Presentations from the workshop "Exploring PPP Opportunities for Smaller Towns in Maharashtra"

"Integrated Fecal Sludge Management Plan of Wai, Sinnar and Ambejogai" *by CEPT University with support from Dalberg Global Development Advisors*

"Implementation of "own toilet scheme" in Wai and Sinnar" *by CEPT University and AIILSG with support from Dalberg Global Development Advisors*

pas performance assessment system

CEPT University

“Integrated Fecal Sludge Management Plan of Wai, Sinnar and Ambejogai”

by CEPT University with support from Dalberg Global Development Advisors

Integrated Fecal Sludge Management Plan of Wai, Sinnar and Ambejogai

CEPT University

With support from Dalberg Global Development Advisors

4th July 2014

Overall mission and approach

Objective

To support cities with developing and implementing inclusive strategies to provide universal access to sanitation services

Approach

1. Conduct sanitation diagnostic
2. Develop city sanitation plans
3. Assess potential for private sector engagement
4. Scale-up and implement

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Brief overview of this sections

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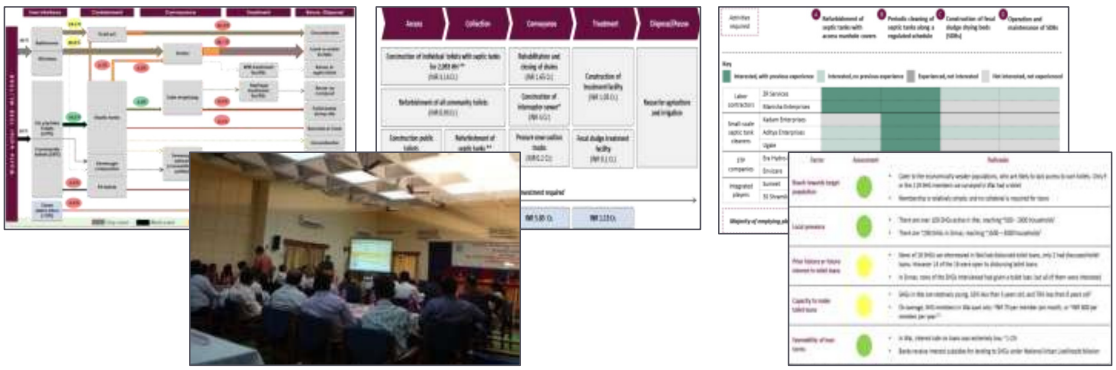
2. Develop city sanitation plans
3. Assess potential for private sector engagement
4. Scale-up and implement



Development of City Sanitation plans were accompanied by ~18 months of stakeholder engagement with the WSSD, MJP and local ULBs

March-April 2012

Meeting with **Hon. Principal secretary of Maharashtra Water Supply and Sanitation Department (WSSD), AIILSG**[1] **and MJP** for the selection of CSP cities. Wai, Ambajogai, Sinnar and Hingoli selected

May 2012

Workshop in Nashik to **kickoff city sanitation planning process** attended by MJP, AIILSG, CEPT, Sanitation experts and local ULB officials

August 2012

Baseline assessment of present sanitation scenario along with **initial suggestions for improvement options** discussed with the officials

Sept.2012 -March 2013

Draft CSP with detailed sanitation proposals across the value chain discussed with the ULB officials

April 2013

Final city sanitation plans shared with ULB officials, MJP and AIILSG; Financial status and affordability of sanitation solutions discussed

May-Sept 2013

Wai, Sinnar and Ambajogai ULB officials along with **MJP** expressed **willingness** to receive **technical support** from **CEPT**

Sept 2013 to date

Wai, Sinnar and Ambajogai select **2-3 solutions for implementation** along with CEPT

Ongoing discussions with city officials to short-list and implement selected solutions

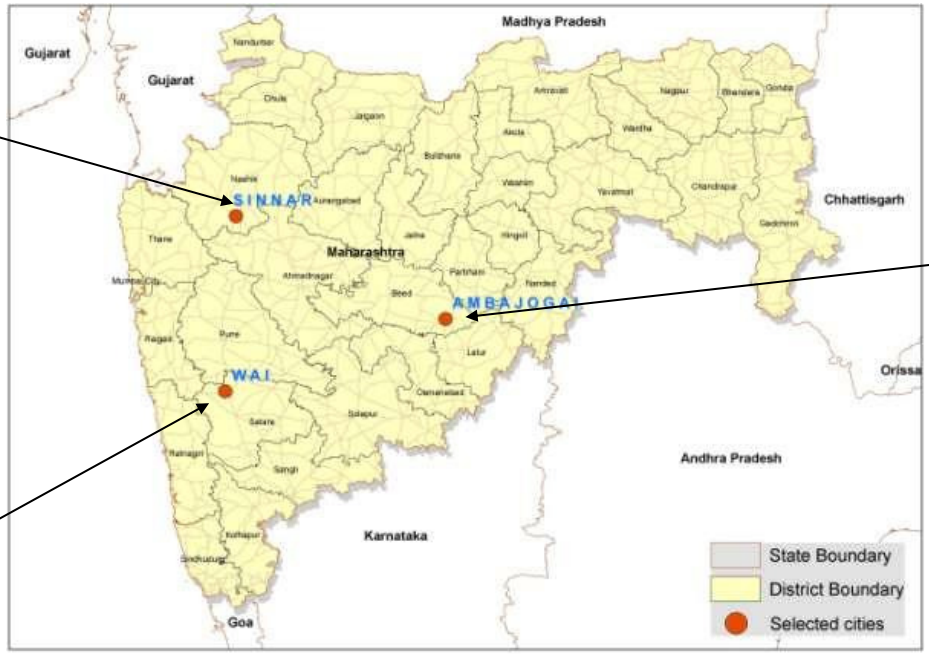
Note (1) All India Institute of Local Self Government

City Profile of Selected cities (1/2)

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.

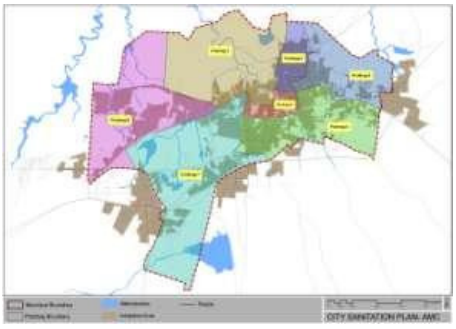


Ambajogai
Located in the Beed district, the town has a population of ~74,000 that has grown at 3% p.a. since 2001. Its growth has been lead by tourism and education.

Source: Census of India 2011, City Sanitation Plan, PAS Project – CEPT University

City Profile of selected cities (2/2)

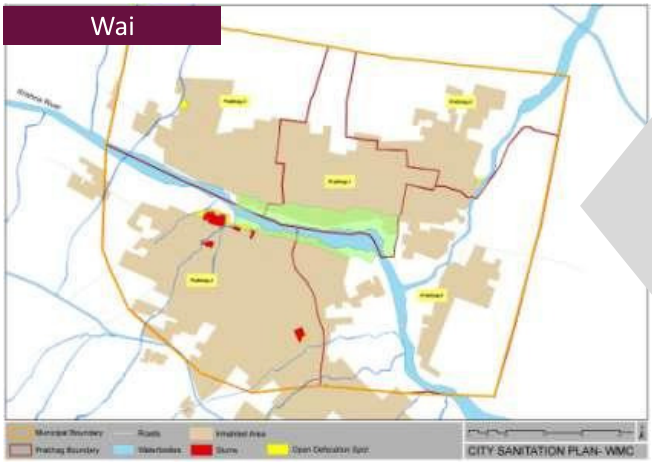
	Wai	Sinnar	Ambejogai
District	Satara	Nashik	Beed
Geographic Location	Latitude 17°56′N and Longitude 73°53′ E	Latitude 19°51′N and Longitude 74°00′E	Lat 18°44′N and Long 76°23′E
Civic status	Nagar Parishad 'C' class	Nagar Parishad 'C' class	Nagar Parishad 'B' class
Total Area	**3.64 sq km**	**51.4 sqkm**	**10.18 sq km**
Population	**36025**	**65299**	**73,975**
Households	**7580**	**13112**	**14,517**
Slum HHs	**456 (6%)**	**837 (6%)**	**1084 (7%)**
No of Wards	19 wards managed through 5 Prabhags	23 wards managed through 6 Prabhags	28 wards managed through 7 Prabhags



Wai is a tourist town , Ambejogai is tourist / educational town, whereas Sinnar is more of an industrial hub

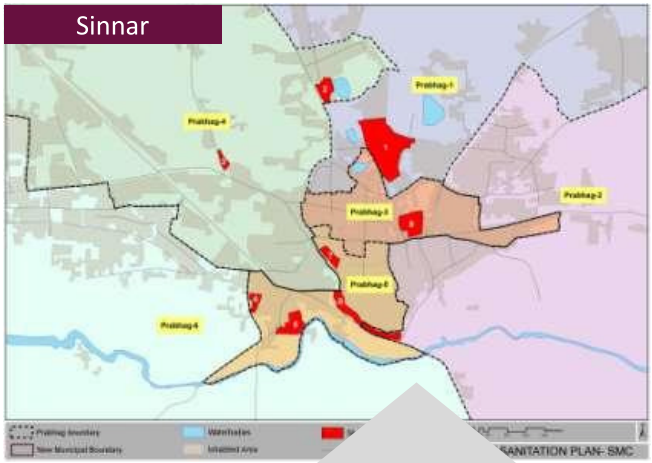
Slum Profile of selected cities

Wai



Wai has **2 slum pockets** which houses 6% of the city population

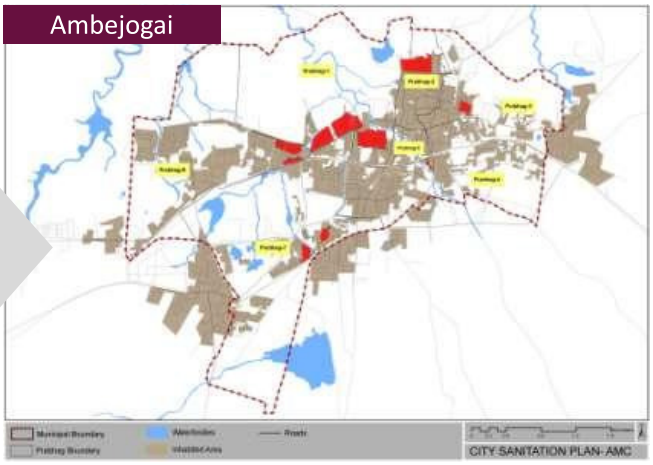
Sinnar



Sinnar has **8 slum pockets** which houses 6% of the city population

Ambejogai has **12 slum pockets** which houses 7% of the city population

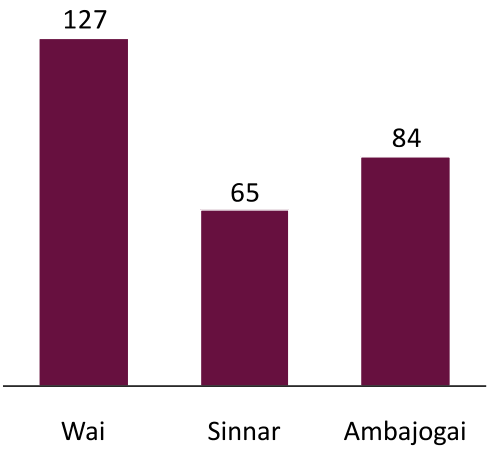
Ambejogai



Water Availability Status of the cities

Per capita availability of water

(in LPCD)



Service standards

- According to the Code of Basic Requirements of Water Supply, set by the Bureau of Indian Standards (BIS), the per capita availability of water should be between 100-150 LPCD
- The service level benchmarks set by the Govt. of India, stipulate the per capita availability of water to be 135 LPCD

Current status of water supply in Wai, Sinnar and Ambajogai

Wai

- **The main source of water supply** is **river Krishna** which passes through the middle of the city
- The current **water supply level (127 LPCD) is adequate** however only 73% of households have water supply connections

Sinnar

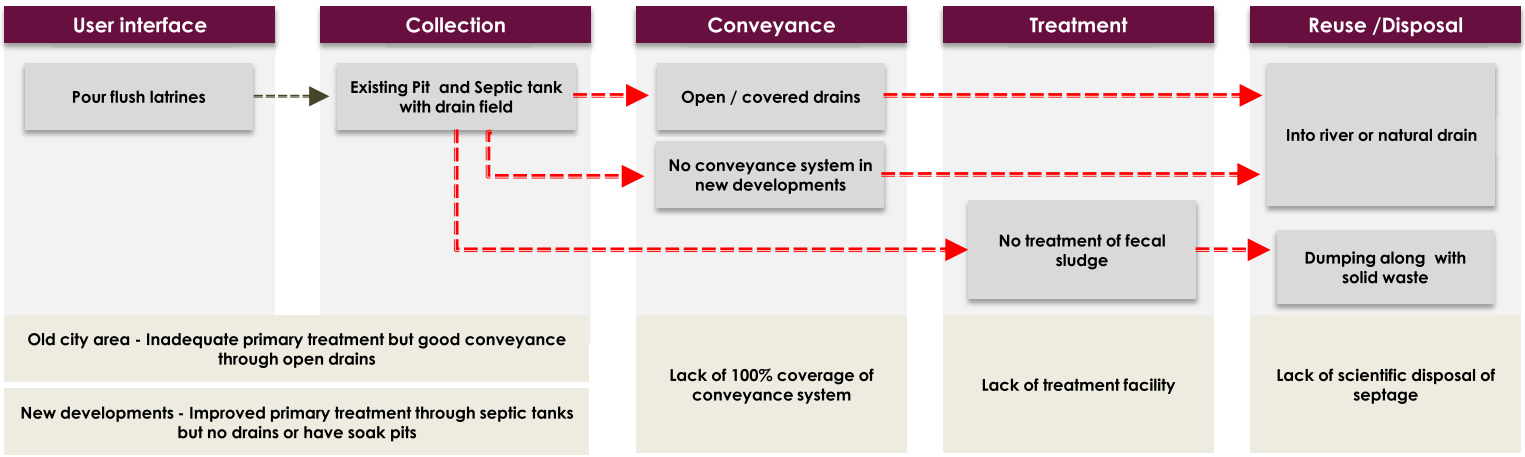
- **The main source of water supply is river Darna**, with low dependence on groundwater
- The current **water supply level (65 LPCD) is inadequate**, with only ~41% of households having a water supply connection
- However the **ongoing water supply project** will increase the availability of water supply

Ambajogai

- **Manjra Damn near Dhanegaon** is the main source of water for Ambajogai
- Even though, the current water supply exceeds demand in the town, the per capita availability of water (84 LPCD) at consumer end is low due to loss of water through **illegal connections and leakages**.

Source: Code of basic requirements of water supply by Bureau of Indian Standards (Link)

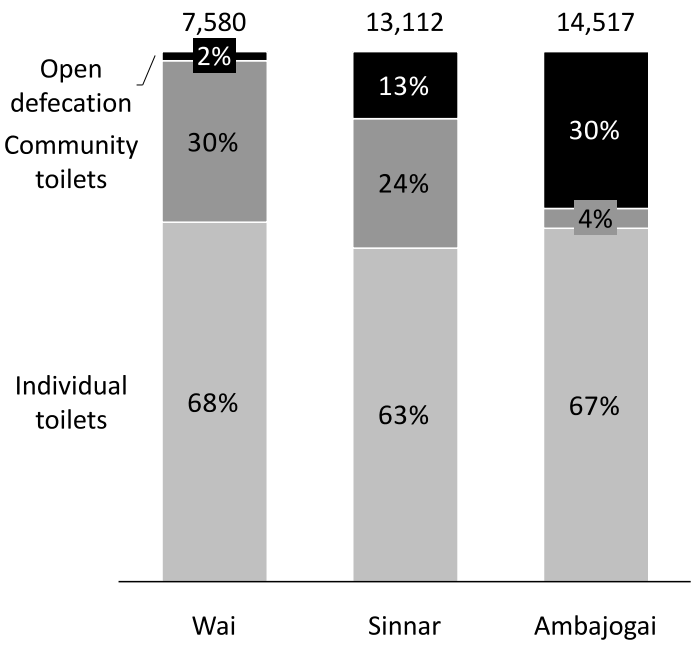
Existing Sanitation situation in the cities



Existing Sanitation situation in the cities

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

Access to types of sanitation facility
(Number of HH)



Non – slum HHs also use community toilets in all the three cities

Source: Census of India 2011, City Sanitation Plan, PAS Project – CEPT University

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
  - **Community toilets are in very poor condition**, only ~50% of seats were functional
  - As a result slum households resort to open defecation

Access to toilets: Another key difference is the quality of community toilet facilities

Wai

Older community toilet blocks are in dilapidated condition

42 Community toilet blocks
264/283 functional seats

Sinnar

Irregularly maintained, with inadequate supply of water and electricity

18 Community toilet blocks
280/320 functional seats

Ambajogai

Completely lack maintenance, with inadequate supply of water and electricity

39 Community toilet blocks
141/249 functional seats

Source: City Sanitation Plan, PAS Project – CEPT University

Access to public toilets: Lack of maintenance of public toilets is an issue

Wai

- There are **6 public toilets currently however only one PT in market area is under ULB purview**
- The toilet, operated by a private player on a pay-per-use model, is functional 24x7 and is in **good condition**
- There is a **need for four more public toilets** in the market area, bus stand, Forest Dept./Tehsil/PWD office and temple precincts

Sinnar

- Currently, there are **3 public toilets in Sinnar which are under ULB purview**
- Public toilets are in poor condition with **41 of 48 seats being functional**
- The public toilets are operational 24x7, however **clogging of toilet pans and poor availability of water limit their use**
- All public toilets are managed by **a private contractor and are free to use**

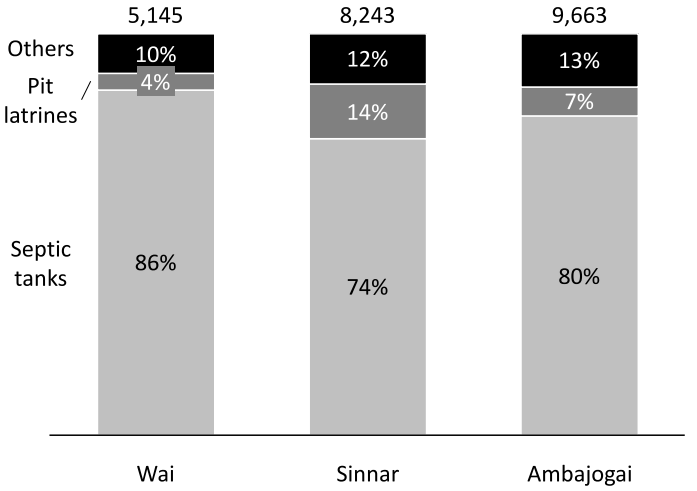
Ambajogai

- There are **2 public toilets** blocks in Ambajogai
- The public toilet at the **bus stand** is operated by a **private contractor** and runs on a **pay-per-use model**
- **Lack of maintenance of toilet blocks, broken infrastructure, and unavailability of water** limit their use
- There is a need for a **public toilet near Yogeshwari temple**

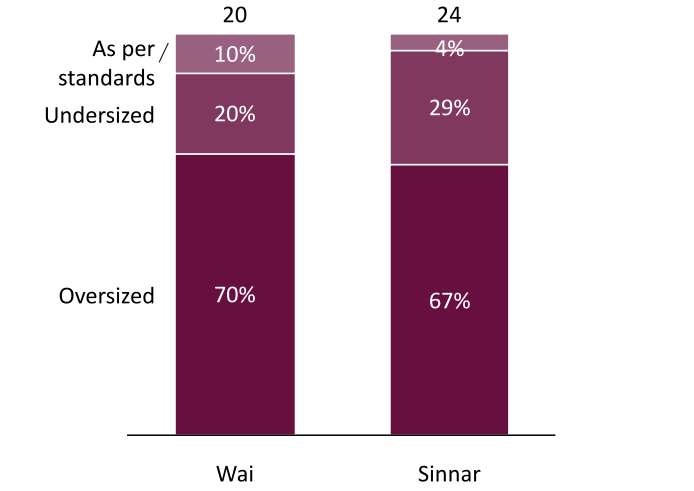
Source: City Sanitation Plan, PAS Project – CEPT University

Septage collection: Households in all three towns depend on septic tanks that are generally oversized

Method of collection of waste for all households
(HH)



Assessment of size of septic tanks connected to personal toilets
(Number of toilets)



- ~75-85% of households in these cities depend on septic tanks
- Tanks generally have a conventional **2-3 chambered baffled design**

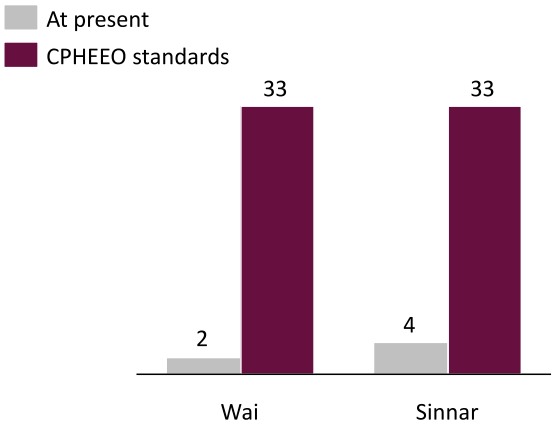
- A sample survey conducted in Wai and Sinnar found that septic tanks connected to individual toilets are **largely oversized** and do not meet the standards prescribed in IS codes and CPHEEO[1]
- Tanks are often connected directly to the drainage system

Note (1) The Central Public Health and Environmental Engineering Organization (CPHEEO) is the technical wing of the MoUD and deals with matters related to urban water supply and sanitation

Source: City Sanitation Plan, PAS Project – CEPT University

Consequently, households get their septic tanks cleaned only once in 8-10 years, resulting in the release of effluent with solids into the drainage system

Estimated number of septic tanks cleaned annually by the local ULBs
(As a % of total septic tanks)



Resulting issues

- The CPHEEO[1] manual and the MoUD septage management advisory recommend that household septic tanks be cleaned **every ~2-3 years, i.e. ~33% of them should be cleaned each year**
- The over-sized tanks and **the lack of awareness among households** are the key drivers of infrequent cleaning

- Septic tanks **often overflow** and fecal matter along with effluent is released into drains
- **Septage hardens and cannot be easily suctioned off,** often requiring manual intervention or the application of a lot of water to break the solids

Note (1) The Central Public Health and Environmental Engineering Organization (CPHEEO) is the technical wing of the MoUD and deals with the matters related to urban water supply and sanitation

Source: PAS database, City Sanitation Plan, PAS Project – CEPT University

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

Individual toilets

Septic tanks are below the toilets and don't have access covers

Inaccessible septic tanks with sealed tops

Septic tanks often empty into drains

Community toilets

In many toilets, septic tanks located behind the complex

2 Chambered septic tanks located behind community toilets

Some of the newer toilets have 2-3 chambered septic tanks with access covers

Source: City Sanitation Plan, PAS Project – CEPT University

Septage Conveyance: Currently, a single vacuum emptier truck cleans personal and community toilets

Existing septage conveyance mechanism in Wai and Sinnar

Suction truck of 5KL capacity in **Wai**

Wai ULB has 1 truck for cleaning

INR ~1000 charged per cleaning

No schedule for cleaning

Suction truck of 3KL capacity in **Sinnar**

Sinnar ULB has 1 truck for cleaning

INR ~400-800 charged per cleaning

No schedule for cleaning

Suction truck of 200L capacity in **Ambejogai**

Ambejogai ULB has 1 truck for cleaning

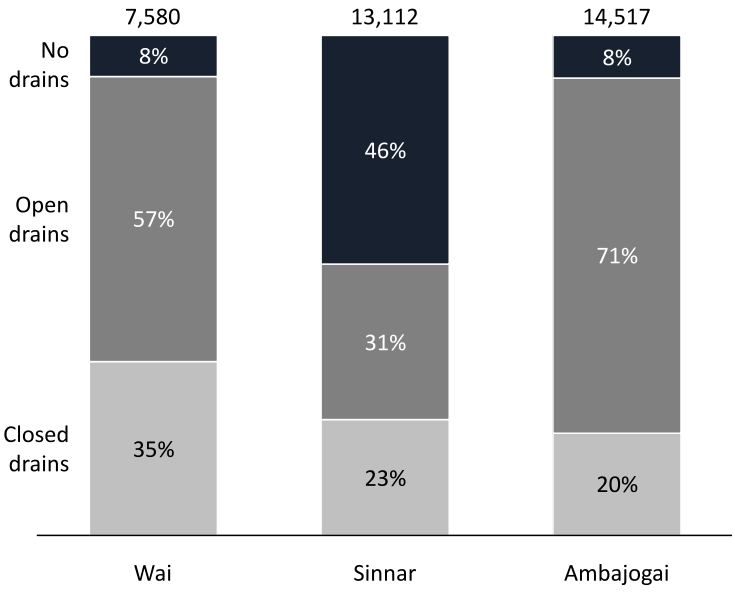
INR ~3000 charged per cleaning

No schedule for cleaning

Source: CEPT University

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)

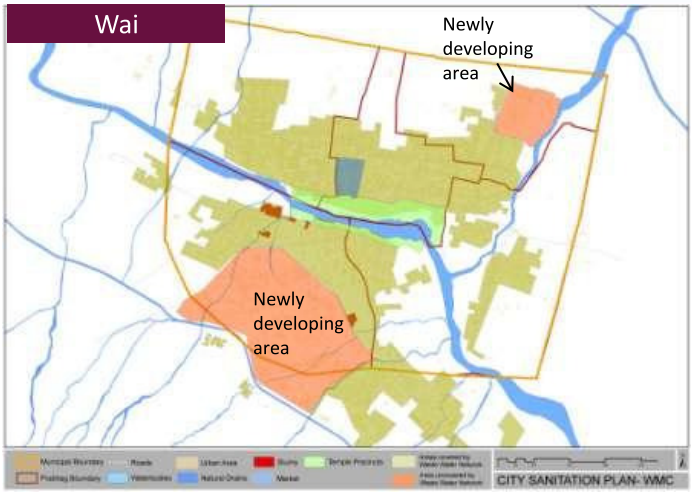


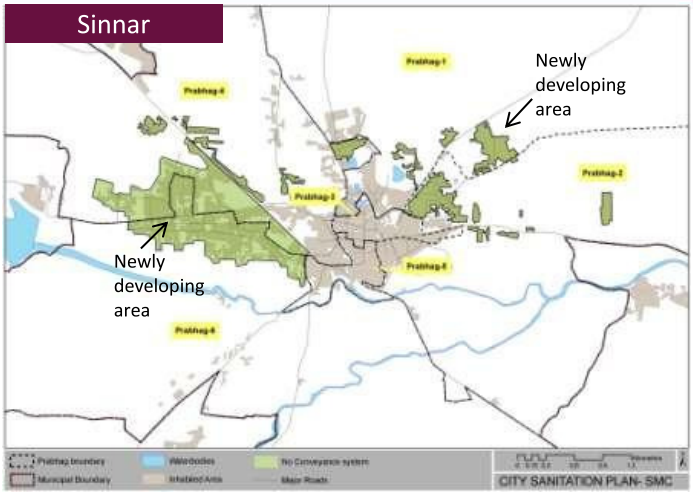
Key issues

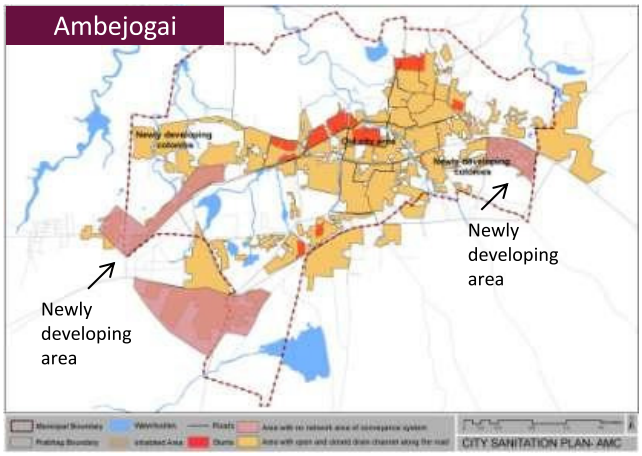
- ~600 households in Wai, ~6000 households in Sinnar and ~1200 households in Ambajogai have **no drainage system for the conveyance of wastewater**
- There is **no appropriate mechanism for conveyance of grey and black water** and all wastewater is disposed into drain channels flowing along the streets
- 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 wastewater is discharged into soak pits or into the open

Source: Census 2011, City Sanitation Plan, PAS Project – CEPT University

Wastewater collection and conveyance: Coverage of drain network in cities







Mainly the newly developing areas do not have drain network

The newly developing areas mainly have soak pits or road side disposal of wastewater

Wastewater collection and conveyance: Current issues

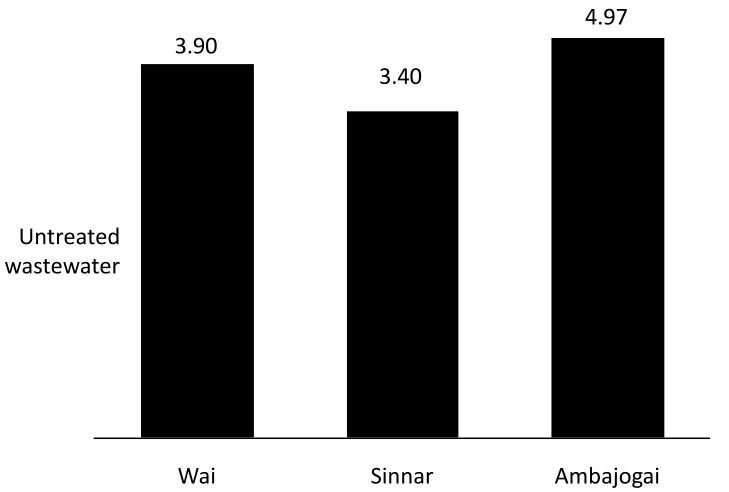
Effluent and grey-water being discharged into drains

Widespread clogging of drains

Source: City Sanitation Plan, PAS Project – CEPT University

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)



- **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 drains into the river**
- Collected septage is directly disposed off without treatment in a **dumping ground on the outskirts of the city**

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***

- 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

Source: Census of India 2011, City Sanitation Plan, PAS Project – CEPT University

Current status of disposal of wastewater and septage in cities

Wastewater dumps into the river




Septage is disposed off in the open



Source: City Sanitation Plan, PAS Project – CEPT University

Based on Sanitation diagnostics , comprehensive City Sanitation Plans (CSP) for universal sanitation services were developed: Wai

Access	Collection	Conveyance	Treatment	Disposal/Reuse

Option 1: Citywide settled sewerage system (INR ~284 million investment)

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Ensuring demand led access to own toilets with septic tanks for 2,093 HH		Rehabilitation and covering of drains	Construction of wastewater treatment facility[2]	Reuse for agriculture and irrigation
Refurbishment of selected old community toilets		Construction of settled sewer network[1]		
		Construction of interceptor sewer[2]		
Construction of public toilets	Refurbishment of septic tanks	Procure new suction trucks		

Option 2: Citywide onsite sanitation system with treatment (INR ~129 million investment)

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Ensuring demand led access to own toilets with septic tanks for 2093 HH		Rehabilitation and covering of drains	Construction of wastewater treatment facility[1]	Reuse for agriculture and irrigation
Refurbishment of selected old community toilets		Construction of interceptor sewer[2]		
Construction of public toilets	Refurbishment of septic tanks	Procure new suction trucks	Fecal sludge treatment facility	

Note: (1) Settled sewers attached to a treatment facility is a longer term solution as compared to other solutions (2) Adopted under Wai's National River Action Project (NRAP) scheme
Source: City Sanitation Plan of Wai, PAS Project – CEPT University

Based on Sanitation diagnostics , comprehensive City Sanitation Plans (CSP) for universal sanitation services were developed : Sinnar

Access	Collection	Conveyance	Treatment	Disposal/Reuse

Option 1: Mixed system with settled sewerage , IFSM and onsite sanitation (INR 325 million investment)

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Ensuring demand led access to own toilets with septic tanks		Rehabilitation and covering of drains	Construction of centralized treatment facility with interceptor sewer	Reuse for agriculture and irrigation purpose
Provision of community toilet (CT) in Satpirbhilati slum and refurbishment of all CTs		Provision of settled sewer in old part of town[1]		
Provision of new public toilet at Tehsildar office and refurbishment of existing public toilets		Construction of interceptor sewer		
Construction of soak pits for new dwelling units in New town area		Provision of vehicles such as emptier trucks	Construction of septage treatment facility	

Option 2: Citywide settled sewerage system with IFSM (INR 553 million investment)

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Ensuring demand led access to own toilets with septic tanks		Rehabilitation and covering of drains	Construction of centralized treatment facility	Reuse for agriculture and irrigation purpose
Provision of community toilet (CT) in Satpirbhilati Slum and refurbishment of all CTs		Provision of settled sewer in the entire city[1]		
Provision of new public toilet at Tehsildar office and refurbishment of existing public toilets		Construction of interceptor sewer		
		Provision of suction emptier trucks	Construction of septage treatment facility	

Note: (1) Provision of settled sewers along with treatment facility is a longer term solution as compared to other solutions
Source: City Sanitation Plan of Sinnar , PAS Project – CEPT University

Based on Sanitation diagnostics , comprehensive City Sanitation Plans (CSP) for universal sanitation services were developed : Ambajogai

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Option 1: Mixed sewerage and settled sewerage, IFSM and decentralized treatment (INR ~800 million investment)				
Provision of own toilets in slum areas		Rehabilitation of drains in Cluster 2[A]	Cluster 2[A]- Conventional wastewater treatment facility[B]	Reuse for agriculture and irrigation purposes
Refurbishment of 39 community toilet blocks		Cluster 2[A]- Conventional sewerage		
Refurbishment of community toilet block in Sardarbazar slum		Cluster 1,3,4[A] – Settled sewers	Cluster 1,3,4[A]- Decentralized wastewater treatment facility	
Refurbishment of existing public toilets and urinals		Cluster 1,3,4[A]- 1 suction emptier truck	Cluster 1,3,4[A]- Fecal sludge treatment facility	Reuse as compost in agriculture

Note: (A) Cluster 2 refers to Ambajogai's central town area, while Clusters 1, 3, 4 are newly developed clusters where ~14% of Ambajogai's households live (B) The plan for a conventional sewerage system attached to a conventional treatment plant had already been undertaken by the city under UIDSSMT

Source: City Sanitation Plan of Ambejogai, PAS Project – CEPT University

Based on local priorities, following solutions were short-listed in each of the three cities

Areas for intervention

Access	Collection	Conveyance	Treatment	Disposal/Reuse
Own Toilets + Septic Tanks ***(Wai and Sinnar)*** Construction of own toilets, individual or shared by 2-4 households, along with attached septic tanks				
		Integrated fecal sludge management ***(Wai, Sinnar and Ambajogai)*** Regular (in a 3-year cycle) collection and disposal of fecal waste from septic tanks, along with the necessary refurbishment of septic tanks, construction of a treatment facility for septage and reuse of treated septage		
		Settled sewers attached to DEWATS ***(Ambajogai only)*** Conveyance of wastewater through non-conventional sewers to a decentralized wastewater treatment facility for the newly developing clusters and reuse of treated wastewater		

These priority solutions were selected with city officials based on a combination of factors

	Urgency of sanitation gap	*Fit with local priorities*	*Ability to implement in the short-run*	*Ability to finance within its own funds*	***City rationale for choosing solution***
Own toilets + septic tanks	✓	✓	✓		• Wai and Sinnar pay ~INR 1-2 million for cleaning community and public toilets, and still face issues such as poor quality of maintenance, theft and vandalism • Individual toilets are not always feasible due to space and cost constraints; group toilets are more affordable and accessible, and shift maintenance burden on the households • Toilets can be constructed relatively quickly in the short-run
Integrated fecal sludge management	✓	✓	✓	✓	• Most households in all three cities depend on septic tanks, which are cleaned infrequently and release untreated effluent into drains • Fecal sludge management is relatively low cost, and can be implemented in the short run from the ULB's own funds
Settled sewer attached to DEWATS	✓	✓			• Ambajogai city was already focused on building a conventional sewer system in the center of the city • The city wanted a low cost option for the remaining three clusters

Source: Assessment based on interactions with the city stakeholders

Short-listed solutions in each of the three cities

Areas for intervention

Access → **Collection** → **Conveyance** → **Treatment** → **Disposal/Reuse**

Own Toilets + Septic Tanks
(Wai and Sinnar)
Construction of own toilets, individual or shared by 2-4 households, along with attached septic tanks

Integrated fecal sludge management
(Wai, Sinnar and Ambajogai)
Regular (in a 3-year cycle) collection and disposal of fecal waste from septic tanks, along with the necessary refurbishment of septic tanks, construction of a treatment facility for septage and reuse of treated septage

Settled sewers attached to DEWATS
(Ambajogai only)
Conveyance of wastewater through non-conventional sewers to a decentralized wastewater treatment facility for the newly developing clusters and reuse of treated wastewater

MoUD Advisory on Septage Management gives the following recommendations

Desludging of Septic tanks

- **De-sludging** of septic tanks - using **mechanical devices**
- **De-sludging frequencies** of septic tanks once every **2 to 3 years**, or when the tank becomes one third full
- Periodical desludging also helps **reduce the pollution levels in the effluent**
- **1-2 inch of sludge** should be **left in tank** to **facilitate** future **decomposition**
- **Regular desludging** activities **require well-organized** community and **public/private service providers**
- **Tanks** should **not be scrub** cleaned or **washed with detergent**

Transportation

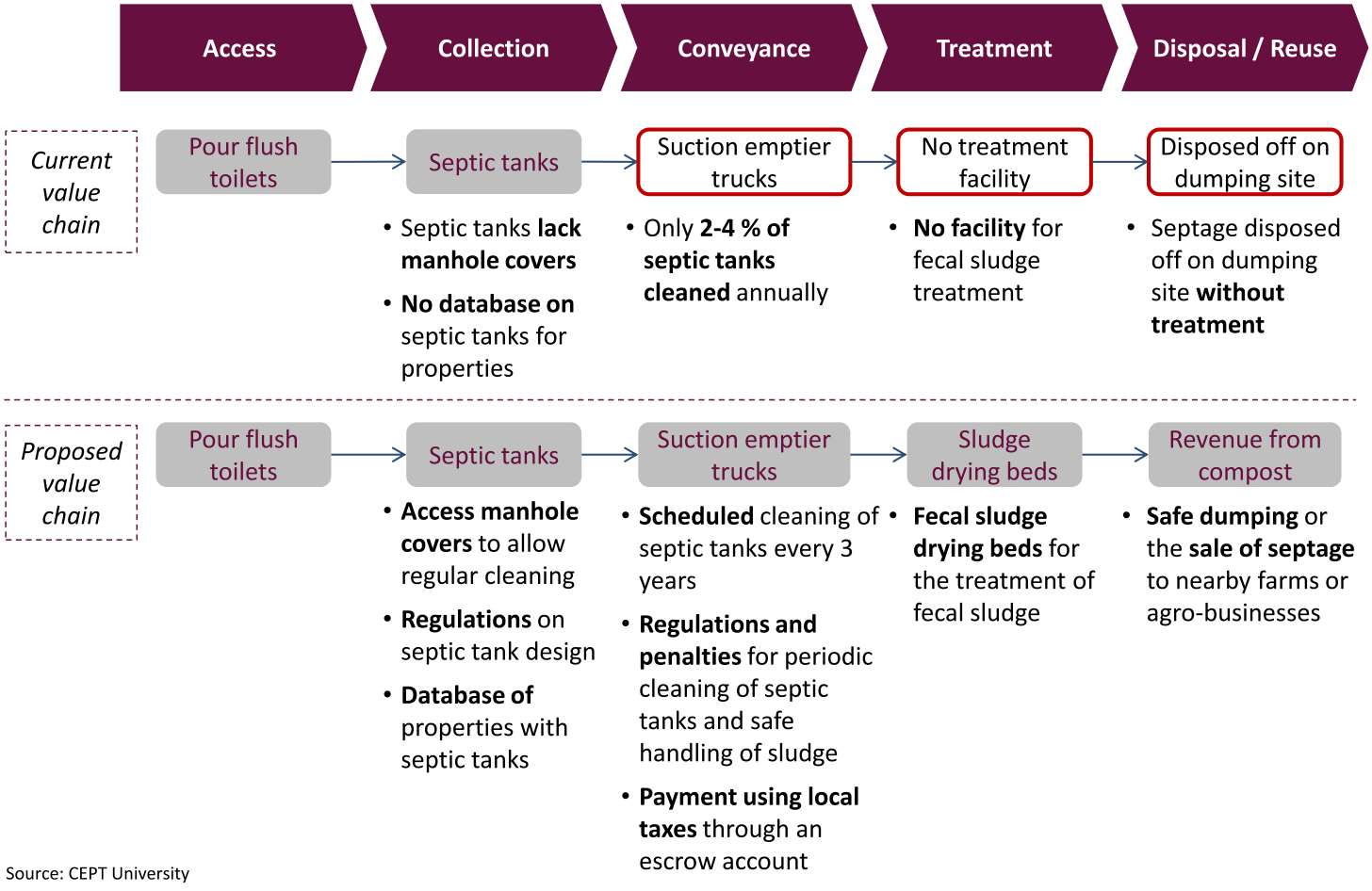
- **Vehicles** are available in different **capacities** from **2,000 to 12,000 litres**.
- Small scale vacuum trucks called **Vacutug** are recommended **for areas inaccessible** to large vehicles
- The **no. of** cleaning **machines** - based on frequency of **cleaning**, **distance** of location **of treatment facility** and local conditions
- A **Transportation Plan** should be formulated which **should include**:
  - **Scheduling** and routing for **trucks**
  - **Customer** service **protocols**
  - **Locating** tanks and cleanouts with **proper pumping** equipment operation and worker safety
  - Transportation requirements, including rules of the road
  - **Disposal procedures** at the treatment facility
  - **Routine service** of equipment
  - **Recordkeeping** for all tanks pumped and wastes discharged at the disposal facility

Treatment / Reuse / Disposal

- Treatment at **existing sewage treatment plants**
  - Septage addition at the **nearest sewer** manhole
  - Septage addition **at the STP**
  - Septage addition to **sludge digesters/sludge drying beds**
- Treatment at **independent septage treatment plants**
  - **Space is not a constraint** : Lime treatment, Sludge drying beds, Anaerobic baffled reactor, stabilization pond, Constructed wetland, co-composting with solid waste
  - **Space is a constraint** : Mechanical Dewatering system
- Properly **treated sludge** can be **reused** to reclaim parched land by application **as soil conditioner**, and/or as a **fertilizer**

Regulation and Monitoring by the ULB and Awareness Generation

Based on the advisory, the cities need to explore an end-to-end integrated fecal sludge management (IFSM) solution



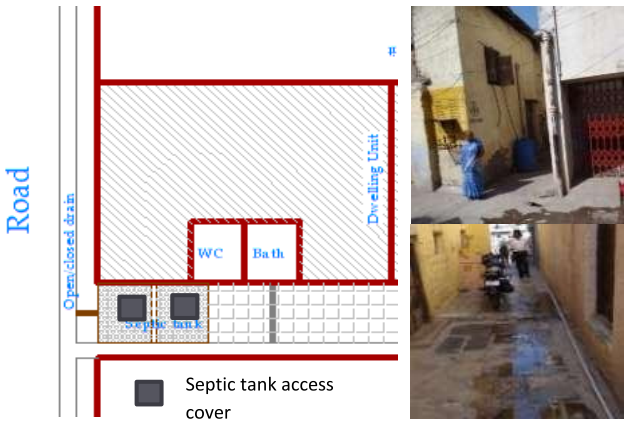
Source: CEPT University

First, septic tanks will need to be refurbished to enable easy access for cleaning

Details of proposal

- Based on a sample technical assessment done in 2013, it was noticed that many **septic tanks in Wai and Sinnar had sealed covers or *farsi* (tiles) placed over** them
- This **prevented regular cleaning**, as the seal had to be broken each time to access the septic tanks
- **RCC access manhole covers** (60 cm X 45 cm) can be constructed to allow easy access during emptying, at a cost of **INR 500-800 per tank**
- ULBs will do a **household level assessment** to assess the number of septic tanks that can be refurbished for access and also create a data base of households/properties with septic tanks.

Location of manhole of cover



RCC access manhole cover

Source: Presentation on septage management plan, CEPT University

Second, tanks will be cleaned on a regulated schedule, and financed through taxation to ensure periodic cleaning

Current septage management practice

~2-4% of tanks cleaned per year (once in >8-10 years)

Recommended septage management practice

~33% of tanks cleaned per year (once in 3 years)

Current barriers

1. Cleaning is done when called by the household

   No preset schedule for periodic cleaning of septic tanks
2. Each town has only 1 truck, owned and operated by the ULB
3. Households pay ~INR 400-3000 to get tanks cleaned, but only once in >8-10 years when the tanks overflow

Proposed solution

1. Septic tanks to be cleaned on schedule

   Regulations and penalties to be imposed to ensure periodic cleaning

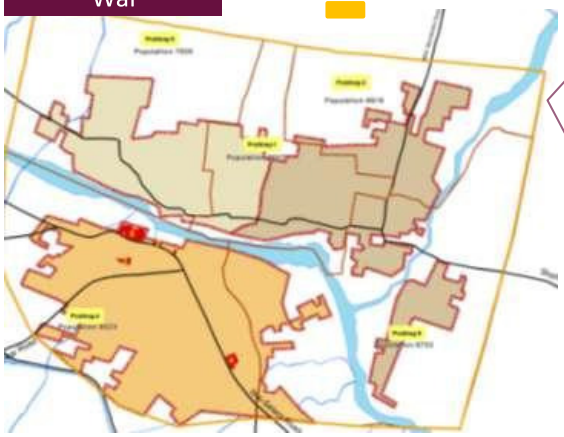
   Awareness generation activities to be undertaken
2. Each town to get an additional trucks to meet service standards
3. Households to pay a sanitation tax levied by the ULB as per municipal act[1] for regular cleaning

1) Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965, Chapter IX : Municipal taxation, Section 108

Source: CEPT University

Regulated three year septic tank emptying plan

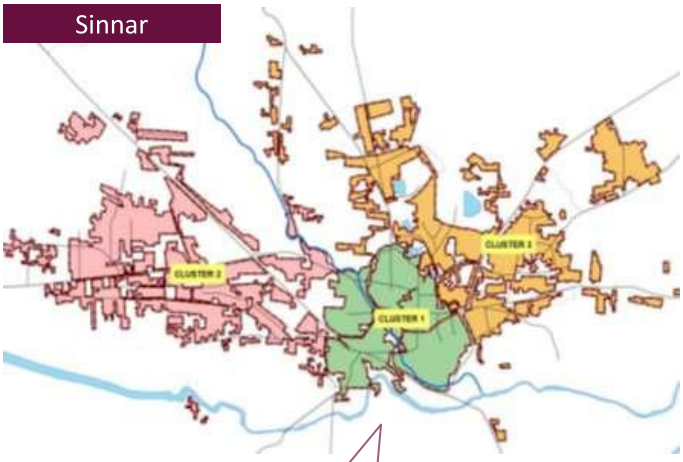
Wai



Wai requires 1 more additional suction emptier truck

~1760 septic tanks need to be cleaned annually on scheduled basis

Sinnar

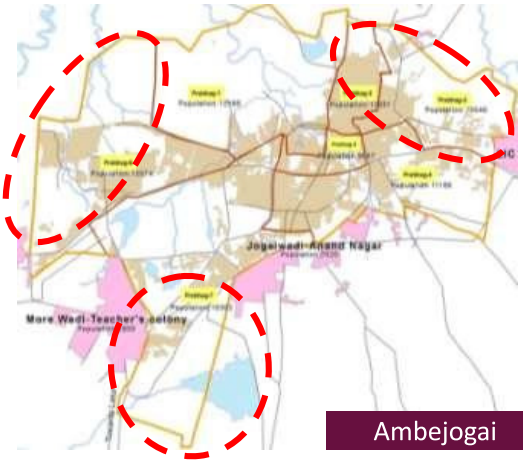


Sinnar requires 3 more additional suction emptier truck

~2800 septic tanks need to be cleaned annually on scheduled basis

Ambejogai requires 1 more additional suction emptier truck

~900 septic tanks need to be cleaned annually on scheduled basis

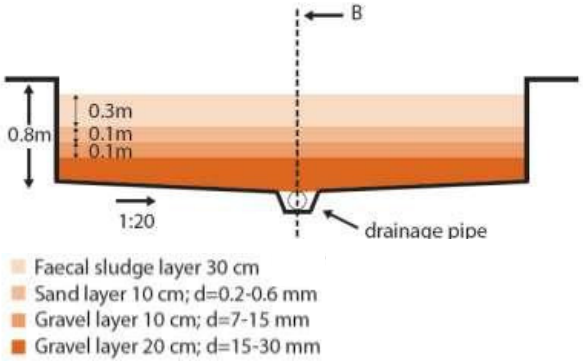


Ambejogai

Finally, sludge drying beds will be constructed for the treatment of sludge which can then be disposed or sold to nearby fields or agri-business

Technical details of sludge drying bed

Technical illustration of a sludge drying bed



- The MoUD advisory recommends the use of unplanted **sludge drying beds (SDB)** for the treatment of collected septage
- The sludge will be allowed to dry for **15 days to form sludge cakes**, which can be disposed safely in the open

Description of proposal

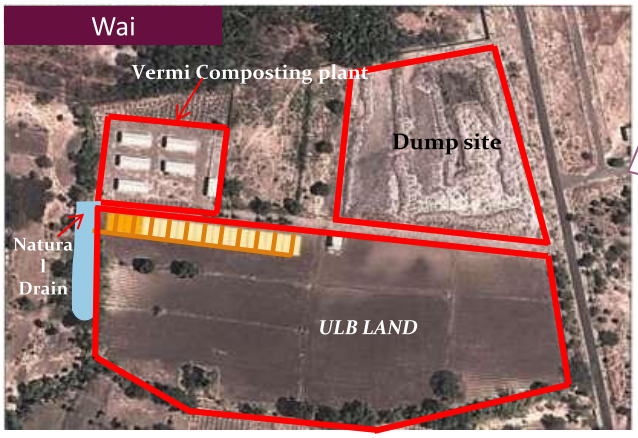
	Wai	Sinnar	Ambejogai
Septage generated (cubic meters)	26.3	42	10.5
Number of sludge beds needed	11	18	4
Land area required (sq. m.)	1700	2800	700
Total cost[1] (INR million)	***2.2 – 2.8***	***3.6 – 4.5***	***0.8 – 1.0***
Cost per HH (INR)	***~330***	***~300***	***~330***

- Each sludge drying bed is **~12m X 10m** and costs **~INR 200,000 – 250,000**
- In India, SDBs are being used in **100 villages in Punjab** under the World Bank's **Punjab Rural Water supply & Sanitation scheme**

Note: (1) Excluding the cost of land, which will be provided by the ULB

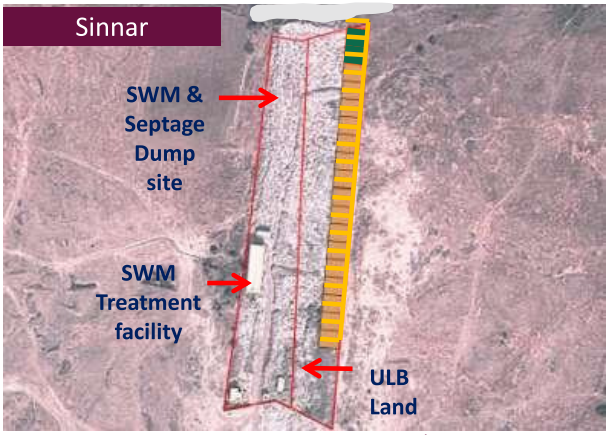
Source: CEPT research

Location of Sludge drying Bed



ULB land is available for Sludge drying bed

~11 SDBs of 12 x 10 m need to be constructed



ULB land is available for Sludge drying bed

~18 SDBs of 12 x 10 m need to be constructed

ULB land is available for Sludge drying bed

~4 SDBs of 12 x 10 m need to be constructed

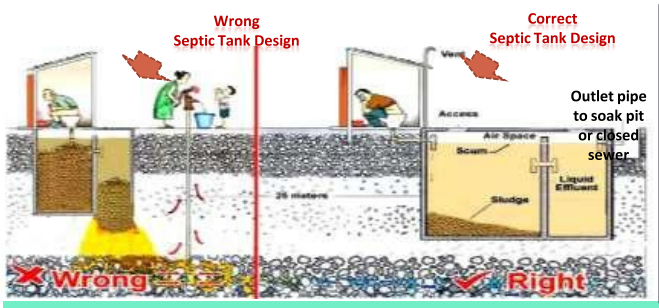
To ensure adoption of the integrated fecal sludge management plan, the ULB has to make regulatory changes

- 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:
  1. **Septic tank design**: to ensure septic tanks of standard size are installed in new constructions
  2. **Periodicity of de-sludging**: to ensure septic tanks are cleaned every 3 years as per the MoUD's advisory
  3. **De-sludging procedures**: to ensure safe handling of fecal sludge
  4. **Sanitation tax**: to persuade households to clean septic tanks regularly
  5. **Penalties:** to deter irregular cleaning and use of substandard septic tanks
- There is also a need for **regular monitoring and inspection** of septic tanks and de-sludging procedures to facilitate the implementation of bye-laws

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 :
  1. Print and electronic media
  2. Civil Society organizations such as NGOs and RWAs
  3. Academic institutions such as schools and colleges
  4. Opinion influencers such as doctors and religious leaders

Illustrative posters to generate awareness



Proper Design

- Preservation of the Environment is our Joint responsibility.
- Septic tank base should always be sealed, so that it does not the pollute ground
- Whenever the septic tank get cleaned, please check that no cracks in the side walls or base of septic tanks
- Have proper vent pipes for your septic tanks
- Septic tanks should be located away from groundwater source
- Provide proper access manhole to ease the process of emptying

De-sludge Your Septic Tank every 3 Year

- As you clean you toilets daily , so that it does not affect your health, similarly clean your septic tanks every 3 years so that it does not affect the environment
- Ambajogai Nagar Parishad will provide you services for cleaning of Septic tank free of cost once every 3 years.
- The ULB officials will inform you in advance before they clean your septic tanks
- ULB will leave 1inch of solids inside septic tank, as it will act as seeding material for new incoming waste

Overall mission and approach

Objective

To support cities with developing and implementing inclusive strategies to provide universal access to sanitation services

Approach

Focus of previous workshops — *Focus for today*

1. Conduct sanitation diagnostic
2. Develop city sanitation plans
3. Assess potential for private sector engagement
4. Scale-up and implement

The objective of today's workshop is to discuss the potential for private sector engagement for the provision of these solutions

Key objectives

1. *Discuss rationale for private sector engagement*
2. *Share findings from private sector research*
3. *Brainstorm key elements of structuring engagements*

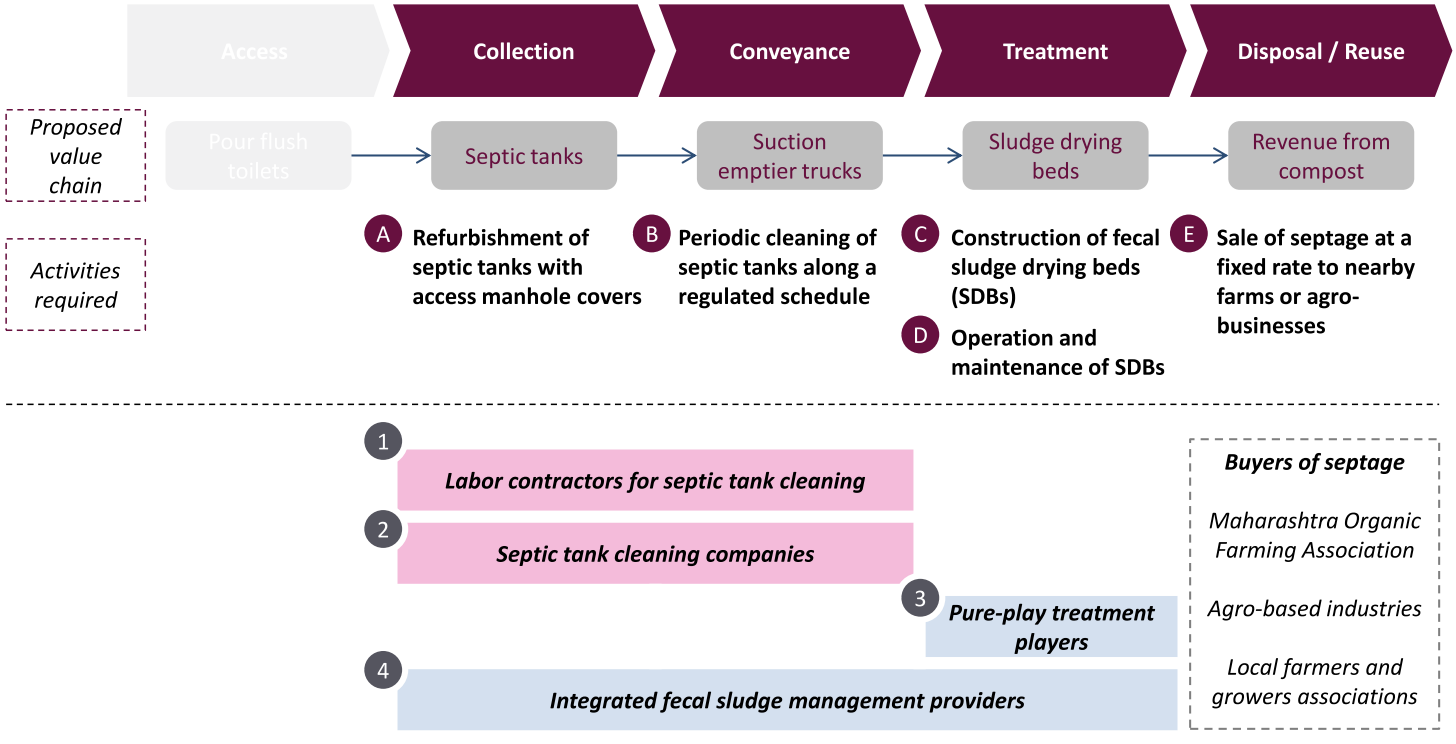
Areas for intervention

Integrated fecal sludge management

Opportunities for private sector engagement

A *Private sector engagement for refurbishment of septic tanks, regular septic tank emptying, construction and O&M of fecal sludge drying beds and sale of septage*

We identified four kinds of players offering septage management services in nearby towns



Source: Field visits, online business listings

Players vary in their operations across the sanitation value chain

	Description
Labor contractor for septic tank cleaning	Small players that employ workers to operate rented trucks, and also offer other allied facility management services
Septic tank cleaning companies	Small companies that own 1-2 trucks and are generally specialized at septic tank cleaning
Pure play treatment companies	Companies who specialize in constructing and maintaining sewage and water treatment technologies, including SDBs
Integrated fecal sludge management providers	Large septic tank cleaning companies (Sumeet Group and 3S Shramik), who own multiple trucks and operate across Maharashtra. 3S Shramik also has the capacity to construct SDBs

Source: Private player interviews, Artwork from the Noun Project

Players are willing to undertake the following activities in the sanitation value chain as per their competencies and interests

Activities required

- **A** Refurbishment of septic tanks with access manhole covers
- **B** Periodic cleaning of septic tanks along a regulated schedule
- **C** Construction of fecal sludge drying beds (SDBs)
- **D** Operation and maintenance of SDBs

Key

- Interested, with previous experience
- Interested, no previous experience
- Experienced, not interested
- Not interested, not experienced

		A	B	C	D
Labor contractors	ZR Services	Interested, with previous experience	Interested, with previous experience	Interested, no previous experience	Interested, no previous experience
	Manisha Enterprises	Interested, with previous experience	Interested, with previous experience	Not interested, not experienced	Not interested, not experienced
Small-scale septic tank cleaners	Kadam Enterprises	Not interested, not experienced	Interested, with previous experience	Not interested, not experienced	Not interested, not experienced
	Aditya Enterprises	Interested, no previous experience	Interested, with previous experience	Interested, no previous experience	Interested, no previous experience
	Ugale	Interested, no previous experience	Interested, with previous experience	Not interested, not experienced	Not interested, not experienced
STP companies	Era Hydro-Biotech	Not interested, not experienced	Not interested, not experienced	Experienced, not interested	Experienced, not interested
	Envicare	Not interested, not experienced	Not interested, not experienced	Interested, with previous experience	Interested, with previous experience
Integrated players	Sumeet	Interested, with previous experience	Interested, with previous experience	Interested, no previous experience	Interested, no previous experience
	3S Shramik	Interested, with previous experience	Interested, with previous experience	Interested, with previous experience	Interested, with previous experience

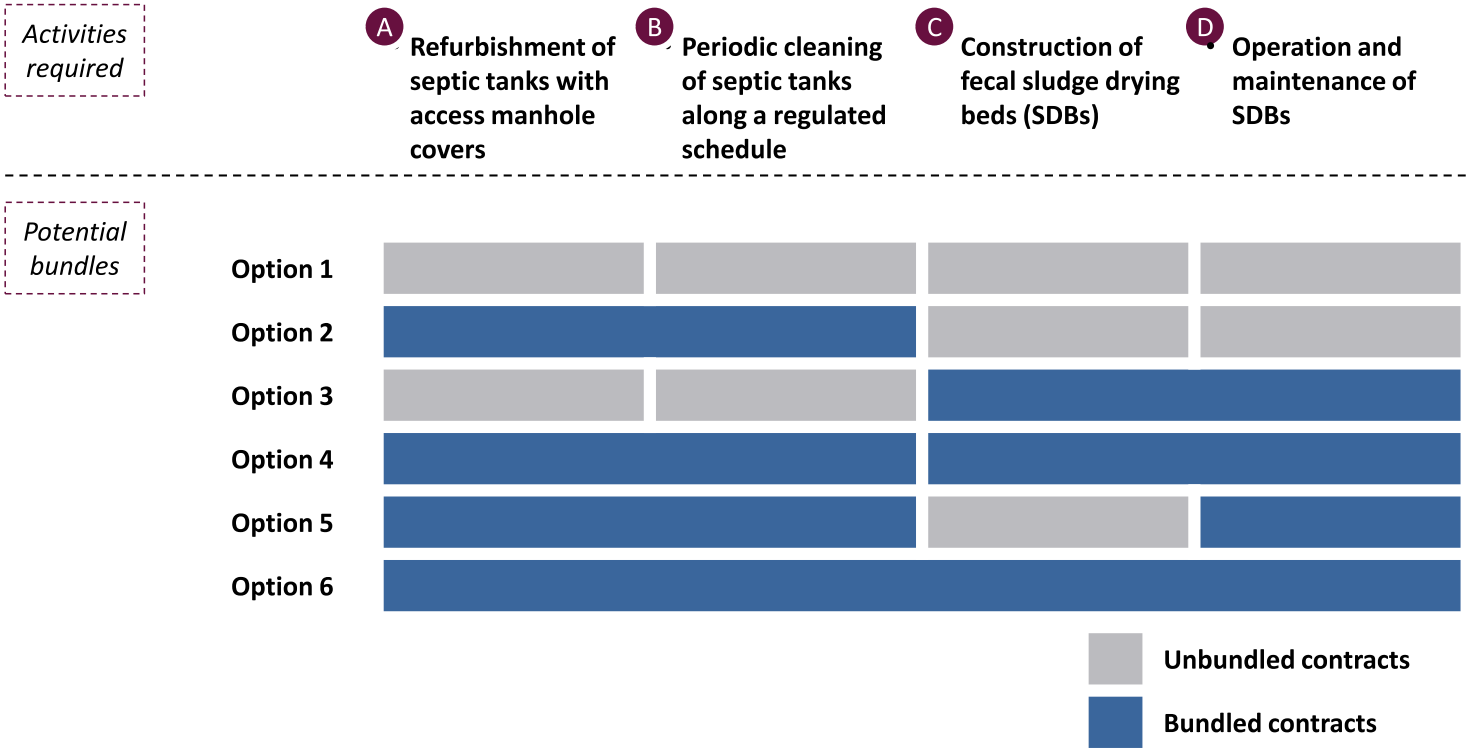
Majority of emptying players had no previous experience in construction while the players in treatment had none in septic tank emptying

Source: Private player interviews

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

1	2	3	4	5	6
Operational role of the private sector	**Source of revenue**	**Investment and ownership of capital asset**	**Payment structure**	**Contract length and value**	**Risk mitigation and allocation**
Should the ULB give out an integrated contract for refurbishment and cleaning of septic tanks and construction + O&M of SDBs or do these activities need to be unbundled?	*Is the revenue from operations enough to meet private players' return expectations or does the ULB need to compensate private players?*	*Should the capital investment in the truck and the SDB be borne by the private player or the ULB?*	*What is the appropriate payment structure for the private player?*	*What is the appropriate contract duration and value which compensates private players for the risk they undertake, while providing the ULB with the flexibility to switch providers?*	*What are the major identified risks for the private player and the ULB that need to be mitigated and allocated?*

1 Operational role: There are various possible contract combinations depending on how IFSM activities are bundled together



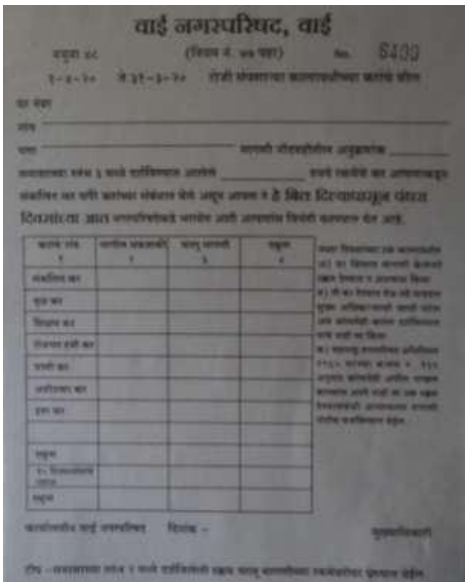
Since the elements of integrated fecal sludge management are highly connected and success of one element is closely tied to the success of the others, bundled contracts would align performance incentives and ensure accountability

1 Given the interest and capabilities of identified players, there are three possible options for contract bundles

Activities required	A Refurbishment of septic tanks with access manhole covers	B Periodic cleaning of septic tanks along a regulated schedule	C Construction of fecal sludge drying beds (SDBs)	D Operation and maintenance of SDBs
Option 1				
Contract 1A	Refurbishment and cleaning of septic tanks			O&M of SDBs
Contract 1B			Construction of SDBs	
Option 2				
Contract 2A	Refurbishment and cleaning of septic tanks			
Contract 2B			Construction and O&M of SDBs	
Option 3				
Contract 3A	Refurbishment and cleaning of septic tanks, construction and O&M of SDBs			

2 Source of revenue: Since households are unlikely to pay for regulated cleaning, the ULB will need to compensate players, potentially by levying taxes

Current taxes levied in Wai



Appropriate awareness can ensure willingness to increase local taxes

- Currently, households clean their septic tanks once in 8-10 years and spend INR ~1000 in Wai ,INR ~400 - 800 in Sinnar and INR ~ 3000 in Ambejogai
- Property owners currently have to pay local taxes of about Rs 2200/annum in Wai , Rs.1600/annum in Sinnar and Rs. 1950/annum in Ambejogai
- To cover the costs of a cleaning cycle of ~3 years would require **an increase** in annual tax spend for a household of about **10% in Wai , 20% in Sinnar** and **30% in Ambejogai.**
- As these are reasonable increases for a regular service and related environmental as well as personal benefits , it is expected that with appropriate awareness there will be willingness to pay additional taxes.

The ULB can consider using its local taxes to support the integrated fecal sludge management plan, and will need to compensate private players directly through a management fee

Source: Private player interviews

2 Source of revenue: There is demand for sludge among small and medium farmers, but willingness to pay is unclear

"Larger farmers who export their crops are bound by restrictions on the use of animal and human waste. ***Sludge can be sold mainly to small and marginal farmers****, who lack access to synthetic fertilizers."*

- Mr. Vishwanath, Biome

*"****Fecal sludge cannot be used in organic farming*** *due to concerns about e-coli and shigella infections. However, it is often used by small farmers as 'son-khad'."*

- Madhav Pandit, Maharashta Organic Farming Federation

"We make compost from solid waste. The market is extremely seasonal. Creating a continuous market for this waste is tough. People say that you are creating compost from waste so we don't want to use it. ***Source is very important."***

- Mr. Ravikrishna Pochiraju, Waste Ventures

*"****I often have to pay farmers*** *to dump sludge in their farms, I do not think the sale of septage is a viable revenue source."*

- Aditya Enterprises

"It (sale of septage) is possible, ***but will require investment in marketing and distribution****, which we do not do."*

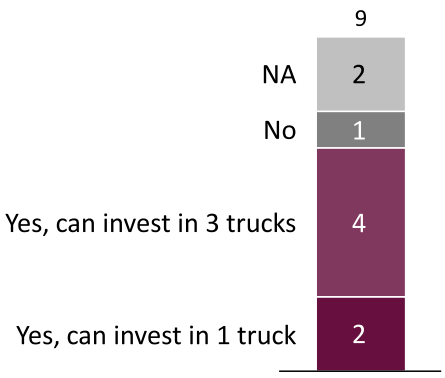
- Kadam Enterprises

Source: Private player interviews

3 Capital investment: While the private players are willing to invest in suction emptying trucks, they do not want to invest in the construction of SDBs

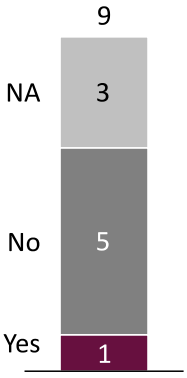
Willingness to invest in a suction emptier truck

(Number of players)



Willingness to invest in a sludge drying bed

(Number of players)



*"****Yes, I can procure a truck*** *and operate it on the regulated schedule… I can use (the truck) for other business in case the contract does not work out."*

- Kadam Enterprises

*"****I cannot afford to buy more than one truck.*** *I have just ordered a truck, and faced financial troubles there too."*

- Ugale Septic Tank Cleaning Services

*"****Payment needs to be mile-stone based,*** *~40% up-front, 50% when materials are delivered to the site and 10% post-completion."*

- Envicare

*"****It would be interesting*** *to explore an integrated contract structured as a build-operate-transfer concession agreement."*

- 3S Shramik

Source: Field interviews

3 Capital investment: Private sector investment in trucks has significant benefits for the ULB

Benefits to public sector

- ✓ **Ease of procurement:** ULB procurement of the truck would require floating a tender, inviting, evaluating and negotiating bids. This is likely to be time consuming, and involve transaction costs that can be avoided if the private player purchases the truck.
- ✓ **Aligns private sector incentives:** Private sector investment in trucks incentivizes the player to use and maintain the truck well.
- ✓ **Allows investment in quality:** ULBs are often bound to minimize cost, while the private sector can invest in quality trucks with longer lifecycles and additional features like water jets.

Benefits to private sector

- ✓ **Facilitates access to finance:** Having a contract from the ULB can make it easier for the private player to raise capital for the truck and negotiate better financing terms.
- ✓ **Provides a platform for business expansion:** A contract with the ULB serves as a low-risk platform for private sector players to scale by providing access to guaranteed demand to recoup investment in a truck.

Source: Private player interviews

4 Payment structure: Different activities across the value chain will require different payment structures

Key activities	Payment structure	Rationale
Refurbishment of septic tanks	*Fixed fee per unit*	Refurbishment is a one time activity in which the cost per tank is known, but the number of tanks is not. Hence a fixed fee per refurbished tank is paid
Regular cleaning of septic tanks	*Recurring fixed fee*	Because of the ULB HH survey, the number of tanks to be cleaned and the schedule is well determined. Hence it is an ongoing activity for which a fixed monthly fee is paid given the schedule being followed
Emergency Cleaning of septic tanks	*Fixed fee per emptying service*	The emergency septic tank emptying service can be provided by the ULB using its own vehicle. The fee of this would be kept high as a deterrent for users to not opt out of regulated services
O&M of SDBs	*Recurring fixed fee*	O&M of SDBs is an ongoing activity for which the costs and procedures are well defined. Hence, a recurring fixed fee is paid
Construction of SDBs	*Overall fixed fee*	Construction of SDBs would be a one time activity. Since the design is specified by the ULB, the costs would be well known. Hence, an overall fixed fee can be given

5 Contract valuations range from INR ~ 11-45 lakhs for Wai, ~INR ~28-80 lakhs for Sinnar and INR ~6-23 lakhs for Ambajogai

Contract valuations for Wai and Sinnar

S. No.	Types of contract	Contract length	*Wai*			*Sinnar*			*Ambajogai*[1]	
			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)*	*Annual Contract value (INR, Lakhs)*	*Sanitation tax per 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	12-14	~590
1B	Construction of SDBs	Duration of construction	24-28	N.A.	N.A.	40-45	N.A.	N.A.	6-10	N.A.
2A	Refurbishment and regular cleaning of septic tanks	2 - 3 years	11-13	~140	~170	27-32	~230	~270	10-12	~530
2B	Construction and O&M of SDBs	1 year	28-33	N.A.	N.A.	45-51	N.A.	N.A.	7-11	N.A.
3A	Refurbishment and regular cleaning of septic tanks with construction and O&M of SDBs	2 - 3 years	39-45	~190	~230	72-81	~270	~320	17-23	~590

Notes: Does NOT include costs for refurbishment which will be paid on a per tank basis. Assumes a tax collection efficiency of 80% and Non-residential properties paying 20% more tax than residential properties

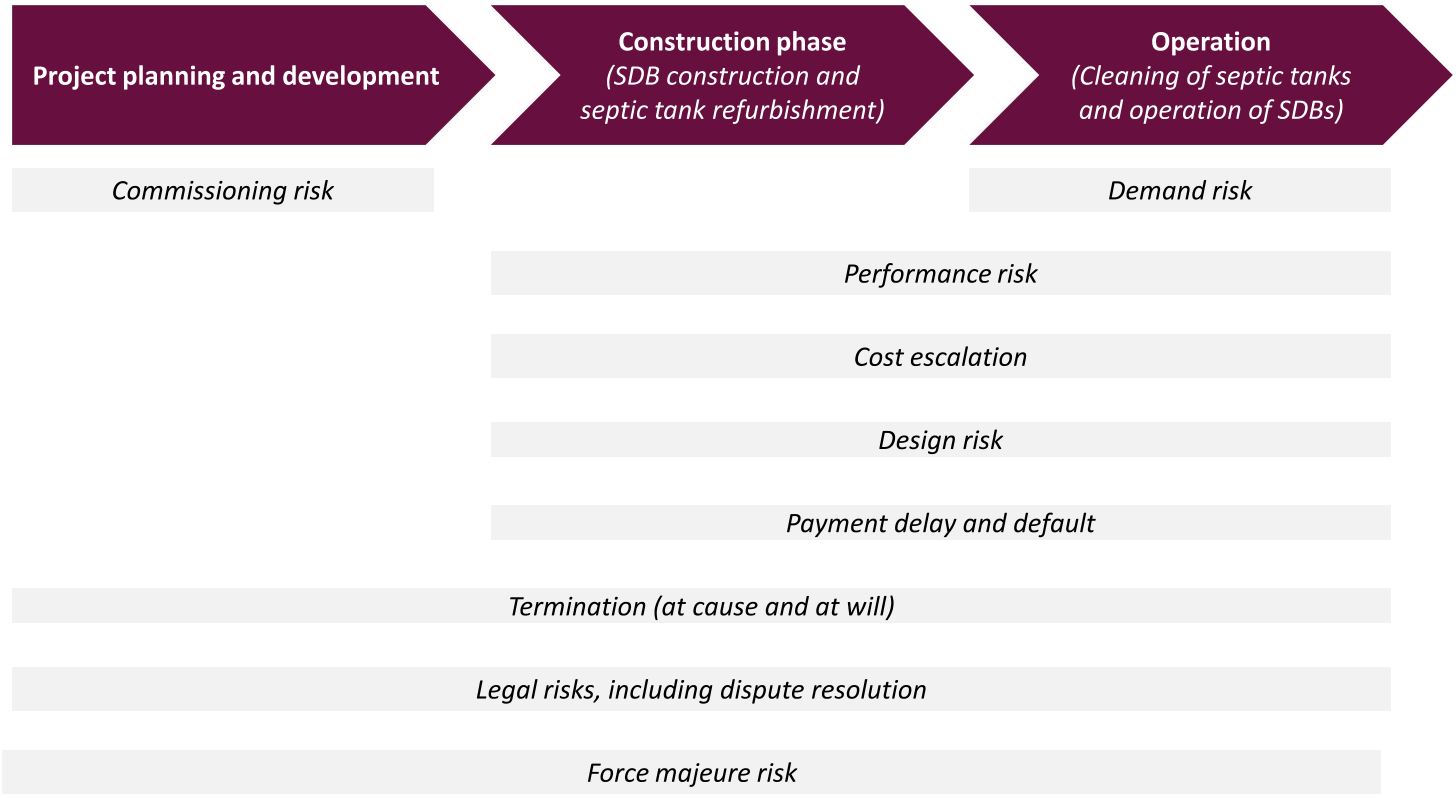
(1): Only 2,694 HH with septic tanks in selected prabhags of Ambajogai are assumed to pay taxes to compensate the ULB

Source: Private player interviews

5 Summary of potential contract structures

	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 , ~INR 15-17 lakhs in Wai and ~INR 12-14 lakhs in Ambejogai annually
1B Construction of SDBs	*ULB*	ULB	Overall fixed fee on a pre-decided schedule	~ INR 40-45 lakhs in Sinnar ,~24-28 lakhs in Wai and ~6-10 lakhs in Ambejogai lasting the time period of construction
2A Refurbishment and cleaning of septic tanks	*ULB*	Private player	Recurring fixed fee with Fixed fee per unit for refurbishment	2-3 year, ~INR 27-32 lakhs in Sinnar , ~INR 11-13 lakhs in Wai and ~INR 10-12 lakhs in Ambejogai
2B Construction and O&M of SDBs	*ULB*	ULB	Overall fixed fee on a pre-decided schedule + recurring fixed fee for O&M	12-18 months, Construction cost plus ~5-6 lakhs annually for O&M in Sinnar and ~4-5 lakhs in Wai
3A Integrated contract involving refurbishment, cleaning of septic tanks, construction and O&M of SDBs	*ULB*	Trucks – Private SDBs- ULB	Recurring fixed fee for cleaning and O&M with Fixed fee for Construction and Fixed fee per unit for refurbishment	Payment for refurbishment, cleaning and O&M as in 1A above; payment for construction as in 1B above

6 Risk mitigation: There are several types of risks that must be managed across the lifecycle of any public private partnership



Source: ADB, "Toolkit for Public Private Partnerships in Urban Water Supply for the State of Maharashtra, India; Ministry of Finance, Government of India, "PPP Toolkit for Improving PPP decision-making processes in water and sanitation, PPIAF, Vijay Sarma, 'Risks in PPP projects in Western India"'

6 Risk mitigation: Private players highlighted a number of concerns with public private partnerships that need to be addressed

Termination

"The contract should have a clause defining a 3 month notification period in case of termination. It should also have a dispute resolution mechanism."

– Kadam Enterprises

Delayed payments

"Ideally, bills should be cleared in 30 days, and for late payments, interest should be paid at the rate of 8% per annum."

– Manisha Enterprises

Transparent procurement

"We would rather not deal with the ULB directly, there are always issues with internal politics. If there is a mediator in between then we would be interested."

- Envicare

Cost escalation

"For a fixed-fee contract for regulated schedule, we cannot offer 24 hour emergency service. We will only work 8 hours a day, otherwise it is likely that we will over-use our truck."

- Aditya Enterprises

"Another key issue is the escalation of fuel costs. The contract should clearly account for that."

– ZR Enterprises

Performance risks

"If we work on a regulated schedule, it will be difficult to get household signatures. That will become complicated, and I don't want my payment to suffer."

– Ugale Septic Tank Cleaning Services

"I have tried to do a regulated schedule on my route, but that has been difficult. People always say, "come back later", and it falls apart."

– Aditya Enterprises

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

Cleaning of septic tanks

Risk	Mitigation	Allocation of remaining risk
Private player uses manual scavenging for cleaning septic tanks or SDBs	• Requirement of safety gear for all personnel • A clear description of activities that constitute manual scavenging	• Contract terminated if complaints of manual scavenging are received from HH or ULB staff
Private player does not clean septic tanks as per schedule	• Portion of monthly payment tied to number of HH signatures collected whose septic tanks have been cleaned • Undertaking random inspections of HH whose signatures have been submitted • A complaint redress mechanism to be opened by the ULB for the HH	• Penalties imposed if number of cleanings is lower than specified in the contract, or if discrepancies found during random sampling, or if complaints not dealt with • Large or persistent breaches can lead to termination
Private player damages tanks during cleaning	• As above	• Work would have to be remedied within a specified days of complaint and the cost borne by the private player
Private player spills septage during transportation	• A complaint redress mechanism to be opened by the ULB for the HH	• Complaints of spillage and illegal dumping must be addressed within a specified period, to avoid a fine • If the number of complaints exceeds a specified number in a time period, the contract can be terminated
Private player dumps septage in the open	• A portion of monthly payment is tied to signatures collected from the SDB operator	

6 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
Refurbishment of septic tanks		
Septic tanks are damaged during or as a result of refurbishment	• Specify the type of materials required • Payment tied to the number of signatures from HH with repaired septic tanks • ULB to undertake random inspections of HH whose signatures have been submitted • A complaint redress mechanism to be opened by the ULB for the HH	• Work would have to be remedied within a specified days of complaint and the cost borne by the private player • Penalties imposed if discrepancies are found during sampling, or if complaints are not dealt with in a timely manner • Persistent breaches may lead to termination
Construction of SDBs		
Sludge drying beds do not meet specified design	• Specify the design and materials to be used in consultation with town consultants • Payment made in installments on the completion of construction milestones • Regular reporting by the player and monitoring by the ULB	• If work is found to be faulty at any stage, payment to be withheld until the corrections are made
O&M of SDBs		
Sludge recovered from SDBs is not sufficiently treated	• Regular checks to be undertaken by the sanitation department to measure sludge properties • X% of O&M payment to be conditional on the sludge meeting specified qualities	• If specified standards not met, a warning to be given, followed by fines. • Persistent breaches may lead to termination

6 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	• ULB does not fulfill contract conditions	• Ensuring a clear monitoring mechanism for transparent contract execution • Disputes to be handled through frequent communication and by an agreed upon third party meditator	• Private player compensated for investments, the cost of winding down and foregone profits
	• Private player does not meet service standards	• As above	• Private player compensated for some portion of capital investments performance bank guarantee[1] seized
Termination at will	• ULB terminates the contract for reasons unrelated to player performance	• Up-front discussions with key stakeholders to create buy-in for private sector engagement • Frequent communication between ULB and private player	• X month notice period required • Private player compensated for investments, the cost of winding down and foregone profits • Performance bank guarantee returned
	• Private player terminates the contract due to reasons unrelated to ULB compliance with contract terms	• Frequent communication between ULB and private player	• X month notice period required • Private player forfeits the performance bank guarantee

Note: The private player can be required to put down a performance bank guarantee at the beginning of the contract to compensate the ULB in case of at-will termination by the private player. The guarantee is returned to the private player at the end of a successfully executed contract, or in case of at will termination by the ULB

Source: Adapted from 'Improving sanitation outcomes through service level agreements' – Castalia Partners

6 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	• ULB is unable to make timely payments towards the project	• Ensuring budgetary allocation for contracts before procurement • Establishment of an escrow account for payment	• ULB to pay interest for the payment, delayed by X months or more, at a negotiated rate of interest
Cost escalation	• Cost of inputs increase over the course of contract	• Adjustment of contract value annually for inflation • Inclusion of a cost re-negotiation clause	• Private player would be responsible for bearing the cost escalations within the negotiated period

Source: Adapted from 'Improving sanitation outcomes through service level agreements' – Castalia Partners

Brainstorm Session :

1. **Discuss key PPP opportunities and key challenges in outsources activities related to citywide FSM. Which contract combinations will be preferred?**

   - **Option 1 :**
     - Contract 1 : Refurbishment and cleaning of septic tanks , O & M of SDBs
     - Contract 2 : Construction of SDBs
   - **Option 2 :**
     - Contract 1 : Refurbishment and cleaning of septic tanks
     - Contract 2 : Construction and O & M of SDBs
   - **Option 3:**
     - Contract 1 : Refurbishment and cleaning of septic tanks , Construction and O & M of SDBs

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2. **Discuss and assess sources of finances for meeting the O & M expenses of above mentioned contracts**

   - Levy new sanitation tax as per the Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965, Chapter IX : Municipal taxation, Section 108
   - Levy Sanitation tax as a part of consolidated property tax as per the Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965, Chapter IX : Municipal taxation, Section 105, sub section 1 and 2
   - Setting up of an escrow account to manage payments to contractors in order to avoid delays.

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3. **Capital expenses for Sludge drying bed and refurbishment of septic tanks**

   - There are two options for funding of sludge drying bed facility
     - Option 1 : ULB own funds
     - Option 2 : Loan
   - ULB will need to pay for refurbishment (putting access covers) cost of septic tanks

Thanks....

“Implementation of “own toilet scheme” in Wai and Sinnar”

by CEPT University and AIILSG with support from Dalberg Global Development Advisors

Implementation of "own toilet scheme" in Wai and Sinnar

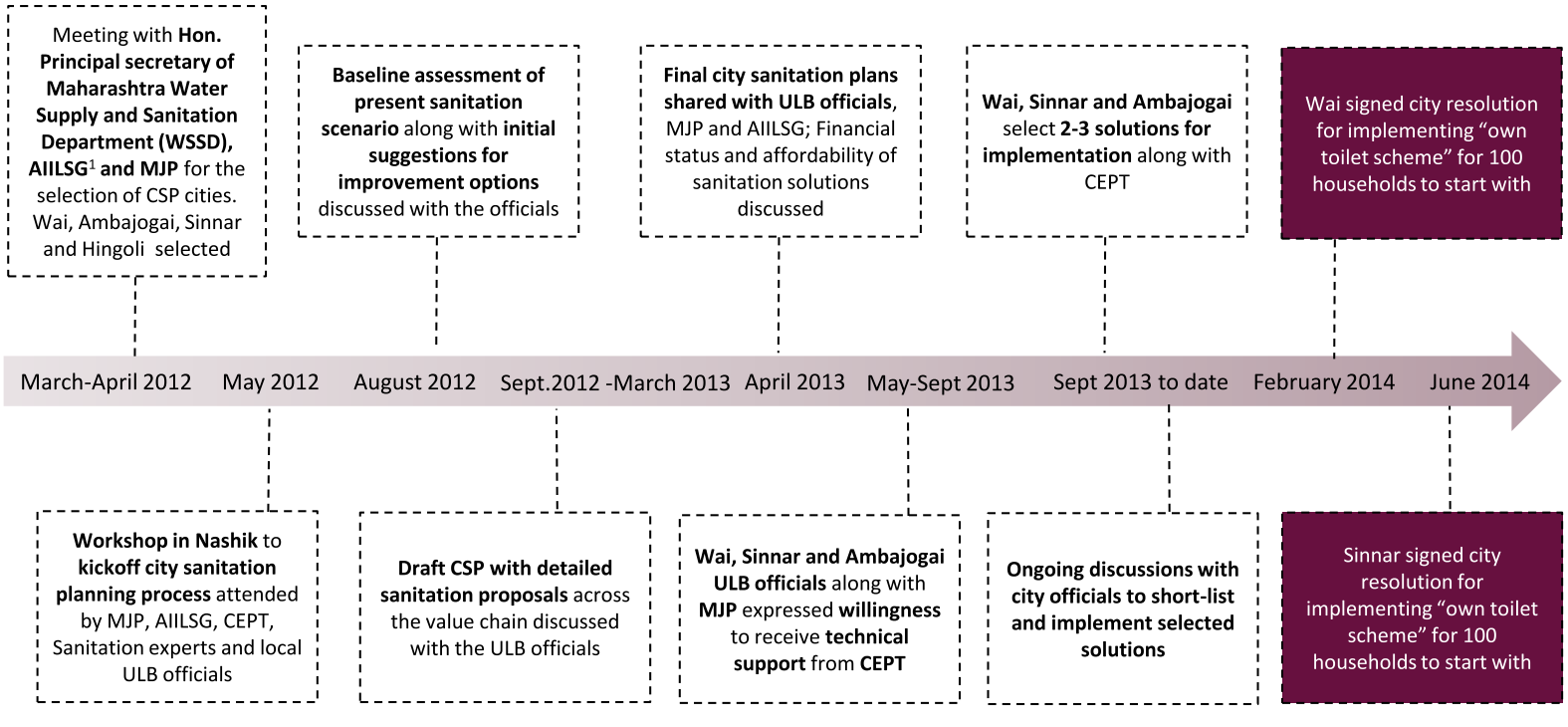
CEPT University, Ahmedabad and

All India Institute of Local Self Government, Mumbai

With support from Dalberg Global Development Advisors

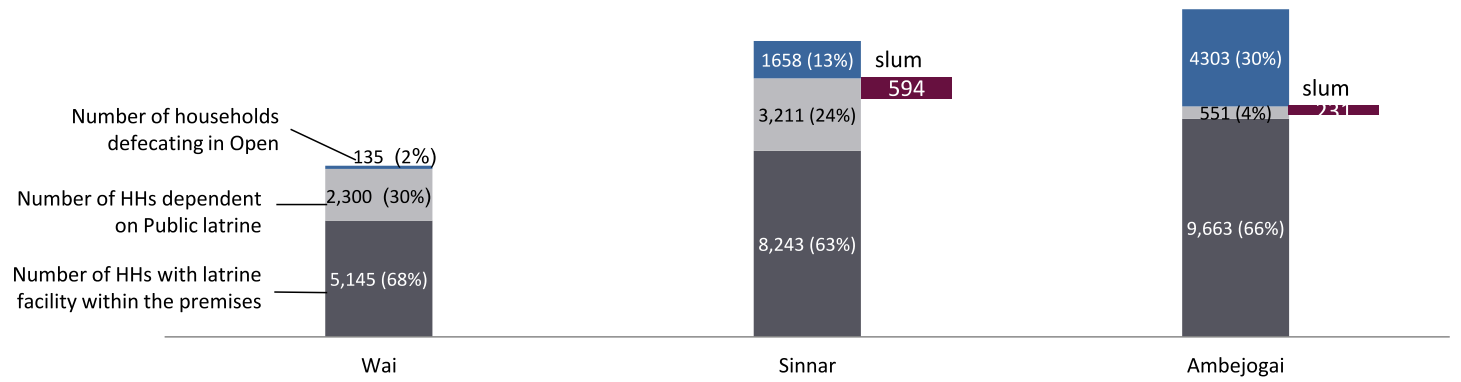
4th July 2014

Development of City Sanitation plans were accompanied by ~18 months of stakeholder engagement with the WSSD, MJP and local ULBs



Note (1) All India Institute of Local Self Government

Existing Sanitation Scenario



Ratio: households per seat of a community toilet	9	17	34

Key reasons for lack of individual toilets

- Lack of space
- Lack of funds
- Land tenure issues

Non – slum HHs are also dependent on the community toilets in all the three cities

Individual Toilets

Wai

Sinnar

Ambejogai

Community Toilets: the quality of community toilet facilities

Wai

Older community toilet blocks are in dilapidated condition

42 Community toilet blocks
264/283 functional seats

Sinnar

Irregularly maintained, with inadequate supply of water and electricity

18 Community toilet blocks
280/320 functional seats

Ambejogai

Completely lack maintenance, with inadequate supply of water and electricity

39 Community toilet blocks
141/249 functional seats

Source: City Sanitation Plan, PAS Project – CEPT University

Issues with maintenance of community toilets

Issues with maintenance of community toilets

Wai

- In the new toilet block, wash basin facilities have been provided but taps are missing / stolen from these facilities.
- **Disposal of menstrual waste** is another problem
- **Older blocks depend on street lights** for access during nights.
- **Spending Rs. 16.14 lakh/year on maintenance – 500/seat**

Sinnar

- Most of the CT blocks **lack basic infrastructure** like doors, water and electricity.
- All the CTs have septic tanks. However; having no **maintenance, periodical cleaning;** almost all the septic tanks are defunct.
- **No hand washing** facility in the community toilets.
- None of the blocks have electricity and **depend on street lights** for access during nights.
- Almost all **blocks need to be refurbished.**
- Need better monitoring of community **toilets in slums**
- **Spending Rs. 7.8 lakh/year on maintenance (some blocks)- 2100/seat**

Ambejogai

- **Non availability of regular water supply**
- **Poor O & M resulting into unhygienic condition** of toilet blocks
- Most of the toilet blocks are in **dilapidated condition**
- **Non functioning of toilet block** leads to open defecation
- **Non availability of electricity** makes un-safe for using toilet blocks during night.
- **No hand washing** facility in the community toilets.
- Many **blocks need to be refurbished.**
- **Lack of awareness and ownership** towards public infrastructure
- Defunct septic tanks at many toilet blocks

25 lakhs for constructing 10 Seats of CTs !!

Moving towards “own” toilets

Own Toilets = Toilets owned by households, individually or jointly by 2-4 HHs

Various National and International Studies on: Community Toilets versus Own Toilets

- Increased risk of adverse health effects associated with community toilets if compared with individual household lartines - **includes diarrhoeal disease, helminth infection and poliomyelitis**
- **Acute or bloody diarrhoea:** Public sanitation facilities are statistically significant risk factor in 6 out of 7 countries - India is one of them.
- **Helminth Infection:** 5 of 6 countries reported that number of persons per toilet was statistically associated with the intensity of infection.
- **Birth Outcomes:** Community toilets was found to be the risk factor for premature birth, low birth weight and prenatal death.

Health risks have been observed in shared community toilets

Group Toilets:

*Group Toilet is a toilet **shared by 2 to 4 households** residing in the close proximity. This is owned by the beneficiaries and its access is to be controlled by them by putting lock and key to it. Repair and maintenance of shared toilets is to be taken care by the users.*

We want to provide own toilets, either individual and group toilets, to households who defecate in the open or rely on community toilets

Own toilets ←→

	Individual toilets	Group toilets	Community toilets
			
Description	Personally owned toilets, usually constructed inside the household premises	Owned and shared by few households who are related to each other or know each other well, constructed in common spaces between households	ULB owned toilets built in community spaces catering to households in the vicinity
# of HH per seat	1	2-4	10
JMP* category	Improved	Improved	Unimproved

- Note: *According to the The WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, an improved sanitation facility is defined as one that hygienically separates human excreta from human contact. In the Post 2015 targets, a group toilet shar by less than 5 families who know each other is also treated as ‘improved sanitation’.

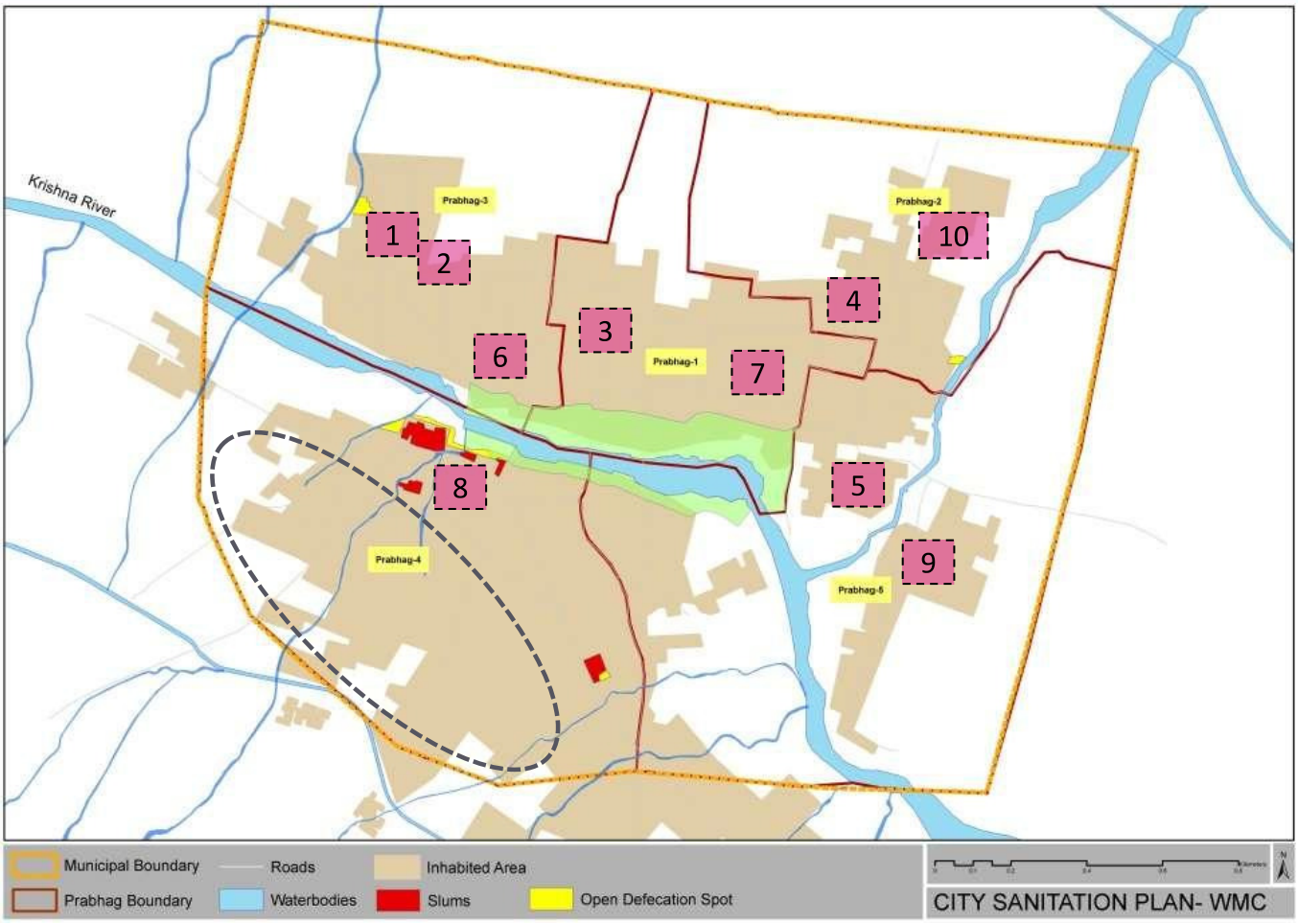
Individual and group toilets have several security and privacy benefits over community toilets

Criteria	Type of toilet facility		
	Individual toilets	Group toilets	Community toilets
Space efficiency	◔	◕	●
Cost effectiveness for household	◔	◕	●
Level of cleanliness	●	◕	○
Cost savings for the ULB	●	◕	○
Ease of Access	●	●	◔
Safety and User friendly	●	●	◔

While individual toilets are the most preferred solution, in situations where space and affordability pose serious constraints, group toilets may be a cost and space efficient way of providing improved sanitation facilities in Wai and Sinnar

Wai and Sinnar expressed interest in exploring the “group toilet” idea

Households interviewed- Wai

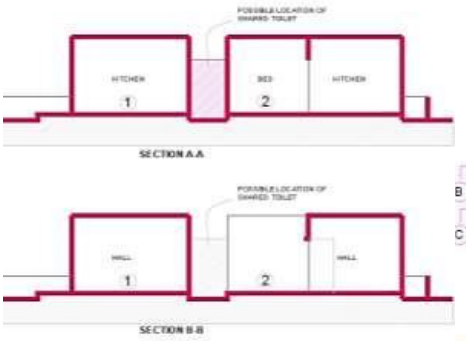


Wai- Assessment for group toilets

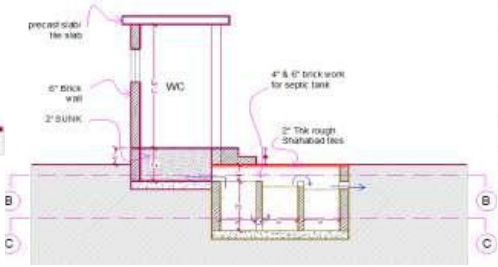
Case No	Number of Families	Family Background		Reason for which they agreed to share the toilet	Own contribution towards construction of a toilet/HH	Availability of space	Availability of required documents	key Observations
		Monthly Income (Range in Rs.)	Relation of HHs with each other (If Any)					
case 1	Family 1	10000	Neighbours	1. CT is too far 2. CT not convenient for children and women 3.User group of CT is large	7000	✓	partial	Female from one of the families is an active member of SHG
	Family 2	15000						
case 2	Family 1	15000	Brothers	CT not convenient, especially for children and women	5000	✓	partial	One of the family members is a construction labour. Can construct their own toilet
	Family 2	10000						
	Family 3	6000						
case 3	Family 1	7000	Relatives	Three of the members are physically challenged for whom CT is very inconvenient	4000	✓	partial	Soak pit may need to be provided with septic tank since there is no possibility of connecting the septic tank to the open drain
	Family 2	15000						
	Family 3	5000						
case 4	Family 1	10000	Brothers	CT not convenient. Rush during morning hours	6000	✓	partial	
	Family 2	10000						
	Family 3	15000						

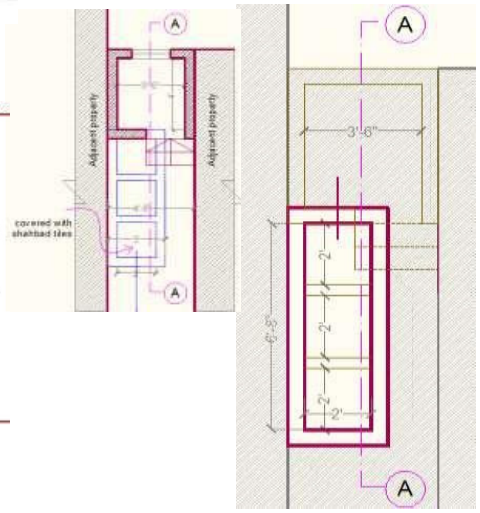
Wai- Possibilities of group toilets

LOCATION OF PROPOSED TOILET

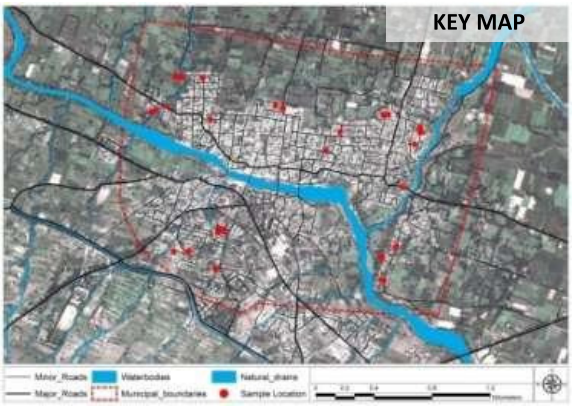


DETAILS OF PROPOSED TOILET

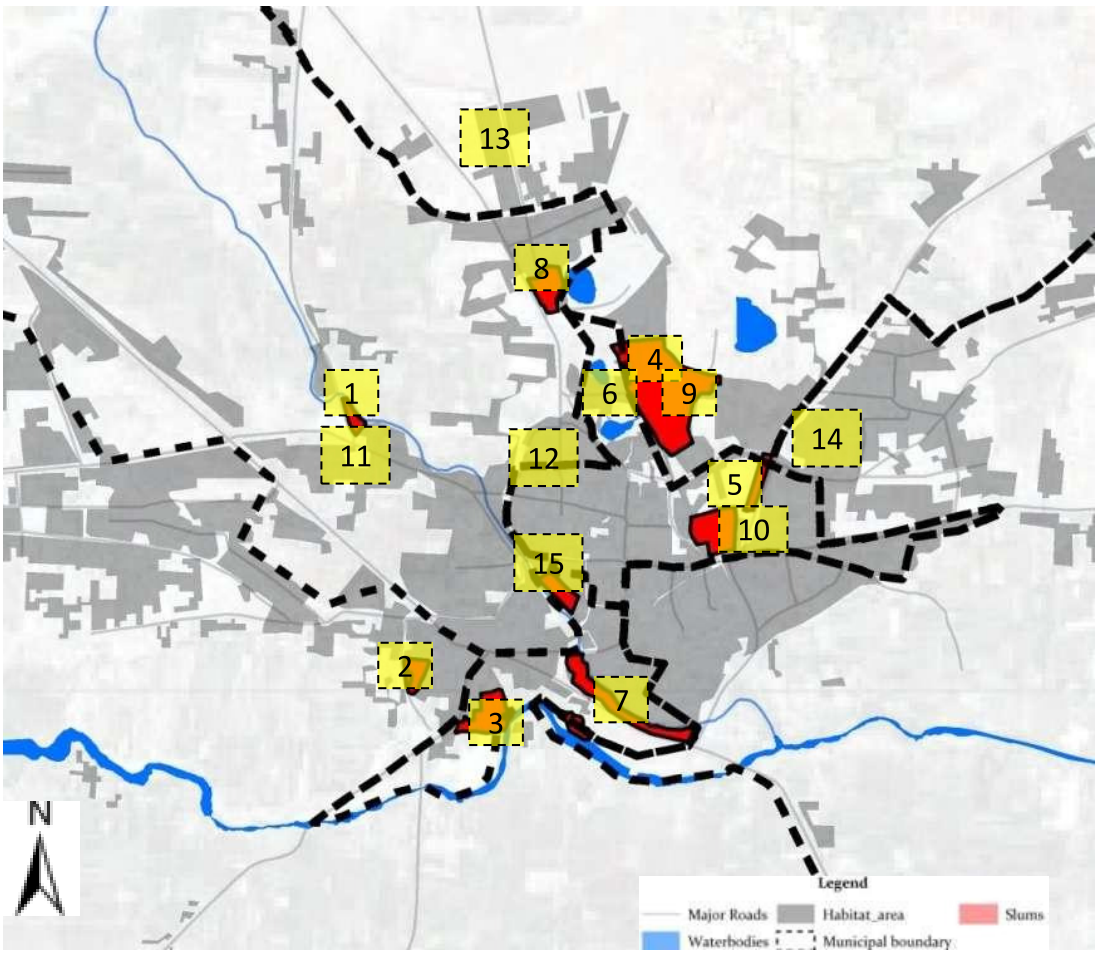




KEY MAP



Households interviewed- Sinnar

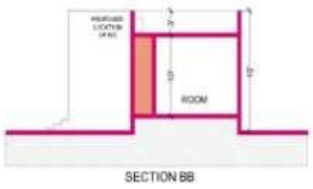


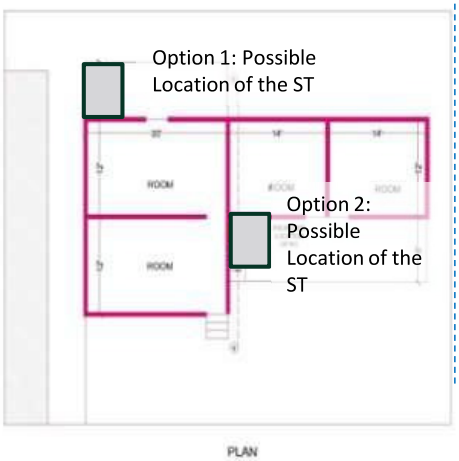
Sinnar- Assessment for group toilets

Case No.	Number of Families	Family Background		Reason for which they agreed to share the toilet	Own contribution towards construction of a toilet/HH	Availability of space	Availability of required documents	Key Observations
		Monthly Income (Range in Rs.)	Relation of HHs with each other					
Case 1	Family 1	8000	Neighbours	1. CT is too far and not well maintained 2. User group is large 3. CT not convenient for women and children	8000	✓		Adequate space available in front yard of one of the house
	Family 2	5000						
Case 2	Family 1	12000	Brothers	1. CT is not well maintained 2. CT not convenient for women and children	5000	✓		No. of members is more. Two seats with common septic tank can be a good option
	Family 2	5000						
	Family 3	7000						
Case 3	Family 1	7500	Neighbours	1. CT is far 2. User group is large 3. CT not convenient for women and children especially during nights	4000	✓		
	Family 2	8000						
Case 4	Family 1	8000	Brothers	1. CT is not well maintained 2. CT not convenient for women and children	5000	✓		One family member of a HH is a construction labour. Can construct their own toilet
	Family 2	10000						
	Family 3	6000						

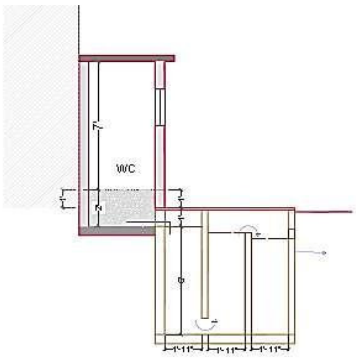
Sinnar - Possibilities of group toilets

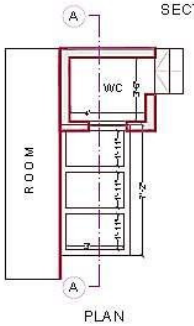
LOCATION OF PROPOSED TOILET

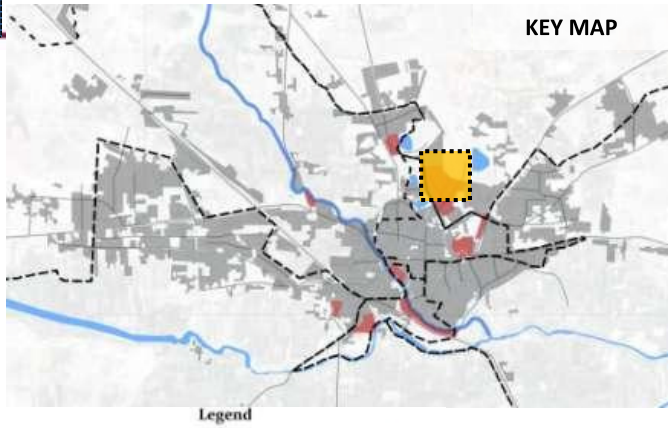




DETAILS OF PROPOSED TOILET







- **Estimated user as per current requirement**
- **Sizes of the proposed septic tank as per CPHEEO 2013**
- **Size of toilet block (4'x3' 6"x7')** (NEUFERT's)

Estimated Users	Length (m)	Breadth (m)	H (m) (Cleaning interval of 3 years)
15	2.0	0.9	2.3

Surveys- Observations

1. People prefer individual toilets but they are also aware that it is difficult for them to construct one- (Reasons- space constraints, financial constraints and land issues)
2. Households are ready to use toilets in sharing. Some are even ready to go ahead with the implementation as soon as possible.
3. Mostly, interested households are the extended families/ relatives.
4. Affordability of some households is very less
5. Queries by HHs-
   - Will any financial support be provided?
   - What about the land issues?

Budget Assessment- Wai

Total Requirement of Funds

Total number of households without individual toilets: **2093** (2435- 342 IHSDP)

Implementation in 3 years	2014	2015	2016	Total
% of HHs to be covered in a year	20%	35%	45%	100%
Number of HHs to be covered in a year	419	733	942	
Subsidy Requirement @ Rs 3000 per HH (Rs lakhs)	12.6	22.0	28.3	**62.8**
% of Available Surplus	16%	28%	37%	
Subsidy Requirement @ Rs 4000 per HH (Rs lakhs)	16.7	29.3	37.7	**83.7**
% of Available Surplus	21%	37%	49%	
Subsidy Requirement @ Rs 5000 per HH (Rs lakhs)	20.9	36.6	47.1	**104.7**
% of Available Surplus	26%	46%	62%	
Subsidy Requirement @ Rs 6000 per HH (Rs lakhs)	25.1	44.0	56.5	**125.6**
% of Available Surplus	31%	56%	74%	

Total Requirement of Funds

Total number of households without individual toilets: **4869**

Implementation in 5 years	2014	2015	2016	2017	2018	Total
% of HHs	10%	20%	20%	25%	25%	100%
Number of HHs	487	974	974	1217	1217	4869
Subsidy Requirement **@ Rs 3000** per HH (Rs lakhs)	14.6	29.2	29.2	36.5	36.5	146.1
% of Available Surplus	10%	21%	22%	29%	31%	
Subsidy Requirement **@ Rs 4000** per HH (Rs lakhs)	19.5	39.0	39.0	48.7	48.7	194.8
% of Available Surplus	13%	27%	29%	39%	42%	
Subsidy Requirement **@ Rs 5000** per HH (Rs lakhs)	24.3	48.7	48.7	60.9	60.9	243.5
% of Available Surplus	17%	34%	36%	48%	52%	
Subsidy Requirement **@ Rs 6000** per HH (Rs lakhs)	29.2	58.4	58.4	73.0	73.0	292.1
% of Available Surplus	20%	41%	44%	58%	63%	

Resolutions for implementing the "own toilet scheme" by Wai and Sinnar

वाई नगरपरिषद,वाई सर्वसाधारण सभा ठराव क्रमांक ३ दिनांक २६-०२-२०१४

ठराव क्रमांक ३

विषय - अखिल भारतीय स्थानिक स्वराज्य संस्था मुंबई यांनी वैयक्तिक आणि गट शौचालया संदर्भात केलेल्या सर्वेक्षणानुसार योजना राबविणे बाबत निर्णय घेणे.

ठराव - अखिल भारतीय स्थानिक स्वराज्य संस्था मुंबई यांनी वैयक्तिक आणि गट शौचालया संदर्भात वाई शहरातील कुटूंबांचे सर्वेक्षण केले असून सन २०११ चे जनगणने नुसार २४३५ कुटूंबाना वैयक्तिक शौचालये नाहीत सदरची कुटूंबे ही ४२ सार्वजनिक शौचालयावर अवलंबून आहे. नगरपरिषदेचे २६४ सीट सार्वजनिक शौचालय आहेत. घरामध्ये शौचालय नसल्यामुळे नागरीकांना संसर्गजन्य साथीची लागण होणेची जास्त असते. या करिता घराघरात शौचालय असणे आवश्यक आहे. नगरपरिषदेचे वतीने गट शौचालय व वैयक्तीक शौचालय योजना राबविणे आवश्यक आहे. या ठरावाव्दारे असा निर्णय घेणेत येत आहे की, वाई शहरातील उघडयावरील शौचास कोणीही बसू नये या करिता ज्या अनुसूचित जाती, जमाती व इतर जातीचे कुटूंबाकडे शौचालयाची व्यवस्था नाही अशा कुटूंबापैकी ज्या कुटूंबाकडे शौचालयासाठी जागा असेल व ते शौचालय बांधणेस तयार असतील तर शौचालयाची व्यवस्था करणे करिता प्रत्येक कुटूंबाकरिता रु.५०००/- देणेस या ठरावाव्दारे मंजूरी देणेत येत आहे. तसेच अनेक कुटूंब एकत्र येवून गट शौचायल बांधलेस त्यासाठी सुध्दा प्रत्येक कुटूंबासाठी र.रु.५०००/- प्रमाणे मानधन देणेस या ठरावाव्दारे मंजूरी देणेत येत आहे. सदरची वैयक्तिक व गट शौचालयाची योजना अखिल भारतीय स्थानिक स्वराज्य संस्था मुंबई यांचे मार्फत व त्यासाठी या संस्थेचे लागेल ते सहकार्य घेणेस या ठरावाव्दारे मंजूरी देणेत येत असून, या संस्थेची या कामाबद्दलची जी काय फी असेल ती नगरपरिषद निधीतून अखिल भारतीय स्थानिक स्वराज्य संस्था मुंबई यांचेकडे भरणेस या ठरावाव्दारे मंजूरी देणेत येत आहे. या कामासाठी पात्र कुटूंबाची निवड त्या अखिल स्थानिक स्वराज्य संस्थेकडून करुन घेणेस या ठरावाव्दारे मंजूरी देणेत येत आहे.

सूचक - मा.श्री.दत्तात्रय उर्फ बुवा भगवान खरात सही XXX

अनुमोदन - मा.सौ.मनिषा सचिन जावळे सही XXX

ठ. स. मंजूर
सही XXX

अध्यक्षा
वाई नगरपरिषद वाई

वाई नगरपरिषद वाई

सत्यप्रत
मुख्याधिकारी
वाई नगरपरिषद, वाई

(नमुना क,नियम ५ व ३१ पहा)

MUNICIPAL COUNCIL (म्युनिसिपल कौन्सिल,सिन्नर)
MINUTE – BOOK (मिनिट बुक)
मे. सर्वसाधारण सभा कार्यवृत्ताचे पुस्तक
Patr 2 (भाग २ ग)

Date & time of meeting सभेची तारीख व वेळ (1) (१)	Subject of motion प्रस्तावाचा विषय (2) (२)	(Wording of motion) प्रस्तावाचा मजकूर (3) (३)	Name of proposer and seconder (4) (४)	(Amendment,if any) सुधारणा कोणतीही असल्यास: (Wording) मजकूर (5) (५)	Name of 1) Proposer 2) Seconder (6) (६)	Number of Votes given: For बाजूने (7) (७)	Against विरुद्ध (8) (८)	Final resolution after the votes on amendments: Wording मजकूर (9) (९)	Serial No. अ.क्र. (10) (१०)
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]

अध्यक्ष
सिन्नर नगरपरिषद

The Wai and Sinnar ULBs are launching a partial subsidy scheme to spur demand, and incentivize households to pool resources for own toilets

Each household lacking access to own toilets will be provided with a subsidy of INR 5000 per household for individual toilets or toilets shared by up to four households

Scheme details	Number of households sharing a toilet			
	Households (Subsidy - INR 5,000/HH)			
	1	2	3	4
Cost per toilet (in INR)[1]	~30,000	~30,000	~30,000	~30,000
Subsidy per toilet provided by the ULB	5000 *(17% of cost)*	~10,000 *(33% of cost)*	~15,000 *(50% of cost)*	~20,000 *(67% of cost)*
Effective cost per HH	~25,000	~10,000	~5,000	~2,500

- ***Estimated willingness to pay upfront is ~INR 4000 – 6000[2] /HH → 3-4 HH can together afford a group toilet***
- ***HH with lower willingness to pay, or lower preference for sharing can be connected with consumer financing through local credit providers***

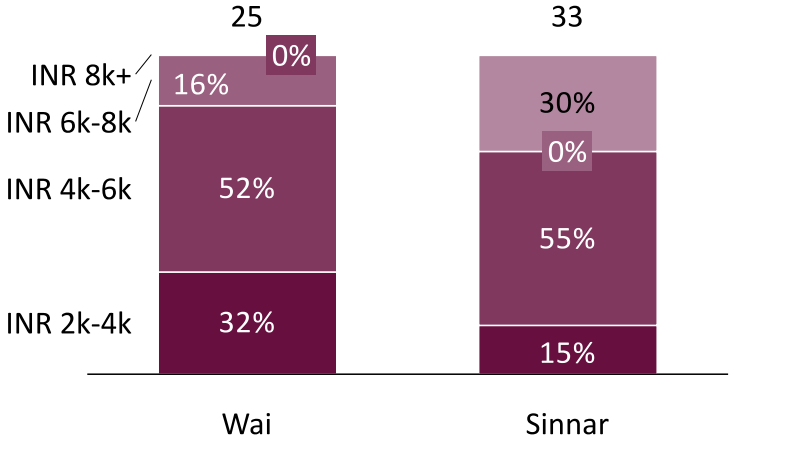
- Note: (1) Based on standard government schedule of rates and local contractor estimates, estimate includes cost of superstructure and septic tank (2) Based on 2013 focus group discussions with ~30 households each in Wai and Sinnar

Preliminary demand assessment in Wai and Sinnar helped assess demand for individual and group toilets

Key observations

- **Households** in the areas with low access to personal toilets were interviewed
- In all cases, households **were receptive to the idea of** sharing toilets
- Households raised concerns about **affordability** and possible arrangements for **maintenance of group toilets**
- **In unregulated slum areas,** households were hesitant to invest in a toilet given their lack of ownership over the land

Household willingness to pay *(in HH)*



- **More than half** of the households interviewed were willing to spend between **INR 4,000 and 6,000**
- The average household willingness to pay was **INR ~4,500 in Wai and INR ~6,300 in Sinnar**

Possible implementation mechanism for the scheme

1 Form a Scheme Implementation Cell / "Own Toilet Scheme Cell"

A	Administrative Staff	Clerk and Computer Operator	1. Dissemination of scheme 2. Give out applications 3. Collect applications 4. Sort applications 5. Publish approved applications 6. Maintain all records in the given formats
B	Technical Staff	Engineer and PWD staff	1. Assess applications 2. Shortlist applications 3. On ground inspection of shortlisted applications 4. Approve applications 5. Monitor implementation 6. Approve implementation
C	Finance Staff	Accountant	1. Disbursement of funds 2. Maintain records in the given format

Implementation Stage 1

55 Working Days

7 Days

Introduce and Disseminate the scheme

1. Ward level meetings headed by the councilors
2. Through Newspapers
3. Advertisements at public places
4. Announcements

PAS can provide support in designing advertisements

3 Days

Set up inquiry desks (ID) at prabhag level / city level

1. 5 inquiry desks at 5 prabhags (1 desk= team of 2) **OR** one desk at ULB office
2. Provide detailed information about the scheme to the citizens

PAS can provide support

Awareness programs at ward level

45 working Days

Give out application forms

1. Interested households to collect application forms from ULB office
2. ULB staff to maintain records in the given format

- PAS can provide support in developing formats

External support may be required in processing the applications

Submission of filled and signed application forms

1. Households to submit applications along with required documents. ULB to collect same and maintain records

Implementation Stage 2

45 Working Days

10 Days

Assess and shortlist applications

1. ULB to collate/ computerise data in the given format and develop a city level data base on applications received
2. ULB to assess applications through deskwork to categorise/shortlist on the basis of their authenticity/ feasibility

PAS can provide support in developing formats

25 Days

On ground inspection of shortlisted applications

1. ULB to inspect on ground- possibility of construction of a toilet with septic tank as per given specifications/ standards

External support will be required in on-ground inspection

5 Days

Finalise list of approved applications

1. ULB to finalise list of approved applications based on deskwork and actual inspection

5 Days

Publish list of approved applications

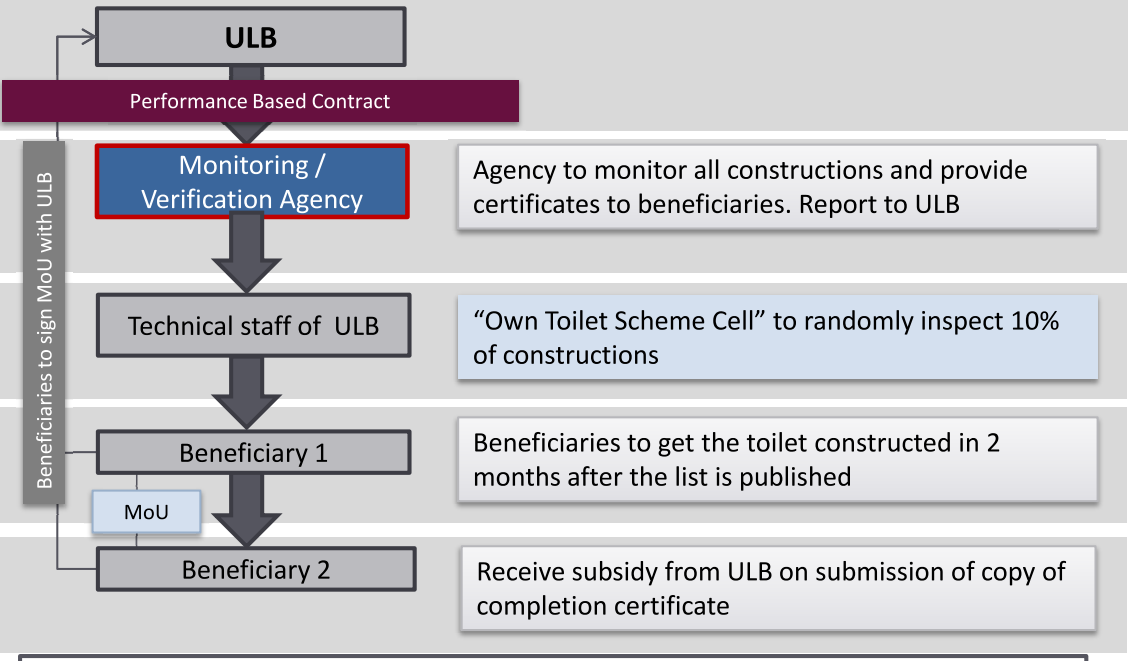
1. ULB to declare list of approved applications/ display at ULB office and publish in the newspapers that it is displayed at the ULB office

Implementation Stage 3

60 Working Days

The scheme can be results-based, with the involvement of an external verification agency

Result based partial subsidy



PAS can provide support in

- Providing feedback on contracts
- Designing MoUs
- Developing monitoring and reporting systems

External support in the form of monitoring/ verification agency will be required

Subsidy will be granted only if toilet is constructed within two months after the list is published

Implementation Stage 3

Proposed option for disbursement of funds

Beneficiaries to construct toilet on their own as per given specifications

Amount of subsidy will be deposited only to the beneficiaries' bank accounts only after the toilet is fully constructed and completion certificate is presented to SMC by the beneficiaries

30% of amount of subsidy will be paid at intermediate stage (construction of plinth etc). Remaining 70% of amount will be paid at the completion of construction
(Subsidy to be transferred to the bank accounts of beneficiaries)

PAS can provide support in developing formats for records

40 Days

Potential lenders like local banks, credit co-op societies, microfinance institutions, housing finance companies and SHGs may offer loans to households for construction of toilets

PAS can provide support in interviewing the lenders and making then aware of the scheme

We have explored five different types of credit providers in these towns

Self help groups (SHGs)	*Micro-finance institutions (MFIs)*	*Credit societies*	*Commercial banks*	*Housing finance companies (HFCs)*
Groups of 5-10 women of similar socio-economic background, that make loans to members at low interest rates, financed through member contributions and commercial loans	*Financial institutions targeting economically weaker sections who do not have access to traditional banking, generally with a periodic repayment and peer liability model*	*Financial institutions owned and controlled by members, who make deposits and can avail of loans*	*Commercial banks accept deposits and make loans to individuals and business enterprises, generally in an EMI model with a defined rate of interest*	*Financial institutions in the primary business of housing loans. HFCs vary in the stringency of collateral requirements, but often lend to customers not served by commercial banks*

- Source: Reserve Bank of India, National Housing Bank, Monitor Inclusive Markets, "Building houses, Financing Homes", 2010

Self Help Groups

25 SHGs interviewed | 30 SHGs interviewed

	Wai	Sinnar
No. of SHGs	155	284
No. of SHGs formed before 2005	20	15
No. of SHGs formed after 2005	135	115 (Having accounts)+ 154 (Without Accounts)
No. of members per SHG	5-20	5-20
SHGs with bank accounts	155 (all)	130
Banks having SHG accounts	Bank of Maharashtra, State Bank of India and Bank of Baroda	Bank of Maharashtra, State Bank of India, Bank of Baroda and Union Bank of India
SHGs that have taken loans	40	31
Average monthly contribution per member	Rs. 75/-	Rs. 75/-
Average savings till date	Rs. 10,000/-	Rs. 15,000/-
Avg. no. of members in a SHG that have a toilet	2	1
Loan amount taken per SHG	Min. 50,000/- Max. 2,00,000/-	Min. 70,000/- Max. 3,00,000/-
Size of internal loans (Rs.)	Min: 1000 Max: 7000 (Depending on the age of group, members and saving capacities)	Min: 1000 Max: 10000 (Depending on the age of group, members and saving capacities)

Self Help Groups

	Wai	Sinnar
Rate of interest	9% to 12% p.a.	9% to 12% p.a.
Loan Repayment period	1 to 7 years (depending upon the amount and type of loan.)	1 to 7 years (depending upon the amount and type of loan.)
Collateral requirement	No	No
Internal Loans disbursed to members in the past	Y (Out of 25 SHGs interviewed, only 14 SHG has disbursed internal loans)	Y (Out of 30 SHGs interviewed, 25 have disbursed internal loans)
Rate of Interest for internal loans	1% per month	2% per month
Purpose of loans	Income generating activities, house improvement, education, medical, domestic use	Income generating activities, house improvement, education, medical, domestic use
Willingness towards group toilets	Group (Out of 25 SHGs interviewed, 15 prefer group toilets)	Group (Out of 30 SHGs interviewed, 17 prefer group toilets)
Willingness to take toilet loans	Y (Out of 25 SHGs interviewed, 23 SHGs are willing to take toilet loans)	Y (Out of 30 SHGs interviewed, 15 SHGs are willing to take toilet loans)
Avg amount that can be spent for constructing toilet from personal savings	Rs. 5000/-	Rs. 5000/-

One SHG with 17 members, formed in 2005, can lend around Rs. 7000 internally to its 4 members at a time.

Micro – Finance Institutions

No MFIs are currently operational in Wai. Few MFIs in Pune were interviewed who are operational in towns near Wai and have history of extending toilet loans.

	IRCED	MANN DESHI MAHILA SAHAKARI BANK	SURYODAY	GRAMEEN KOOTA
Year of Establishment	1994	1997	2008	1999
Interest rates	11% (flat)	15% (flat)	26% (diminishing)	21% (diminishing)
Promoted toilet loans	✓	✓	X	✓

4 MFIs are currently operational in Sinnar. MFIs in Nashik were also interviewed who may extend their services in Sinnar

MFIs operational in Sinnar

	ASMITHA	SPANDANA	HDFC MF	CHAITANYA
Year of Establishment	2006	2008	2013	2008

MFIs operational in Nashik, which were interviewed

	SURYODAY	EQUITAS	GRAMA VIDIYAL	UJJIVAN
Year of Establishment	2012	2012	2012	2009

Ujjivan has plans to start operations in Sinnar

Micro – Finance Institutions

- MFIs follow the JLG (Joint liability groups) model. MFIs lend to group of female members belonging to APL or BPL families.

	Asmitha Microfin	Spandana Spoorty Financial Limited	HDFC Microfinance	Chaitanya - Sahara Grameen Mahila Swayamsandhi	Suryodaya Microfinance	Equitas Micro Finance Private Limited	Grama Vidiyal Microfinance Limited	Ujjivan Financial Services
Number of groups	340	120	9	9 (many in rural)				
Number of members in Sinnar	1700	1200	90	90	-	-	-	-
JLG Model used	✓	✓	✓	✓	✓	✓	✓	✓
Collateral requirement	×	×	×	×	×	×	×	×
Avg no of members per group	5	10	10	10	5	5	5	5
Documents required to sanction loans	Aadhar card, Ration Card, Voter ID, PAN card							
Encourage savings before lending			✓ Rs. 100 – 500 / month	✓ Rs. 200 / month				
Cashless transactions	✓							✓
Income cap	As per the RBI norms the income cap for the lenders is Rs. 1,20,000 per annum							

In one group of 12, at least 8 should have their own houses, rest 4 should be tenants for more than 3 years

Micro – Finance Institutions

	Asmitha Microfin	Spandana Spoorty Financial Limited	HDFC Microfinance	Chaitanya - Sahara Grameen Mahila Swayamsandhi	Suryodaya Microfinance	Equitas Micro Finance Private Limited	Grama Vidiyal Microfinance Limited	Ujjivan Financial Services
Min. loan amount given till date (Rs.)	Rs. 15,000	Rs. 6,000	Rs. 6,000	-	Rs. 15,500	Rs. 15,000	Rs. 10,000	Rs. 8,000
Max. loan/ member given till date (Rs.)	Rs. 40,000	Rs. 30,000	Rs. 17,500	Rs. 22,000	Rs. 22,000	Rs. 50,000	Rs. 20,000	Rs. 30,000
Rate of Interest (flat)	13%	14%	11%	-	11%	-	-	-
Rate of Interest (diminishing)	25%	27.7%	20%	24%	26%	23.5%	26%	23.6%
Income Generating loan	✓	✓	✓	✓	✓	✓	✓	✓
Repayment period (years)	1 – 2	1 – 2	1 – 2	1 – 2	1 – 2	1 – 2	1 – 2	1 – 2
Educational purpose				✓				
Home Improvement								✓
Provided loans to construct toilet				✓				✓

- Ujjivan and Chaitanya are the only organization which have given loans for construction of toilets. Loans from other MFIs have been used for constructing toilets but the purpose of loan was stated as income generating to the MFI.
- As per the RBI rules a person can take a loan from max 3 institutions at a time, total loan amount adding up to Rs. 50,000.

Loan used for constructing a toilet

Suvarna Lokhande, 43 (Tailoring Business)

Suvarna Lokhande runs a tailoring business. She is a member of Sumananjali Bachat Gat, a JLG started with Spandana in 2008. The group has 10 members like Suvarna, each involved in different economic activities like papad making, ladoo making, running beauty parlor, tailoring etc. They have been taking loans from Spandana since 2008, loan amounts ranging from Rs. 10,000 to Rs. 50,000.

Last year (2013) she took a ***loan worth Rs. 45,000 as income generating loan but constructed a toilet instead.***

Before constructing our own toilet, the family had to walk for 20 minutes to reach the community toilet. Moreover, it was very inconvenient during rainy season and at nights. Heavy traffic on the roads also poses a major problem. Therefore, she decided to construct an individual toilet.

Toilet details	
Toilet cost	Rs. 45,000
Technology	Pour flush (septic tank – outlet connected to open drains)

Loan details	
Loan amount	Rs. 45,000
Amount repaid	Rs. 18,000
Repayment period	2 years
Interest rate	27.70%

Credit Co-operative Societies

	11 credit cooperatives interviewed of the total ~20	15 credit cooperatives interviewed of the total 35
	Wai	**Sinnar**
No. of members	Min. 500- Max. 3000 (Only in Wai city)	Min. 350- Max. 2000 (Only in Sinnar city)
Average monthly income of members	7,500/-	10,000/-
Type of loans given	Personal, Vehicle, Gold, Mortgage, Cash Credit, Hire Purchase, Home, Term loan	Personal, Vehicle, Gold, Mortgage, Cash Credit, Hire Purchase, Home, Term loan
Documents required	Address proof, ID proof, photos, cheques, mortgage papers, 2 guarantors, income returns	Address proof, ID proof, photos, cheques, mortgage papers, 2 guarantors, income returns
Range for rate of interest	9% - 18% p.a.	12.5% - 20% p.a.
Repayment Period	1 to 7 years (depending upon the amount and type of loan)	1 to 7 years (depending upon the amount and type of loan)
Collateral requirement	Collateral required for a loan amount more than Rs. 25,000/-	Collateral required for a loan amount more than Rs. 25,000/-

Credit Co-operative Societies

	Wai	**Sinnar**
Loans given to non members	Yes (have to become a B class/ temporary member)	Yes (have to become a B class/ temporary member)
Loans given to SHGs	No	No
Loans given for constructing toilets in the past	Yes (2 out of 11 co-operatives are currently offering toilet loans as a separate category of loans, 1 has offered toilet loans as a part of housing loans)	No
Willingness to extend sanitation loans	Yes (Of the 11, 6 showed willingness to extend sanitation loans)	Yes (Of the 15, 15 showed willingness to extend sanitation loans)

Requirements in terms of documents and guarantors etc. are more

Personal loans taken are sometimes used for construction of toilets, but there is no separate category for toilet loans

Credit Co-operative Societies

	Sai Devnadi Khore Grameen Bigarsheti Sahakari Pata sanstha	Dhanalaxmi Nagari Sahakari Patasanstha, Khadakpura	Amruta Mahila Nagari Sahakari Patasanstha	Yash Nagri Sahakari Patasanstha	Bhaichand Hirachand Raisoni Multi State Co-operative Credit Society	Jijamata Mahila Nagari Sahakari Patasanstha	Sinnar Nagari Sahakari Patasanstha	Dilip Anna Shinde Nagari Sahakari Patasanstha	Vighnaharta Nagari Sahakari Patasanstha	Shri Sai Nagari Sahakari Patasanstha	Shri Siddheshwar Gramin Bigarsheti Sahakari Patasanstha
No. Of Members (Sinnar)	2000	1000	1100	700	1500	671	2000	2000	950	2000	387
Min. loan amount given till date (Rs.)	5,000	10,000	5,000	10,000	5,000	10,000	20,000	5,000	5,000	10,000	20,000
Max. loan amount given till date (Rs.)	15,00,000	10,00,000	1,50,000	10,00,000	10,00,000	10,00,000	5,00,000	2,00,000	10,00,000	50,00,000	50,000
Average Rate of Interest	15%	16%	16%	15%	20%	16%	15%	16%	16%	15%	15%
Repayment period (years)	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 – 7	1 –3
Collateral required	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000	for amount >Rs. 25,000
Loans to SHGs	X	X	X	X	X	X	X	X	X	X	X
Provided loans to construct toilet	X	X	X	X	X	X	X	X	X	X	X
Willingness to promote toilet loans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Commercial Banks

Assessment of commercial banks was done with respect to SHG lendings in Wai and Sinnar.

	Bank of Baroda	ICICI Bank	HDFC	SBI	BOM	Union Bank of India
SHG accounts present	✓	✓	×	✓	✓	✓
BPL group accounts present	✓	×	×	✓	✓	✓
APL group accounts present	✓	✓	×	✓	✓	✓
Income generating loans provided	✓	✓	✓	✓	✓	✓
Collateral requirement	×	×	×	×	×	×
Rate of interest	15.0%	10.0%	10.3%	10.5%	12.0%	10.3%
Action in case of defaults	Legal notice and home visits					
Experience in lending to BPL groups	🔴	🟡	🔴	🔴	🟢	🟡
Extended sanitation loan in the past	×	×	×	×	×	×
Willingness to promote sanitation loans	🔴	🟡	🟡	🔴	🟡	🔴
Reasons for not willing to promote san loans	Low repayment rates, many defaulters			Low repayment rates, many defaulters		×Low repayment rates, many defaulters
Minimum salary requirement	Rs. 20,000	Rs. 17,000	Rs. 15,000	Rs. 10,000	Rs. 25,000	Should be salaried employee.

The banks require no collateral for the loans upto 1 lakh but need income proof for salaried employees (as salary slips) or audited income accounts of 2 years for professionals.

Supply side study
Micro finance institutions – Credit cooperatives – Commercial Banks

MFIs

*"Asmitha extends income generating loans only and our organization observes high loan repayment rate. **Even if people take loans for consumption activities like toilet construction** they will repay the loan on time. "*

Branch Manager, Asmitha

*"We provide ~200 loans per month, out of these 5-6 loans every month are for construction of toilets. **People take loans and pay back loans on time.**"*

- Branch Manager, Ujjivan

*"In case of formal 'toilet loan', may be **good to create groups with all the members without toilets,** but there may be additional requirements in terms of security/ collateral from the members "*

- Branch Manager, Spandana

Credit Coops

*"At present we do not provide sanitation loans. Sanitation is a very important issue and should be addressed with appropriate methods. **Loans for construction of toilets should be promoted.** Organization heads should promote sanitation loans."*

- Branch Manager, Sridevnadi Khore Grameen Bigarsheti Patasansta

*"Toilets are the basic need and so promoting sanitation loans is a very good idea, but the issue is that **currently there are no grants and waivers from the government for defaulter loans for credit cooperatives**."*

Branch Manager , Vignaharta Nagari Sahakari Patasanstha

Com. Banks

*"Our **experience in lending to BPL SHGs is poor and we observe many defaulters**, where as our experience in lending to APL SHGs is quite good and loan repayment rates are high."*

-Branch Manager, Union Bank of India

- Source: interviews with Credit coops, MFIs, commercial banks

Demand Side Study- Interviews with households

	30 households without toilet were interviewed	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	23of 30	23 of 35
Willingness towards taking loans	15 of 30	23 of 35
Range of own contribution for toilet	5000 - 15000	1000 - 20000
Preferable amount of toilet loan to be taken (Avg.)	16000	19000
Awareness towards loans/ institutions	20 of 30	18 of 35

" My daughters have grown up and we needed a toilet at home. Therefore I took a loan from credit co-operative society for constructing an individual toilet"

"Everyone in our house resort to open defecation. Our relatives do not visit us as we do not have a CT nearby or an individual toilet. We feel it is very important to have a toilet. We are very much willing to take a loan for toilet"

" I never thought of taking a loan for constructing a toilet. But yes, that is a good option"

" 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."

"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"

- Source: Interviews with households

Summary of lenders for consumer finance for toilets

Factors	Self help groups (SHGs)	Micro-finance institutions (MFIs)	Credit societies	Commercial banks	Housing finance companies (HFCs)
Income Groups					
Very poor / BPL					
poor					
Other low income group					
Middle income group					
Housing Type					
Informal housing					
Formal housing					

Credit providers vary in their areas of strength, but SHGs, MFIs and HFCs emerge as the most promising options

Factors	Self help groups (SHGs)	Micro-finance institutions (MFIs)	Credit societies	Commercial banks	Housing finance companies (HFCs)
Reach towards target population					
Local presence					
Prior history or future interest in toilet loans					
Capacity to make toilet loans					
Favorability of loan terms					

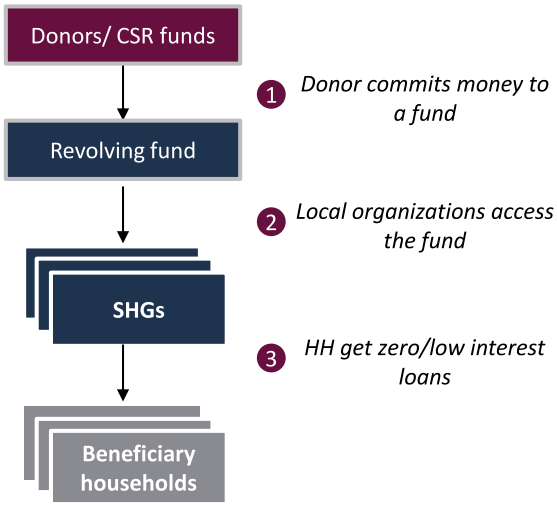
There are many opportunities for households to mobilize credit finance for building their own toilets. With capacity building support, SHGs can play an important role for the poor. The poor can also be reached through MFIs. MFIs will need a credit line of lower cost funds and grants to meet mobilization costs. Banks and HFCs can provide access to other (low and middle income households) that can offer mortgages. A key aspect will be to facilitate households to make their own possible choices from potential lenders.

An enabling environment for these credit providers will be needed to enable or strengthen their presence in sanitation/toilet financing

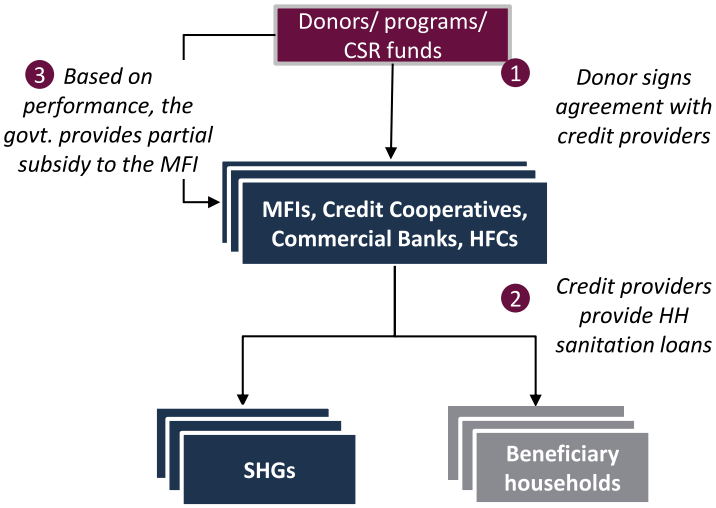
Credit Source	Opportunities	Challenges	Enabling policies and actions
Self-help groups	• Strong local presence • Reach lower income populations • Low interest rates	• Lack financial strength to make loans of adequate size • Limited history of providing toilet loans	• Revolving fund for toilets • Awareness drive
Microfinance institutions	• Reach lower income populations • Established history of providing toilet loans	• Limited presence in Wai • High interest rates • Regulatory barriers on lending for non-income generating activities	• Credit lines or partial subsidies for lending for toilets to individuals and SHGs • Grants to support mobilization and set-up costs
Credit cooperatives	• Strong local presence • Strong financial capacity	• Stringent loan requirements for collateral, ID proof, etc. • Limited history of providing toilet only loans	• Credit lines or partial subsidies for lending for toilets to individuals and SHGs • Connect with SHGs to avail of interest subsidies
Commercial banks	• Strong local presence • Strong financial capacity • Moderate interest rates	• Stringent loan requirements for collateral, ID proof, etc. • Limited history of providing toilet only loans	
Housing finance companies	• Target lower income populations • Strong financial capacity	• Lack local presence • Previous history with toilet loans unknown	

It is possible to leverage limited funds through revolving funds by SHGs and subsidies to other credit providers

Self help groups and Credit cooperatives



Micro credit institutions



- **Local SHGs and credit cooperatives** can be given access to a **revolving fund** to provide **sanitation loans** to households at zero/low interest rate
- Previously used in the **Total Sanitation Campaign in India**, where a revolving fund with a maximum corpus of INR 5 million was set up at the village level
- Source: Total Sanitation Campaign website, GPOBA website

- The local government can **provide performance based subsidy to MFIs** for providing sanitation loans to households at low interest rate
- **Previously used in the GPOBA 'Maji Ni Maisha'** project in Kenya, where a local MFI (K-rep bank) was given 40% subsidy once the water project was completed to repay a part of the loan to community water project

Brainstorm Session : Own toilet scheme

1. **Need to finalize eligibility criteria and implementation mechanism for the scheme**
   - What should be the eligibility criteria for the scheme? We need to relax the conditions if we want to achieve the aim.

     Sinnar- what can be the take on granting permissions to individual or group toilets in slums (all are non notified)?
   - What are the major challenges in implementing the scheme? What are the areas where an external support may be required.
   - Who can be the 'monitoring agency' for the scheme?
   - What should be the timeframe for implementation of pilots- application process, approvals, construction of toilets etc.?
2. **How can different credit options be made available to the citizens?**
   - *Fair for lenders*- Can a fair be arranged for interested lenders and consumers, wherein consumers can choose their own credit options?
   - How can ULB support in conducting this fair?

विचारमंथन- "स्वतःचे/ गट शौचालय योजना"

1. **योजनेसाठी कुटुंबाची पात्रता व योजनेची अंमलबाजवणी यंत्रणा निश्चित करणे गरजेचे आहे.**
   - योजनेसाठी कुटुंबाची पात्रता काय असावी ? योजनेचे उद्दीष्ट साध्य करायचे असल्यास काही अटी व शर्ती शिथील करणे गरजेचे आहे.

     सिन्नर : अघोषित गलिच्छ वसाहतींमध्ये शौचालयास परवानगी देण्यासंदर्भात आपली काय भूमिका असावी ?
   - योजनेच्या अंमलबाजवणी दरम्यान कोणती मोठी आव्हाने असू शकतात? कोणत्या कामांसाठी बाह्य मदतीची / खाजगी संस्थांच्या मदतीची गरज भासू शकेल?
   - योजनेसाठी कोण योग्य असा 'नियंत्रक कक्ष / संस्था ' असू शकेल?
   - योजनेच्या अंमलबाजवणीसाठीचे वेळापत्रक काय असावे? – अर्ज देणे – घेणे, मंजूरी देणे, शौचालयांचे बांधकाम इ.
2. **नागरिकांना कर्ज घेण्यासाठी विविध पर्याय कसे उपलब्ध करून देता येऊ शकतील?**
   - *कर्ज देयकांचा मेळावा – आपल्या शहरांमध्ये,* इच्छुक कर्ज देयकांचा व ग्राहकांचा मेळावा आयोजित करता येईल का, जेथे ग्राहकांना त्यांच्यासाठीचा योग्य पर्याय निवडता येईल?
   - हा मेळावा घडवून आणण्यासाठी नगरपालिका कशाप्रकारे मदत करू शकेल?

Assessment for availability of documents

** Land is within NA zone, but HH does not have any certificate*

	Location	Availability of documents							Remarks
		PRC/ Document for land ownership	Ownership of Applicant	Latest Building Permission	Non Agricultural Clearance Certificate	Ration Card	Identity Proof	Space Availability for toilet	
1	767/4 & 3, Fulenagar	√	Mother's name	√	X*	√	√	√	1.) One of the applicant is an active member of SHG
2	23B, Gangapuri	√	√ (All names on 7/12 extract)	X	X*	√	√	√	1.) One of the applicant is an active member of SHG
3	1972, Maulinagar, Raviwar Peth	√	Father's name	X	X*	√	√	√	1.) Applicants are not willing now to opt for the scheme
4	2286/13A, Fulenagar	√	√	X	X*	√	√	√	1.) Incomplete documents 2.) One of the applicant is ex-councilor
5	2279, Fulenagar	√	√	X	X*	√	√	√	1.) All the documents are complete 2.) Land is available Applicant himself is a mason
6	1652, Raviwar Peth	√	√ (All names on 7/12 extract)	√	X*	√	√	√	1.) All the documents are complete 2.) Land is available
7	23, Gangapuri	√	√	X	X*	√	√	√	1.) Land ownership might be an issue
8	23, Gangapuri	√	Grandfather's name	X	X	√	√	√	1.) Land ownership might be an issue
9	246, Damle Aali	√	Mother's name	X	X*	√	√	√	1.)Required documents are available, however **land is not available as per building by-laws**
10	1716, Rawivar Peth	√	Mother's name	X	X*	√	√	√	1.)Issue regarding title of of the PRC 2.) Land is available
11	1870, Kumbhar wada, Raviwar Peth	√	Mother's name	X	X*	√	√	√	1.) Documents are complete 2.) Land is available
12	1650, DhageAali, Raviwari Peth	√	√	X	X*	√	√	√	1.) All four houses are owned by the same, but each household has individual ration cards
13	1710, Bhoi Aali, Raviwar Peth	√	√	X	X*	√	√	√	1.) Need to check the space, 2.) One of the HH's stays in different location 3.) Two of the applicants are active SHG members
14	342, Petkar Colony, Raviwar Peth	√	√	√	X*	√	√	√	1.) Agriculture Land - No N.A permission 2.) Incomplete documents
15	Petkar Colony, Raviwar Peth	√	√	X	X*	√	√	√	1.) Agriculture Land - No N.A permission 2.) Incomplete documents
16	1737, Raviwar Peth	√	Uncle's name	X	X	√	√	√	-
17	1753, Raviwar Peth	√	Grandfather's name	X	X*	√	√	√	1.) No clear documents available
18	1753, Raviwar Peth	√	Grandfather's name	X	X*	√	√	√	1.) Incomplete documents
19	1738, Raviwar Peth	√	√	?	X	√	√	√	-
20	1752, Raviwar Peth	√	√	X	X	√	√	√	1.) Incomplete documents (BPL/APL Card - absent)

- For the municipal councils, for the purpose of construction of toilets, which are considered most essential for human health, that irrespective of building permission which should not encroach in public space and meeting specific guidelines of National building code, the permission shall be granted to the properties which should be treated as a special case.