

Bringing sustainable and equitable sanitation services to small and medium towns in India

Meera Mehta and Dinesh Mehta

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Our research were centered around three cities in Maharashtra – Wai, Sinnar and Ambajogai

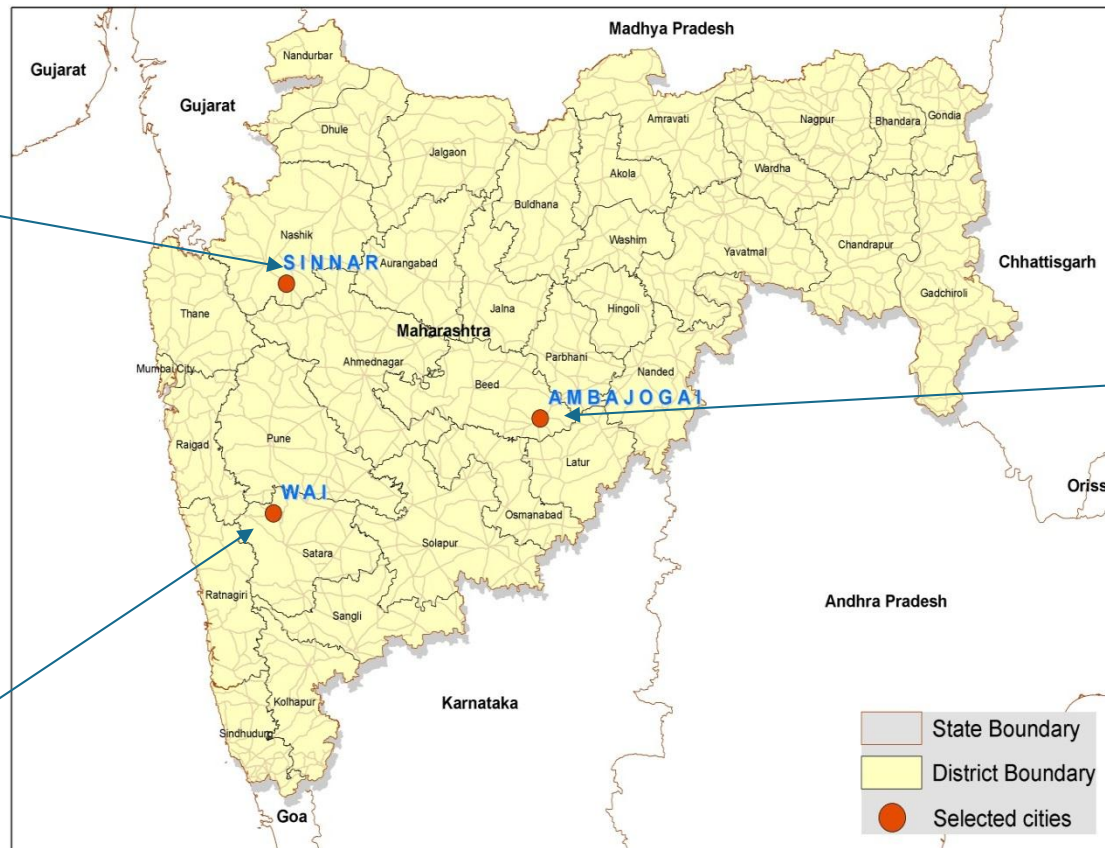
These cities were selected by the Maharashtra Jeevan Pradhikaran and the Water Supply and Sanitation Department of Maharashtra for the development of City Sanitation Plans (CSPs) with the support of CEPT University

Sinnar

Located in the Nashik district, with a population of ~65,000 that has more than doubled in size since 2001 mainly due to expansion of city boundaries and an industrial and manufacturing boom in nearby Nashik.

Wai

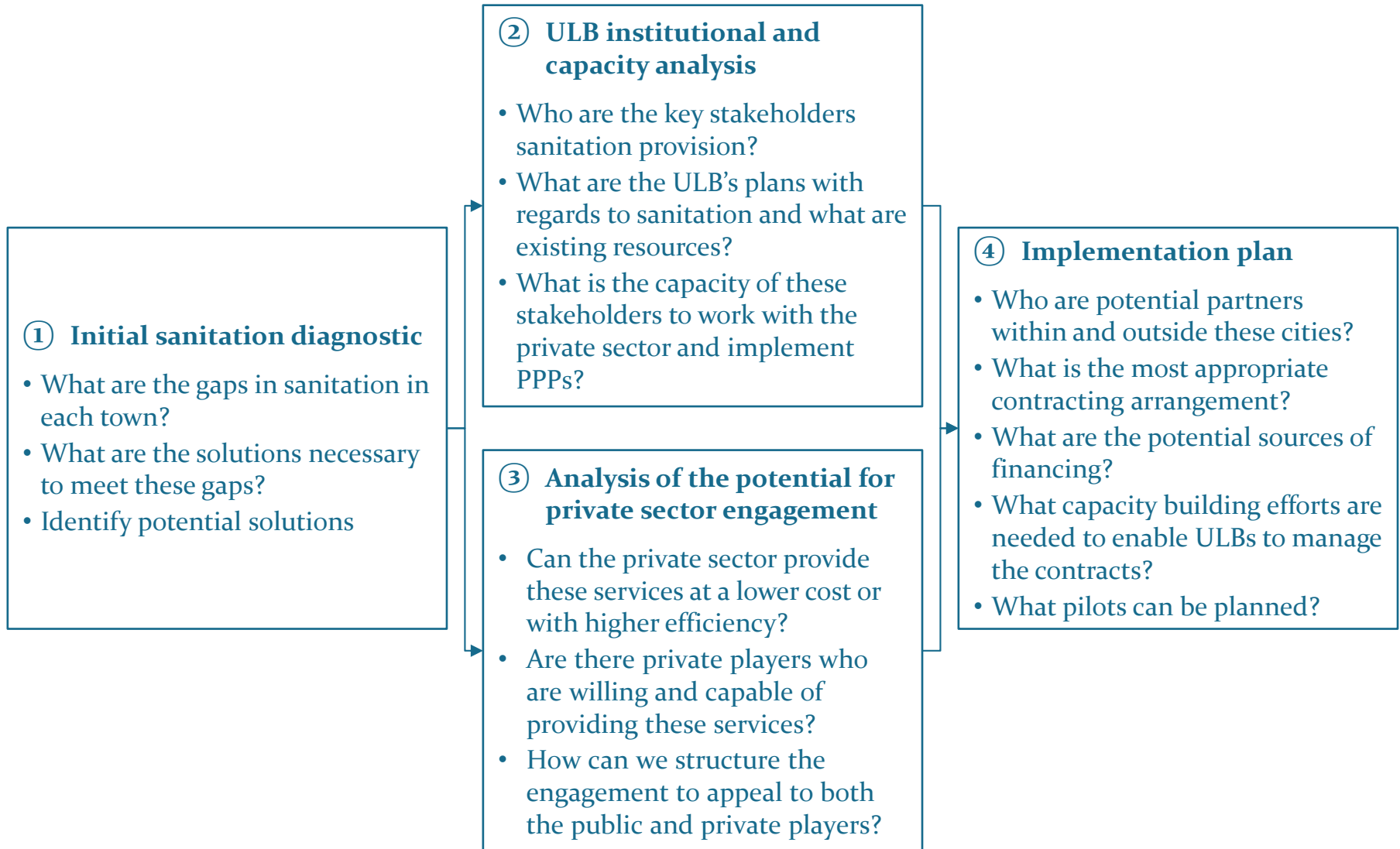
Located in the Satara district, 90 km away from Pune, with a population of ~36,000. Wai has grown slowly at 1% per year since 2001.



Ambajogai

Located in the Beed district, the town has a population of ~74,000 that has grown at 3% p.a. since 2001. Its growth has been lead by tourism and education.

four building blocks of our work



1 Step 1: An in-depth diagnostic of the sanitation landscape was conducted in each city to develop city sanitation plans for universal coverage

Primary research and secondary analysis

- Assessment of household and community level facilities across the sanitation value chain
- Satellite imaging for mapping natural drainage
- Primary interviews with households and local officials



Development of sanitation options

- Analysis of projected outcomes, required investments and available funding to prioritize and phase initiatives

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Construction of individual toilets with septic tanks for 2,093 HH ** (INR 3.14 Cr.)	Rehabilitation and closing of drains (INR 1.65 Cr.)	Construction of treatment facility (INR 1.05 Cr.)	Reuse for agriculture and irrigation	
Refurbishment of all community toilets (INR 0.93 Cr.)	Construction of interceptor sewer* (INR 4 Cr.)	Fecal sludge treatment facility (INR 0.1 Cr.)		
Construction public toilets (INR 0.17 Cr.)	Refurbishment of septic tanks ** (INR 1.67 Cr.)	Procure new suction trucks (INR 0.2 Cr.)		
Investment required				
INR 5.91 Cr.		INR 5.85 Cr.	INR 1.15 Cr.	

Continuous stakeholder engagement

- Over a ~18 months period stakeholder discussions with city officials and state experts was held. This included field visit and workshops to discuss and develop potential solutions



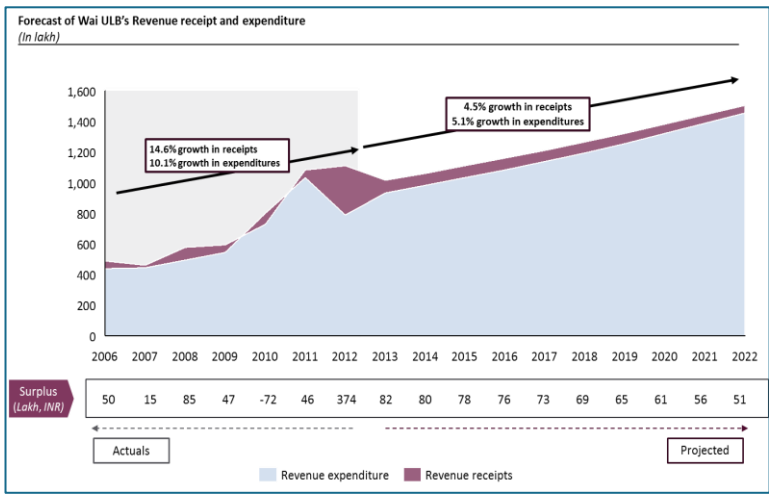
Key outcome:

We worked with city officials and representatives to shortlist 1-2 high potential solutions to pilot and implement in each town

1 Step 2: An assessment of the institutional and financial capacity of the ULBs to implement private sector engagements

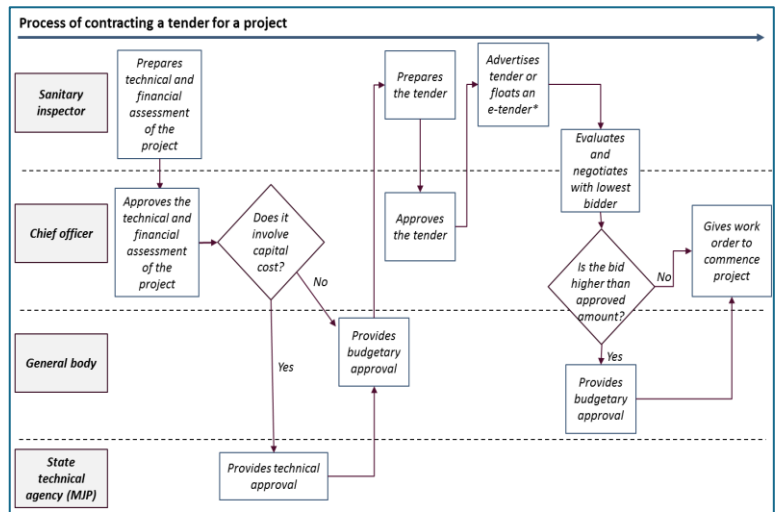
Analysis of city budgets

- Analyzed income and expenditure data obtained through city budget documents for the period 2005-06 to 2011-12
- Developed a forecast of the investible surplus based on past trends
- Assessed implications of proposals on ULB municipal finances over a time period



Capacity assessment interviews

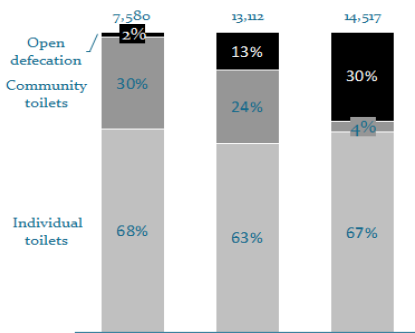
- Overall institutional barriers facing the ULB were identified
- Previous experience with private sector engagement was assessed
- Capacity to undertake private engagements for the short-listed solutions was evaluated



Initial diagnostics and identification of issues related to sanitation for the cities (1/2)

Access: There is variation in levels of open defecation in the three towns

Access to types of sanitation facility (Number of HH)



Key issues in access

- Wai
 - The prevalence of open defecation is low, but ~30% or ~2,400 households lack individual toilets, and are dependent on community toilets, even among non-slum households
 - Community toilets are in fair condition
- Sinnar
 - ~13% or ~1700 households practice open defecation, and another ~24% rely on community toilets, even among non-slum households
 - Community toilets are in poor condition, and 13% of seats we surveyed were non-functional
- Ambajogai
 - ~30% or 4,303 households practice open defecation
 - Only ~4% or 551 households are dependent on community toilets

Access to toilets

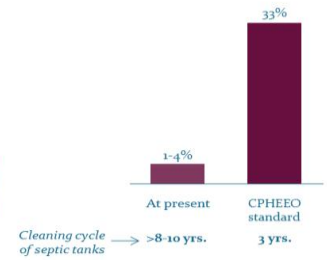
Septage conveyance: Septic tanks are only cleaned once in more than ~8 to 10 years resulting in fecal matter being released into drains

Existing septage conveyance mechanism



- Each town has only 1 suction emptier truck with the capacity varying from 200 L in Ambajogai to 5000 L in Wai
- The truck is owned and operated by the ULB, that charges households ~INR 500 / trip in Sinnar, INR 1000 / trip in Wai & INR 3000 / septic tank in Ambajogai
- There is no regulated schedule for cleaning, and households call the ULB when required, ~once in >8-10 years

Number of septic tanks cleaned annually by the ULB (As a % of total septic tanks)



- Only 1-4% of tanks are cleaned annually, far below the service standards of 33% recommended by the MoUD's CPHEEO manual
- Due to infrequent cleaning, septage begins to solidify in tanks
- As the septic tank fills up, fecal matter is released into open

Conveyance of septage

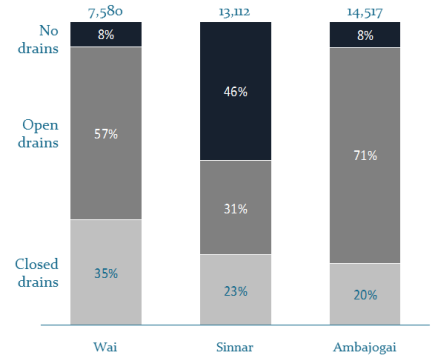
Septage collection: Inappropriate design and location of household septic tanks often makes access difficult for regular cleaning and emptying



Collection of septage

Wastewater collection and conveyance: Both the effluent from septic tanks goes directly into drains, causing possible human exposure to pathogens

Method of collection and conveyance of wastewater (As a percentage of total HH)



Key issues

- ~600 households in Wai, ~6000 households in Sinnar and ~1200 households in Ambajogai have no drainage system for the conveyance of wastewater
- There is no appropriate mechanism for conveyance of grey and black water and all wastewater is disposed into drain channels flowing along the streets
- In the old town areas in both Sinnar and Ambajogai, a large amount of solid waste is dumped into drains causing constraints in free flow of water
- The drainage system in new areas is limited in coverage in Sinnar and Ambajogai and

Conveyance of effluent

Initial diagnostics and identification of issues related to sanitation for the cities (2/2)

Wastewater collection and conveyance: Current issues

Effluent and grey-water being discharged into drains



Widespread clogging of drains



Issues in collection and conveyance

Current status of disposal of wastewater and septage

Wastewater dumps into the river



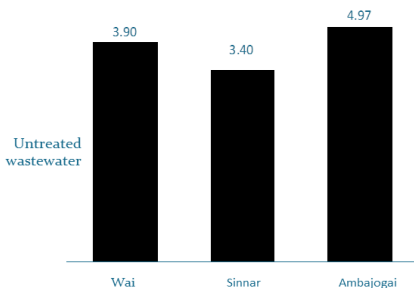
Septage is disposed off in the open



Issues in disposal of WW

Treatment and disposal: All wastewater is dumped without treatment into the rivers, while untreated septage is disposed off in the open

Quantity of untreated wastewater (in MLD)



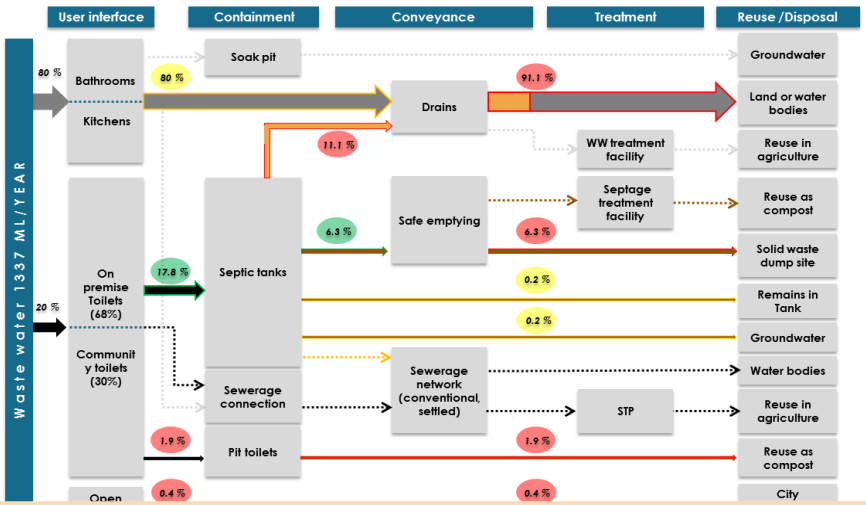
Wastewater pollution levels

	Average	BOD (Mg/l)	COD (Mg/l)	TSS (Mg/l)	pH count
1	Wai	92.4	160.0	117.3	7.0
2	Sinnar	276.6	432.0	233.2	7.0
	Permissible Limits	30	250	600	6.5-8.5

- There are no centralized or decentralized treatment facilities in these towns
- The towns slope towards the rivers, and due to lack of soak-pits and treatment facilities, all the wastewater ends up in the rivers
- Samples of wastewater collected from various locations in Wai and Sinnar show far higher levels of Biochemical Oxygen Demand (BOD) than the prescribed limits set by the Central Pollution Control Board

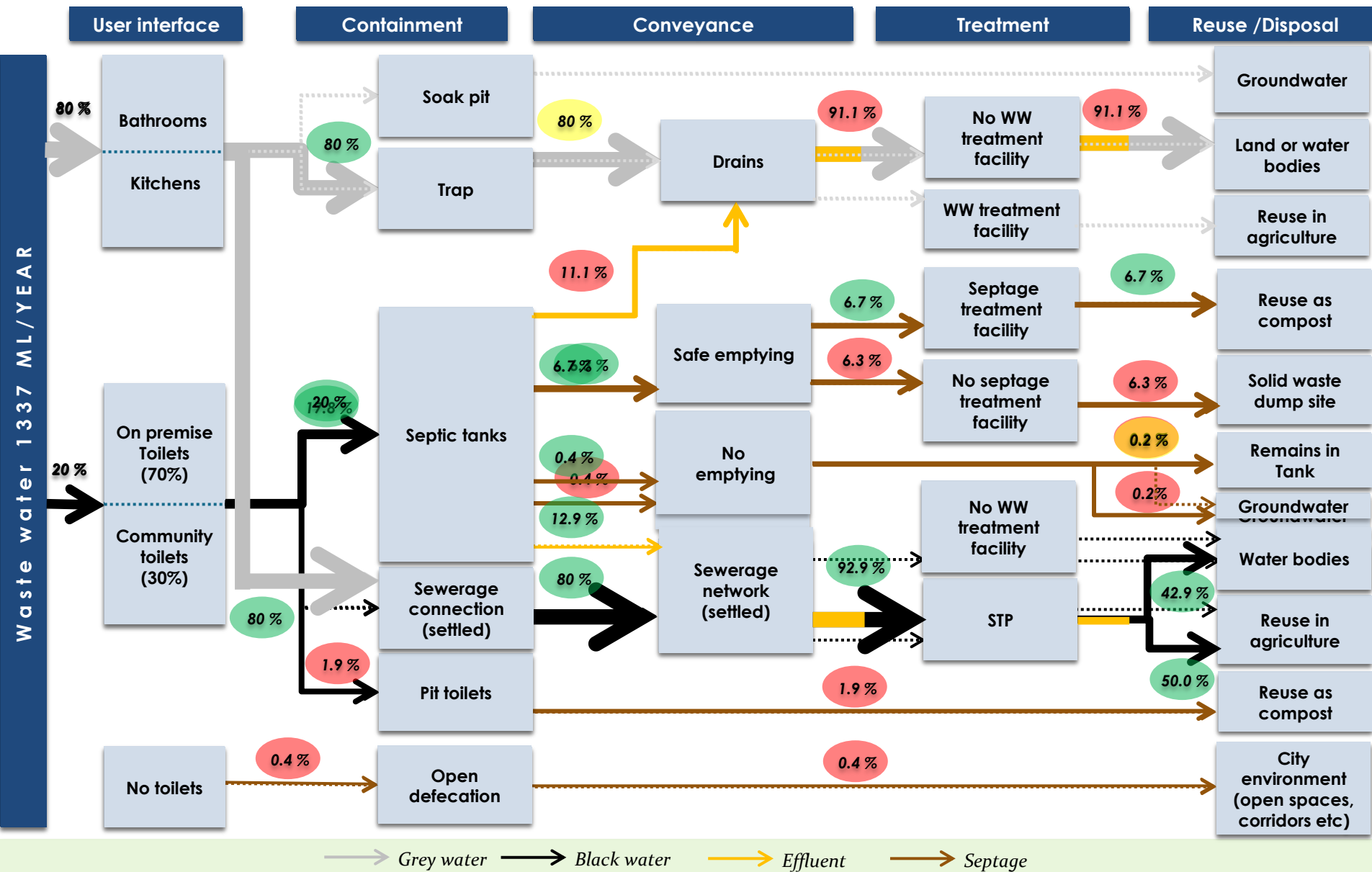
Treatment and disposal WW

Existing Wastewater water flows in Wai



WW flow diagrams for cities

Wastewater flows - Wai



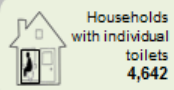
Decision Support Tool for sanitation

SANITATION VALUE CHAIN

WAI CITY

Status of current situation

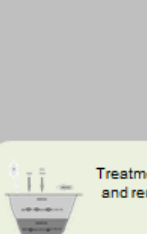
USER INTERFACE



COLLECTION AND CONVEYANCE

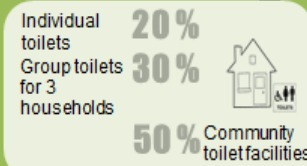


TREATMENT AND REUSE

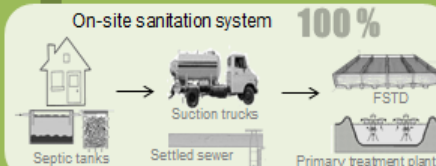
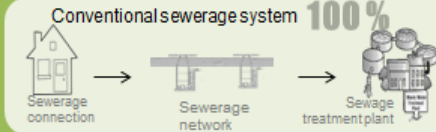


Meeting the infrastructure gap

Options for Household level access



Options for City level access



Select Option 1

W/W disposal options	On-site sanitation	Settled Sewer	Conventional Sewer
Toilet options			
Individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual + group	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Indiv + group + community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select Option 2

W/W disposal options	On-site sanitation	Settled Sewer	Conventional Sewer
Toilet options			
Individual	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Individual + group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indiv + group + community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sanitation options for comparison

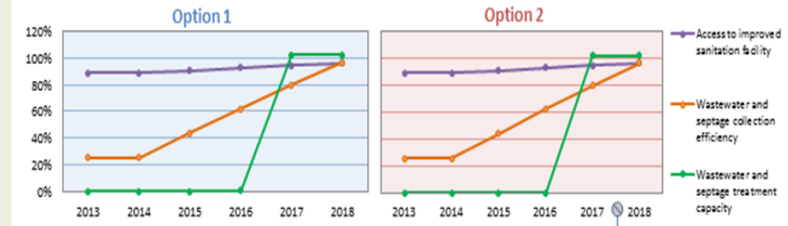
OPTION 1

OPTION 2

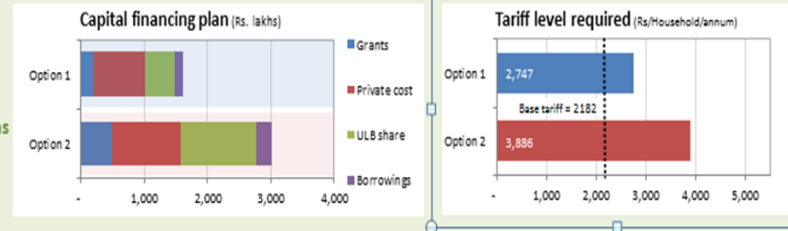
Toilet	Individual + Group toilets	Individual
WW disposal	Settled sewer	Conventional sewerage system
CapEx	1611	3007
O&M	15	43
Revenue	8	31

All figures are in Rs. Lakhs

Impact on service levels



Financial implications



Summary of Action plan

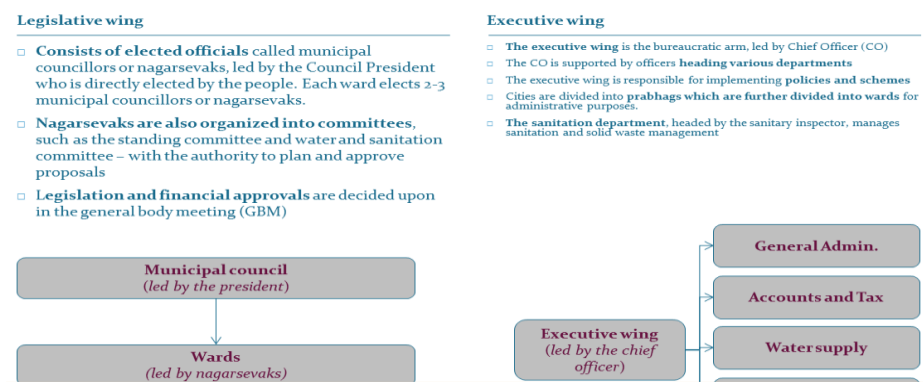
Select mode: CAPITAL EXPENDITURE

	2014	2015	2016	2017	2018
Refurbish individual toilets	18	19	21	22	-
Refurbish septic tanks	12	13	-	-	-
New individual toilets	118	126	135	144	154
Construct new group toilets	26	28	30	32	34
Construct new public toilet	3	3	-	-	-
Improve septage collection	1	-	-	-	-
New settled sewer	98	105	113	121	129
New suction emptier trucks	-	11	-	-	-
Fecal sludge treatment plants	5	6	-	-	-
Primary treatment plant	26	28	30	-	-

	2014	2015	2016	2017	2018
Refurbish individual toilets	16	17	18	19	-
New individual toilets	163	175	187	200	214
Construct new public toilet	2	3	-	-	-
Expand/New sewerage network	291	311	333	356	381
Sewage treatment plant	100	107	114	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

institutional and capacity analysis

Cities are governed by the elected municipal council which is aided in its day-to-day operations by the executive wing



All cities have previous experience with service contracts, and acknowledged the gains from private sector participation of key functions

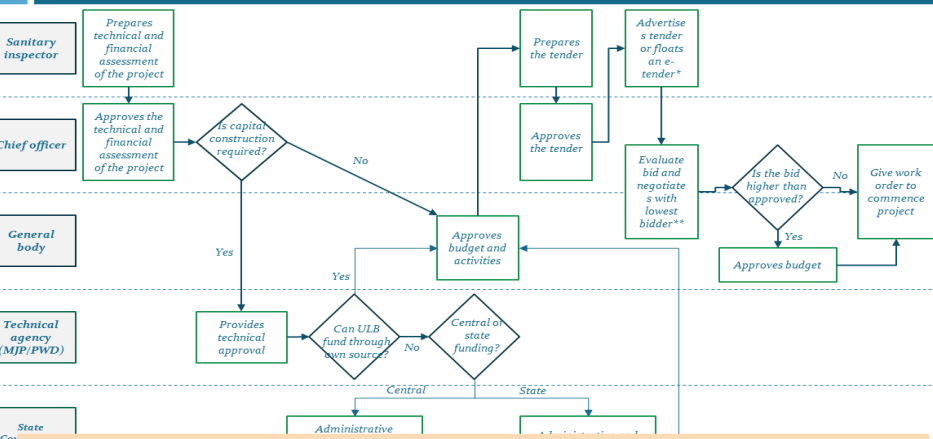
	Door to door waste collection	Drain cleaning	Operation and maintenance of community and public toilets	Operation and maintenance of vermi-compost plant
Wai	✓	✓	✓	✓
Sinnar	✓	✓	✓	✓
Ambajoga i		✓		✓

"Private sector engagement became necessary because of a severe staff crunch. The number of permanent staff we can hire is fixed by the state government. On top of that, our sanitary

"We are paying more than we did when we did these activities themselves. However, the service levels have improved and we have shifted a lot of our burden on to the private player. For example, we constantly faced issues

Analyzed existing Private Sector Engagements

The process for implementing private engagements involves multiple stakeholders



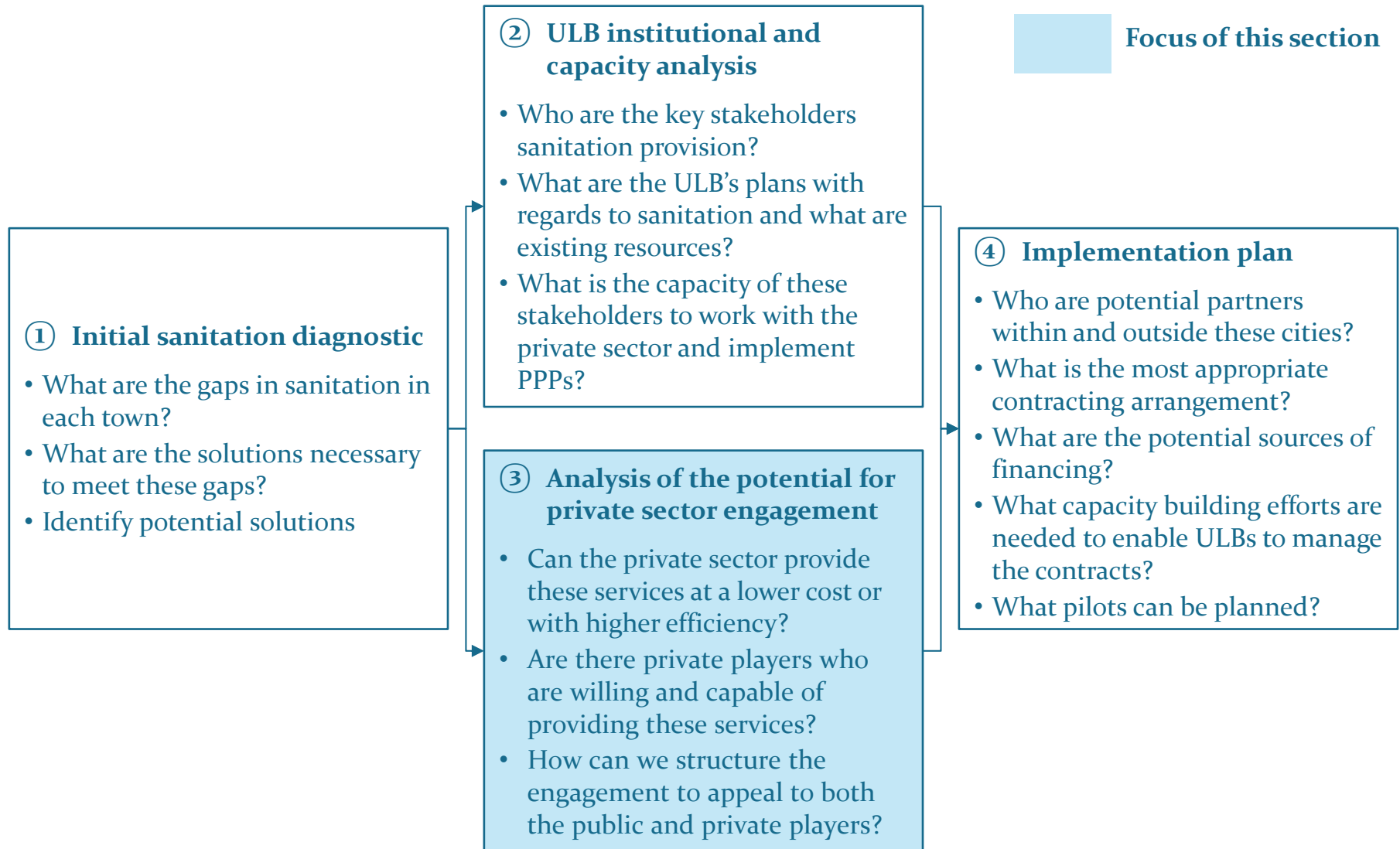
Private sector engagement - Process Mapping

ULBs need capacity building support in technical and financial assessment, contract development and monitoring

	Technical and Financial assessment	Contract development	Procurement process	Monitoring
Current status and key gaps	<ul style="list-style-type: none"> Undertaken by sanitary inspector and ULB staff 	<ul style="list-style-type: none"> Management contracts with a monthly payment not linked to performance and lacking essential risk clauses 	<ul style="list-style-type: none"> Lowest bid meeting minimum criteria is chosen 	<ul style="list-style-type: none"> Self reported forms and form filled by ULB supervisors is tallied daily Monitoring forms focus on inputs
Capacity building needed	<ul style="list-style-type: none"> Prepare technical and financial assessments for proposed solutions 	<ul style="list-style-type: none"> Develop a systematic contracting framework which: <ul style="list-style-type: none"> Links payment to explicitly monitored service levels or outputs Clearly addresses risks affecting both the private and the public sector 	<ul style="list-style-type: none"> Strengthen current framework for bid evaluation to include metrics for quality and level of service delivery 	<ul style="list-style-type: none"> Draft a systematic monitoring framework that <ul style="list-style-type: none"> Monitors outputs or outcomes Is clearly tied to payment incentives Can be effectively implemented by ULB staff

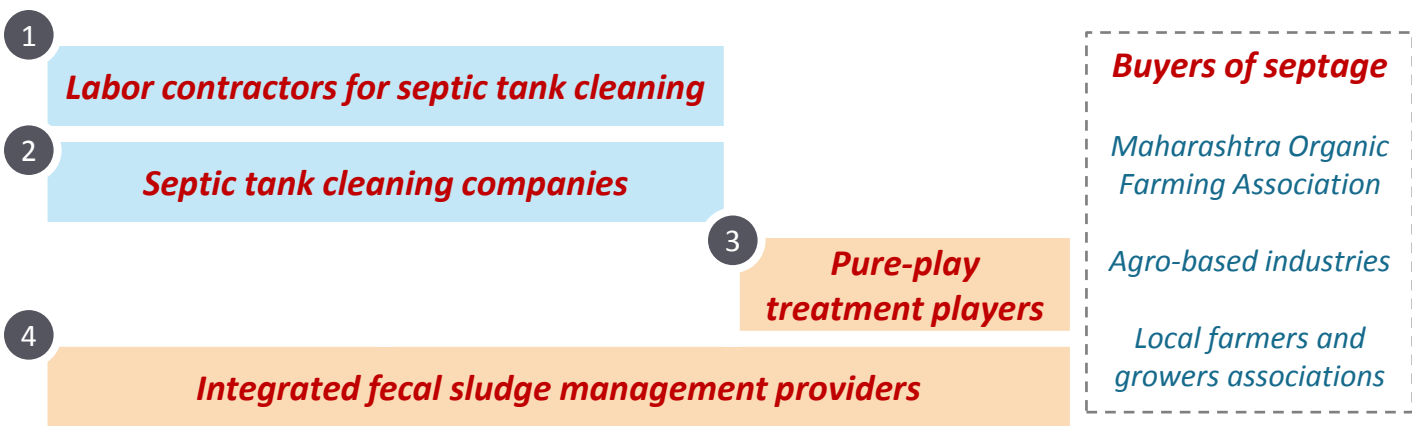
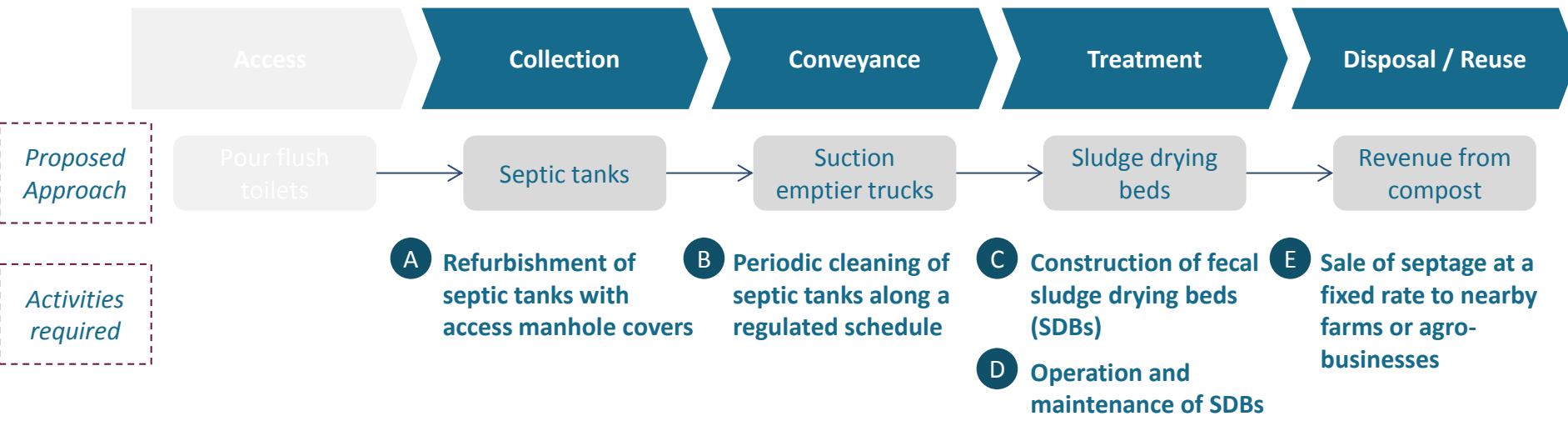
Identification of gaps

Four building blocks of our work . . .



3

We identified four kinds of players offering septage management services



Small scale players (<10 employees)

Medium scale enterprises (>10-50 employees)

Source: Field visits, online business listings

③ Assessed work profile, interests and capacity of private sector

① Labor contractors: These are small players that employ workers to operate rental trucks, and also offer other facility management services

<p>Name: ZR Enterprises Geographic focus: Pune Services offered: General facility management Business model:</p> <ul style="list-style-type: none"> • Scale: ~1-3 trips per month • Customers: Households and small retail establishments • Payment structure: ~ INR 1000 - 3000 per trip • Expected return: ~ 10 - 15 lakh per year <p>Interest in business opportunity: <i>"Yes, I am actively looking for new business opportunities... I can obtain a truck and labor for cleaning. I am familiar with sludge drying beds and know a contractor who can assist with their construction. I am not sure the sale of septage is a possibility, I would prefer to be paid a fee."</i></p>	<p>Name: Manisha Enterprises Geographic focus: Pune Services offered: Septic tank & storm water cleaning Business model:</p> <ul style="list-style-type: none"> • Scale: ~2-3 trips per day • Customers: Households and small retail establishments • Payment structure: ~ INR 1000 - 1200 per trip • Expected return: Operating margin of 30%-40% <p>Interest in business opportunity: <i>"Yes, but only if the ULB provides the truck. We find enough business in Pune and don't see a reason to expand. We do not do construction and are not familiar with sludge drying beds."</i></p>
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Labour contractors

② Septic tank cleaning companies: These small companies own 1-2 trucks and do not offer any other services (1/3)

<p>Name: Kadam Enterprises Geographic focus: 150 km radius in the Pune and Satara districts Service offered: Septic tank cleaning services Business model:</p> <ul style="list-style-type: none"> • Scale: Operates one Tata 709 truck of 3.2 kL capacity, that cleans ~70-80 tanks per month • Customers: Industrial estates and households in nearby villages • Payment structure: One-time cash payment @ ~INR 1700 per trip • Expected return: ~ INR 50,000 - 75,000 in operating profit per truck per month <p>Interest in business opportunity: <i>"Yes, I can procure a truck and operate it on the regulated schedule. The repair can be done by a local contractor. I am familiar with sludge drying beds but am not interested in constructing them, because unlike the truck which I can use for other business in case the contract does not work out, I can't take the bed with me. As for sale of septage, it is possible, but will require investment in marketing and..."</i></p>
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Septic tank cleaning companies

③ Pure-play treatment players: Traditional sewage treatment plant providers are focused on more advanced technologies than sludge drying beds

<p>Name: Era Hydro-Biotech Energy Private Limited Geographic focus: Pune Services offered: Manufacturing and construction of water, wastewater and sewage treatment plants Interest in business opportunity:</p> <p><i>"We do not approve of stand-alone sludge drying beds. Dried sludge will need to be handled manually, and what happens during the monsoon? In addition, each bed would need to be cleaned and repaired every few months. I would suggest a large anaerobic biogas plant, the gas from which can be used for electricity generation."</i></p> <p><i>"I am fine with a BOOT contract with a 1-2 year contract, but generally these contracts are milestone based with 20% payment in advance, and the rest after project delivery."</i></p>	<p>Name: Envicare Technologies Private Limited Geographic focus: Pune Service offered: Manufacturing and construction of water, wastewater and sewage treatment plants Interest in business opportunity:</p> <p><i>"We are not interested in constructing sludge drying beds by themselves. The sludge will be half-digested, and attract fleas or fungal growth. We recommend an anaerobic digester attached to a bed. You can generate methane from the digester, and the dried sludge can be used as manure"</i></p> <p><i>"Payment needs to be mile-stone based, ~40% up-front, 50% when materials are delivered to the site and 10% post-completion. We would like a 25% return."</i></p>
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Pure play treatment players

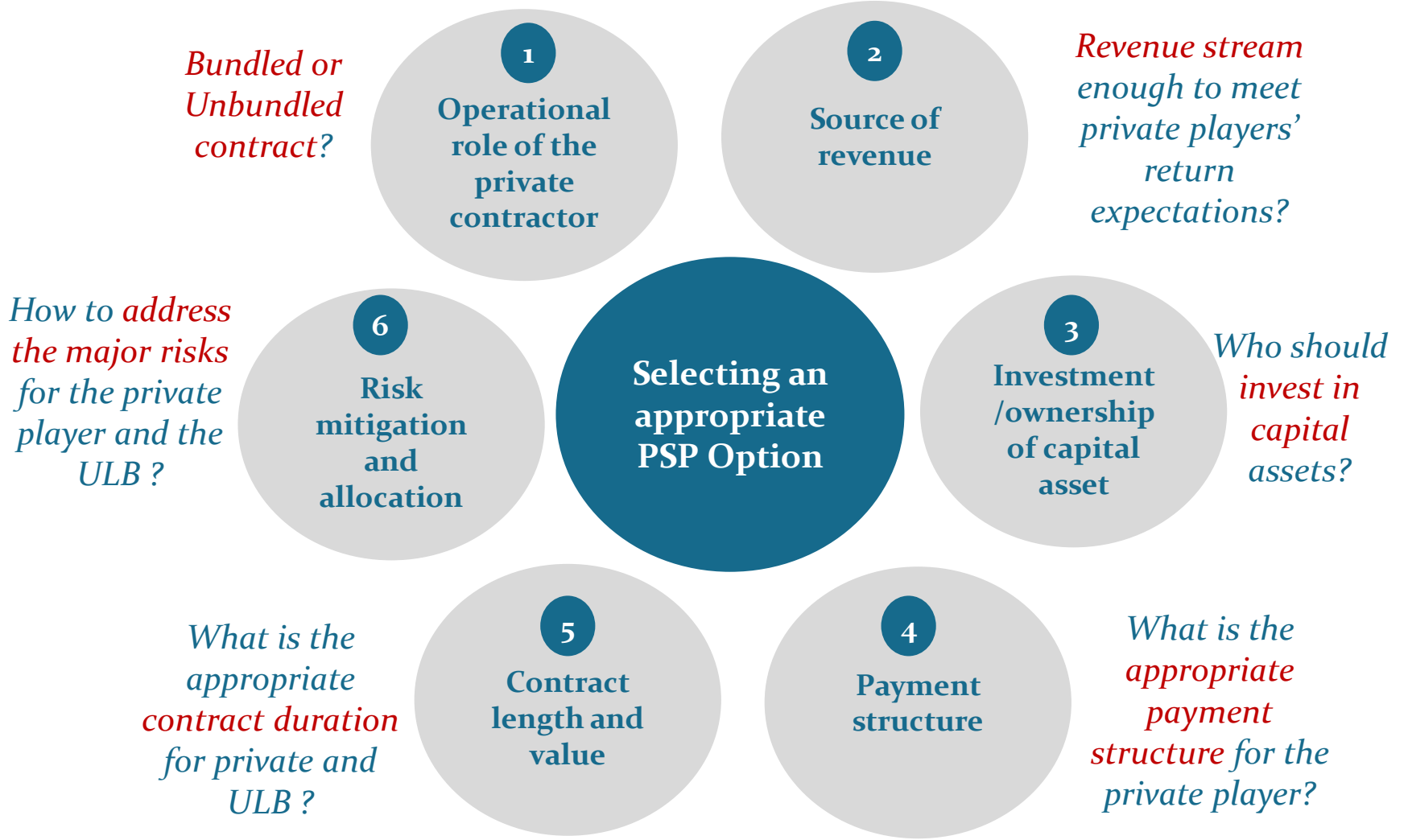
④ Integrated fecal sludge management providers: 3S Shramik constructs toilets, cleans tanks and constructs treatment plants

<p>Name: 3S Shramik Geographic focus: Maharashtra, Karnataka, Tamil Nadu, Goa and Delhi NCR Services offered: 3S Shramik's core business is the manufacture and supply of recyclable portable toilets, but they also offer commercial and residential septic tank cleaning and septage treatment Business model [conveyance]:</p> <ul style="list-style-type: none"> • Scale: ~60 Mercedes Benz suction emptier trucks, each operated by a driver and a technician • Customers: Mostly residential, but also some commercial clients • Payment structure: Charges INR ~400-1000 per trip. Run trucks on a regulated "DHL-like" schedule, but also take emergency calls • Expected return: 20 - 25% EBITDA margin <p>Interest in business opportunity: <i>"We have invested in high quality trucks so that our employees do not have to come into contact with the waste at all. We want them to feel proud of the work they do. Customers don't care, they just want the job done. But we have a rule book, and it clearly tells the customers what we will and will not do"</i></p> <p><i>"We would be interested in an integrated contract for fecal sludge management. In terms of profitability, the business is only viable if you're doing at least a 20-25% EBITDA margin."</i></p>

IFSM service providers

3

We followed a six step process to structure a private sector engagement for integrated fecal sludge management



3

Given the interest and capabilities of identified players, worked out contracting options and possible taxes to be levied for sustaining the services

Contracts	Source of revenue	Ownership of asset	Payment method	Contract length and value
1A Refurbishment and cleaning of septic tanks + O&M of SDBs	ULB	Private player	Recurring fixed fee with Fixed fee per unit for refurbishment	2-3 year, ~INR 32-36 lakhs in Sinnar and ~INR 15-17 lakhs in Wai
1B Construction of SDBs	ULB	ULB	Overall fixed fee on a pre-decided schedule	~ INR 40-45 lakhs in Sinnar and ~24-28 lakhs in Wai lasting the time period of construction

- 2A Refurbishment and cleaning of septic tanks
- 2B Construction and O&M of SDBs
- 3A Integrated contract involving refurbishment, cleaning of septic tanks, construction and O&M of SDBs


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 annual tax spend for a household of about **7% in Wai and 11% in Sinnar.**

refurbishment




3 Addressing the risks involved in PPP engagement for IFSM activities

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

Risk	Mitigation	Allocation of remaining risk
 Private player uses manual scavenging for cleaning septic tanks or sludge drying beds	<ul style="list-style-type: none"> Require safety gear for all personnel Include a clear description of activities that constitute manual scavenging 	<ul style="list-style-type: none"> Contract terminated if complaints of manual scavenging are received from households or ULB staff
<div style="border: 2px dashed red; padding: 5px;"> Private player does not clean household tanks as per the schedule </div>	<ul style="list-style-type: none"> Portion of the monthly payment should be tied to the number of household signatures collected from households whose septic tanks have been cleaned satisfactorily ULB to undertake random inspections of households whose signatures have been submitted A complaint redress mechanism to be opened where grievances can be lodged by the HH with the ULB 	<ul style="list-style-type: none"> Penalties to be imposed if the reported number of cleanings is lower than specified in the contract, or if discrepancies are found during random sampling, or if complaints are not dealt with in a timely manner Large or persistent breaches can lead to termination
Private player	As above	Work on faulty septic tanks would have to

Cleaning of septic tanks

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

Risk	Mitigation	Allocation of remaining risk
 Septic tanks are damaged during or as a result of refurbishment	<ul style="list-style-type: none"> Specify the type of materials required Payment tied to the number of signatures from households whose septic tanks have been repaired to their satisfaction 	<ul style="list-style-type: none"> Damaged septic tanks must be repaired within a specified period days of complaint and the cost shall be borne by the private player Penalties will be imposed if discrepancies are found during random sampling, or if complaints are not dealt with in a timely manner Persistent breaches may lead to termination
<div style="border: 2px dashed red; padding: 5px;">  Sludge drying beds do not meet specified design </div>	<ul style="list-style-type: none"> ULB to undertake random inspections of households whose signatures have been submitted A complaint redress mechanism to be opened where grievances can be lodged by the HH with the ULB The ULB will specify the design and materials to be used in consultation with town consultants 	<ul style="list-style-type: none"> if the work is found to be faulty at any stage, the payment will be withheld until the corrections are made
 Construction of SDBs	<ul style="list-style-type: none"> Payment made in installments on the completion of specific construction milestones 	

Managing performance risk through performance based monitoring and payment

Private player dumps septage at places other than the treatment site


A portion of monthly payment is tied to signatures collected from the SDB operator

exceeds a specified number in a given time period, the contract can be terminated

X% of O&M payment to be conditional on the sludge meeting specified qualities

Persistent breaches may lead to termination

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



Risk	Mitigation	Allocation of remaining risk
 Termination at cause	<ul style="list-style-type: none"> ULB does not fulfill contract conditions Private player is unable to meet service standards ULB decides to discontinue the 	<ul style="list-style-type: none"> Private player compensated for investments, the cost of winding down and foregone profits ULB can compensate the private player for some portion of its capital investments but seize the performance bank guarantee X month notice period required Private player compensated for
	<ul style="list-style-type: none"> Establishing a clear reporting and monitoring mechanism to ensure transparent contract execution Ensuring that disputes are handled amicably through frequent communication and by appointing an agreed upon third party mediator As above Up-front discussions with key stakeholders to create buy-in for 	

at will to terminate the contract due to reasons unrelated to ULB compliance with contract terms

and private player

Private player forfeits the performance bank guarantee

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

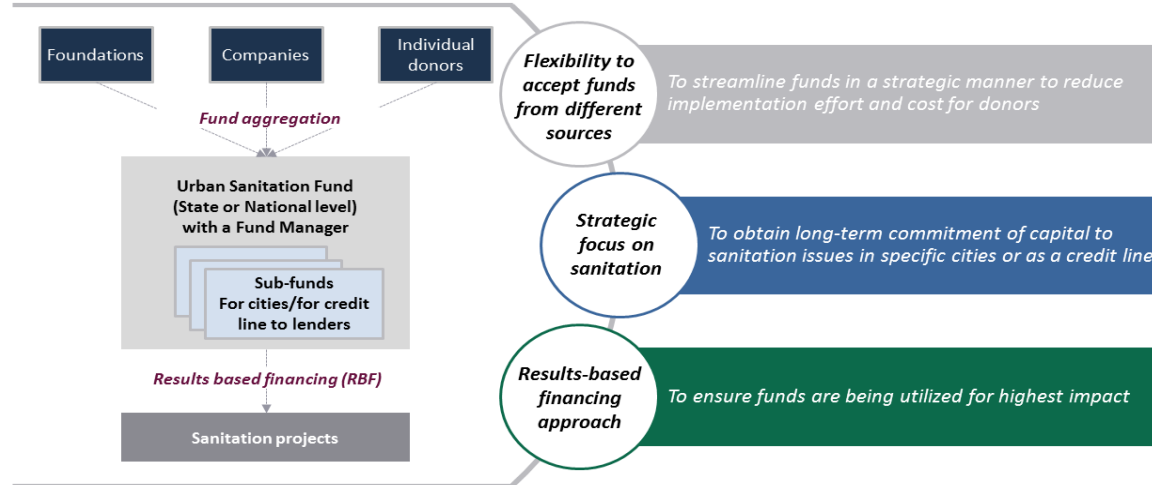
Risk	Mitigation	Allocation of remaining risk
 Payment delays	<ul style="list-style-type: none"> ULB is unable to make timely payments towards the project 	<ul style="list-style-type: none"> ULB to pay interest for the payment, delayed by X months or more, at a negotiated rate of interest
	<ul style="list-style-type: none"> Ensuring budgetary allocation for contracts before procurement Establishment of an escrow account for payment 	
 Cost of inputs increase over the course of contract	<ul style="list-style-type: none"> Adjustment of contract value annually for inflation 	<ul style="list-style-type: none"> Private player would be responsible for bearing the cost escalations within

Managing payment and cost escalation risk

3 Explored the idea of Urban / City Sanitation Fund

These sources can be effectively brought together in the form of a results based urban sanitation fund, at the national, state or city level

Idea of Urban / City Sanitation fund

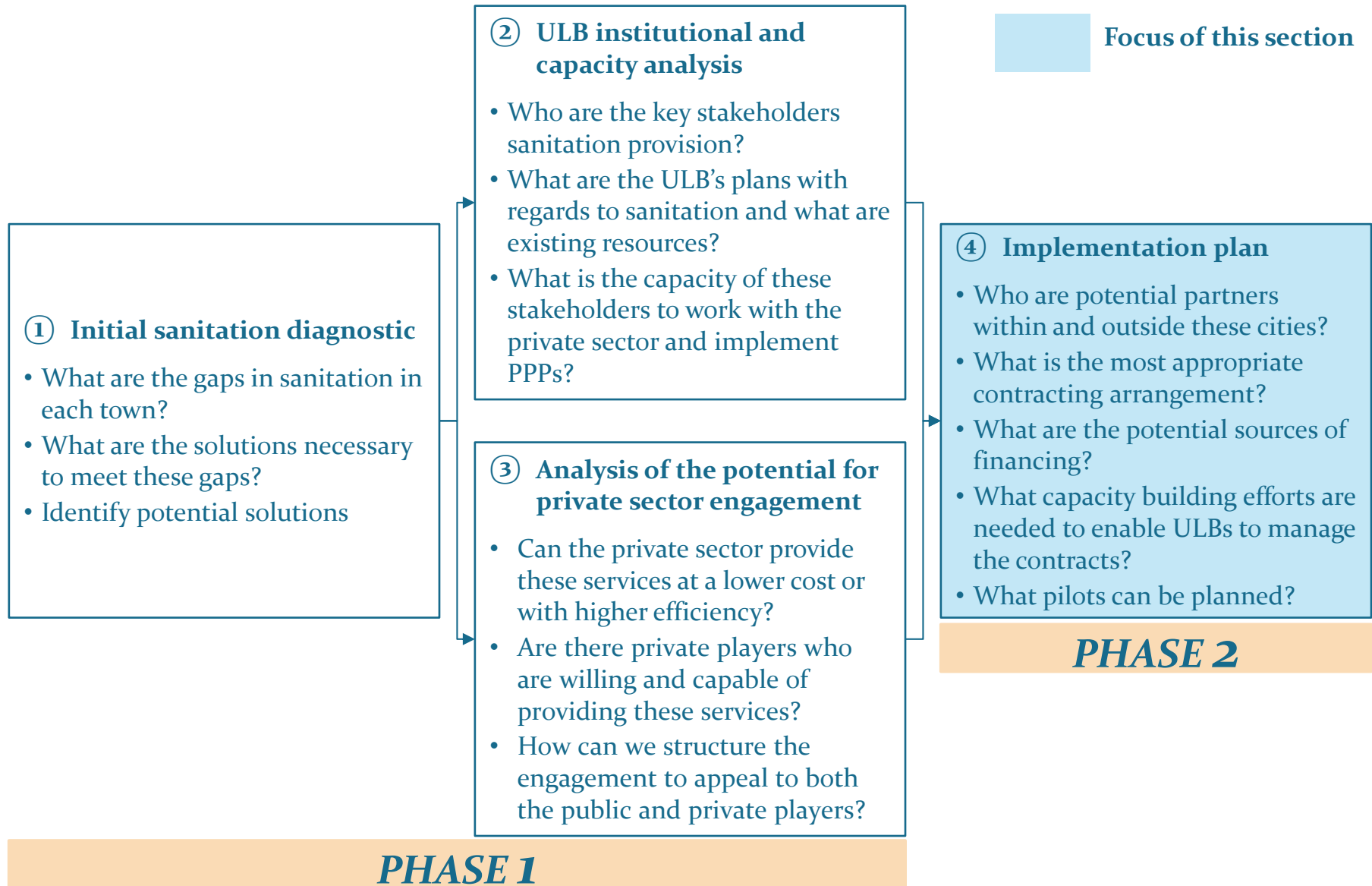


This urban sanitation fund can be deployed for multiple purposes

Use of funds for various purposes



Four building blocks of our work . . .



Goals & Primary outcomes of PHASE 2

Strategic Goal

Scale up citywide sanitation services for the full value chain using **field tested business models** for **private sector contracts for IFSM services** and **toilet finance for households**

Primary outcomes

1

Appropriate **PPP contract(s)** used in **2 project cities** to provide **citywide IFSM services** including safe collection and treatment of faecal sludge, safe reuse or disposal of treated waste

2

Cities move towards being **open defecation free (ODF)** with **Increased share of households using their 'own' toilets**

3

Increased capacity of Urban Local Bodies (ULBs) in India to **engage the private sector** for urban **sanitation services** in **Maharashtra** and two other of **Foundation's priority states** in India

4 Outcome 1: Citywide - Integrated Fecal sludge Management Plan (2/2)

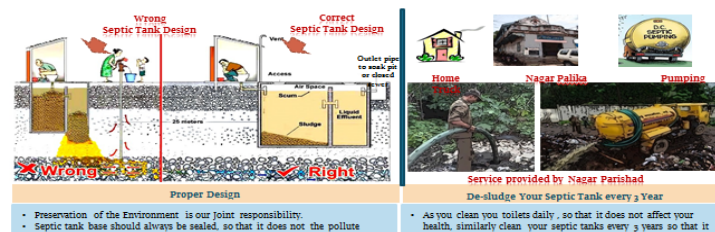
To ensure adoption of the integrated fecal sludge management plan, the ULB has to make regulatory changes

- The key issue in ensuring regular and safe septage management is **lack of implementation of government regulations and advisories**
- This will need the **formulation of ULB bye-laws** and rules to ensure implementation of each aspect of the IFSM plan
- The rules should address:
 - Septic tank design:** to ensure septic tanks of standard size are installed in new constructions
 - Periodicity of de-sludging:** to ensure septic tanks are cleaned every 3 years as per the MoUD's advisory
 - De-sludging procedures:** to ensure safe handling of fecal sludge
 - Sanitation tax:** to persuade households to clean septic tanks regularly
 - Penalties:** to deter irregular cleaning and use of substandard septic tanks

These activities also need to be supported by campaigns for awareness generation

- To ensure **adoption of government regulations and ULB bye-laws**, there is a need to generate awareness about regular septic tanks emptying
- To **educate people about IFSM** we can involve:
 - Print and electronic media
 - Civil Society organizations such as NGOs and RWAs
 - Academic institutions such as schools and colleges
 - Opinion influencers such as doctors and religious leaders

Illustrative posters to generate awareness



Fourth, regulation and implementation

Financial analysis for funding IFSM activities

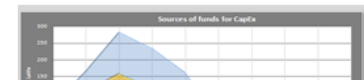
- Financial Analysis of options for conveyance and treatment** need to be carried out and **linked** to the **ULB budget** for financing



- Analysis of ULB budget** needs to be undertaken, to **understand ULB capacity to fund the IFSM activities**.



- Various **other sources of finances** needs to be looked into for **funding**



Funding options for IFSM activities

Fifth, IEC and Awareness generation

Create citywide information for successful implementation of PPP and improving monitoring by ULB for IFSM activities

Present system

- No database** of toilets, septic tanks for HHs
- No ready database** to show how often a septic tank is being cleaned and at which location in the city

Creating database and improving monitoring :

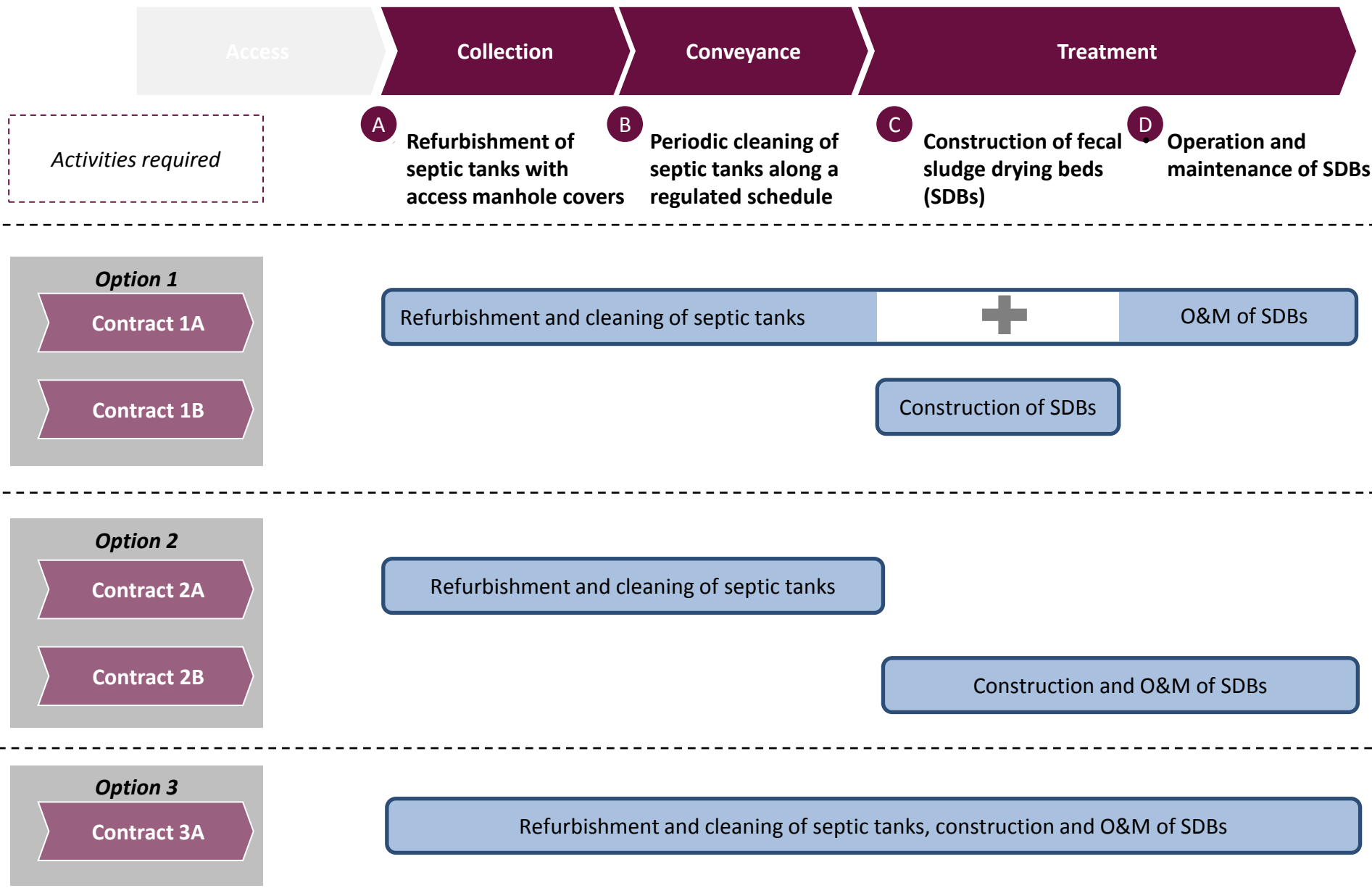
- Create GIS database** for each HHs / property depicting **details on Toilets, septic tanks, soak pits** details
- Update of HHs / property** on server through mobile application or reporting systems **once the septic tank is cleaned**



Citywide database and MIS

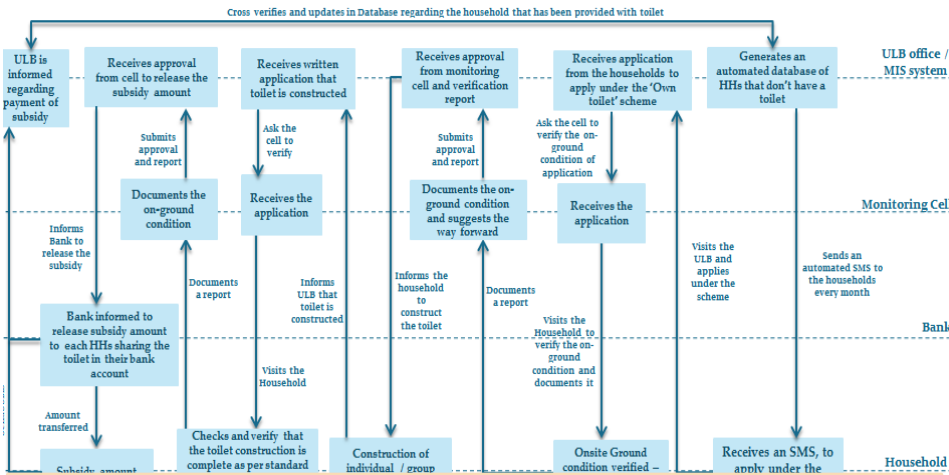
4

These activities will be undertaken under various contracting options to be finalized with the city governments and private sector

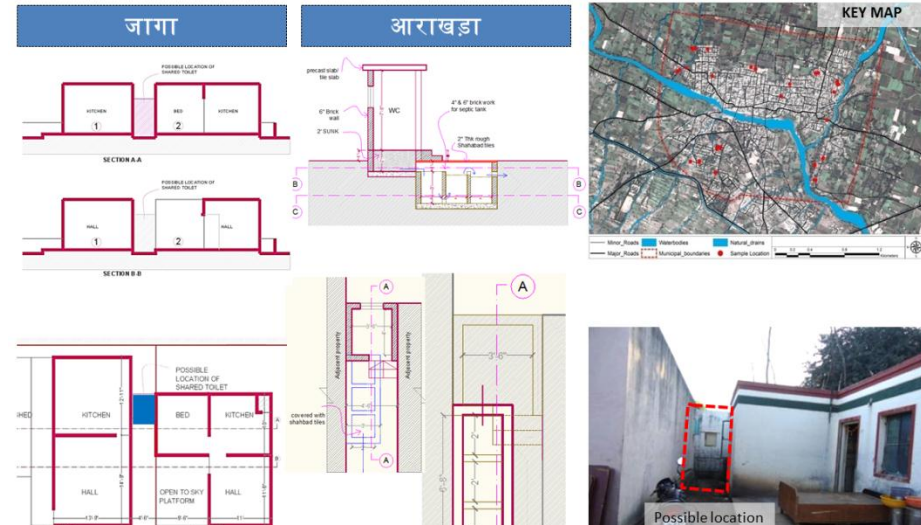


4 Outcome 2 : ODF cities through 'Own toilet' scheme (2/2)

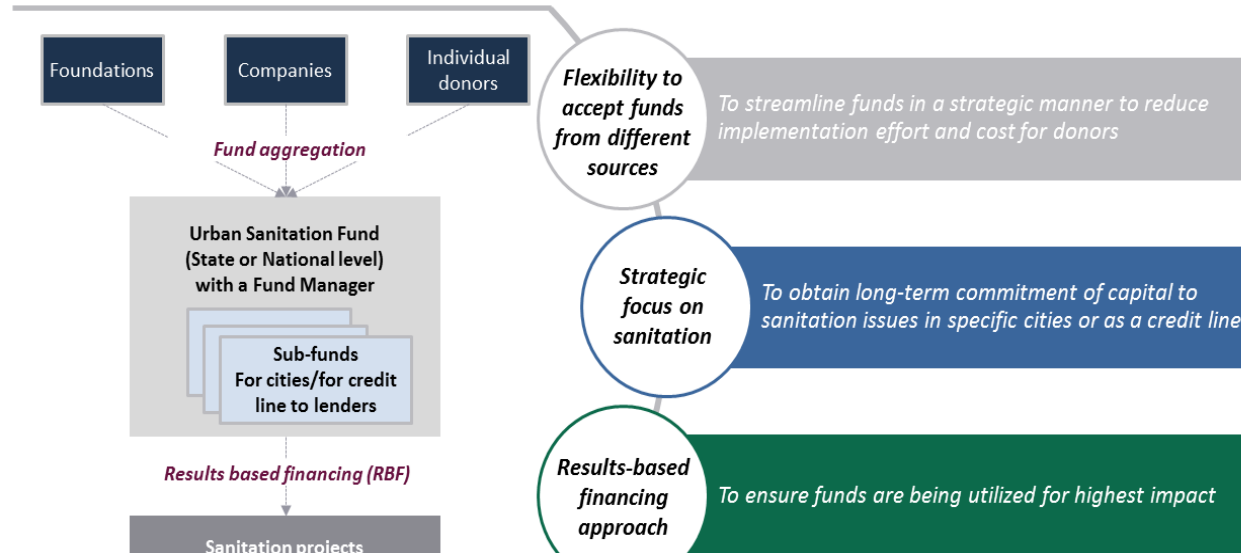
Monitoring framework for 'Own toilet' scheme



Setting up Reporting and monitoring systems



Construction of toilets as per design and specification



Setting up City Sanitation fund for funding the toilet scheme

4 Outcome 3 : Capacity building training of ULBs through PPP toolkits

■ Module 1: PPP Background

■ Module 2: Work through the PPP process

- Introduction

+ Analysis and decision making tools

+ Process Maps

+ Phase 1 - Identification

+ Phase 2 - Full feasibility

+ Phase 3 - Procurement

+ Phase 4 - Operation

+ Further guidance on specific topics

■ Module 3: Tools and Resources

■ Sitemap

Introduction [Go to My Tools](#)

Welcome to Module 2 of the online PPP toolkit. The aim of this toolkit is to help improve decision making for PPPs and, ultimately, to improve the quality of infrastructure PPPs that are implemented in India.

Module 2 is a step-by-step guide to the PPP process. It is written specifically to help PPP practitioners make the decisions needed to plan, develop, and carry out successful PPPs.

Module 2 is divided into 4 phases to match the major activities in the PPP process:

- **Phase 1: PPP identification**, covering strategic planning, project pre-feasibility analysis, PPP suitability checks, and internal clearance to proceed with PPP development
- **Phase 2: Full feasibility, PPP preparation and project clearance**, covering project appraisal including a full feasibility study, PPP preparation including draft documents, and in-principle clearance
- **Phase 3: PPP procurement**, covering procurement, final drafts of bidding documents, final approval and project award
- **Phase 4: PPP contract management and monitoring**, covering project implementation and monitoring over the life of the PPP

The process is illustrated in the diagram below.

The PPP process

PPP identification → PPP development pipeline → PPP operation

Phase 1: Strategic planning, Project pre-feasibility

Phase 2: Full feasibility study, PPP

Phase 3: Procurement

Phase 4: Contract management

Developing PPP toolkits and guidelines



Capacity building of 50 ULBs



Peer review and feedback through workshop with cities



Guidelines disseminated at National and Global level

Thank you

meeramehta@cept.ac.in dineshmehta@cept.ac.in

www.pas.org.in



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