



Intimation through SMS



In January 2022, Wai successfully completed its first 3-year cycle of scheduled desludging and initiated the 2nd round of 3-year cycle of scheduled desludging . . .



Results from 1st Round

3600+
Septic tanks
served

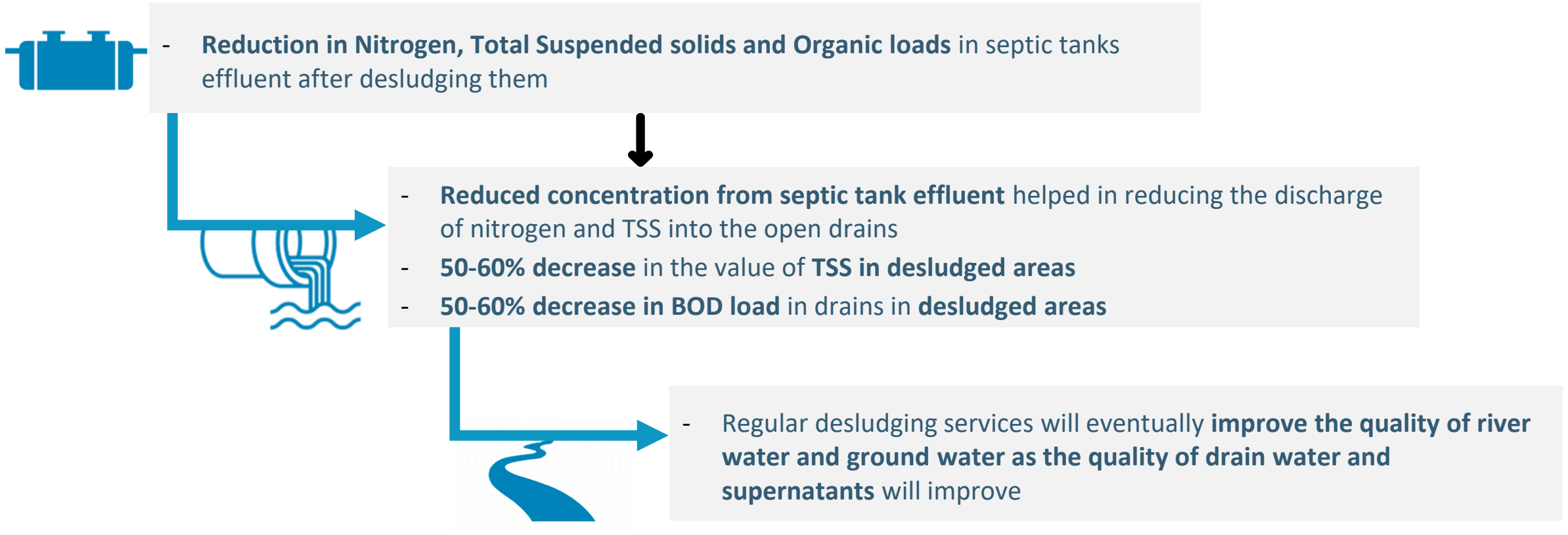
6800+
Properties
covered

95%
Acceptance rate
of services

19 million
Liters of septage
treated

Improvement in groundwater and river water quality due to scheduled desludging . . .

Improved performance of septic tanks after desludging resulting in improved drain water quality flowing into river



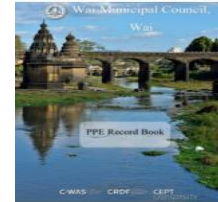
Empowering women for inclusive FSSM service delivery . . .

- **Building capacities of Elected Women Representatives (EWRs)** for effective functioning and participation in local governance focusing on FSSM.
- **Celebrating Women Sanitation champions** in the city and acknowledging their participation
- **Sensitizing women** at household level regarding the process of desludging



Sanitation workers safety....

- Registers for PPE usage and replacement
- SaniTab / SaniTrack dashboard monitors the PPE usage of desludgers on daily basis.
- PPE flyer has been prepared for various sanitation activities and shared with stakeholders
- Training workshop along with a health camp was organized for all Sanitation workers. Also PPEs were distributed during this event.
- Council has introduced clauses related to provision, usage and monitoring of PPEs in all their upcoming contracts for Sanitation based on experience of this scheduled desludging contract



Name of the worker: _____

Helmet	Safety goggles	Nose Mask	Hand Gloves	Jacket	Safety Shoes	Gum-boots	Remark	Sign
Date	Date	Date	Date	Date	Date	Date	PPE set given	Sign
			Date				Hand gloves are torn.	Sign

Sample of formats prepared for capturing replacement record book



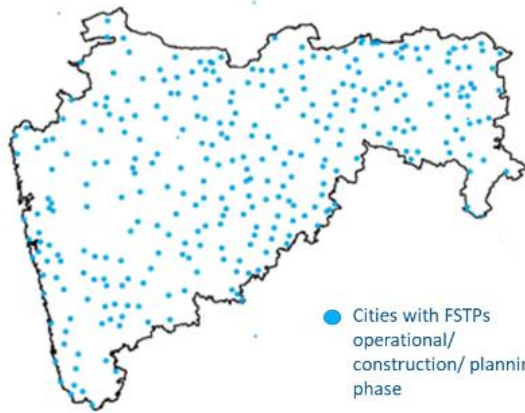
Advised PPE for different type of work



Not just one-off pilots... Learnings from these cities is being scaled up to state, national and global levels . . .

State

CWAS - Partner to the state government for implementing the SWACHH MAHARASHTRA MISSION URBAN –
400 cities
60 Million Urban population



Infrastructural efforts for treatment in Maharashtra

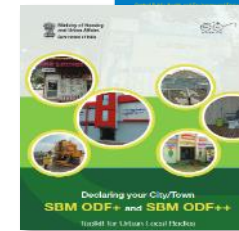
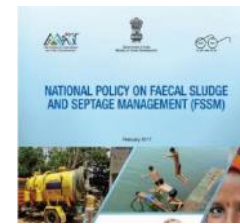
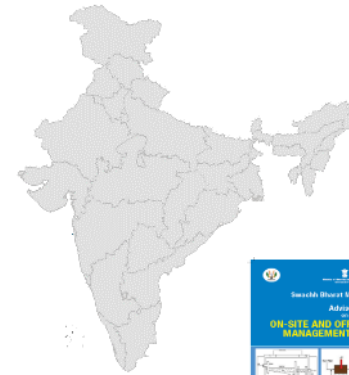
Independent FSTP -
311 cities
Cotreatment @STP-
70 cities



Scaling up **scheduled desludging** across cities of Maharashtra

National

SWACHH SURVEKSHAN 2021



Influenced
National Policies and guidelines

Global



Support to
Kabwe, Zambia for Scheduled Desludging

All this done through policy , guidelines and training support at both state and national level. . .

Partnership and Collaboration to attain scale . . .

BILL & MELINDA
GATES *foundation*

HSBC 



Government of
Maharashtra



CWAS
CENTER
FOR WATER
AND SANITATION

CRDF
CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY

NFSSM
Alliance

Thank you!

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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.

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