

Innovative financing for sanitation

Case studies

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In cooperation with:



Wai, India
became the first
city in India to start
a Scheduled
Desludging service and
introduced sanitation tax
mechanism

Wai is small municipality in
Maharashtra with a population of
45,000.



Current practice of desludging in Indian cities is of complaint redressal and NOT a public service the way sewerage and SWM are!

Low frequency of desludging

On-demand desludging
= only done when septic tanks overflow
= frequency of 8-10 years+
CPHEEO norm is 2-3 years

Environmental impacts of poor quality effluent

Low desludging frequency
= poor efficiency of septic tank
= poor quality of supernatant / effluent
overflow being released in rivers

Increased chances of Manual Scavenging

Low desludging frequency
= sludge hardens in the tank
= requirement of manual labour to remove it

High costs per desludging

Desludgers find it difficult to achieve economies of scale.
Cannot optimize trips or have assured amount of business in on-demand service

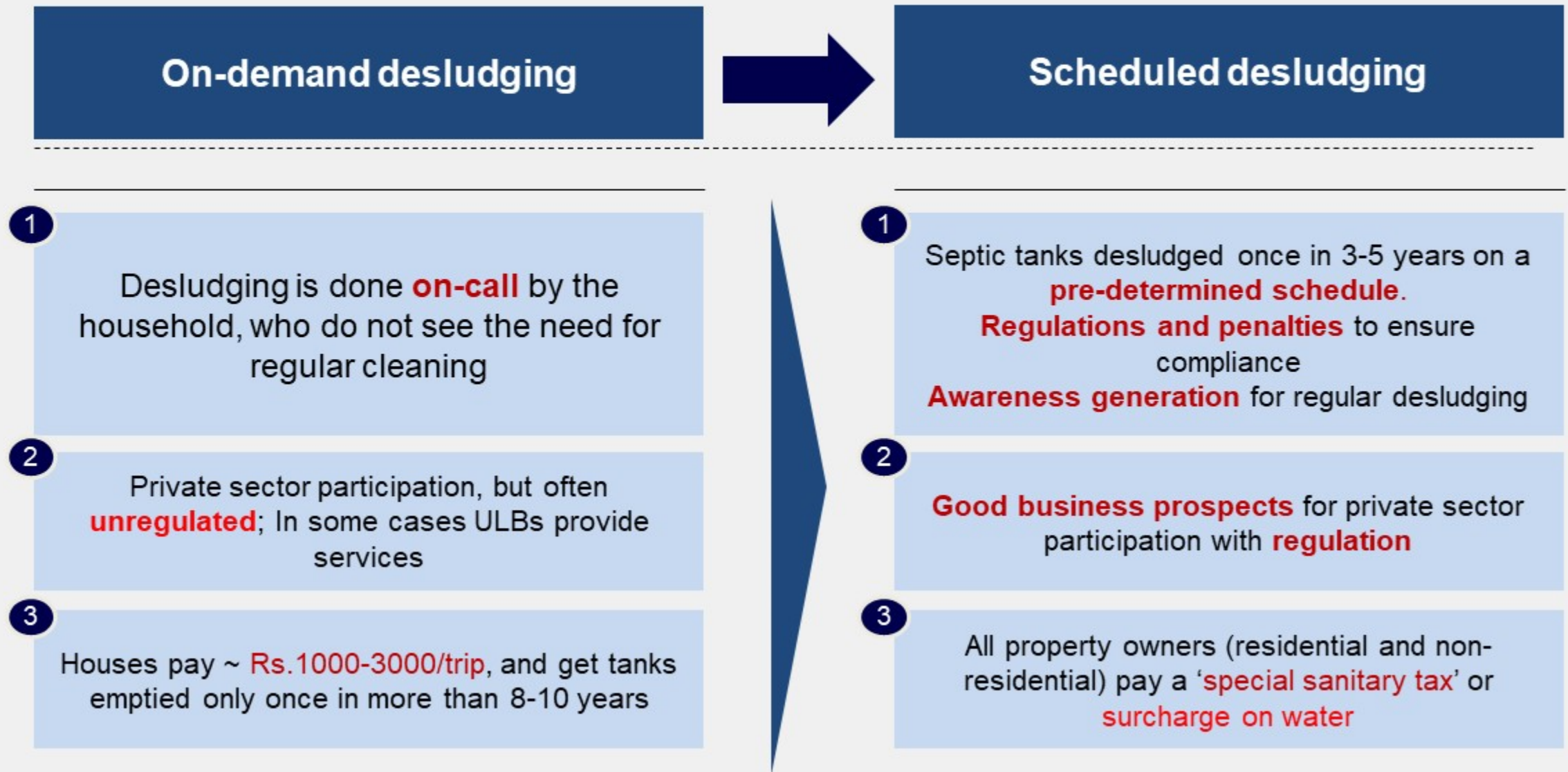
Small towns pay higher prices



High desludging charges may discourage HHs from using toilets

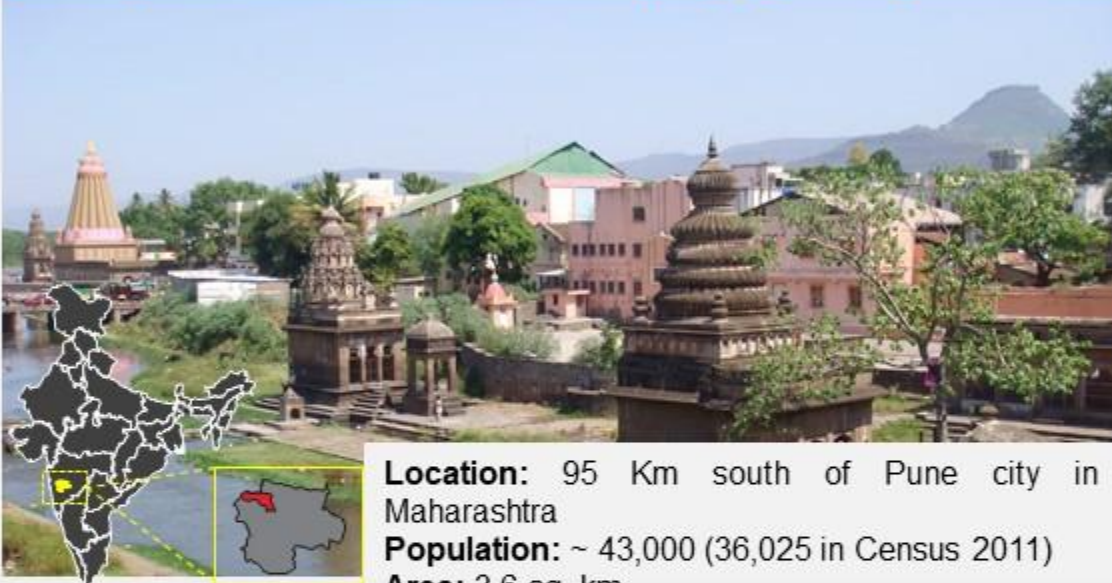
Adversely affects ODF sustainability

Scheduled desludging can achieve regular emptying



Wai, Maharashtra

1st city to start scheduled emptying of septic tanks



Location: 95 Km south of Pune city in Maharashtra
Population: ~ 43,000 (36,025 in Census 2011)
Area: 3.6 sq. km

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

Developed a plan for scheduled septic tank emptying for tanks to be emptied once every 3 years. 2 trucks to desludge ~2000 septic tanks annually in Wai and 3-4 trucks to desludge 4000 septic tanks annually

What has been achieved by scheduled desludging in Wai ...

- 350+ septic tanks covered by scheduled desludging done in 5 months
- Since last 2-3 months...
 - 7-8 septic tanks desludged per day as compared to 7-8 per month in 2017 with demand desludging
 - 2.2 million liter septage delivered to treatment facility
 - 90%+ acceptance rate from HHs for scheduled service
- Sanitation workers now wear safety gear regularly
- Households pay sanitation tax instead of high user charges for desludging

Wai council decided to involve private sector for Scheduled desludging

Developed tender for emptying services covering these aspects

Ownership of assets

The private party brings their own trucks for emptying and operate them for 3 years.

Sanitation tax

No fee at time of desludging.

Instead, a small 'sanitation tax' levied on all properties in the city. This fund used to pay the private company.

Performance linked payments

- Payments based on achieving agreed targets of septic tanks emptied
- Clauses to ensure safety standards - use of PPE and vigilance against manual scavenging
- Fines on non-achievement of targets

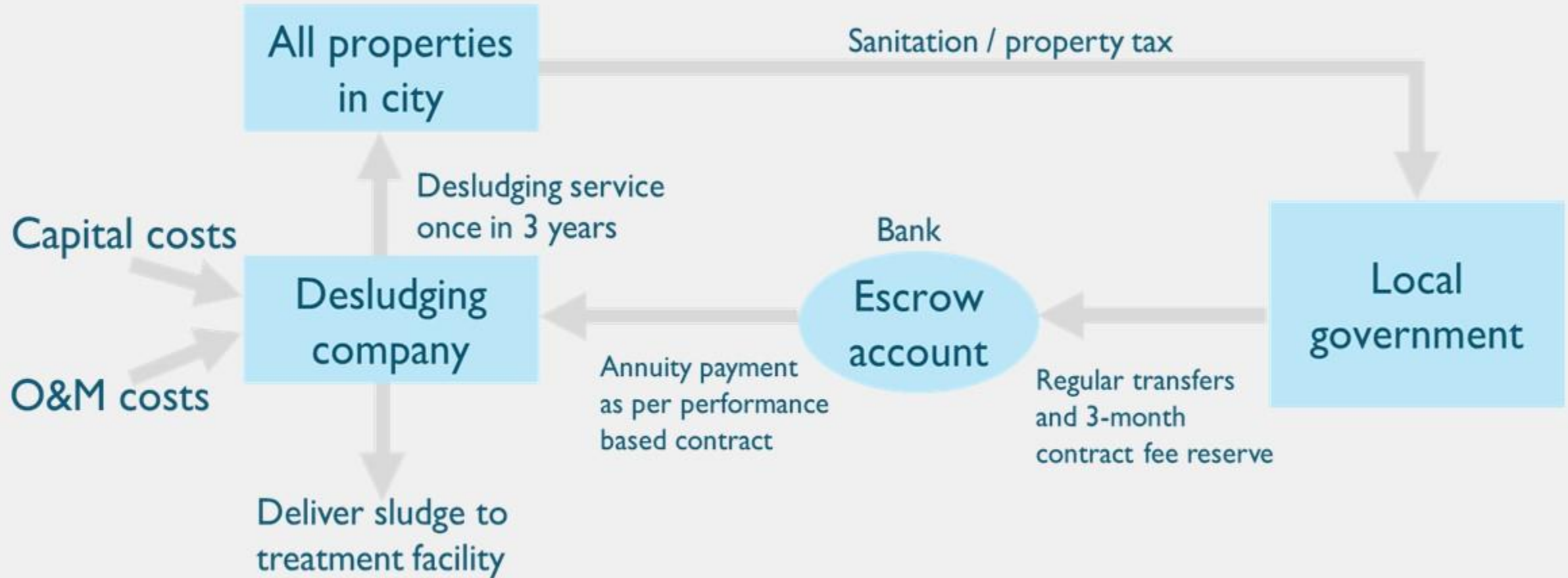
Awareness activities to be done by private contractor

Escrow mechanism – reducing late payment risk

An Escrow account is held by a third party bank.
ULB needs to maintain a fixed balance in it = 3 months of payment

Emergency emptying also included in contract

Performance Linked Annuity Model (PLAM) for scheduled desludging



City government levied differential tax on all properties for financing FSSM services

Differential Sanitation tax rates



Residential Properties **with / without toilets**—
Rs. 300 / annum



Non Residential Properties **with toilets** –
Rs. 300 / annum



Non-residential properties **without toilets**—
Rs. 100 / annum

Performance clauses



Targeted amount of septic tanks emptied

- Survey of all properties done
- Operator must empty pre-determined target of septic tanks in the cycle as per schedule
- After each desludging, desludging form to signed by household - Payment on submission of these forms



Compliance to safety standards and laws

- Disposal at designated site only – subject to fine
- On reaching FSTP site, desludging form must be signed again as proof of receipt - Payment on submission of these forms
- Manual labour should not be allowed to enter septic tanks according to law – households can complain with picture proof – violation can lead to contract termination
- Use of personal protective equipment mandatory – subject to warnings and fine



Quality of service

- Operator must clean any spillage – fine for non-addressed grievances
- There should be no damage to septic tanks during emptying

Implementation through Performance Based Contracts (PBC)

Opportunities

Resource optimization

- Allocation of designated roles and responsibility to the staff in order to achieve the target helped in efficient use of work hours
- **Fuel optimization** due proper route mapping.
- **Lowering vehicle breakdowns** by proper maintenance in order to achieve the target

Streamlining operations

- Target was fixed in terms of number of septic tanks to be emptied which helped in arriving at proper route optimization.

Scope for better performance

- Due to experience of working through the PBC, it has increased their scope to perform better in other cities
- Strengthened their technical ability to bid in other cities



Systematic emptying process followed in Wai



1. Property tax data as baseline. All properties surveyed for sanitation database



2. Households informed 1 day earlier, to open cover of their tank



3. Independent mason to open access cover if households cannot open by themselves



4. Long pipe and smaller truck brought in to reach inner city areas



4. Households visited as per route plan between 7am - 5pm



5. Form signed by households after emptying



6. Separate Survey form to build onsite system database



7. GPS tracking of trucks



8. Septage carried to treatment plant and receipt form signed

IT enabled monitoring and database creation

“Real time” monitoring
No need to process data for results



Easy to Operate,
Reduce paper work,
Minimize human error



Can view progress easily and process payments



Photo stamping,
Geo stamping,
Signatures



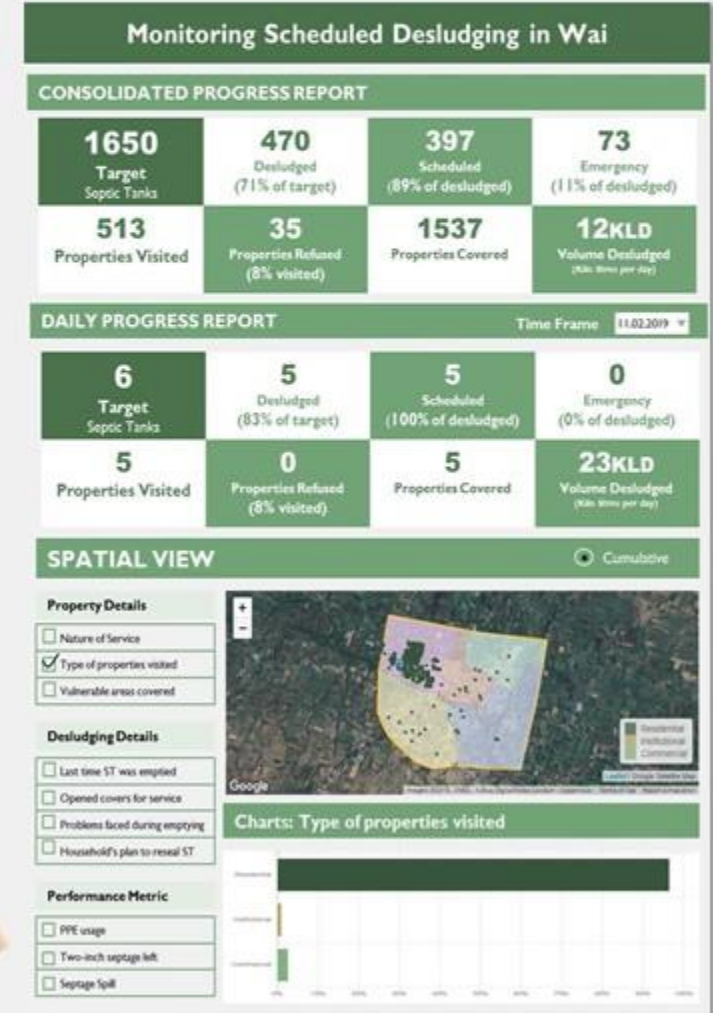
Unique database



SaniTab



SaniTrack

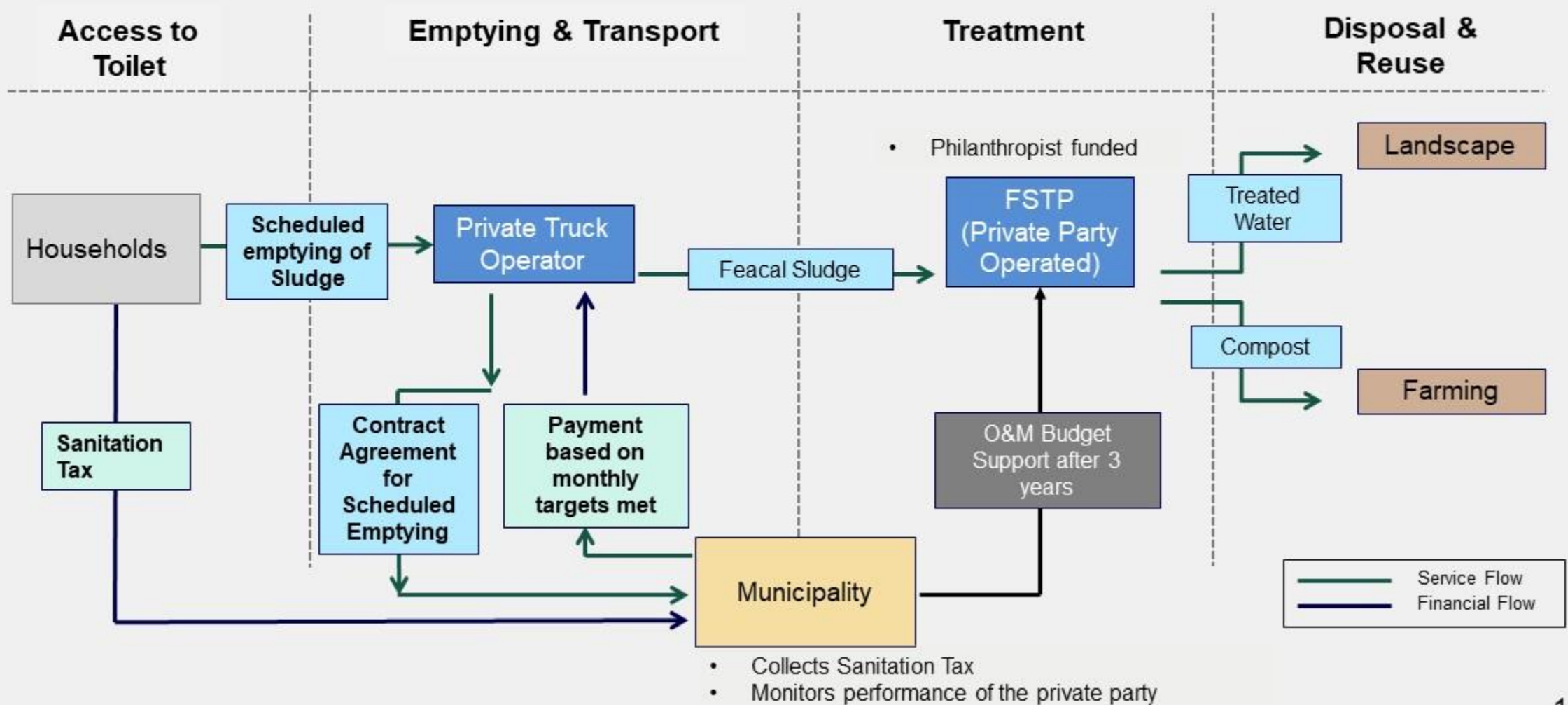


Lessons learnt

- Scheduled desludging is needed to **ensure regular and timely desludging as per norms.**
- Given the potential multi varied benefits of equity, social and environmental impact, it is important to explore the possibility of **scaling up scheduled desludging** :
 - It should be linked to a **performance based contract**
 - **Awareness activities** are needed with households and other properties
 - It is important to **ensure delinking of payments to the desludging visit,** use sanitation tax or surcharge on water bills
 - Requires **strong monitoring system** to capture performance
 - A **treatment facility of adequate capacity** is essential and should be ready before starting – possibility of integrated contracts and clustering, with PPP need to be explored



FSSM in Wai: Performance based emptying contract and Philanthropist and private party operated treatment plant



Leh, India

**Integrated model for scheduled
desludging and treatment through
PPP mode**

Leh's city population is
45,000 + 320,000 tourists + 80,000
temporary workers



Sanitation in Leh

- High altitude (12,000 feet) cold desert
- Temperature -30° C to 35° C
- Population 45,000 + 320,000 tourists + 80,000 temporary workers
- Increasing pressure on natural resources, esp water supply and disposal of wastewater
- Traditionally use dry toilets—ecofriendly
- New, modern flush toilets use septic tanks / soak pits
- Sewerage system under construction for 50% of city at \$15 Million budget—will be operational in 2020 but only 30-40% of buildings may be able to connect due to narrow lanes
- Local authorities looked to FSM for quick solution for wastewater treatment, and long-term solution for 60% of city that will not be able to connect to the sewer—FSM will complement the sewerage system

Leh council decided to involve private sector for FSSM

1. Who will be responsible for providing the FSM Services?

Municipality has no technical skills in FSM

Select turnkey Services Provider responsible for designing, building and operating entire system

2. Who will pay for FSM services?

No budget in current year to build treatment plant etc.

Private Service Provider will invest. Government will charge a fee to citizens / hotels septic tank cleaning, and pay Service Provider as per **Pay for Performance** contract.

Key terms of PPP Contract

Leh Development Authority (LDA) and Blue water Company (private service provider) have entered in 5 year Public Private partnership contract for scheduled desludging and treatment of fecal sludge in Leh

- Blue Water Company (BWC) will design, finance, build and operate the FSTP on the land provided by the LDA
- Municipality will give its suction truck which will be operated by BWC at its own costs
- Five year contract (cleaning and treatment)
- Municipality will collect user fees, with help from BWC
- 90% of fees paid to BWC after service is delivered
- Treated water to be used for children's park on next plot
- Inclusive Services: Cross-subsidize cost of FSM services to poorer households through higher fees from hotels and guesthouses

Integrated PPP contract for scheduled emptying and treatment in Leh

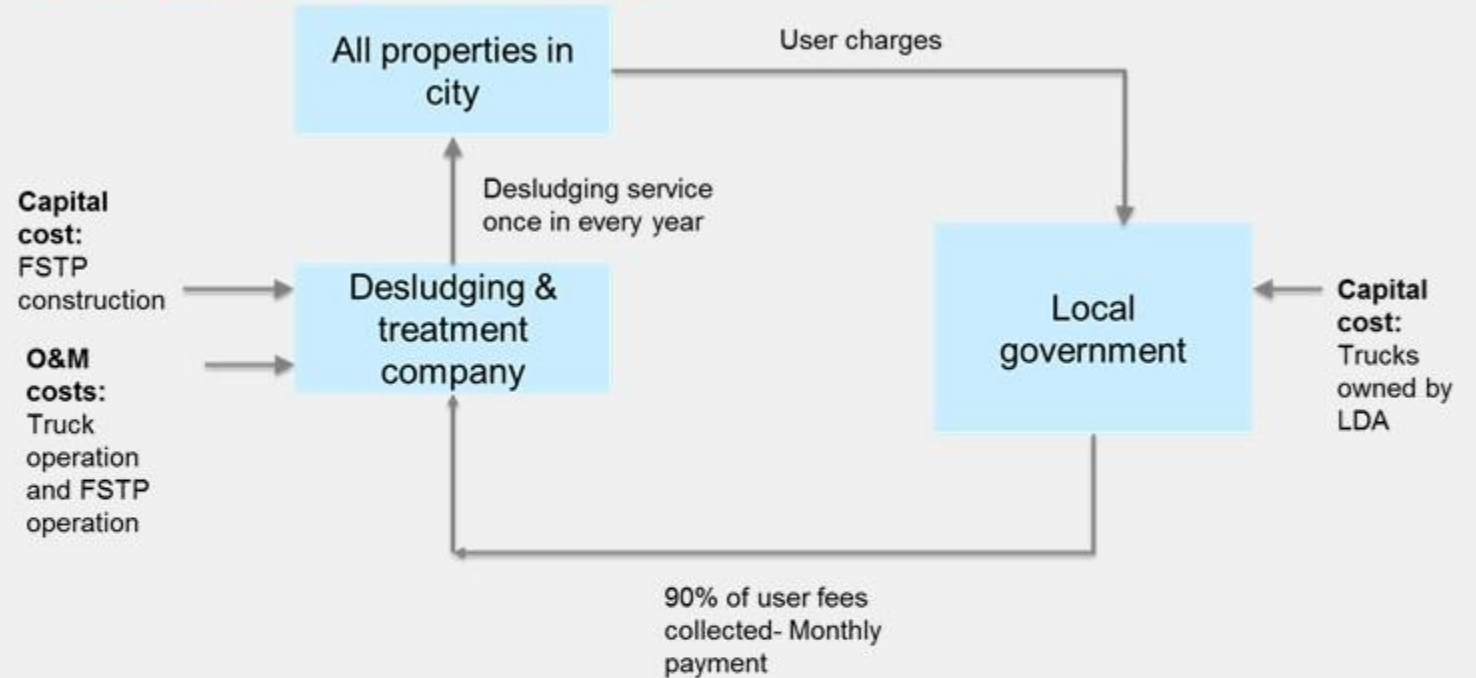
Council has appointed same private operator for scheduled emptying and treatment service

Ownership of assets

The private party will use government owned trucks and FSTP land for five years

Integrated contracts

Emptying user charges are collected by LDA and 90% of the collected amount is paid to private operator



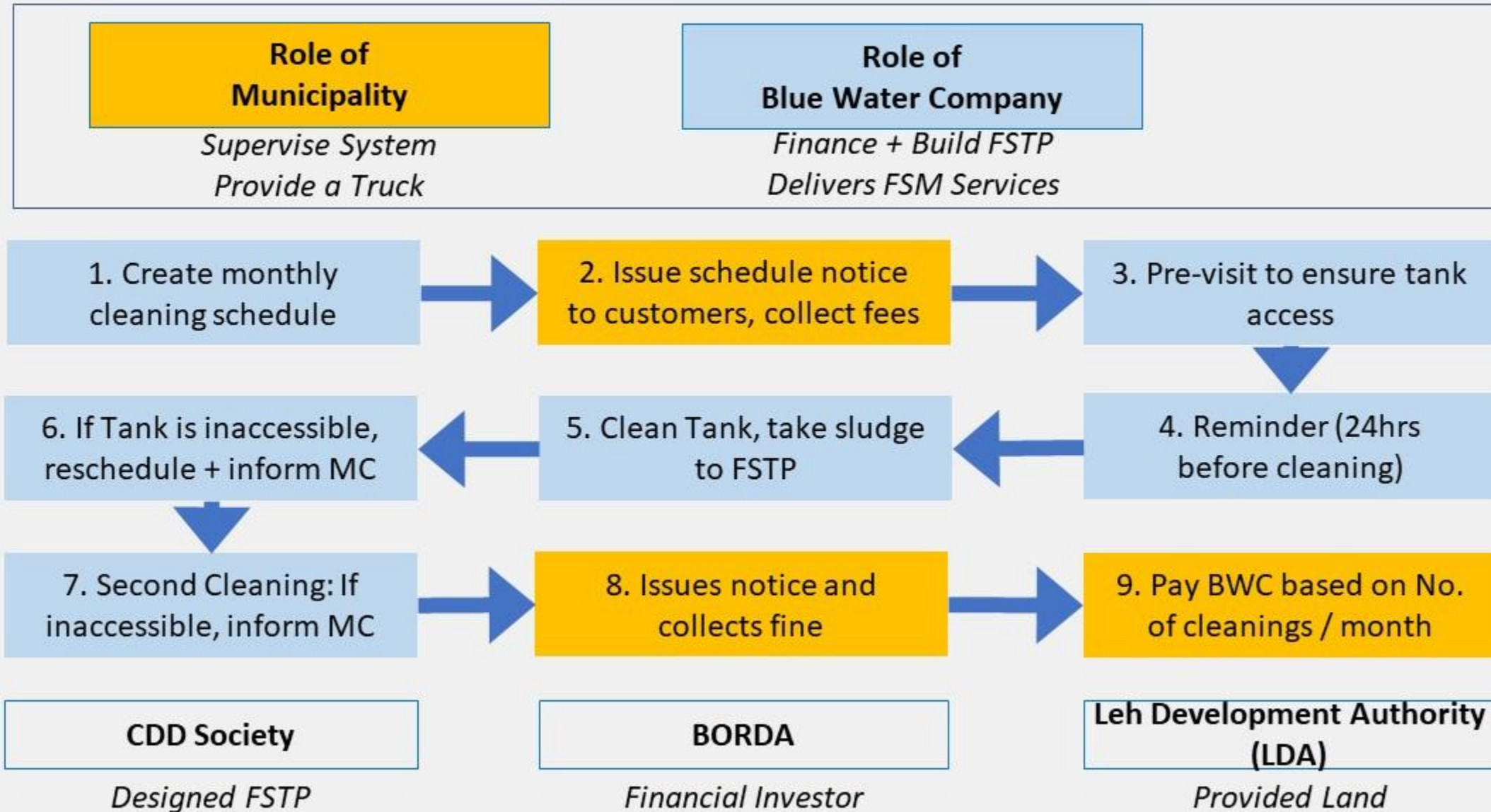
Project Bank account

Funds shall be used for FSM services in Leh. Municipality shall not withdraw any funds from the Project Bank Account for any other purpose and shall not withdraw more than 10% of the funds collected for purposes other than payments made to the Service Provider.

User charges: INR 3500 for hotels and INR 1000 for HHs per year

Inclusive Services: Cross-subsidize cost of FSM services to poorer households through higher fees from hotels and guesthouses.

Roles, Responsibilities and the Process



Advantages of contract

- No upfront investment for Government
- Local government collects fees from customers for scheduled cleaning
- Local government pays 90% of fees received—no financial risk to Government
- Turnkey solution—single party responsibility
- Long tenure—BWC can learn/improve
- Detailed MIS submitted by BWC—transparency
- Focus on re-use

Performance and Challenges

- Over 2.6 Million liters of Faecal Sludge collected and treated
- Trips increased from 6-8 trips/month to about 80-100 trips /month
- Only 25% of septic tanks are easily accessible—extra time is planned to access narrow streets and open tanks, also an off-board pump near septic tank and can push septage from 100m distance
- Cold in nights—pipes break, septic tanks freeze – adjusted work duration
- Had to replace the LDA truck which broke down often, also added a smaller 2000 liter truck



END