



Faecal Sludge and Septage Management From Policy to Practice

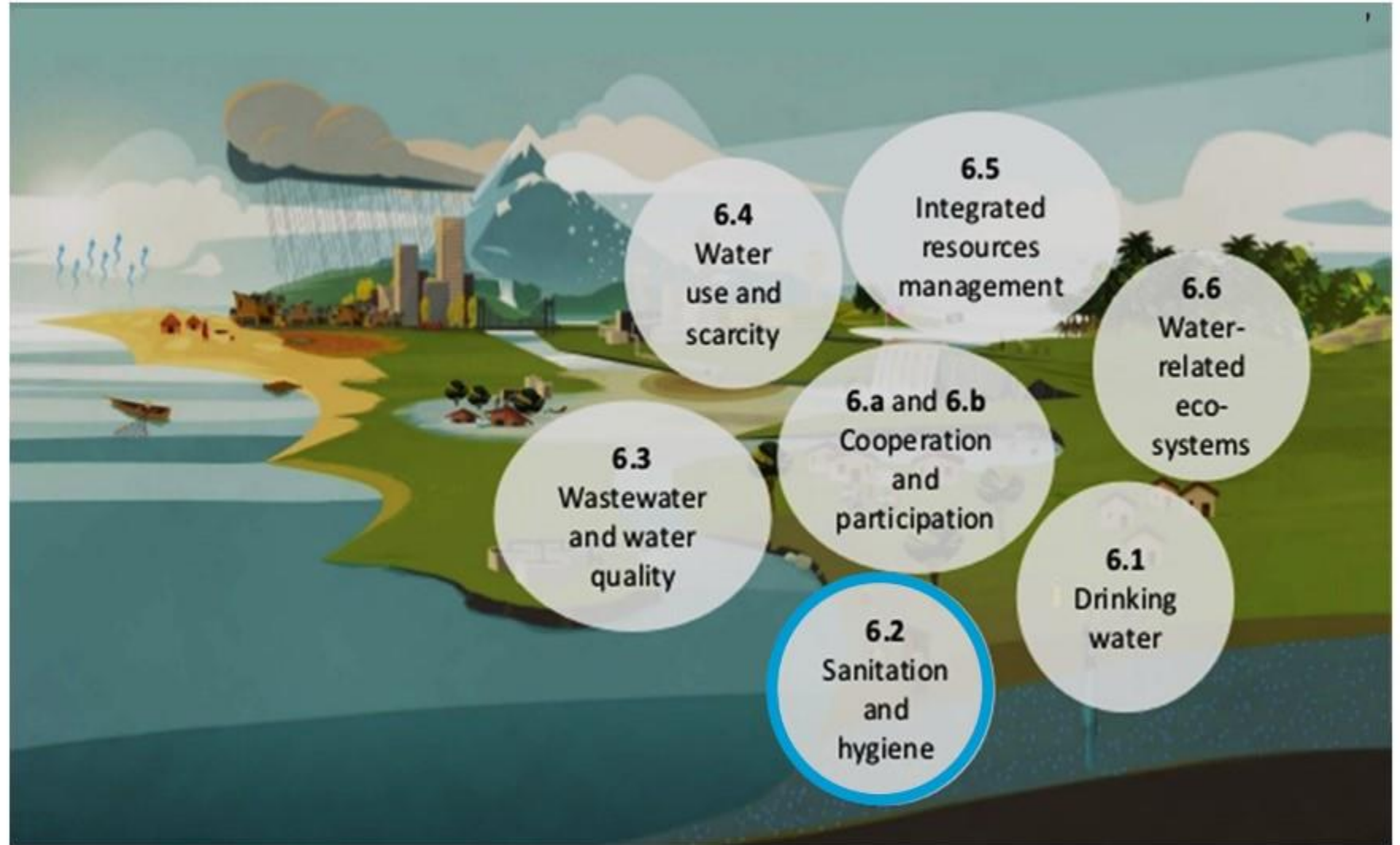
IIT, Mumbai
October 11 2019

Sustainable Development Goals (SDG) – were agreed in 2015

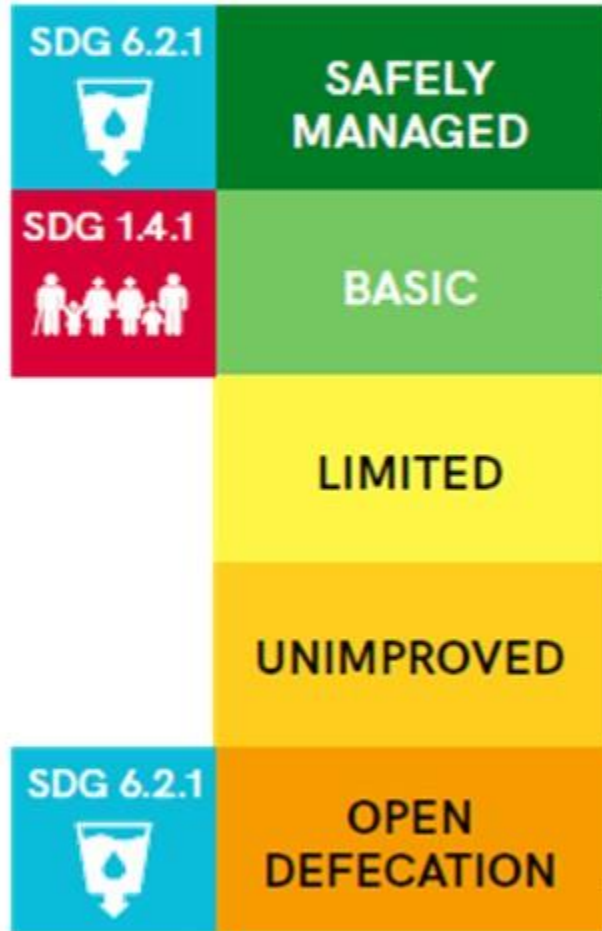


SDG 6 – Focus of 6.2 on sanitation

“By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations”
(JMP 2017, p.2)



JMP sanitation ladder for SDGs monitoring

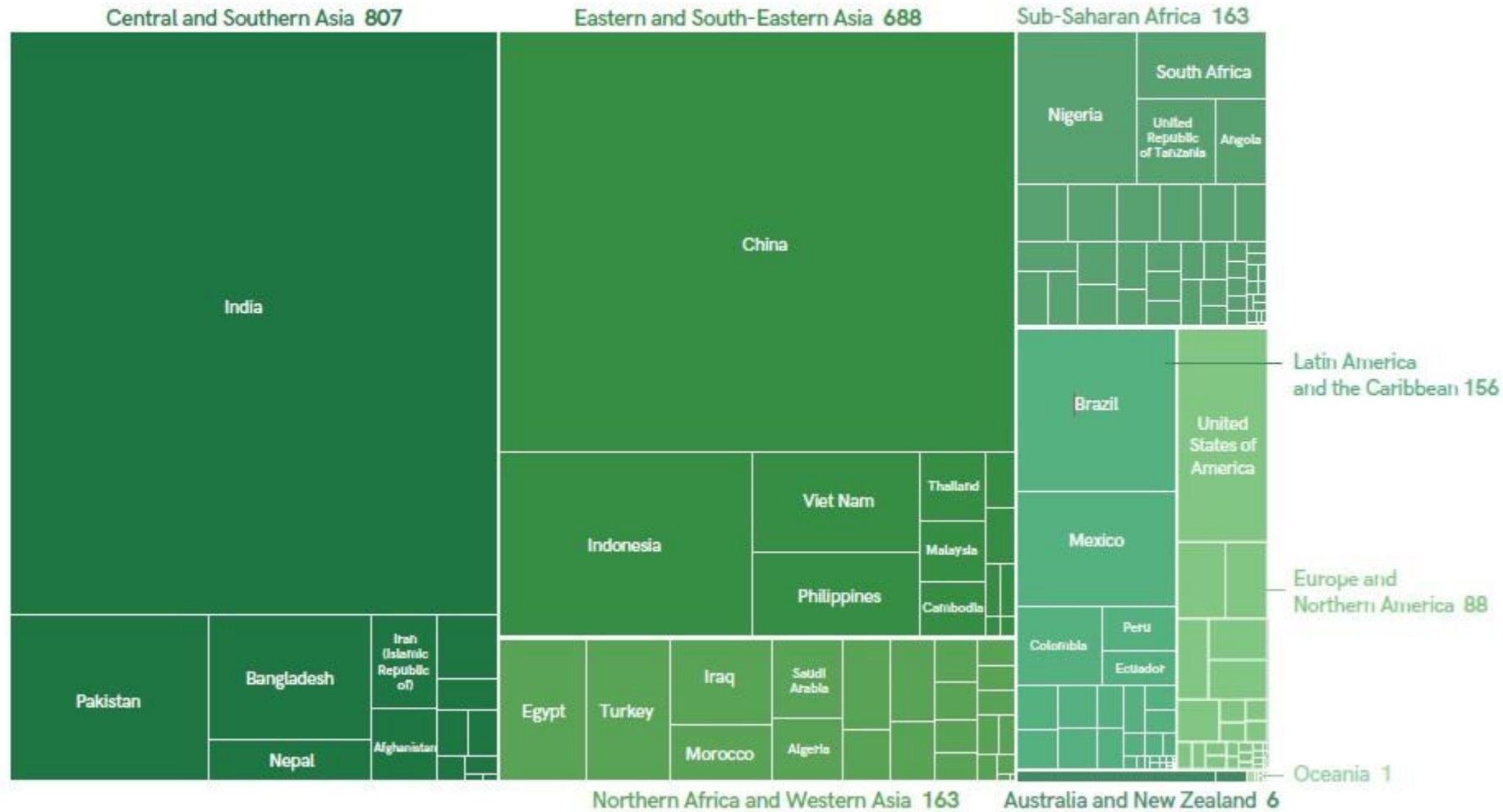


SAFELY MANAGED: Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or transported and treated offsite

BASIC SANITATION: Use of 'improved facilities' that are not shared with any other households

LIMITED SANITATION: Use of 'improved facilities' shared between two or more households

Current Sanitation Situation- basic sanitation services



2.1 billion people gained basic sanitation services between 2000 and 2017 – **The highest were from India**

Current global sanitation situation

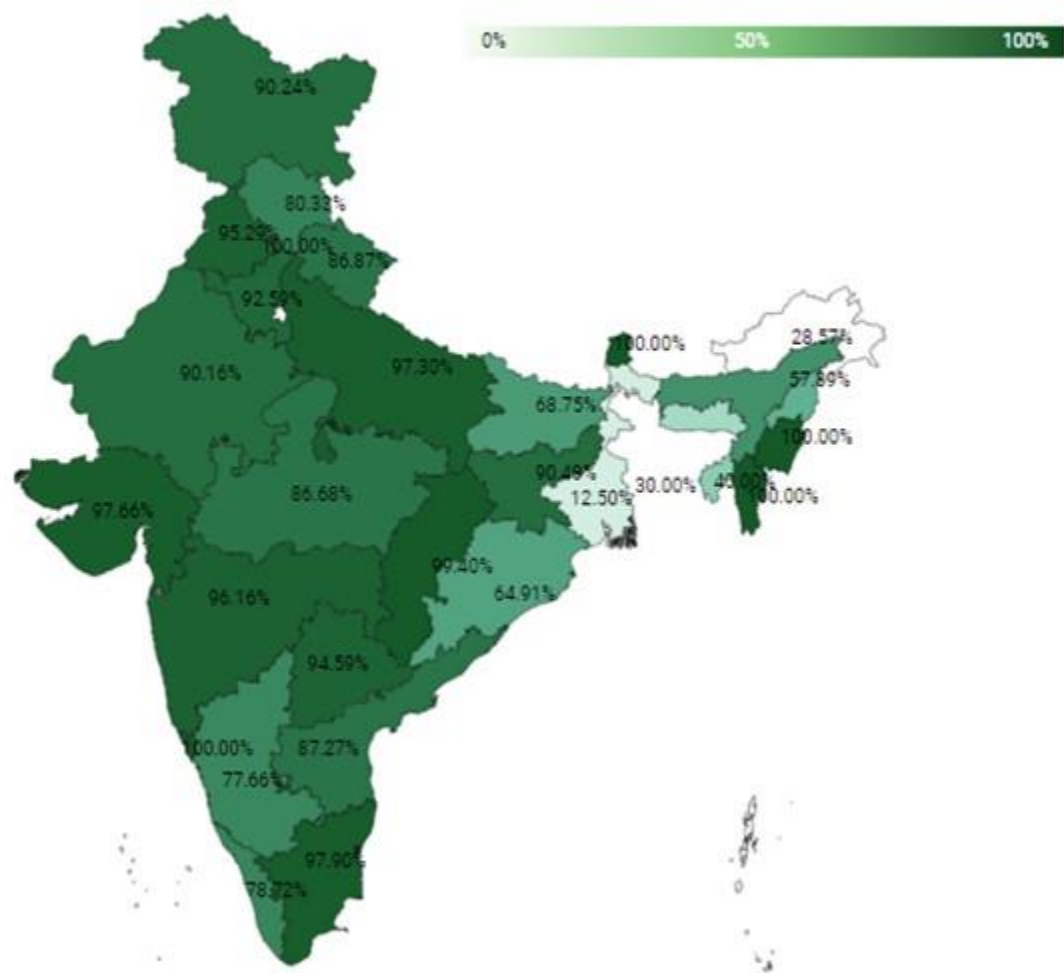


- "45% of the global population (3.4 billion people) used a **safely managed sanitation service**; that is, excreta safely disposed of in situ or treated off-site". **Data available only for 92 countries**
- **82%** of the global population (6.2 billion people) world wide used improved sanitation facilities (including those shared with other households) with this **population split evenly** into those using **sewer connections** and those using **on-site facilities**.



India

Urban India – ODF Status as on October 2, 2019



Over the past five years India has seen impressive achievements in sanitation for making cities open defecation free

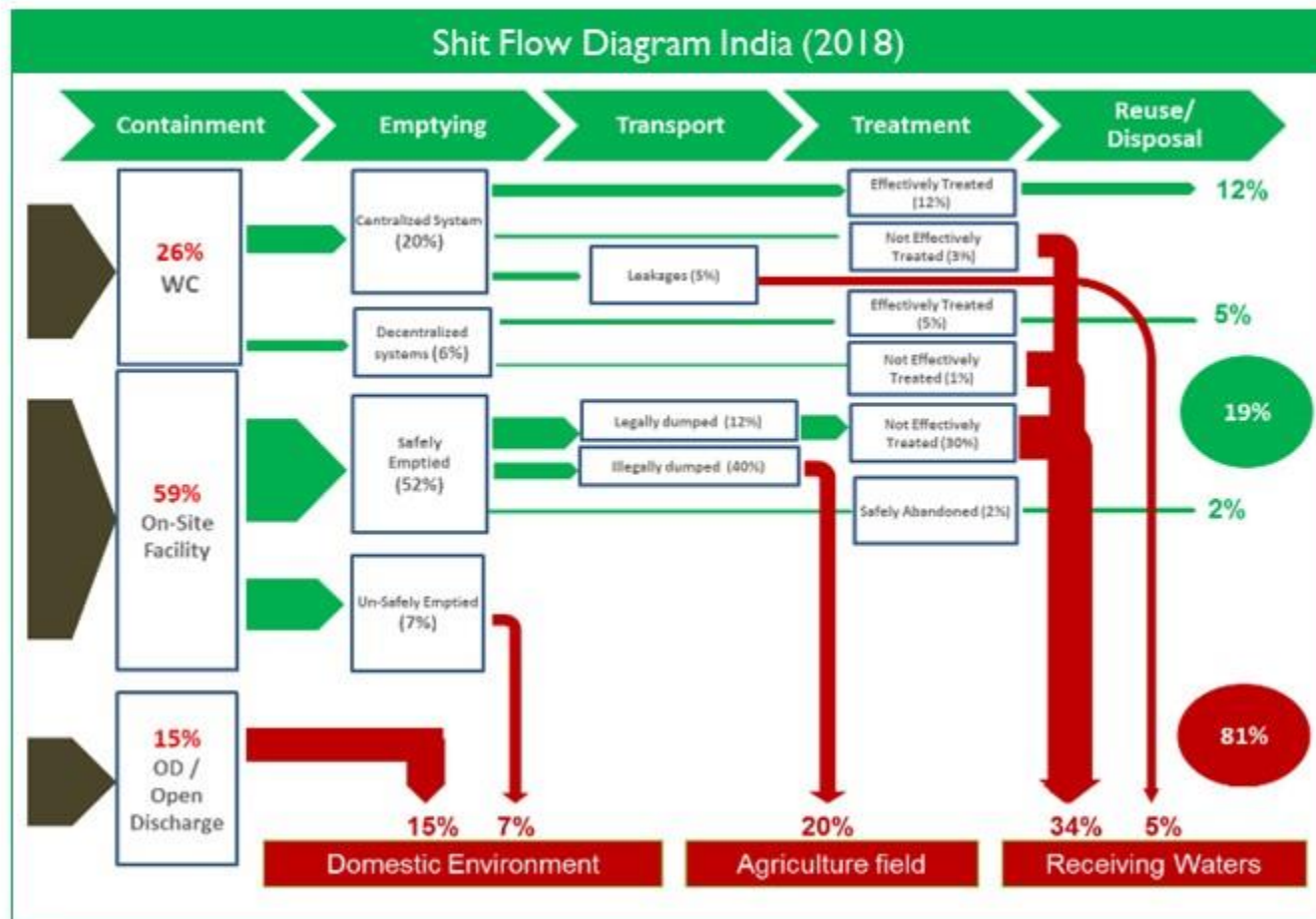
Status of ULBs which have applied for ODF status



Significant achievements under Swachh Bharat Mission (Urban) – But the focus has largely been on toilet construction



Focusing only on toilets leads to a situation where 80% of waste remains untreated



- A Shit-Flow Diagram (SFD) for India suggests that nearly 80 percent of faecal waste in India remains untreated and discharged in the domestic environment, agriculture fields or in water bodies.
- Water borne diseases in India are a major cause of infant and child mortality. Untreated waste is one of the main reasons for this.
- There is now a growing recognition that centralised sewerage systems are expensive both to build and to operate and maintain. The sewage treatment plants in India, as per the report of the Central Pollution Control Board are not efficient and do not treat waste as per the norms.

One truck of faecal sludge and septage carelessly dumped = 3,000 people defecating in the open!



The key challenge is now to move to ODF+ / ++, where all the faecal sludge and septage is properly collected, transported and treated.

The burden of sanitation in India



67% dependent on Onsite Sanitation Systems likely to increase to 70% by 2020 (CDD estimate)

THE BURDEN ON SAFE WATER

70% Faecal sludge in India untreated
38,791 Million litres daily Untreated sewage discharged in water bodies
 62% of total generated [CPCB report]

SDG 6.2

Safe and effective faecal sludge management becomes imperative to meet the **SDG target 6.2**

THE BURDEN ON HEALTH

20% Due to diarrheal deaths in children (under the age of 5) [USAID 2010]

THE BURDEN ON AGRICULTURE

79% would fail faecal coliform standards in Ganga Catchment [UN Environment, 2019], while demand for water for irrigation increases

FSSM as a solution to address the challenge

The challenge !!



Only **33%** of the latrines are connected to a piped sewer network



Only **20%** of the waste generated in the urban areas is currently treated



India is expected to experience the **second highest rate of urbanization** by 2030 indicating further sanitation challenges

Possible solution of FSSM ...

- One of the proven approaches to tackle the sanitation challenge pertaining to liquid waste management is faecal sludge and septage management
- FSSM takes a service-chain based approach, which comprises safe containment, conveyance, treatment, disposal/reuse of faecal waste

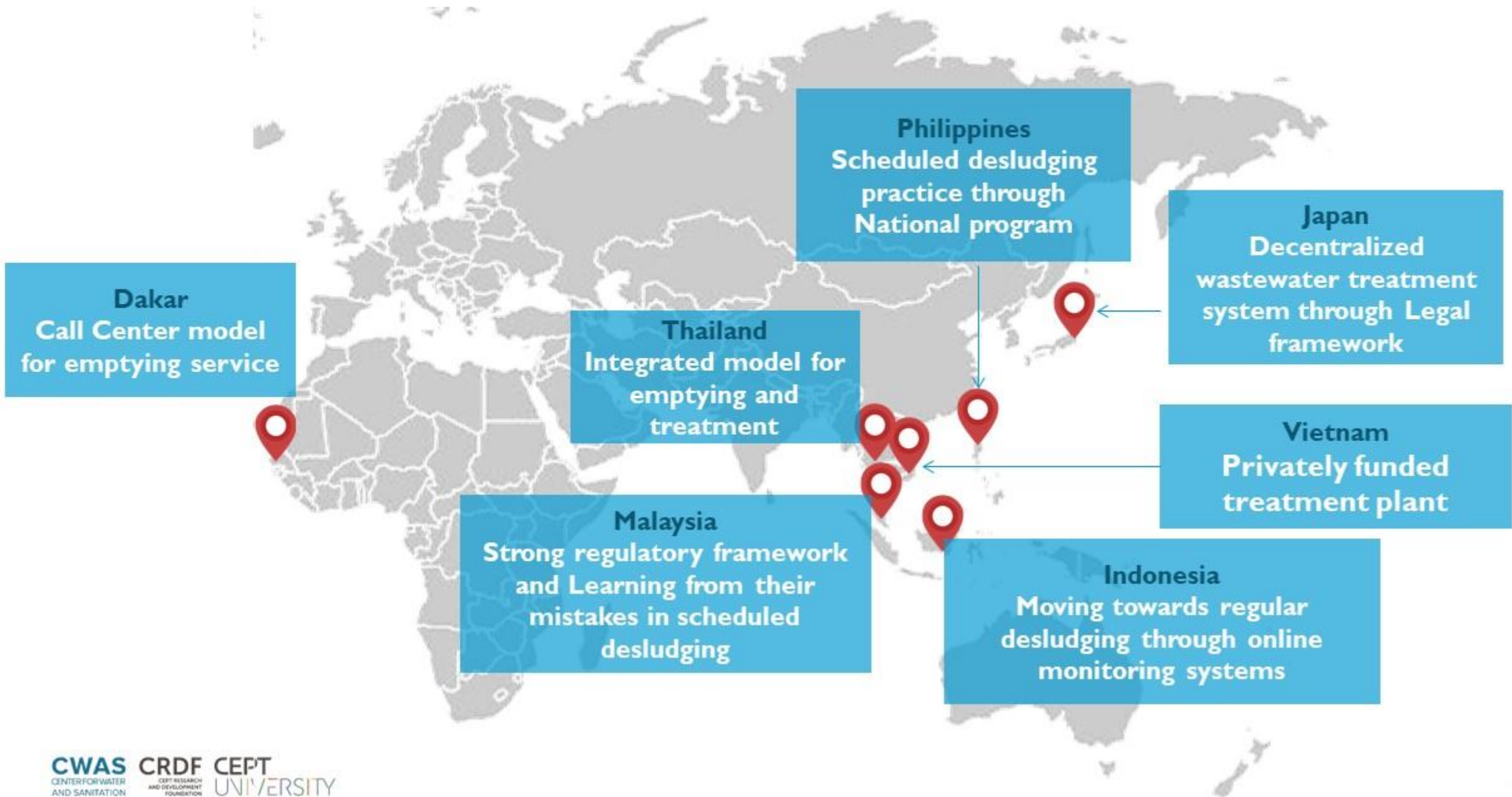


Current focus of SBM

FSSM on the international and national agenda



International experiences in FSSM



Lessons from other countries on FSSM

- Malaysia focused on strong regulatory framework and defined institutional roles and ensured focused investments
- Initially Bangladesh focused on open defecation free, only to realize the importance of treatment and now focuses to develop treatment facilities
- Philippines developed a National Sewerage and Septage Management Plan to oversee the scaling up of septage management through out the country (2010)
- Japan introduced a decentralized treatment system backed by legal provisions and support eco-system development
- All examples emphasize the need to ensure regular emptying of septic tanks/ onsite systems

There is growing recognition for FSSM at National and State level



- National FSSM policy adopted
- State policies – Odisha, TN, Maharashtra, AP, Telangana, Chhattisgarh
- Scheduled desludging initiated in Maharashtra
- 24 FSTPs are operational
- About 400 at planning or implementation stage

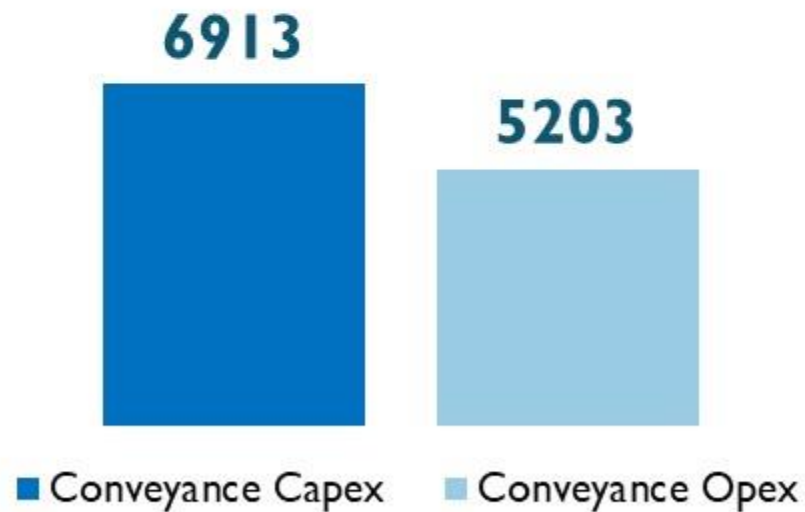


India's story on FSSM – States taking the lead... the need is to scale and sustain the momentum

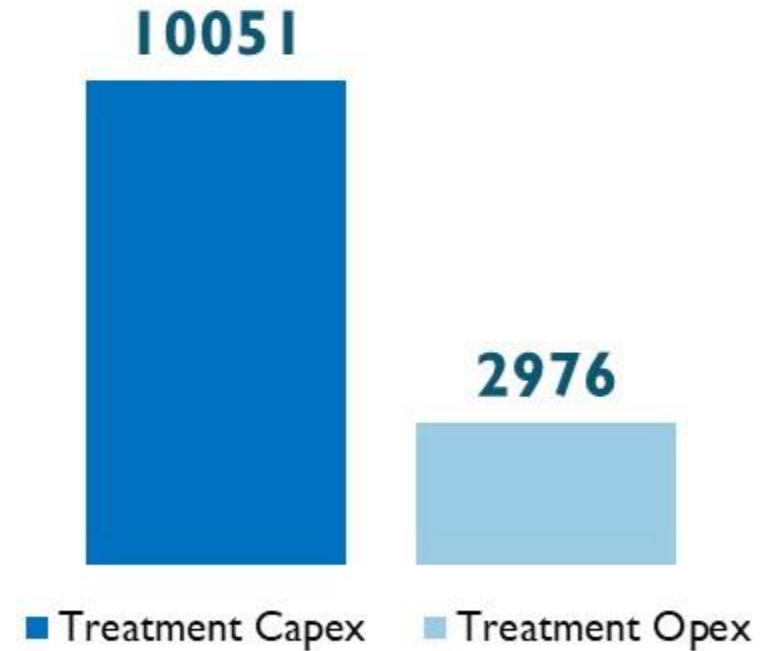
- The Ministry of House and Urban Affairs (MoHUA) released a national policy of Faecal Sludge and Septage Management (FSSM) in Feb'2017
 - This enabled many states to develop their own policy framework and operationalize FSSM
- 24 Faecal Sludge Treatment Plants (FSTPs) are functional and many states are planning state-wide roll-out
- National protocol on ODF++ under Swachh Sarvekshan 2019 emphasizes FSSM
- FSSM and scheduled desludging will help address issues of use of manual labour in emptying septic tanks

All India estimate for financing FSSM services are not very high! Capex ~ 17,000 Cr and Opex ~ 8,000 Cr

All India Financing requirement for
Conveyance



All India Financing requirement for
Treatment



Potential exists to leverage innovative financing /blended options to attract private funds and impact investments

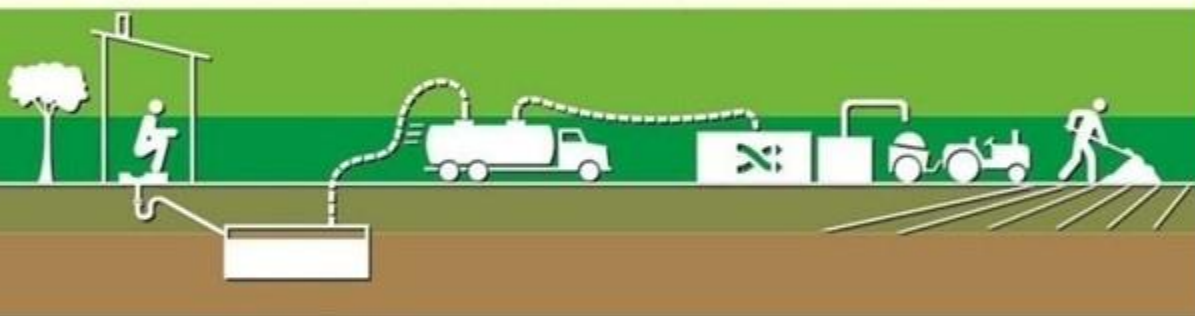
Potential of performance linked annuity models (PLAM) or hybrid annuity models (HAM)
Impact investment for FSSM Development Impact Bonds (DIB) or Social Impact Bonds (SIB)

- Focus on measuring outcomes
- Introduce strong monitoring systems
- Attract social investors to sanitation sector
- Large social, economic and environmental benefits





NFSSM



The NFFSSM Alliance

- NFSSM Alliance, is a consortium of 28 national and international agencies working towards improving urban sanitation outcomes in India by incorporating FSSM as an approach.
- The Alliance was instrumental in getting a National Faecal Sludge and Septage Management Policy of MoHUA. NFSSM Alliance has also submitted notes to the 15th Finance Commission: a) to consider inclusion of Faecal Sludge and Septage Management as a priority area for grants to Local Bodies in India, b) measures to support strengthening of municipal governments for service delivery

Focus on Fecal Sludge and Septage Management Government of Maharashtra

- Increased focus on moving cities towards ODF+ / ++ after declaring Urban Maharashtra ODF on 2nd Oct. 2017
- Maharashtra Government has issued three govt resolutions:
 - to move towards ODF+ / ++
 - to utilize Incentive grants and 14th FC funds for sanitation / ODF+ / ++ activities
 - Co-treatment of FS at own / nearby STP

GR on ODF, ODF+ and ODF++ framework



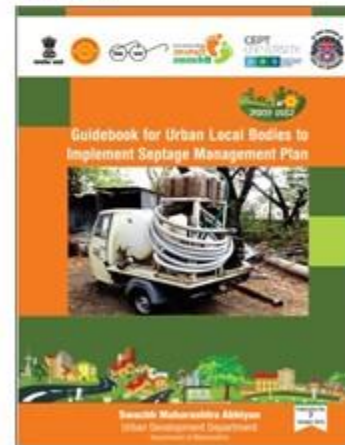
GR on use of 14th FC & Incentive Funds



Septage Management Guidelines



Step by Step Guide for ODF+



Sustainability Charter launched by the Hon'ble Chief Minister



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

Mr. Devendra Fadnavis
Chief Minister, Maharashtra

Emphasizes FSSM

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



Hon'ble Chief Minister's Speech on occasion of declaring Urban Maharashtra ODF on 1st October 2017



GoM Pioneered the concept of ODF+ /++

Maharashtra began with FSSM in two cities – Sinnar & Wai



Small & Medium towns in Maharashtra	Population Wai ~43,000 Sinnar ~72,000 ,	Declared ODF in 2016 - 2017	Moving towards ODF++
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Comprehensive City Sanitation planning and council resolution for Integrated FSSM



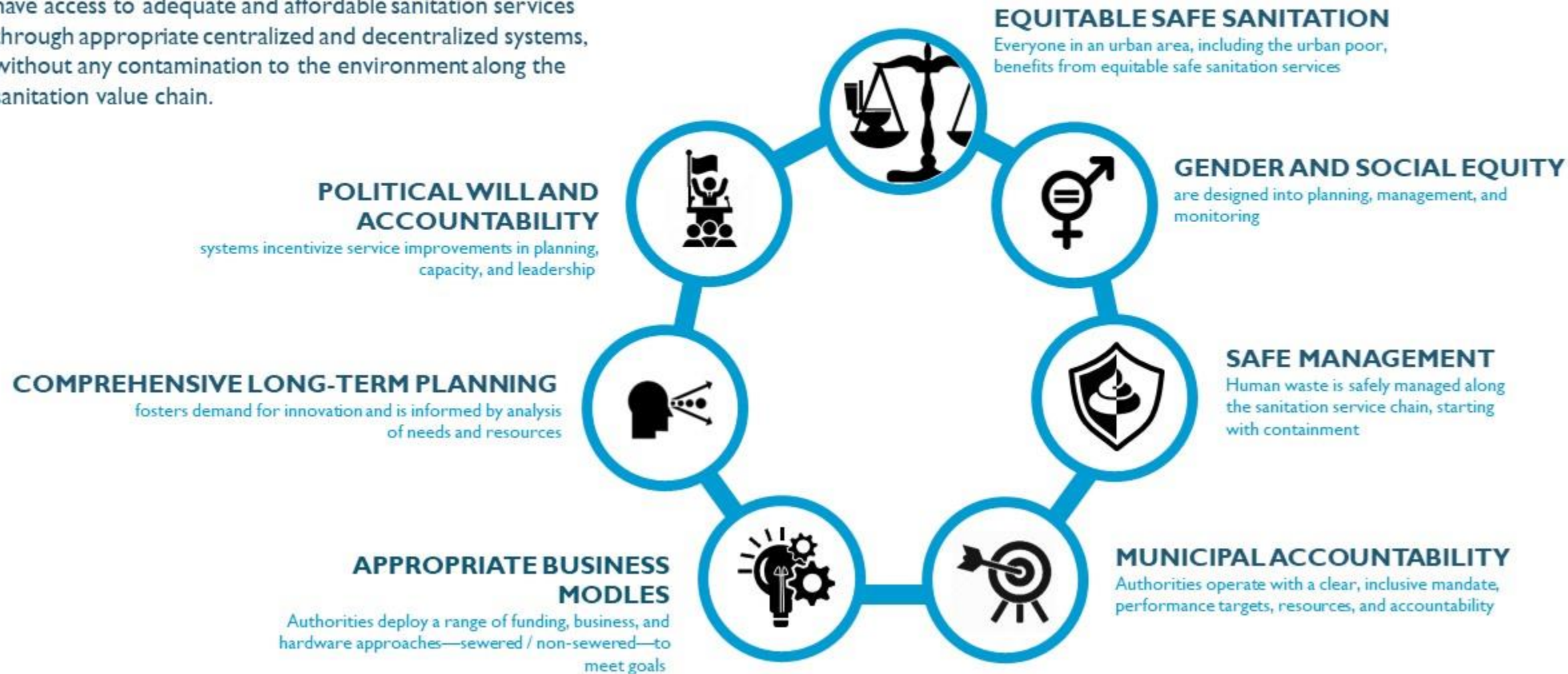
1st cities in India to implement citywide scheduled emptying of septic tanks



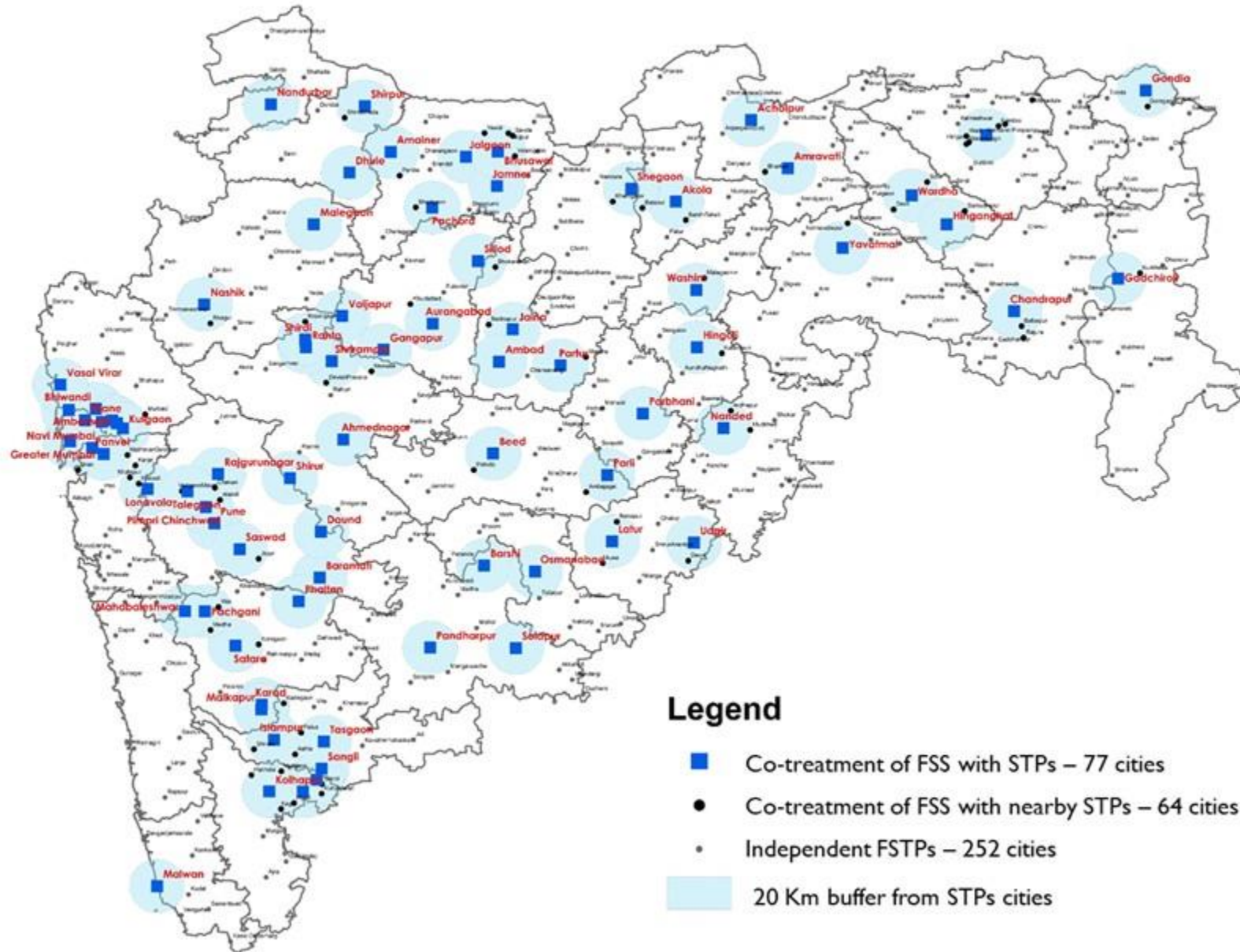
- 1 Scheduled emptying of septic tanks
- 2 Involving Private sector for emptying operations
- 3 Levying a Sanitation tax to support operations
- 4 Faecal Sludge and Septage treatment facility (FSTP)
- 5 Use of Own (DBO) / Philanthropy funds for FSTPs
- 6 Online monitoring systems for FSSM – emptying and treatment
- 7 Reuse of treated Waste Water
- 8 Municipal council commitment and leadership

Citywide Inclusive Sanitation

A state of urban sanitation, where all members of the city have access to adequate and affordable sanitation services through appropriate centralized and decentralized systems, without any contamination to the environment along the sanitation value chain.



Maharashtra – emerging approach for state wide safe sanitation

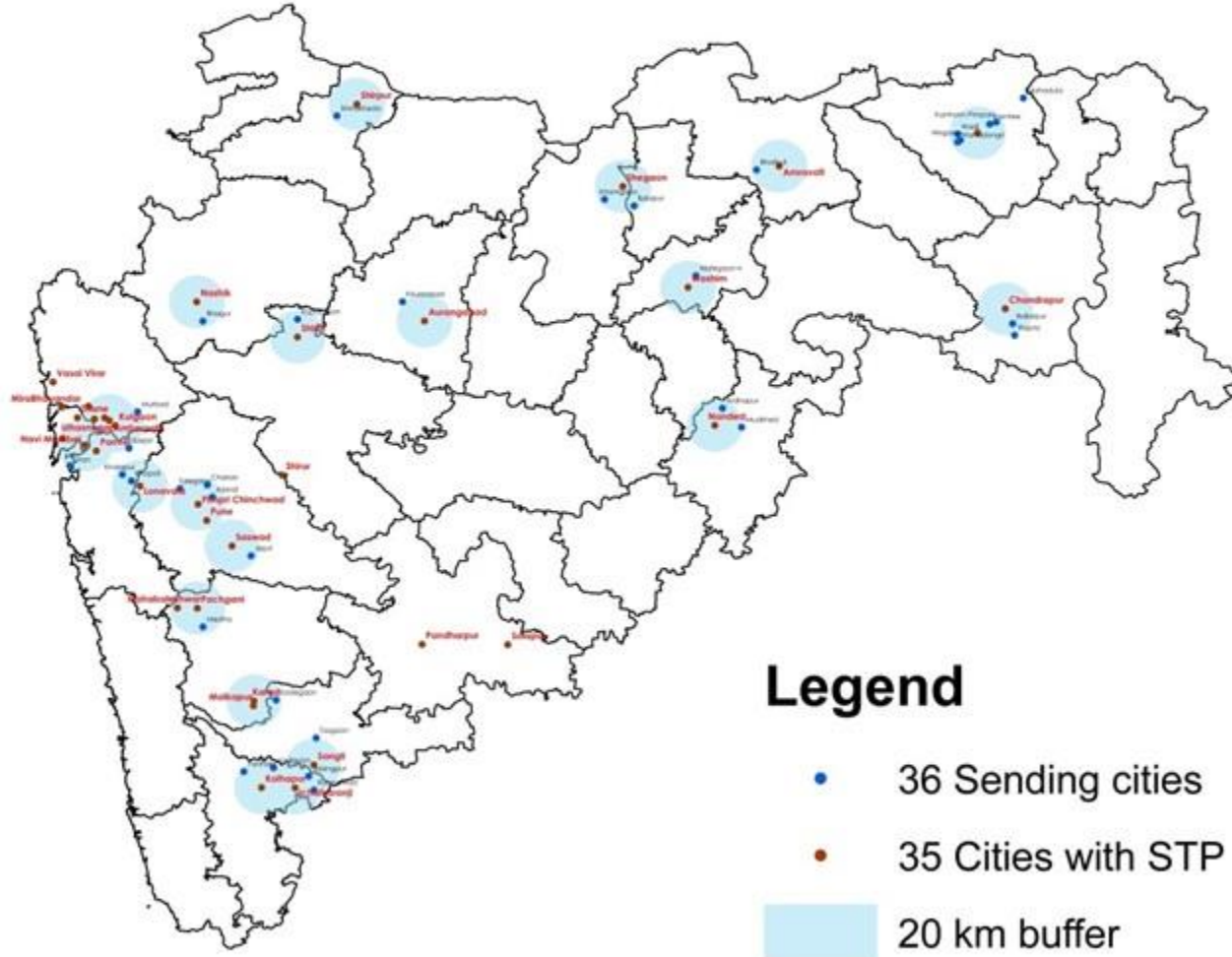


77 cities with underground sewerage systems and existing/proposed STPs – GR issued for co-treatment at own STP

64 cities with potential for co treatment with STPs of nearby – GR issued

252 cities with independent FSTPs

Co-treatment of Septage at Own STP and at nearby STPs



Government resolution dated 15 Dec '18

स्वच्छ महाराष्ट्र अभियान (नागरी) अंतर्गत राज्यातील नागरी स्थापिक स्वराज्य संस्थांनी करावयाच्या मैला व्यवस्थापना बाबत.

महाराष्ट्र शासन
नगर विकास विभाग
शासन निर्णय क्रमांक: स्वमअ- २०१८/प्र.क्र.३५१/नवि-३४
हुतात्म्या राजगुरु चौक, नादान काना मार्ग,
मंत्रालय, मुंबई-४०० ०३२
दिनांक: १५ डिसेंबर, २०१८.

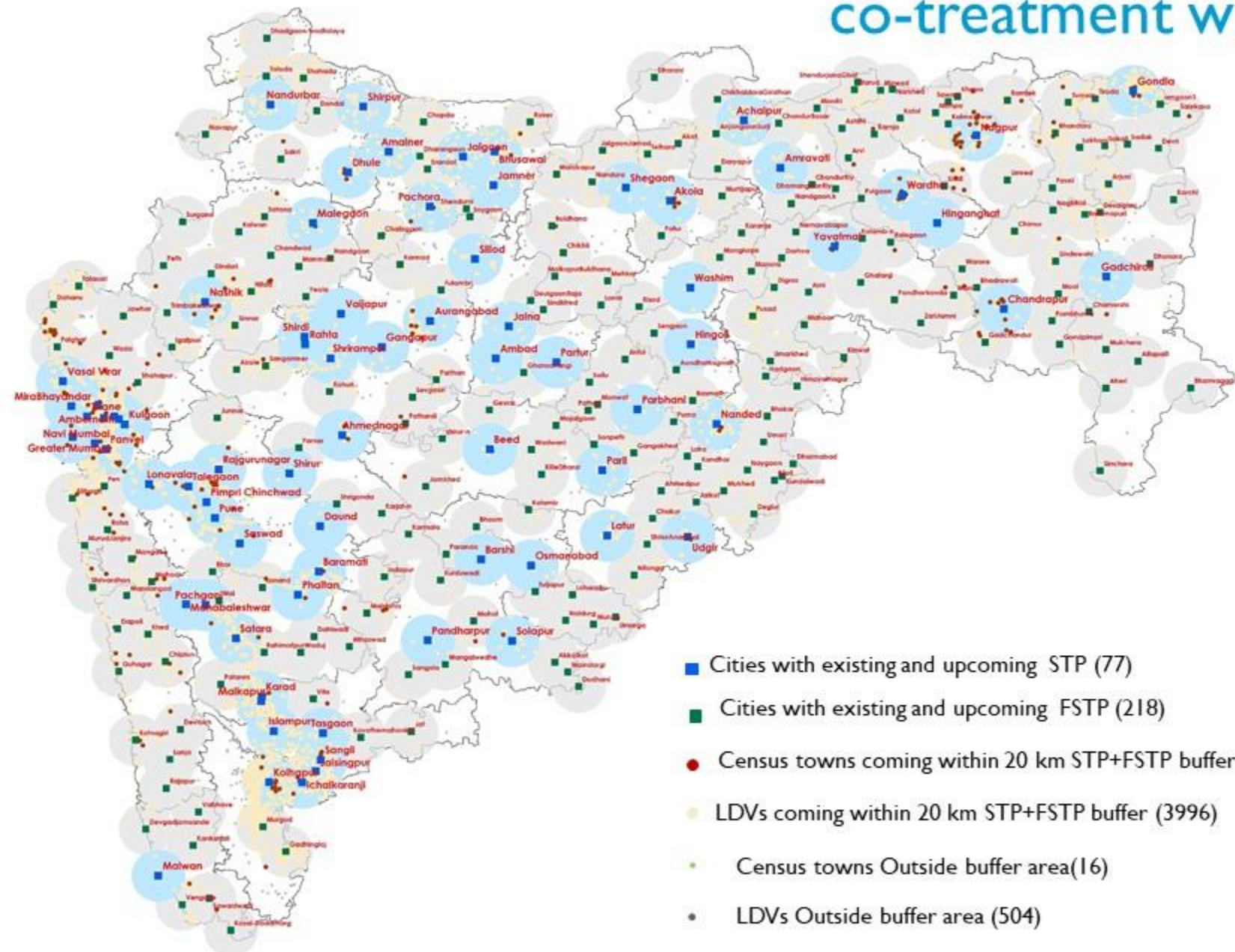
- बाधा:**
१. शासन निर्णय, नगर विकास विभाग, क्रमांक स्वमअ २०१५/प्र.क्र.२३/नवि-३४, दिनांक १५ मे, २०१५
 २. शासन परिपत्रक, नगर विकास विभाग, क्रमांक स्वमअ २०१७/प्र.क्र.३९/नवि-३४, दिनांक १७ मार्च, २०१७
 ३. शासन परिपत्रक, नगर विकास विभाग, क्रमांक स्वमअ २०१७/प्र.क्र.२६३/नवि-३४, दिनांक ३० डिसेंबर, २०१७

शासन निर्णय:

केंद्र शासनाच्या स्वच्छ भारत अभियानाच्या धर्तीवर राज्यामध्ये स्वच्छ महाराष्ट्र अभियानाची अंमलबजावणी सुरु आहे. या अभियानांतर्गत शहरांमधील ज्या कुटुंबांकडे शौचालयाची सुविधा नाही अशा कुटुंबियांना वैयक्तिक अथवा सामुदायिक शौचालयाची सुविधा उपलब्ध करून देवून शहरे "हागणदारी मक्त" करणे तसेच शनकचरा व्यवस्थापन निराम २०१६ नसार शहरातील शनकचरा व्यवस्थापन करून

- Cities mapped falling in the buffer of a city having STP
 - Total Receiving cities: 21
 - Total Sending cities : 36
- Cities to Co-treat at own STP - 35

Potential of Rural – Urban linkages co-treatment with STPs / new FSTPs



- Most of the **262 census towns** and **3996 LDVs** can be covered through co-treatment options with STPs/FSTPs covering around **1.8 crore population**.
- Many local governments and private sector are already providing desludging services to nearby rural areas. With some awareness, business promotion and capacity building support, they can expand these services.

Planning workshops with 150+ cities to take up FSSM

- Capacity building Workshops held
 - To help cities develop an FSSM plan, take up co-treatment
 - Provide technical guidance to cities for moving towards ODF++
- Resource materials like state guidelines on FSSM, model tenders etc were shared with ULB officials



As we move forward from Policy to Practice

- FSSM is essential to sustain and move beyond ODF, and to achieve safely managed sanitation
- In FSSM, equal focus is needed on regular/ scheduled Emptying and Conveyance as on Treatment and Reuse
- National role in policy and funding
- State role is crucial for state policy, funding, facilitating implementation by ULBs, ensuring private and community roles
- City ULB role is crucial in ensuring local ownership in planning, design and implementation and ensuring operational sustainability

Thank you

Suggested citation: Mehta, M., Mehta, D. (2019). Faecal Sludge Management: Policy and Practice. Presented at Faecal Sludge Management: Policy and Practice workshop, Mumbai, India.

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About us

The Center for Water and Sanitation (C-WAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

We are a member of the NFSSM Alliance, India

With conducive policies and practice
This is the expected future for ALL Indian cities in the next 10 years

