APPROACHES FOR FINANCING FAECAL SLUDGE MANAGEMENT

NFSSM Alliance

THE NFSSM ALLIANCE

The National Faecal Sludge and Septage Management (NFSSM) Alliance was convened in January 2016 to build consensus around faecal sludge and septage management.

The Alliance with support from the Bill and Melinda Gates Foundation works in close collaboration with the Ministry of Housing and Urban Affairs and helped design a national policy on FSSM.

The Alliance comprises of numerous national and international organizations across the country working towards sanitation solutions for India.

VISION

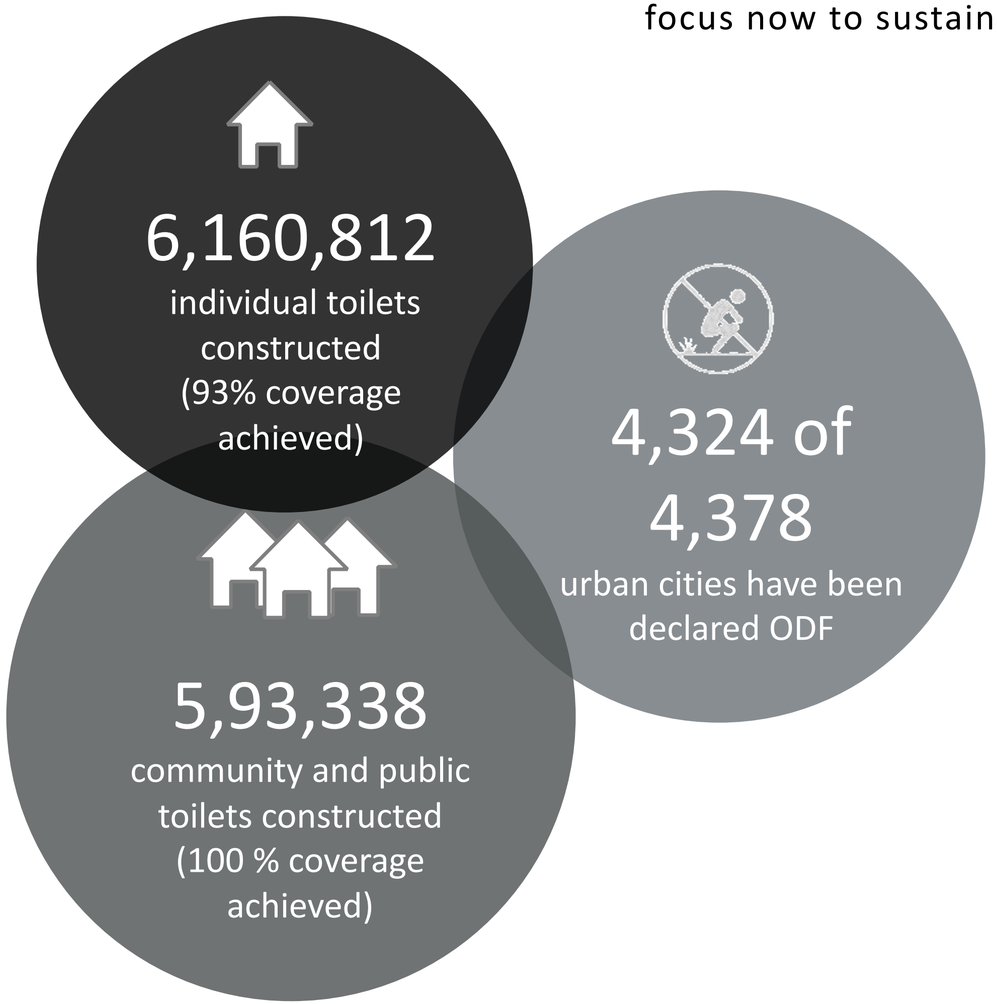
Create an enabling environment that amplifies scaling of safe, sustainable and inclusive FSSM through knowledge, partnerships and innovative solutions by 2024.

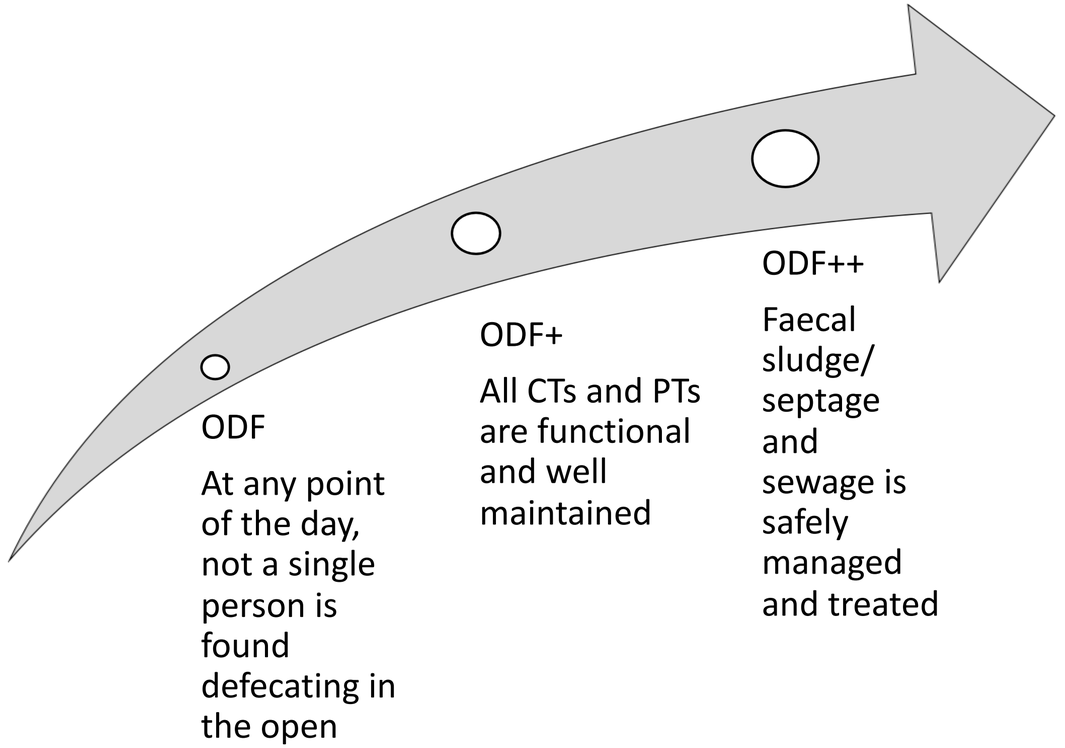
GUIDING PILLARS

INCLUSIVITY
INFRASTRUCTURE AND TECHNOLOGY
SYSTEM STRENGTHENING AND CAPACITY BUILDING
BEHAVIOUR CHANGE COMMUNICATION
POLICY

SANITATION ACHIEVEMENTS

The Swachh Bharat Mission is addressing toilet access successfully. Need to focus now to sustain the SBM Momentum and fully achieve SDG 6.2

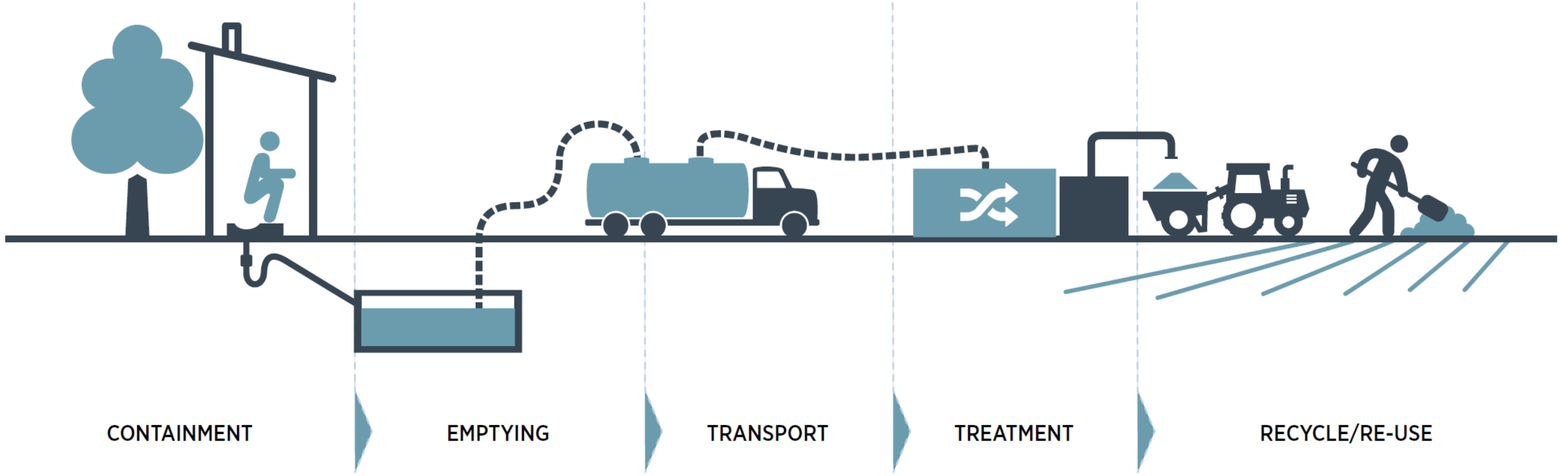




Journey from ODF to ODF+ and ODF++ has begun

Source: SBM Urban MIS; National Annual Rural Sanitation Survey 2018-19

SANITATION SERVICE CHAIN- CURRENT STATUS



ON SITE SANITATION (OSS) DEPENDENCE

About 67% of urban HHs have Onsite Sanitation Systems (OSS) likely to increase to 70% by 2020 [CDD estimate]

THE BURDEN ON SAFE WATER

Nearly 70% of faecal sludge is untreated in India, and 38,791 MLD untreated sewage (62% of total sewage) is discharged directly in water bodies [CPCB report]

THE BURDEN ON AGRICULTURE

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

Key Facts

30 million of 79 million urban HHs (nearly 40%) with septic tanks, **have no clear method for sewage disposal** (WaterAid, 2016)

Diarrhoeal diseases (most of them due to poor sanitation services) **contribute to 20% of deaths** in children under the age of 5 (USAID, 2010)

Lack of proper and functional service chain causes an **estimated loss of US$ 54 Billion** to India annually.

NEED FOR FAECAL SLUDGE AND SEPTAGE MANAGEMENT (FSSM) IN INDIA

Low Cost, High Impact

Advantages of Non-Sewered Sanitation:

- Requires low investment & operations as compared to Sewered Sanitation
- It is water saving and does not need large scale infrastructure
- Cost-effective solution for treatment and reuse

Even the **CPHEEO manual** defines the high capital and O&M costs of centralized STPs as hurdles for small towns, and mentions: **STPs remain a highly resource inefficient technology with high capital and O&M costs, thereby prohibiting widespread adoption in all sizes of urban areas in the country.**

Open Discharge of Faecal Matter

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

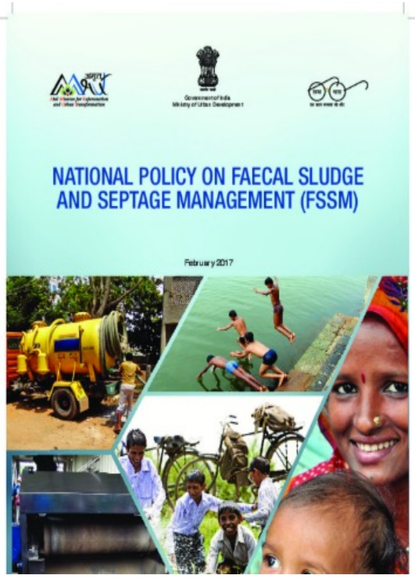
Lack of Services leads to manual scavenging

Since 2017, one **manual scavenger has died** on the job **every five days!**

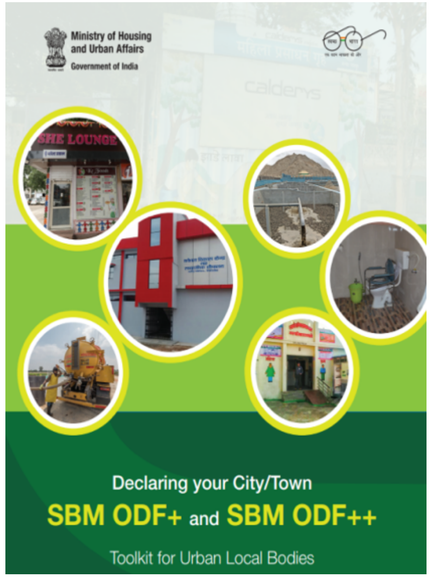
EMERGING EMPHASIS ON FSSM

SDG

Target SDG 6 states that by 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation.



National Policy on FSSM



National ODF+ and ODF++ protocol

Swachh Survekshan

AVAILABILITY OF FUNDS FOR FSSM IS CRUCIAL

Why is there a need for funds for FSSM?

- The urban population of India is increasing indicating the need for preparedness to address the sanitation challenges across the value chain.
- Presented below is an example of the estimated projection of households from four states, which would require FSM services by 2022.

Two-thirds of the urban population in India are dependent on FSSM

To meet the growing demands, enabling the presence of **funds to finance** FSSM implementation is key

Why is financing FSSM important?

- Faecal sludge and septage management (FSSM) has not received adequate public finances in the past.
- Even the flagship sanitation programs such as the Swachh Bharat Mission did not include FSSM as a focus area, while funding under AMRUT and Smart Cities programs is not usually used for FSSM.
- Over the past two years FSSM has received increasing attention and a national FSSM policy has bene adopted. With increasing recognition of the need for FSSM solutions, financing sources and models have emerged as key.

Given that FSSM is typically viewed as a public good, it is expected that public financing for FSSM will have a significant role

BENEFITS OF INVESTING IN FSSM

EXPECTED IMPACT

Improved health and reduction in disease outbreaks

Increased safety for sanitation workers

Significant reduction in water and soil pollution

Large social, economic and environmental benefits

- Improved health – morbidity and mortality
- Time savings
- Improved environment – river and ground water quality,
- Reduced exposure to FS in environment
- Improved safety and dignity for women
- Increase in property values

Studies by UNICEF, World Bank and BMGF

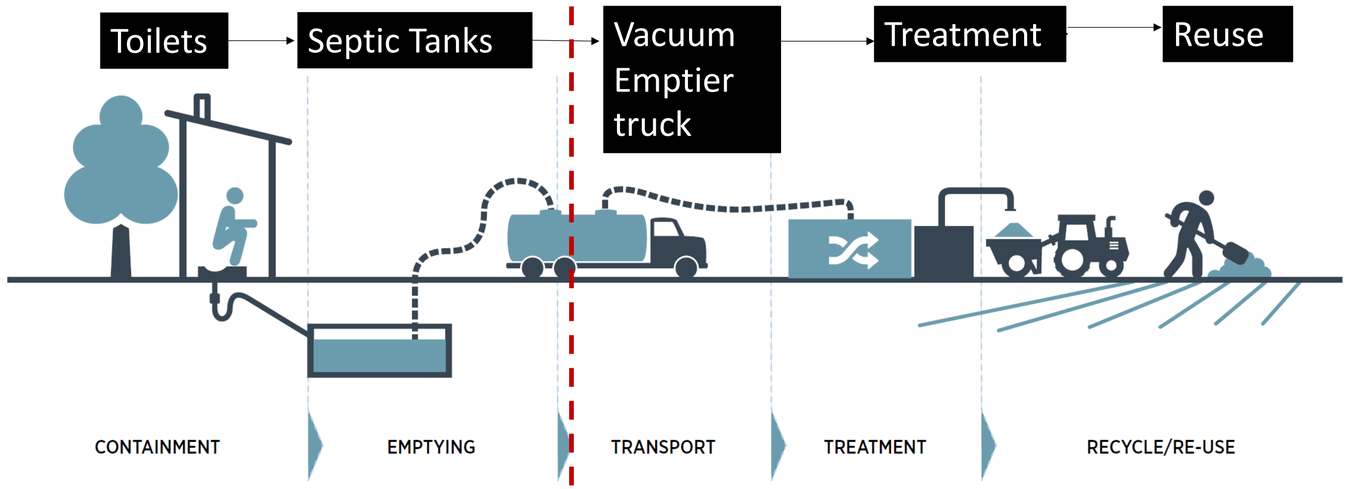
The public health consequences of untreated sewage are immense; for example, diarrheal diseases contribute to 20% of deaths in children under the age of 5.[2]

The health and environmental impacts of inadequate sanitation in India add up to Rs. 2.44 trillion (US$53.8 billion) a year —this was the equivalent of 6.4 percent of India's GDP in 2006.[3]

Source: Sector track report SDG #6 Clean water and sanitation, Prabhav 2018 by Intellecap, FSM brochure, Samhita

FINANCING FSSM SERVICES FOR SAFELY MANAGED SANITATION SYSTEMS

Faecal Sludge and Septage Management



Investors → Households

Private Sector

Public/Private

Financial Requirements

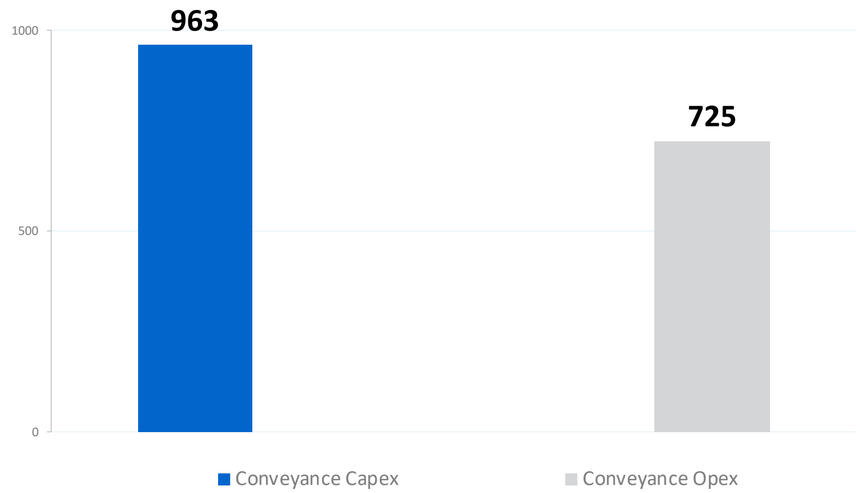
Capex	**New Toilets New septic tanks**	**Refurbishment of septic tanks**	**New Suction Emptier Trucks**	**Treatment Facility-** Land and construction cost
Opex			**Operation of Emptier trucks–** Fuel cost, salaries of truck driver, etc	**Operation of Treatment Facility-** staff salary, electricity bill, pumps replacement, etc

ALL INDIA ESTIMATE FOR FINANCING FSSM SERVICES

Capex ~ 2.4 Billion USD and Opex ~ 1.1Billion USD

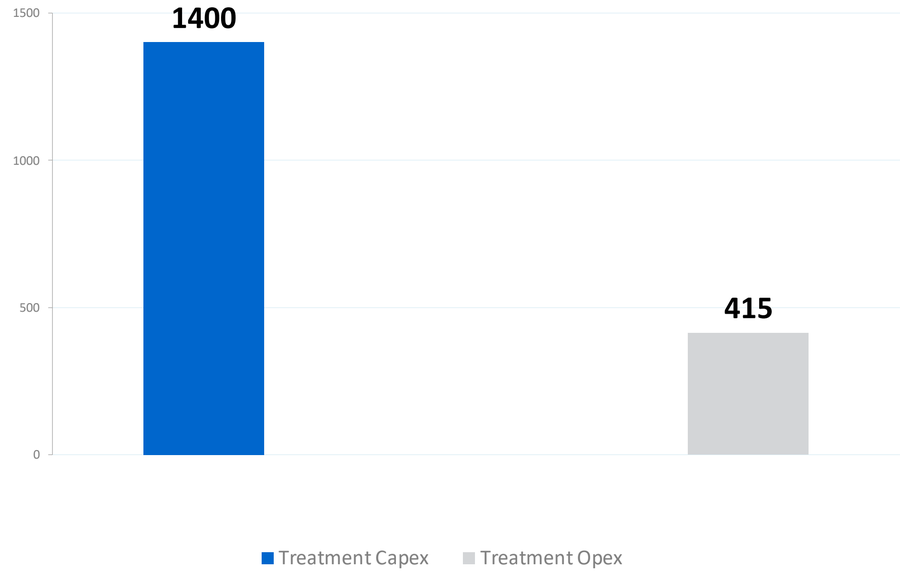
All India Financing requirement for Conveyance

(In Million USD)



All India Financing requirement for Treatment

(In Million USD)



EMERGING BUSINESS MODELS IN CONVEYANCE

Demand desludging business models

1. **Truck Capex and Operations by Private Operator**
2. **Truck Capex and Operations by Local Government**
3. **Government-Owned Vehicles and Leased to Private Players for Operations**

Scheduled desludging business models

4. **Truck capex and Operations by Private Operator with Performance Based Annuity Contract With Local Government**
5. **Truck Capex by Government and Operations by Private operator with Performance Based Annuity Contract with Local Government**

**In Conveyance, Capex will involve buying of trucks*

EMERGING BUSINESS MODELS IN TREATMENT

Treatment business models

1. **Philanthropic funded treatment facility**
2. **State government funded through national/ state programs for capex and opex**
3. **Local Government funded for capex and opex**
4. **Partially funded by private sector and state government and operated by private**

Integrated business models

1. **Integrated business model for scheduled desludging and treatment**
2. **Integrated model with cluster based approach**

PROTOTYPES OF TREATMENT BUSINESS MODELS

Initiated with Philanthropic funded treatment plants (e.g. Wai, Warangal, Narsapur)

State/ Local government funded treatment plans (Sinnar, Maharashtra; Odisha)

Hybrid annuity models (AP and Telangana), integrated emptying and treatment models (Leh)

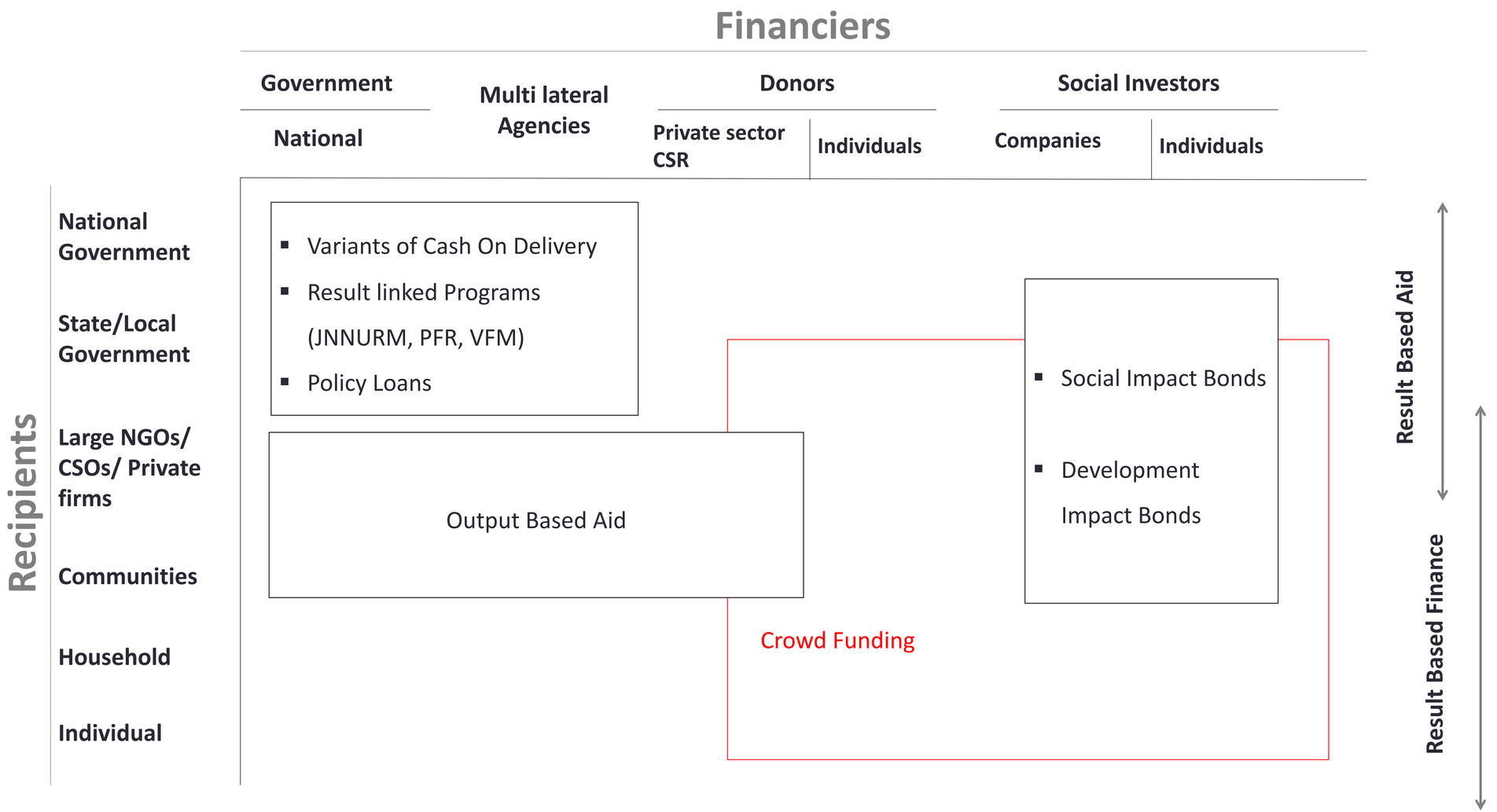
ACCESS TO FUNDS FOR PRIVATE ENTERPRISES?

Not easy….. Despite inclusion in Priority Sector Lending (PSL)

Need to increase awareness about the investment opportunities in FSSM for potential funders, bankers and other lenders.

But also impact investors, and corporates to support the sector through CSR funding/ impact investment.

INNOVATIVE FINANCING FOR SANITATION



INNOVATIVE FINANCING/BLENDED OPTIONS TO ATTRACT PRIVATE FUNDS AND IMPACT INVESTMENTS

Performance linked Public-Private-Partnerships (PPPs)

- Performance linked annuity models for conveyance
- Hybrid Annuity Model (HAM) model for treatment facilities

Municipal Borrowing for Sanitation Infrastructure

- Municipal borrowing from banks for FSTPs under Priority Sector Lending
- Municipal borrowing from institutions for FSTPs
- Use of Water Sanitation Pooled Funds for FSSM in TN

Impact Investment and CSR

- Corporate Social Responsibility Funds
- Philanthropy funds
- Development Impact Bonds / Social Impact Bonds

It is essential to recognize that public finance, supported by selective private funding will be the primary means of funding for FSSM. However, different forms of blended finance should also be explored to leverage private funds and impact investment.

CSR – A POTENTIAL NEW SOURCE IN INDIA

- The Companies Act, 2013 allows new models of social engagement by mandating that large companies spend 2% of their three-year average annual profit towards corporate social responsibility (CSR)
- potential estimated annual flows from CSR of Rs 17,000 Crores
- Challenge to direct CSR funds to urban sanitation
- Many companies already active in sanitation space but largely in rural areas – HUL, Ambuja Cement, ACC, Amul, GAIL, NTPC
- Swachh Bharat Kosh – mainly to be used for school sanitation

Ambuja Cement ~Foundation~

Its community development work is based on its mission and underscores our belief in communities and in our role as catalysts to bring in change.

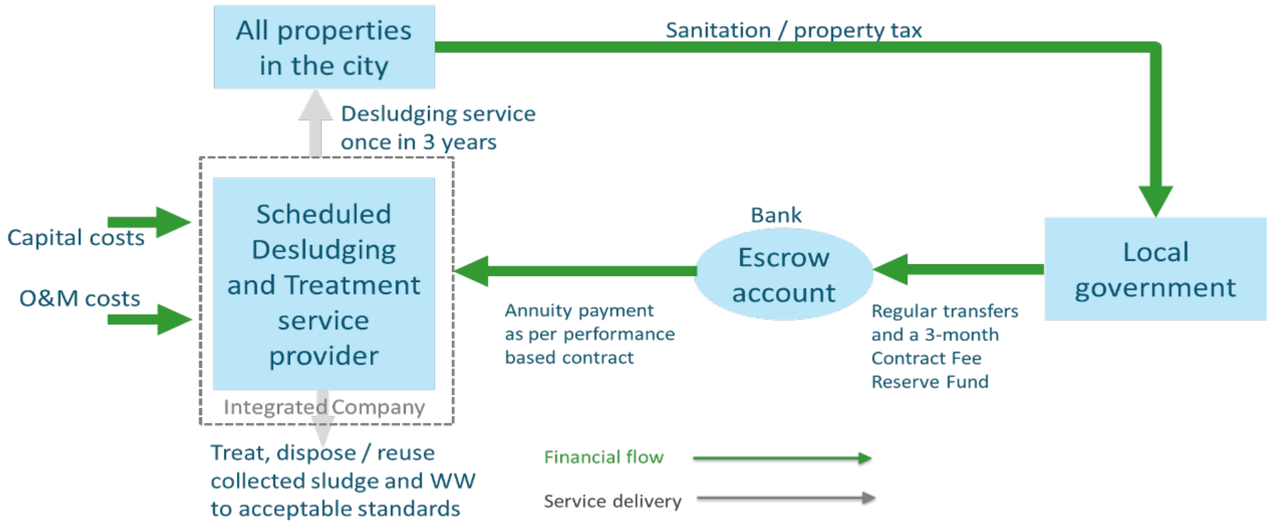
PERFORMANCE LINKED ANNUITY MODEL

For scheduled desludging in Wai and Sinnar

In Wai, ULB appointed the private player to carry out scheduled emptying service in the city. The Capex cost of the truck and Opex cost of the emptying service will be initially mobilized by the private player which will be paid back by the local government using annuity payments. The private player will be paid against performance linked to the number of septic tanks emptied. The household will pay sanitation tax to the local government, which will ensure that adequate funds are available to recover the cost of emptying service. The risk of late payment raised by private players is attempted to be mitigated through an escrow account mechanism.

Benefits: Thus, with a performance-based contract, customers are assured of a high-quality service with low prices paid through sanitation tax. Lower prices are due to economies of scale, lowering the charge per individual emptying.

Performance Linked Annuity Model (PLAM) for conveyance in Wai



On May 30, 2018, Wai Municipal Council in Maharashtra became the first city in India to start a Scheduled Desludging service.

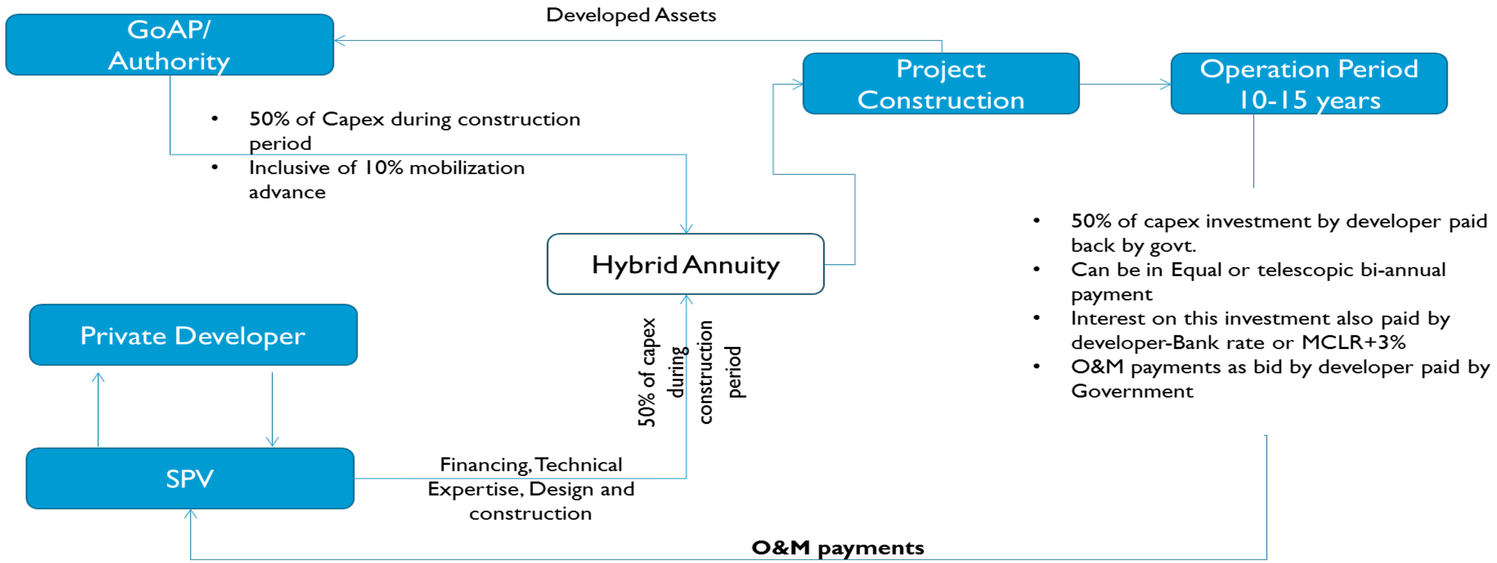
Positive results !

- Scheduled emptying since June 2018
- 500+ scheduled desludging done in 8 months
- 7-8 septic tanks desludged per day as compared to 7-8 per month in 2017 when demand desludging was happening.

- 2.5 million liter septage delivered to treatment facility
- 90%+ acceptance rate from HHs for scheduled service
- Sanitation workers now wear safety gear regularly
- Households pay sanitation tax instead of high user charges for desludging

HYBRID ANNUITY MODEL FOR TREATMENT

For Treatment in Andhra Pradesh and Telangana



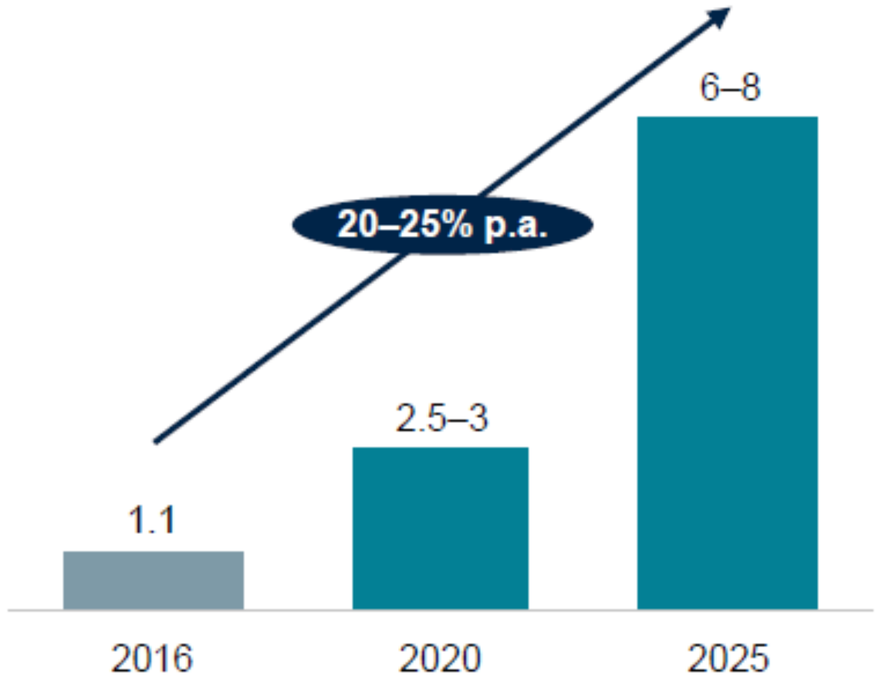
HAM model proposed through city clusters for
76 ULBs in AP
72 ULBs in Telangana

- Private companies - undertake construction, operation and maintenance on a DBOT basis. Cost determined by bidding
- CapEx – 50% by government , 50% by private company
- Annuity payments cover a) CapEx repaid through annuity payments over contract period, b) and OpEx
- Funding by Funding by Swachh Andhra Corporation supported through the state budget alleviates concerns around individual ULB financial capacity and payment risks
- Private player clustering approach (multiple ULBs per partner) to achieve scale economies and a large contract
- Private player responsible for selling soil conditioner/bio-fertilizer/biogas and recycled wastewater. In the long term, part opex recovery planned through user charges

Source: ASCI, Andhra Pradesh and Telangana FSTP Tender
CWAS CEPT University Presentation on financing FSSM- 13 June

IMPACT INVESTING IN INDIA HAS THE POTENTIAL TO GROW 6-8 TIMES BY 2025

Potential growth for impact investing in India
Annual investments, US$, billion



Growth drivers

- **Large unmet** social needs
- **Strong** forecast growth of Indian social sectors
  - **23–25%** in microfinance
  - **24–26%** in clean energy
  - **22–24%** in healthcare
  - **7–9%** in education
- **29%** historical global growth

SOURCE: IBEF, Press search; McKinsey analysis

Pay-for-success instruments such as Social and Development Impact Bonds (SIBs and DIBs) are increasingly being used

Source: McKinsey & Company (2017), “Impact Investing finds its place in India” September

DEVELOPMENT IMPACT BONDS (DIBS)

A Development Impact Bond, or DIB, is a results-based investment instrument in which one or more private investors provide working capital for social programs, implemented by service providers and one or more outcome funders (e.g., foundations, donors, etc.) pays back the investors their principal plus a return if, and only if, these programmes succeed in delivering results.

Key features of DIBs

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

Need funds for

Procuring trucks

Construction of treatment plant

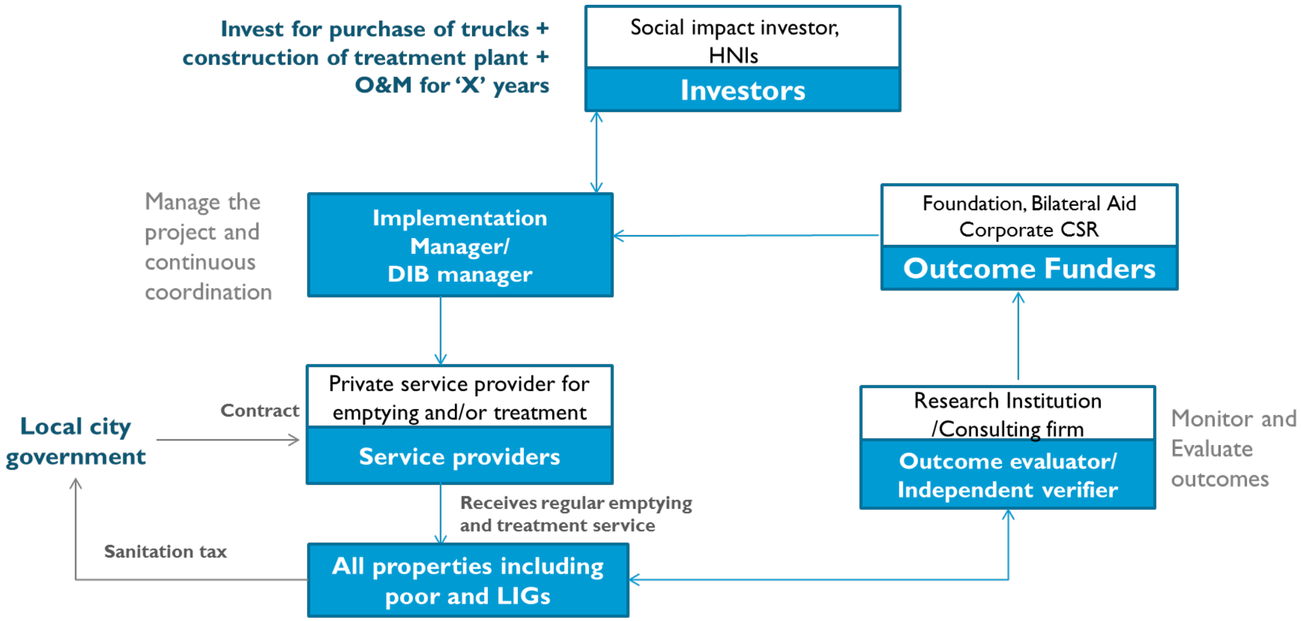
Operations and maintenance for 5 years

Measurable outcomes

Households served through scheduled emptying service esp. vulnerable ones

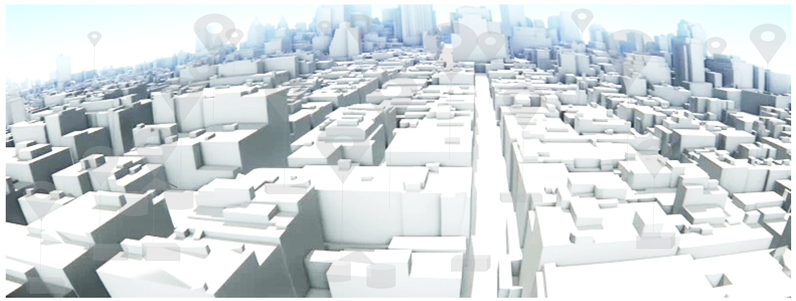
Volume of sludge treated to acceptable standards

Development Impact Bond Structure

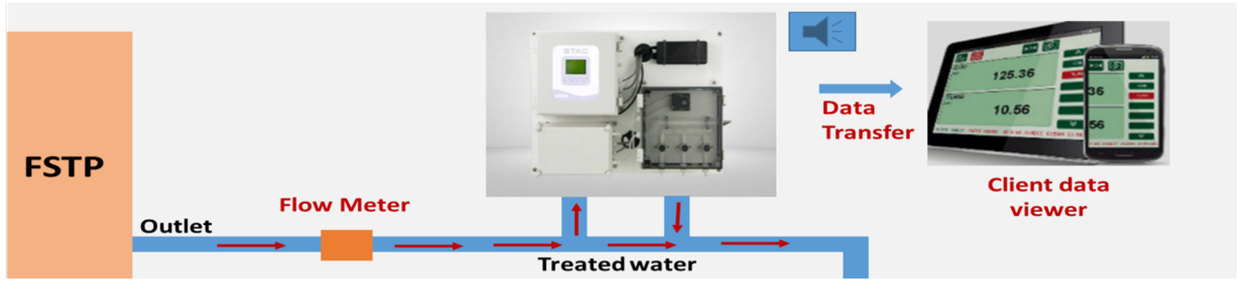


Source: CWAS CEPT University, Presentation on DIB at WWW, Stockholm, 2019

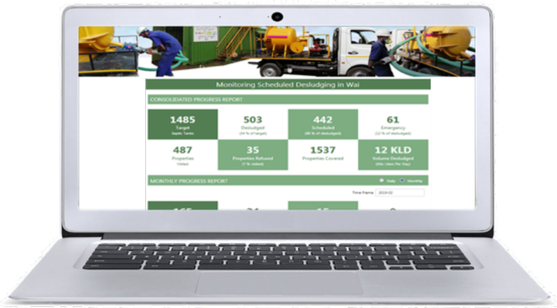
STRONG MONITORING SYSTEMS CRUCIAL TO IMPROVE OPERATIONAL PERFORMANCE



Database



Real-time Monitoring



Dashboard

PRESENTATION CREDITS

CEPT-CWAS, Ahmedabad

All Members of the NFSSM Alliance

THANK YOU!

NFSSM Alliance