Financing Urban Sanitation in India

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Results from the 2011 Census of India

18.6% urban hhs with 100 latrine facility

This translates to 68 million people or 14.7 million households

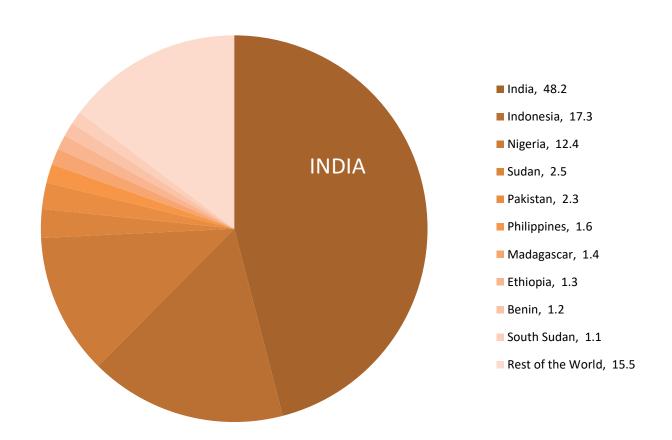
6% OF HHS DEPEND ON PUBLIC TOILETS

12.6% of this resort to Open Defection

Situation is worse in smaller towns with OD rates of 22%

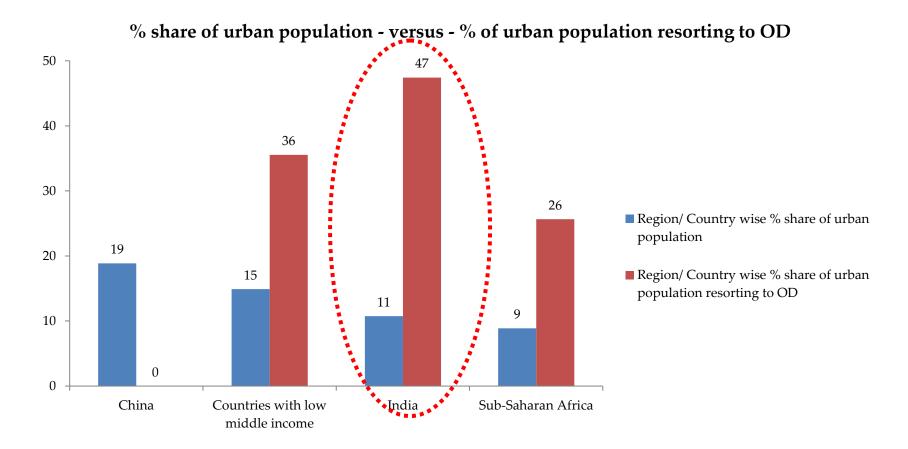
Challenge of Open Defecation

Globally, 100 million people in urban areas resort to open defecation
Of these 48% are in India



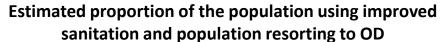
India Story WAS faltering in sanitation!!

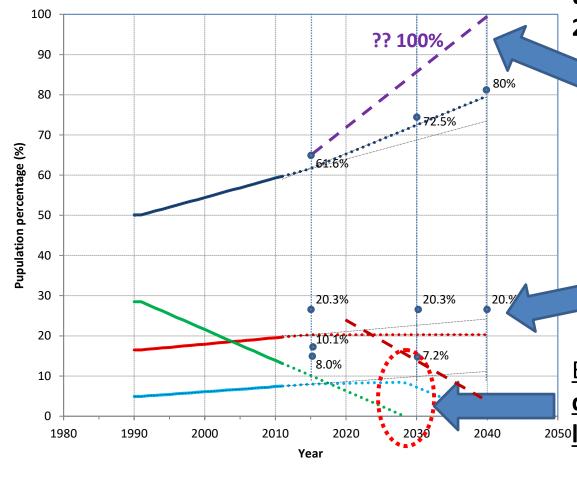
Share of urban population for India is 11% as compared to India's share 47% of urban population resorting to open defecation





Progress on new 'SDG' – by 2030 / 2040?





Policy changes needed for universal improved sanitation by 2040

The rate of increase for 'improved sanitation at home' will need to increase significantly – double/triple

Need to convert community toilets by promoting sharing by 5 households/ families

Based on past trends open

defecation from urban India is

likely to be eradicated by 2028.

•Total Improved (%) ——Shared (%) ——Open Defecation (%) ——Other Unimproved (%)

Swachh Bharat Mission (SBM) - Urban Areas



Key objectives of SBM Urban Areas

- Eliminating open defecation with universal access and an emphasis on own toilets
- Universal services for end-to-end solid waste management
- Awareness generation and behaviour change
- Capacity building of local governments
- Enabling environment for private sector participation

Service components in urban sanitation

	Service components in the value chain						
Goals of improved sanitation	User interface	Collection and /or storage	Conveyance	Treatment	Reuse / disposal		
Samilation	Access		Waste Management				
Equity and							
access							
Public health							
Environment							

Major Challenges in Urban Sanitation

Access and equity

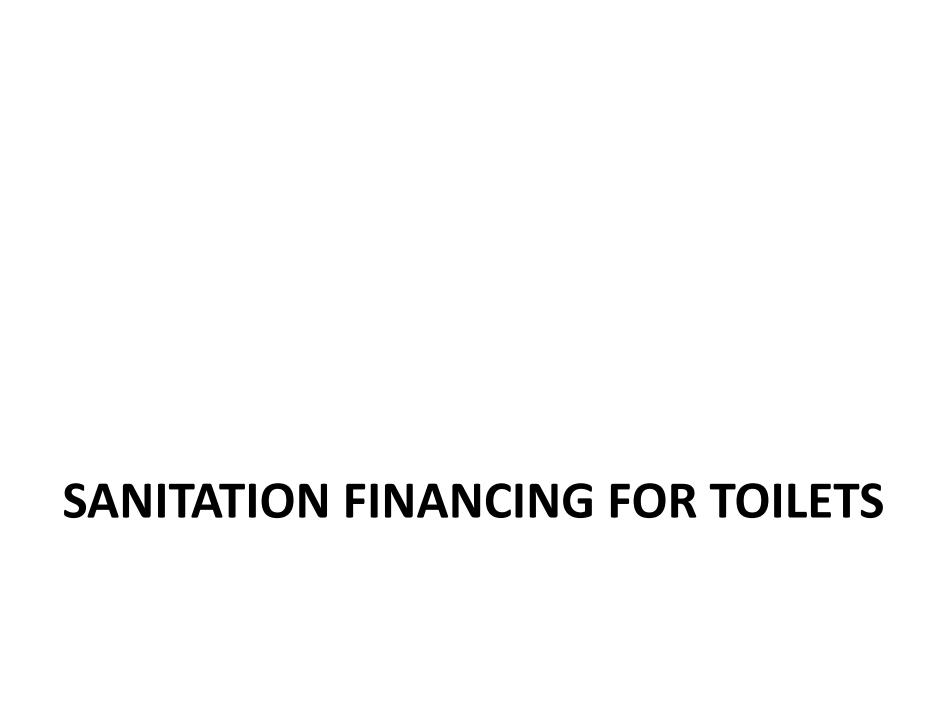
- ✓ Eliminate open defecation
- ✓ Ensure universal access to adequate sanitation

Waste water management

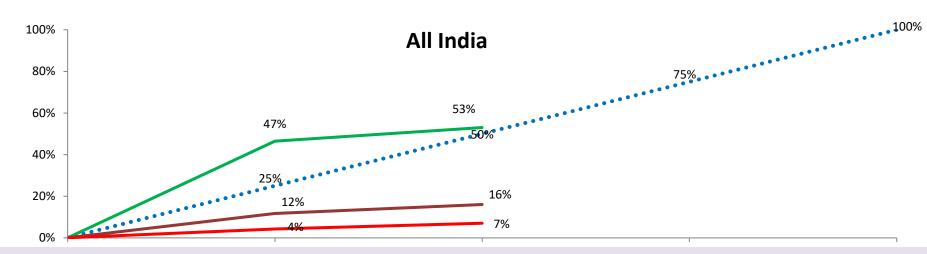
- ✓ Treatment of waste water /feacal sludge collection, conveyance and treatment
- ✓ Reuse of treated waste water and sludge

Financing and governance

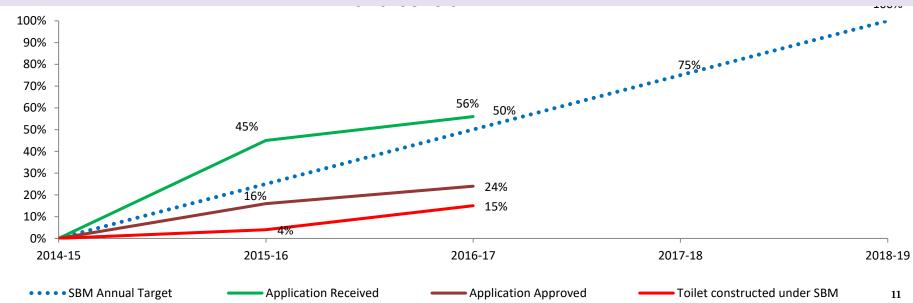
- ✓ Institutional capacity at local level, regulation
- ✓ Financing options and mechanisms



Status of Toilet Construction under SBM



Household surveys in Maharashtra done under the PAS Project at CEPT University in 2010 and quick assessments in two project cities of Wai and Sinnar suggest lack of access to finance as one of the key reasons that inhibits individual toilet construction in urban areas



Demand Side Study - Interviews with Households

were interviewed

30 households without toilet 35 households without toilet were interviewed

	Wai	Sinnar
Range of income	1200 - 20000	500 - 18000
Average saving capacity per month	550	950
Willingness towards group toilets	23 of 30	23 of 35
Willingness towards taking loans	15 of 30	23 of 35

Aspiration for an Individual Household Toilet and need for HH credit voiced by respondents

Sample surveys of those who have not built/applied for SBM shows that nearly 90% face financial challenges as a key barrier

[&]quot;I have taken an internal loan of Rs. 5000/- through SHG for construction of toilet in the year 2009 as we had to walk 20-25 mins. to reach to the community toilet"



[&]quot;I feel the need of constructing a toilet but I don't think any institution will lend me a loan. I do not have a capacity to repay the loan on time."

Financial Institutional Ecosystem in Urban India

BANKS

HDFC Bank
ICICI Bank
Bandhan Bank

COOPERATIVE INSTITUTIONS

Commissioner for Cooperation and Registrar, Urban credit Cooperative Societies, Urban Cooperative Banks

HOUSING FINANCE INSTITUTIONS

GRUH Finance Ltd.

Micro Housing Finance Corporation Ltd.

India Shelter Finance Corporation Ltd.

SEWA Grih Rin Ltd.

MICROFINANCE INSTITUTIONS /SFB

Grameen Koota, Ujjivan

Janalakshmi Financial Services

ESAF Microfinance

Equitas

Suryoday Microfinance

NGOs / Dev Programs/ State Dev agencies

FINISH Society

Bandhan Bank NGO

MHT

Navyadisha

MAVIM

OTHER REGULATORY/ APEX ORGANIZATIONS

National Housing Bank

NABARD

SIDBI

FWWB

Evidence on household finance for sanitation

Most MFI and HFI records show 99%+ repayment record

A number of MFIs have provided toilet loans

- Guardian has supported over 27000 households with toilet loans
- Water.org support to 20 MFI partners
- ESAF, SKSRDP, Grameen Koota have also provided sanitation loans

Besides MFIs, there are other institutions

- Cooperative sector
 - Coop banks, and Coop credit societies
- Scheduled commercial Banks
 - housing improvement loans SBI, HDFC Bank, etc.
- HFIs
 - housing improvement loans e.g. GRUH, others

Widespread Presence of MFIs-HFIs











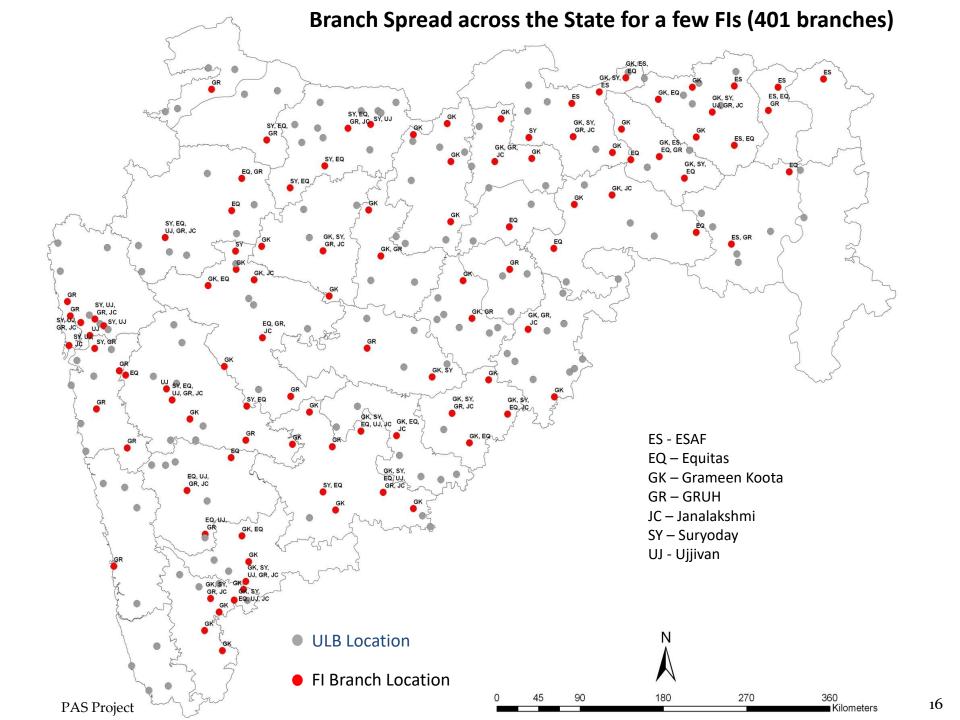








Type of Institution	Active Customers	ve Customers Presence in Total Loan Maharashtra Disbursed (INR)		Provides Sanitation Loans	
MFI w/ SFB License	27.70 L	61 branches	4328 Cr. FY 14-15	No	
MFI w/ SFB License	23.45 L	35 branches	4121 Cr. FY 14-15	No, but plan to initiate Pilot in South India	
MFI w/ SFB License	5.66 L	21 branches	1170 Cr. FY 14-15	Yes	
MFI w/ SFB License	22.92 L	73 branches	2,129 Cr FY 14-15	Yes	
MFI w/ SFB License	6.80 L	46 branches	1,663 crore FY 14-15	No , but willing to explore	
MFI	14 L	102 branches	2500 Cr. FY 15-16	Yes	
MFI	11.5 K	7 branches	16 Cr. FY 14-15	No, but willing to pilot	
HFI	n/a	49 branches	3,120 crores FY 14-15	No, but willing to pilot – have designed a product	
HFI	10,000 loans (cumulative)	7 branches	400 Cr. (cumulative)	No, but willing to pilot	

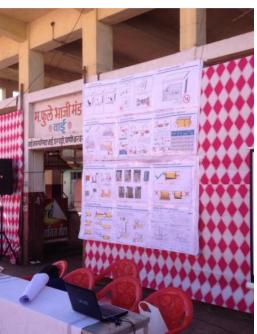


Toilet and Lender Fairs in Cities

Fair was an attempt to create a platform for interaction of all the sanitation technology providers, sanitary ware suppliers, financial lending institutions and the applicants of Swacch Bharat Mission toilet scheme.









Loans from WUCB by SHGs in a small city



Varsha Kumbhar



Chandrakala Kumbhar Kalpana Kumbhar





Alka Kumbhar



Individual toilet



Group toilet



Individual toilet



Rs. 20,000



Rs. 20,000



Rs. 20,000

Mobilizing SHGs for toilet loans and construction

SHGs mobilization support in small cities

- Assessment of Self Help Groups in Wai
 [Completed 150 SHGs (1500+ families)
 assessment]
- Awareness generation towards need of individual toilets
 - (Mobilize 200+ toilet applications)
- Assess and establish links with potential lenders
- Facilitate access to loans for toilets and linkage with financial institution





- With capacity building support, SHGs can play an important role to expedite SBM progress
- Mobilizing SHGs would bear results quickly

Scaling up Sanitation Credit

- Operationalizing policies such as incorporation of Sanitation in Priority Sector Lending
- Supporting agencies such as MAVIM/ Navya Disha /MHT to strengthen SHG-Bank Linkages for sanitation credit
- Work through thousands of coop institutions in states in Maharashtra and southern states
- Work with NABARD to support SHG links

FINANCING CONVEYANCE AND TREATMENT

Financing Citywide FSM Services

Sanitation service	FSM Financing			
value chain	Capital	O&M		
AMPSS	der SBM and Sanitation	_		
Collection and Conveyance	Procurement of Trucks	Service contract for septic tank emptying service		
Treatment	cus Area for FSM finan Set up Feacal Sludge treatment plant (FSTP)			

Emerging Recognition of FSM in India







AMRUT Reform

Regulatory provisions will help create a demand for FSM financing at State/City level

hygienic facilities with proper disposal and proper disposal and treatment of sludge from on-site installations; Proper operations & maintenance (O&M) of all sanitary facilities

MoUD, 2013

Recommends
developing a Septage
Management Plan
(SMP) as a part of city
sanitation plans (CSP)

MoUD, 2015

rsm in a cost-effective manner; Mechanical and biological cleaning of sewers and septic tanks and recovery of operational cost in full

ODF definition advocates urgent need for FSM

Maharashtra ODF, ODF+, ODF++ Framework

ODF



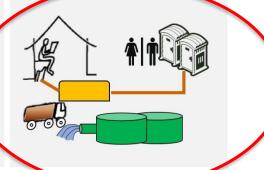




ODF+



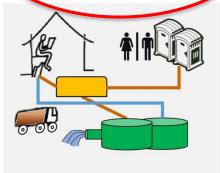




ODF++





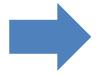


From a complaint redressal system to regular scheduled service

Current septage management practice

Recommended septage management practice

~2% of tanks emptied per year (once in >8-10 years)



~33% of tanks emptied /year (once in 3 years)5

Current barriers

1

Emptying is done on-call by the household, who do not see the need for regular cleaning

2

Wai has only 1 truck of 5kL capacity, owned and operated by the ULB

3

~INR 1500 payment to get tanks emptied, but only once in more than 8-10 years

Proposed solutions

1

Septic tanks will be emptied on a pre-determined schedule. Regulations and penalties will be set in place to ensure periodic emptying

Awareness generation activities will educate households about the need for regular cleaning

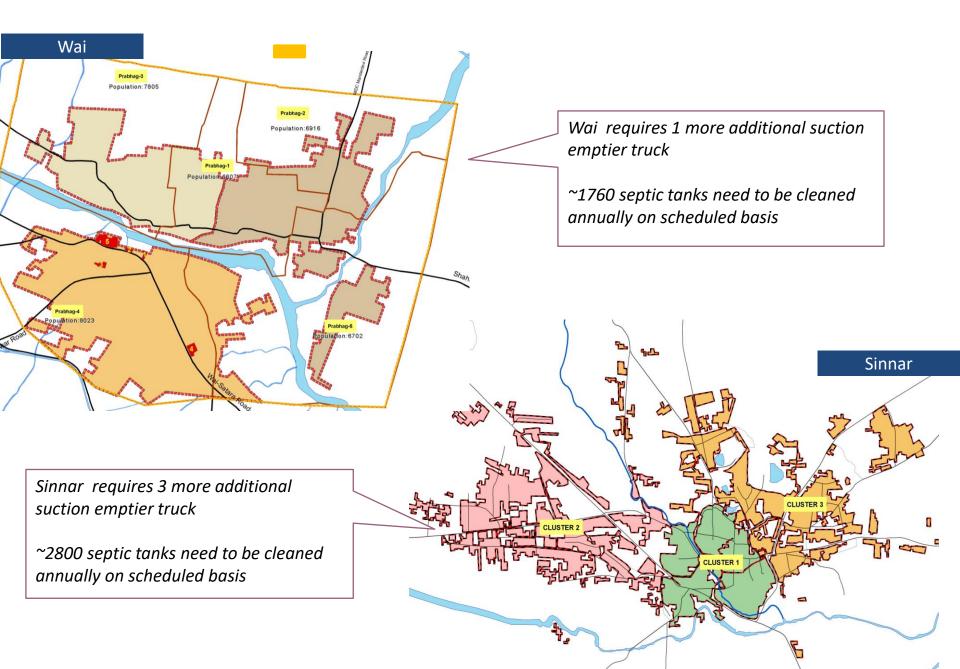
2

Wai will get 1 additional 5 kL truck to empty~6 septic tanks a day, 300 days a year, operated by a private contractor. The existing truck will continue to empty public and community toilets

3

All property owners (residential and non-residential) will pay a 'special sanitary tax' to be levied by the ULB as per the municipal legislation¹

Need to plan for a three year cycle of scheduled emptying of septic tanks



Potential sources of finance: Collection & Conveyance

A. Potential sources of finance for Capital Expenditure

Suction Emptier Trucks

Demand based FSM Services

Scheduled FSM Services

Central/state Grants/ Local Government Funds

Several states have earmarked funds/ grants for procurement of vacuum trucks for urban local governments.

Private sector

Private sector is already investing as per demand

Private sector is generally willing to bring investment for vacuum trucks

B. Potential sources of finance for O&M Expenditure

Communities/ Households

User charges

Levy Sanitation tax, Transfer from property tax, User charges

FSM Services: Collection and Conveyance

- Financing for procurement of truck is not a major constraint
- Private sector is willing to fund trucks and an attractive business model around emptying services is possible
- Scheduled emptying service can help reduce prices
- But there is a lack of experience for scheduled empting in India

Potential sources of finance: Treatment and Reuse

A. Potential sources of finance for Capital Expenditure

Treatment & Reuse/Disposal

Potential Sources of Fund Central/state Grants

Local government fund

Private /VGF

Innovative Finance

Demand based FSM Services

Size of treatment units is relatively small. Large cities may mobilize from own funds. Small cities may mobilize from 14th FC funds.

Scheduled FSM Services

- -Large cities may use of ongoing national level programme
- Small cities may require small size of grant from state programme or mobilize from 14th FC funds.

- Private sector is willing if provision for VGF.

CSR, Social Impact Investor, Donor funding etc.

B. Potential sources of finance for O&M Expenditure

Potential Sources of Fund

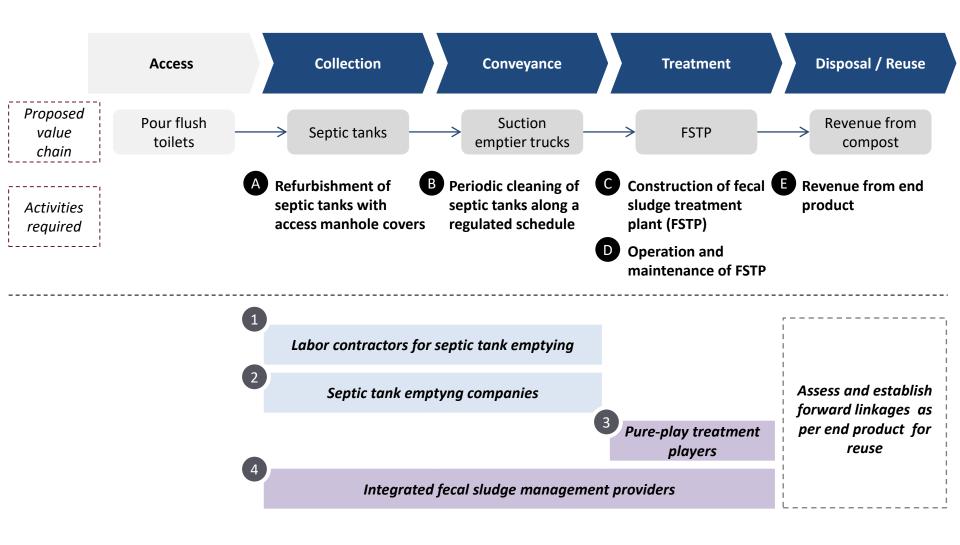
Local government fund

Levy sanitation tax, Transfer from property tax

FSM Services: Treatment and Reuse

- Large cites can afford to mobilize capital funds from ULB own funds and from ongoing National level programme like AMRUT
- Small cities will need to mobilize capital funds from state schemes, 14th FC grants
- Need to explore the possibility of municipal borrowing for FSTP through pooled finance, municipal bonds etc.
- Private sector is not willing to invest in capital funding for treatment, as this seems a risky investment
- At present there is no market for reuse products

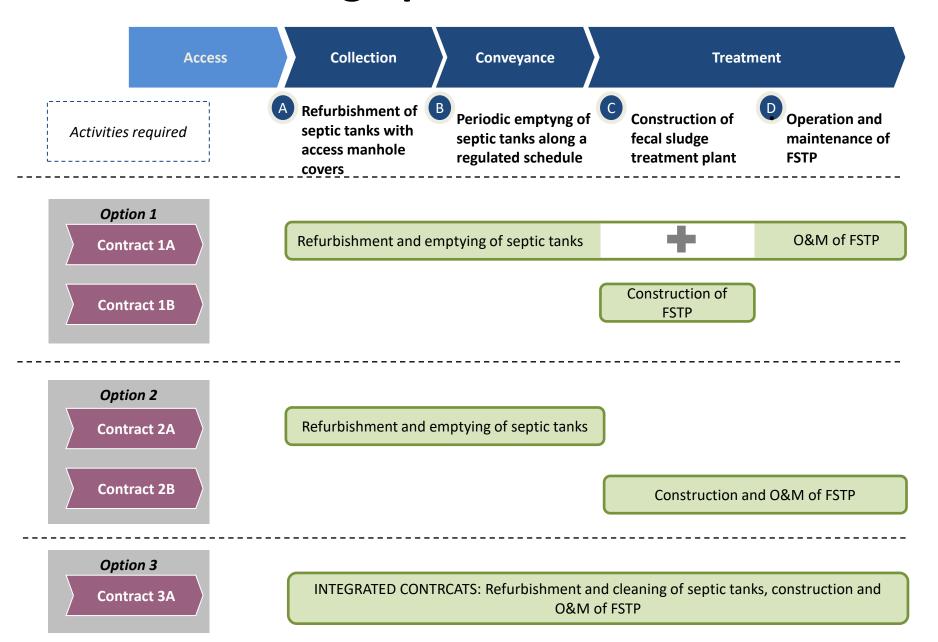
Opportunities for PSP in FSM services



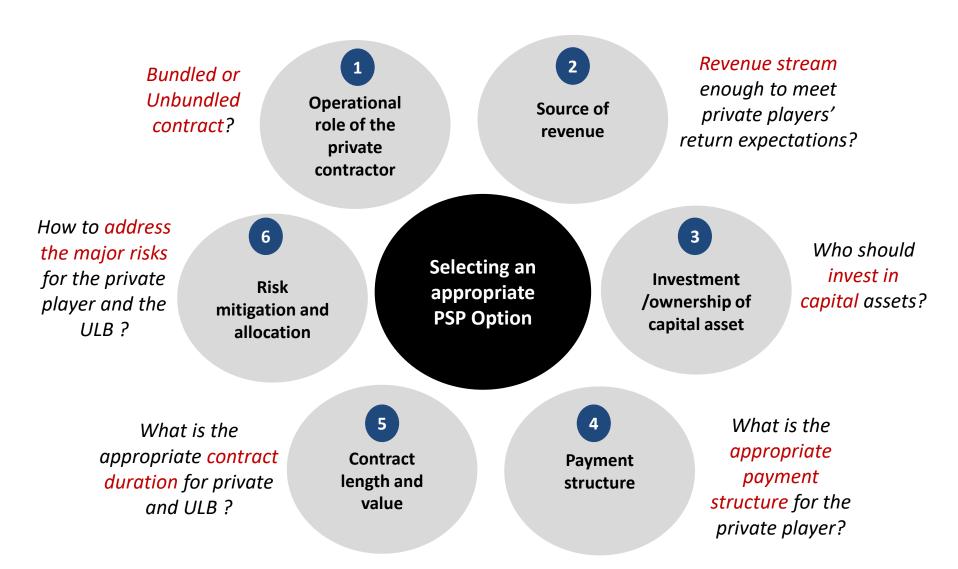
Small scale players (<10 employees)

Medium scale enterprises (>10-50 employees)

Possible Bundling options: PSP in FSM services



Iterative approach to structure a PSP option for FSM



Addressing Risks in PPP for Citywide IFSM

Risk mitigation: Building a strong system for performance based monitoring and payment is critical to managing performance risk (1/2)

Mitigation Allocation of remaining risk Risk Mitigation Allocation of remaining risk Septic tanks are · Specify the type of materials required · Damaged septic tanks must be repaired Require safety gear for all personnel Private player uses Contract terminated if complaints of damaged during or as within a specified period days of manual scavenging are received from manual scavenging for Payment tied to the number of signatures a result of complaint and the cost shall be borne by cleaning septic tanks * Include a clear description of activities that households or ULB staff refurbishment from households whose septic tanks have the private player constitute manual scavenging or sludge drying beds been repaired to their satisfaction · Penalties will be imposed if discrepancies Refurbishment · ULB to undertake random inspections of Private player does Portion of the monthly payment should be tied . Penalties to be imposed if the reported are found during random sampling, or if of septic tanks households whose signatures have been not clean household to the number of household signatures number of cleanings is lower than complaints are not dealt with in a timely tanks as per the collected from households whose septic tanks specified in the contract, or if submitted schedule have been cleaned satisfactorily discrepancies are found during random sampling, or if complaints are not dealt · A complaint redress mechanism to be opened · Persistent breaches may lead to where grievances can be lodged by the HH · ULB to undertake random inspections of with in a timely manner termination households whose signatures have been with the ULB submitted · Large or persistent breaches can lead to Sludge drying beds do . The ULB will specify the design and materials . If the work is found to be faulty at any not meet specified to be used in consultation with town stage, the payment will be withheld until · A complaint redress mechanism to be opened consultants the corrections are made where grievances can be lodged by the HH with the ULB · Payment made in installments on the completion of specific construction Private player Work on faulty septic tanks would have to Managing performance risk through performance based monitoring and payment transportation citizens with the ULB specified period, to avoid a fine from SDBs is not sanitation department to measure sludge standards, a warning would be given, sufficiently treated followed by fines. O&M of SDBs In case the number of complaints Private player dumps . A portion of monthly payment is tied to exceeds a specified number in a given X% of O&M payment to be conditional on the Persistent breaches may lead to septage at places other signatures collected from the SDB operator time period, the contract can be termination sludge meeting specified qualities than the treatment

Risk mitigation: Contracts must also clearly manage at will and at cause termination by the private player and the ULB

terminated



reasons unrelated to ULB compliance with contract terms

Risk mitigation: Provisions need to be made for payment delays and cost escalation to protect private player and public interests

Risk mitigation: Building a strong system for performance based

monitoring and payment is critical to managing performance risk (2/2)





- Cost of inputs increase over the course of contract for inflation
- · Adjustment of contract value annually · Private player would be responsible for bearing the cost escalations within

Managing payment and cost escalation risk

Cost escalation

Model contract document for PSP in FSM

Sinnar Municipal Council, Sinnar

TENDER DOCUMENT

Name of Work

"Scheduled cleaning of septic tanks, Sinnar"

Estimated Cost: To be given by the bidder

E.M.D. :40,000/-



Office of the

Chief Officer, SinnarMunicipal Council, Sinnar

Sunil S. Patil

Vyanktesh R. Durvas

Sanjay Navse Vice President Ashvini Deshmukh

Municipal Engineer

Chief Officer

1,000,000,000

President

eeds to be undertaken

Total in Figures

Quoted Rate in Words

Septic tank Emptying Tender document

CONTENTS Detailed Tender Schedule List of documents to be submitted along with tender..... Detailed Tender Notice – General Conditions..... Detailed Tender Notice – Special Conditions..... V. Form Formats..... Details of suction emptier trucks available with the tenderer for the use of this work.... Details of work of similar type and magnitude carried out by the tenderer Details of technical personnel with the tenderer Year wise statement showing cost of completed works VI. Opening of Tender..... VII. Acceptance of Tender VIII. Declaration of the Contractor..... Item Rate BoQ Tender Inviting Authority: Sinnar Municipal Council, Nashik Name of Work: Scheduled cleaning of septic tanks, Sinnar Contract No. Name : (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be NUMBER BASIC RATE In TOTAL AMOUNT TOTAL AMOUNT Rate Figures To be Inclusive of all entered by the Taxes 1.00 Per year 0.00 INR Zero Only ears of households/properties as per schedule and emergency cleaning with appropriate safety gears for septic tank empyting cleaners and operators, transportation of septage in GPS mounted suction emptier trucks owned by private sector and safe disposal of collected sludge in septage treatment facility The bidders shall also undertake IEC activities to spread awareness about regular cleaning of septic tanks in areas where scheduled cleaning

0.00 INR Zero Only

INR Zero Only

Assessing contract values and taxes to be levied

Contract valuations for Wai and Sinnar

			Wai			Sinnar		
S. No.	Types of contract	Contract length	Annual contract value (INR, Lakhs)	Sanitation tax per residential property (INR)	Sanitation tax per non- residential property (INR)	Annual Contract value (INR, Lakhs)	Sanitation tax per residential property (INR)	Sanitation tax per non- residential property (INR)
1A	Refurbishment and regular cleaning of septic tanks with O&M of SDBs	2 - 3 years	15-17	~190	~230	32-36	~270	~320
1B	Construction of SDBs	Duration of construction	24-28	N.A.	N.A.	40-45	N.A.	N.A.
2A	Refurbishment and regular cleaning of septic tanks	2 - 3 years	11-13	~140	~170	27-32	~230	~270

Property owners currently have to pay local taxes of about Rs 2600/annum in Wai and Sinnar

To cover the costs of a cleaning cycle of ~3 years would require an increase in total annual tax spend for a household of about 7% in Wai and 11% in Sinnar.

5-Year FSM Investment Plan (2017-2022)

GoM's policy decision on moving toward scheduled FSM services

City Wide 100% FSM (218 Cities; Cover population of 12.5 Mn)

- Capital investments for FSTP USD 80 Million (Public)
- Capital investments for trucks USD 20 Million (Private)
- Total capital investment for FSM USD 100 Million

Maharashtra's average annual budget allocation for Urban WASH sector = USD 250 Million

- Annual FSM investment requirement of USD 16 Million i.e. 6.5% of total annual WASH allocation

Sources of funds for Urban Sanitation

Sustainable urban water service

Examples of expenses Revenue to build operate and maintain water supply there are two primary sources of financing: and sanitation systems: User fees Training and paying workers Public funds ■ Repay loans for infrastructure investment Social investors ■ Maintenance of pipes, pumps and **CSR** equipment **Crowd funding** ■ Materials for cleaning water Energy to deliver water

Need to identify additional sources of funds beyond user charges and public finance

Social impact investors

- "Actively placing capital in businesses and funds that generate social /environmental good and at least return nominal principal to the investor" (Monitor group)
- Social impact investors emerging as a potential new source.. High net worth individuals (HNI), Institutional social investors, Foundations
 - For example, a recent 3-year Debt Funds for Cancer Cure by HDFC Mutual Fund mobilized about Rs 77 + Rs 180 crore. The dividend from this was provided to Indian Cancer Society. The first HDFC-CC Debt Fund provided Rs 11 crore to ICS in two years.





CSR – a potential new source

- 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

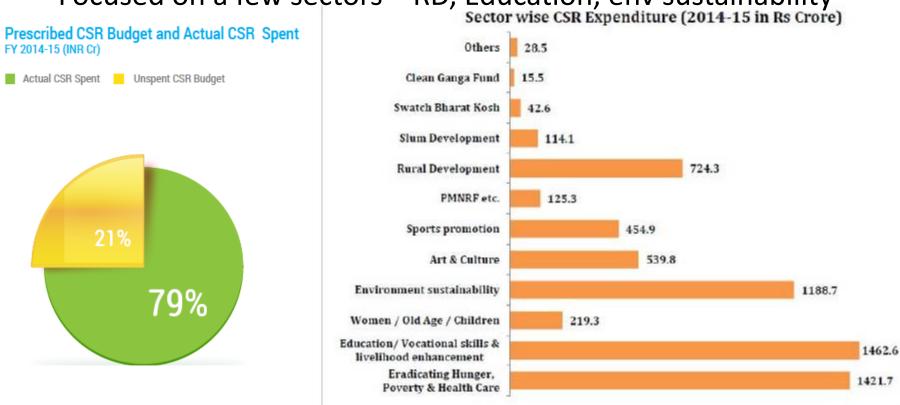


Its community development work is based on its mission and underscores our belief in communities and in our role as catalysts to bring in change.

Reality of CSR

The reality is inadequate spend (21%)

Focused on a few sectors – RD, Education, env sustainability



Source: https://factly.in/this-is-how-theindian-industry-csr-expenditure/ and NGO Box (2015), "a Snapshot of CSR Spend in 2014-15: 250 BSE listed companies".

Crowdfunding is also emerging as an important source

2012- More than 450 Crowdfunding Platforms

- 2011- Amount raised US\$1.5 billion
- 2014- amount increased to US\$ 5.1 billion



Source: Based on Crowdsourcing.org Directory of Sites as of April 2012

Spacehive - Transforming civic spaces

- World's first funding platforms for civic projects
- ✓ Since Dec. 2011, platform to more than 240 civic initiatives in UK
- Hives- online hubs, bring local people and councils together
- Charges 5% fee (only when target is achieved)



Raised more than 792,000 pounds to build a multi-purpose, energy efficient community center



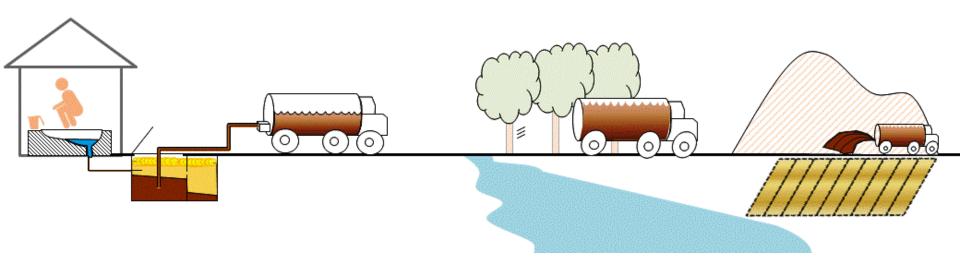
Raised 36,850 pounds to provide free access to Wi-Fi for visitors to Mansfield Town



Till now raised 40,800 pounds for turning derelict flyover into urban park, backed by City Council

Summary – Financing Urban Sanitation Systems

- ✓ SBM has put a focus on sanitation facilities but access to sanitation credit is crucial in achieving the ambitious targets for toilet infrastructure
- ✓ Rich FI landscape in India but scaling up access to sanitation credit in urban areas requires innovative models of aggregator support
- ✓ For FSM conveyance private finance possible but scheduled emptying can make it a FSM service and help reduce /control price
- ✓ For FS treatment Public Finance remains key, but there is scope for private management and innovative financing
- ✓ For small cities, State governments will need to prioritize FSM investments for treatment, but citywide planning and robust procurement procedure are critical, clear links to municipal finance for sustaining O&M for FSM services
- ✓ Need to also explore innovative finance



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