

FSM for Rural India

- Approach and first steps

National Workshop on Non-Sewered
Sanitation

- Mussorie, Uttarakhand

Why FSM for Rural India



Swachh Bharat Mission - Gramin
Ministry of Drinking Water and Sanitation



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9,22,91,065

Household Toilets Built
Since 2nd Oct, 2014

5,53,307

Open Defecation Free Villages

4,465

Open Defecation Free Villages in
Namami Gange

604

Open Defecation Free Districts

28

Open Defecation Free States/UTs

Explore →

India
38.70% (Oct 2, 2014)

98.90% (As on Date)



● < 30% ● 30% - 60% ● 61% - 90% ● 91% - 100%

More than 55% of all rural toilets maybe “non-twin pits”

Components of strategy

	Scope	Desired output
Biodegradable waste	<ul style="list-style-type: none">• 700 GOBARDHAN projects• All districts to have organic waste management	<ul style="list-style-type: none">• Organic waste is managed within the village and is converted to useful products
Non-biodegradable waste	<ul style="list-style-type: none">• 700 districts to have plastic projects	<ul style="list-style-type: none">• Plastic waste, metals, glass etc. are disposed safely• Medical and sanitary waste is incinerated (as per rule)• Inerts are disposed safely
Fecal Sludge	<ul style="list-style-type: none">• All census towns and LDVs to be covered as priority	<ul style="list-style-type: none">• Fecal sludge from pits and tanks is treated before disposal
Grey Water	<ul style="list-style-type: none">• All districts to have grey water management	<ul style="list-style-type: none">• Greywater and septic tank overflows disposed in-situ or treated before disposal

Timeline of strategy

Area	Initiative	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
District SLWM Action Plan		SLWM action plan for each district – 700 (in number)					
A. Biodegradable waste	GOBARDHAN Projects	700 (up to Sep 2019)					
	Other bio-waste	Village level management					
B. Non-biodegradable waste	Plastic management projects	50 district projects	All districts have plastic projects				
	Other non-biowaste						
C. Fecal Sludge	FSM plants/projects	5-6 pilots*	All Census towns + Large GPs covered				
D. Grey Water			2 pilots**	All villages have GW management initiatives			

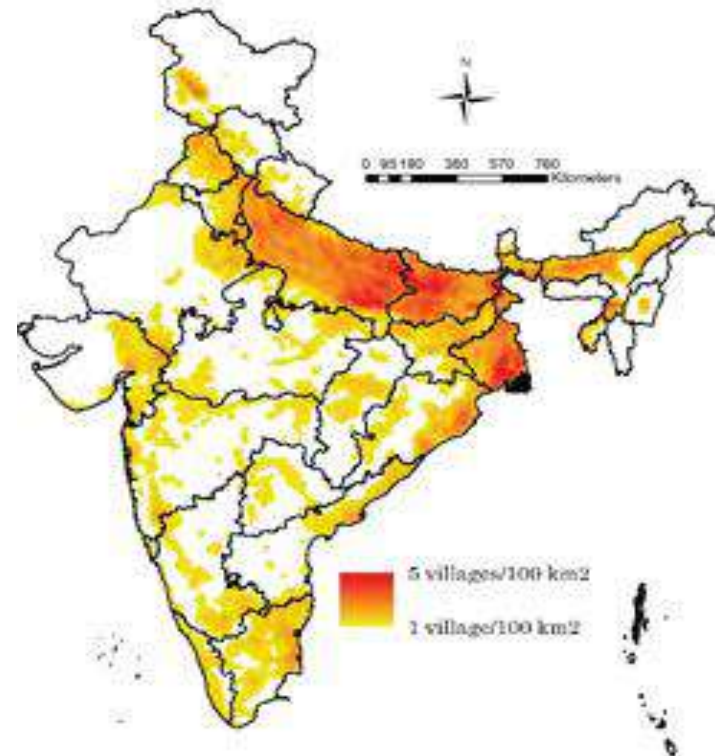
- * 1. Anupshahr, UP (Ganga GP)
 2. Sikkim (Hilly terrain)
 3. Odisha (Rural-Urban Convergence)
 4. Udipi, Karnataka (In-situ FSM)
 5. Remote area (Very low cost)
 6. Flood prone area

- ** 1. Andhra Pradesh (DEWATS for greywater recycling for non-potable purposes like agriculture, etc)
 2. Gujarat (In-Situ greywater treatment soak it/leach pit)

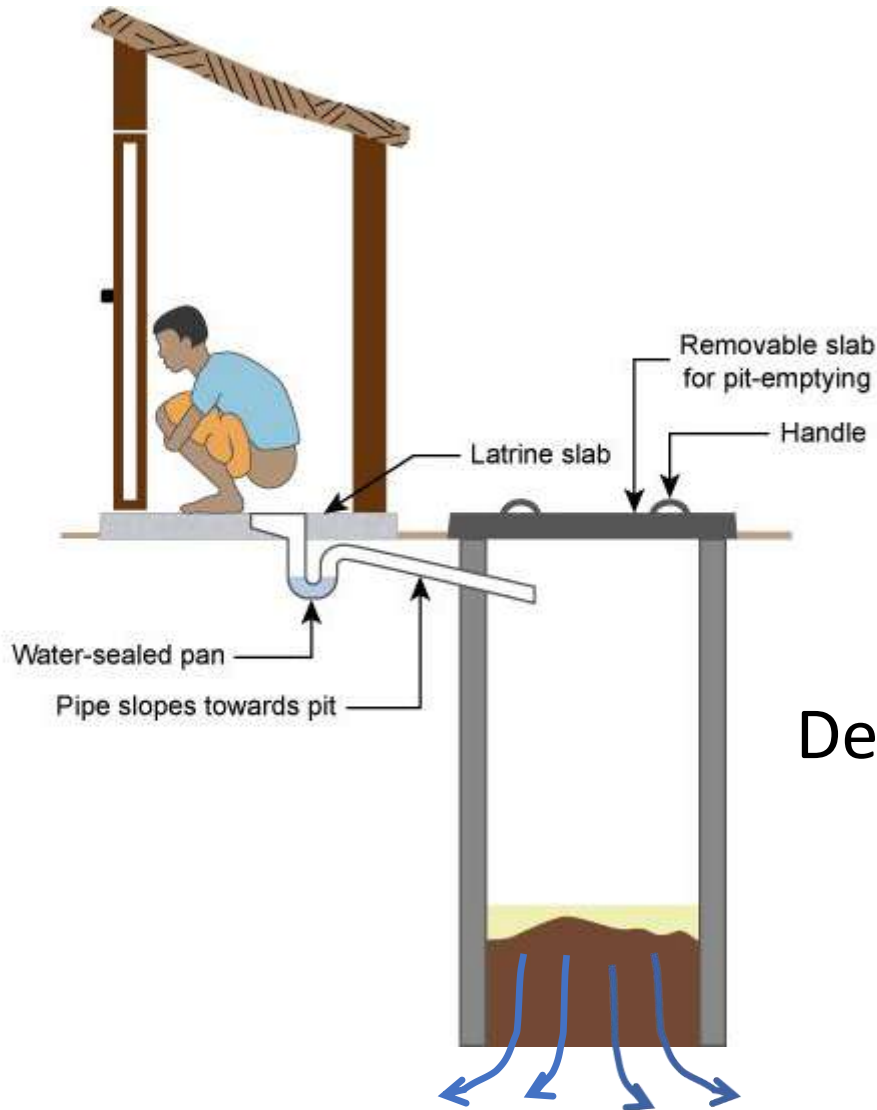
Note: The State Integrated SLWM plan will have all 4 streams mentioned above by end of Sep 2019.

Priority Areas for FSM

- Census towns
 - Population 4000+, density > 400 per sqkm
 - Urban characteristics, rural admin
 - 83% CTs “near” a town or each other
- LDVs: Ganga Basin Villages
 - Large, dense villages
 - Population > 1000
 - Density > 400

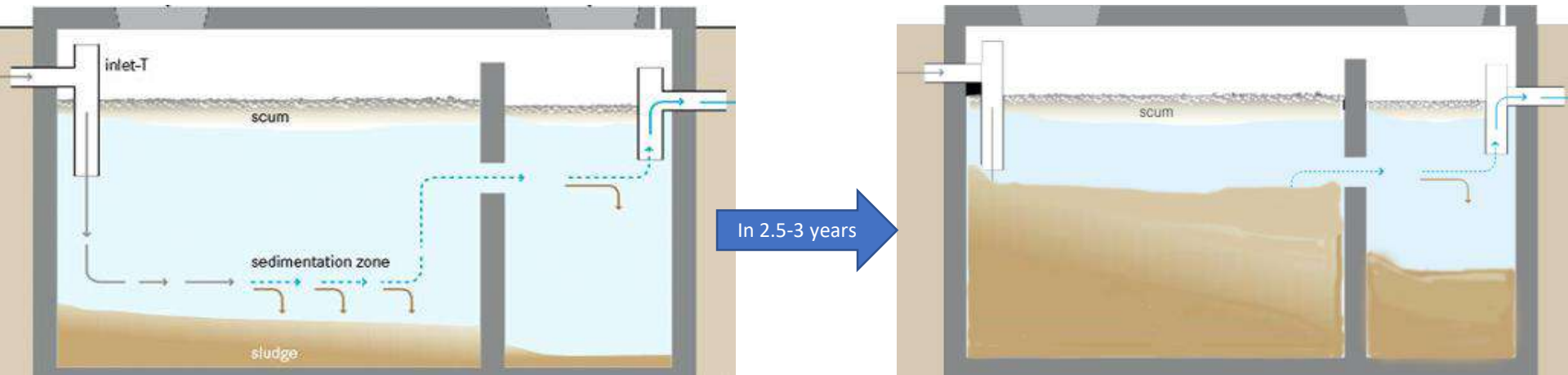


Step 1: Know your Pits – Single Pit



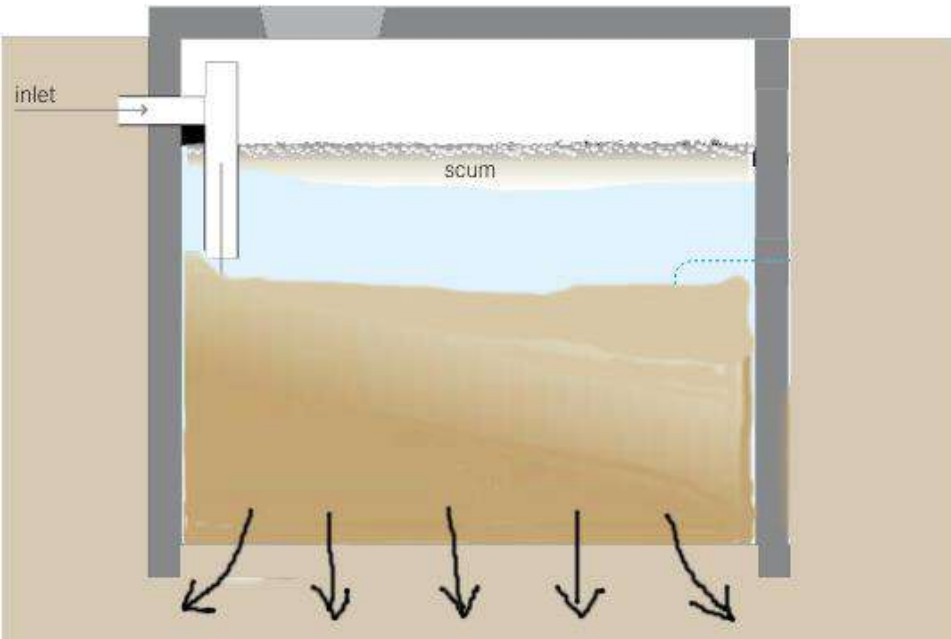
Desludging required when pit fills
But better do it every 5-6 years

Step 1: Know your Pits – Septic Tank



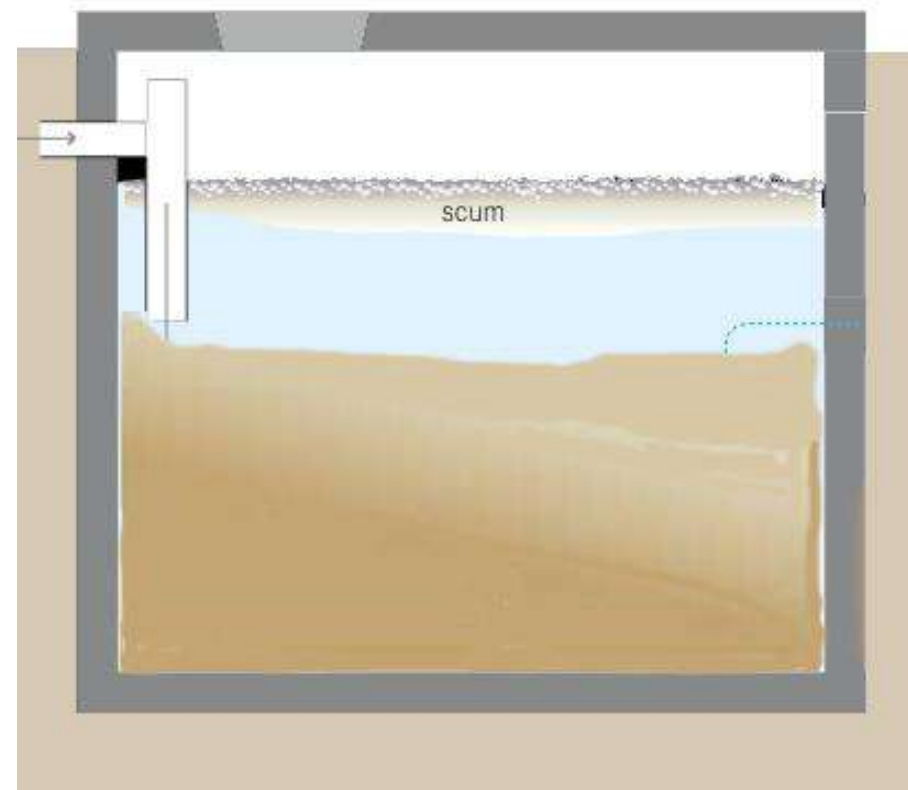
Desludging required every 2.5 – 3 years

Step 1: Know your Pits – Septic Tank?



Septic tank or single pit?

Holding tank



Step 3: Pick your Tools



which causes the actual desludging operation to be much more difficult than it can be.

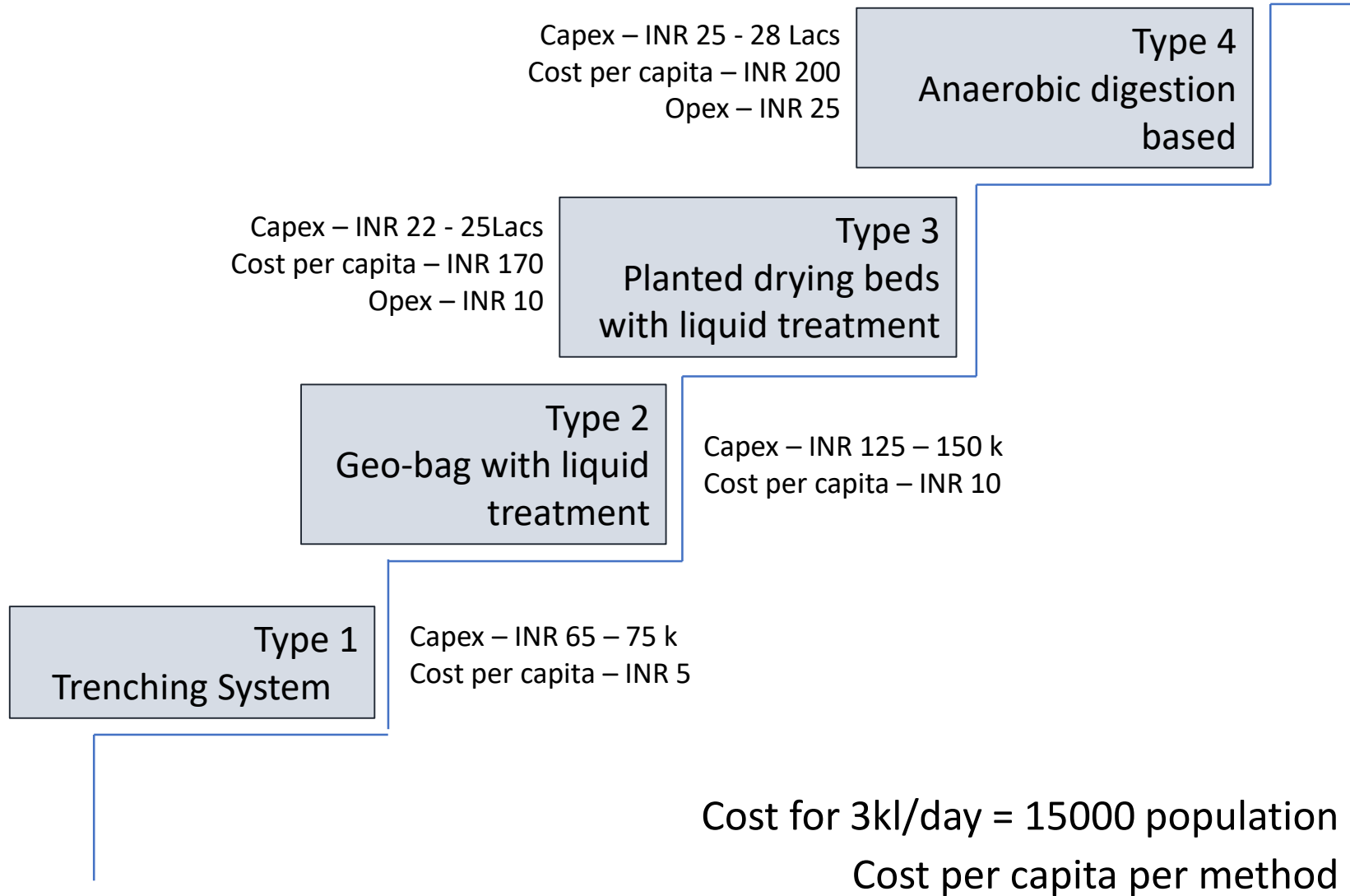
Step 3: Pick your Tools

Emptying and Transport of sludge

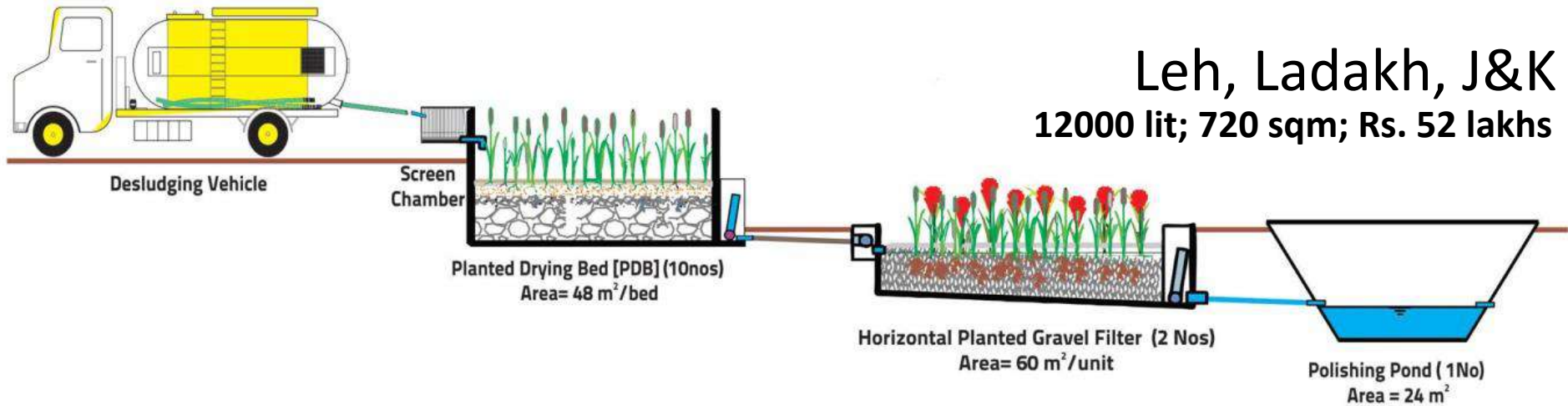


	Gulper	Pump and tanks	Vacuum Truck
Ease of use	Low	Medium	High
Thick sludge	High	Medium	High
Accessibility	High	High (50m)	Medium
Capital cost	~ Rs. 20,000	~ Rs. 1 lakh	Rs. 7 – 15 lakhs
Opex	Low	Medium	High

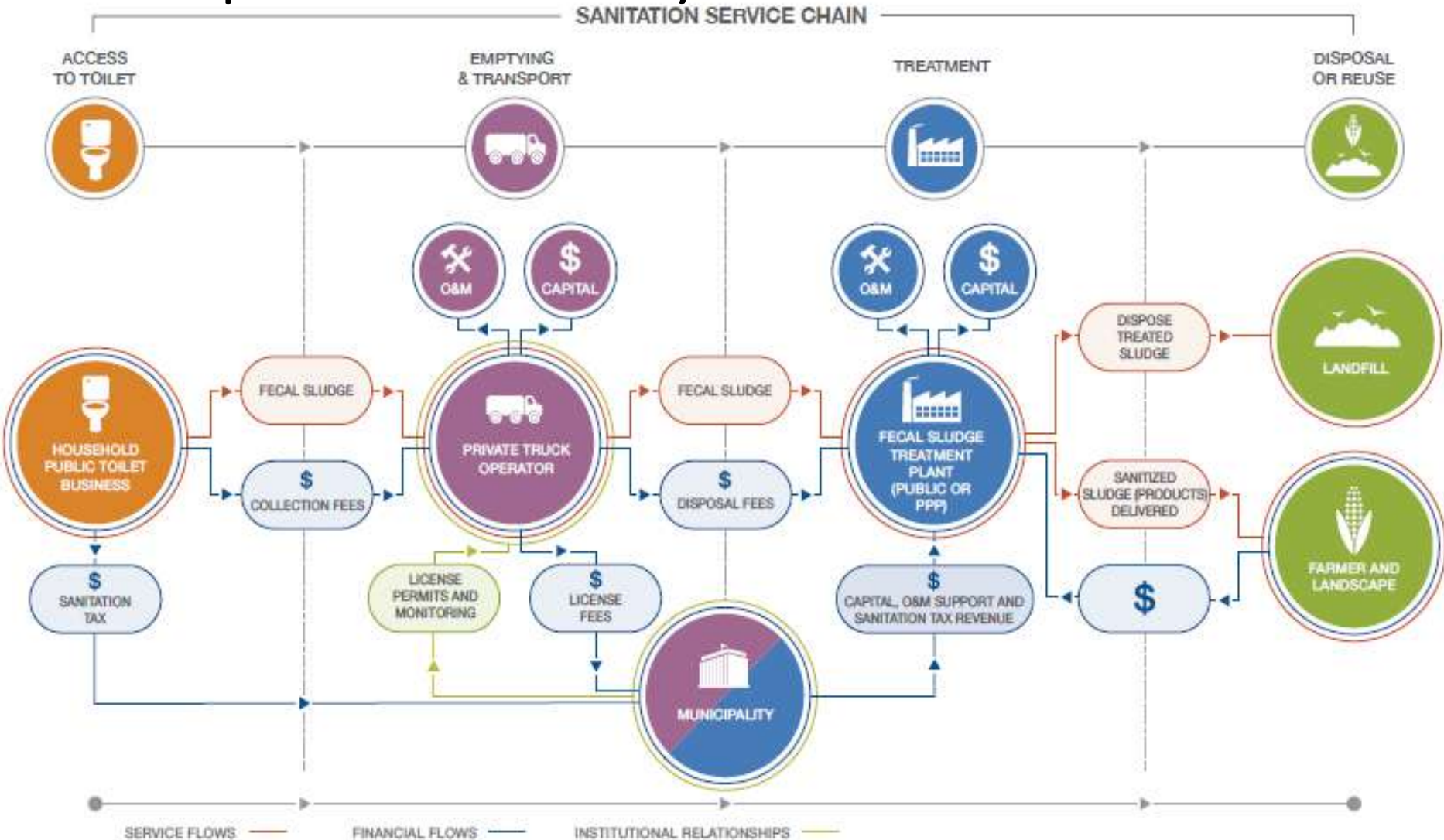
Step 3: Treatment Methods – Cost and complexity



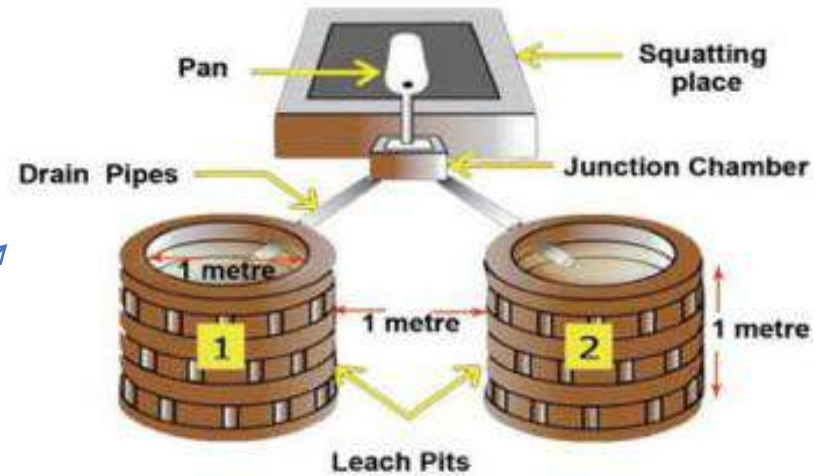
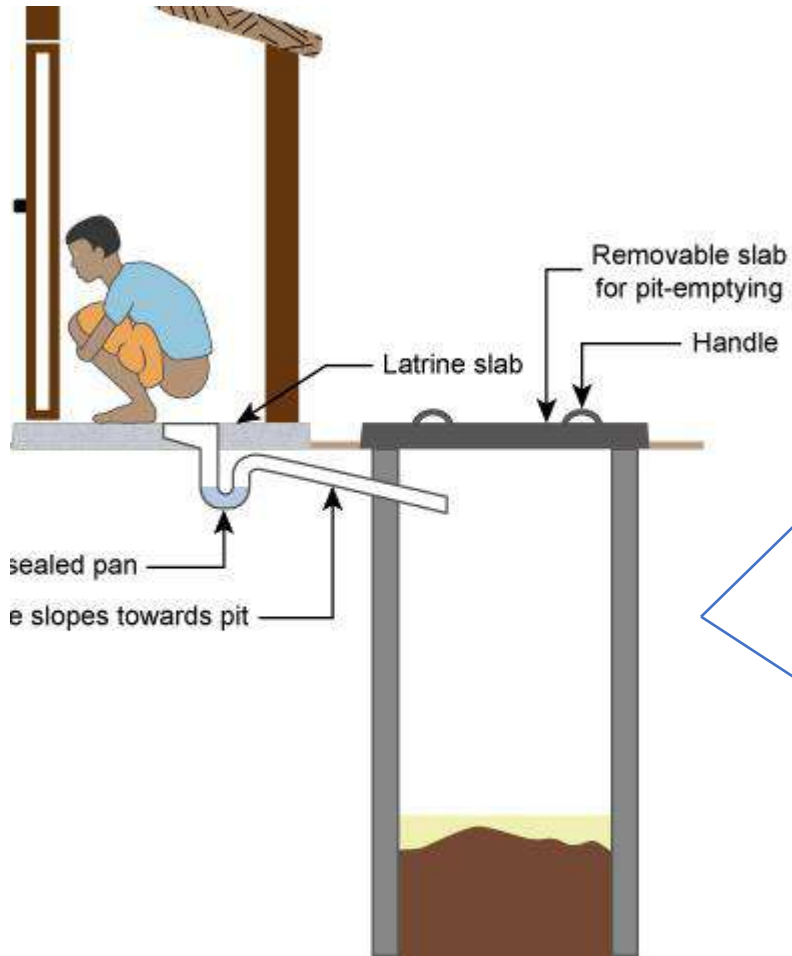
Step 3: Pick your Tools



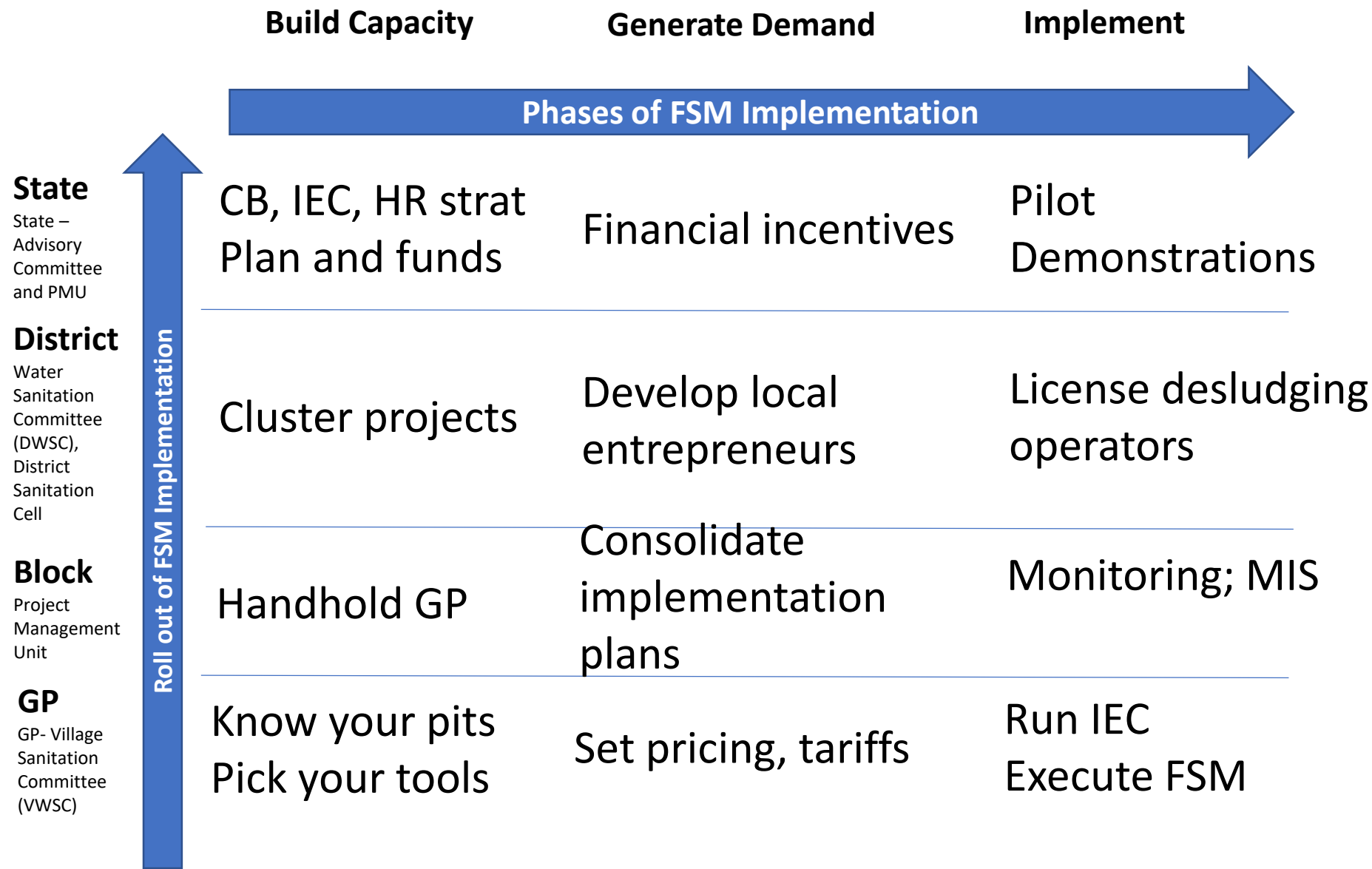
Step 4: Choose your FSM Model



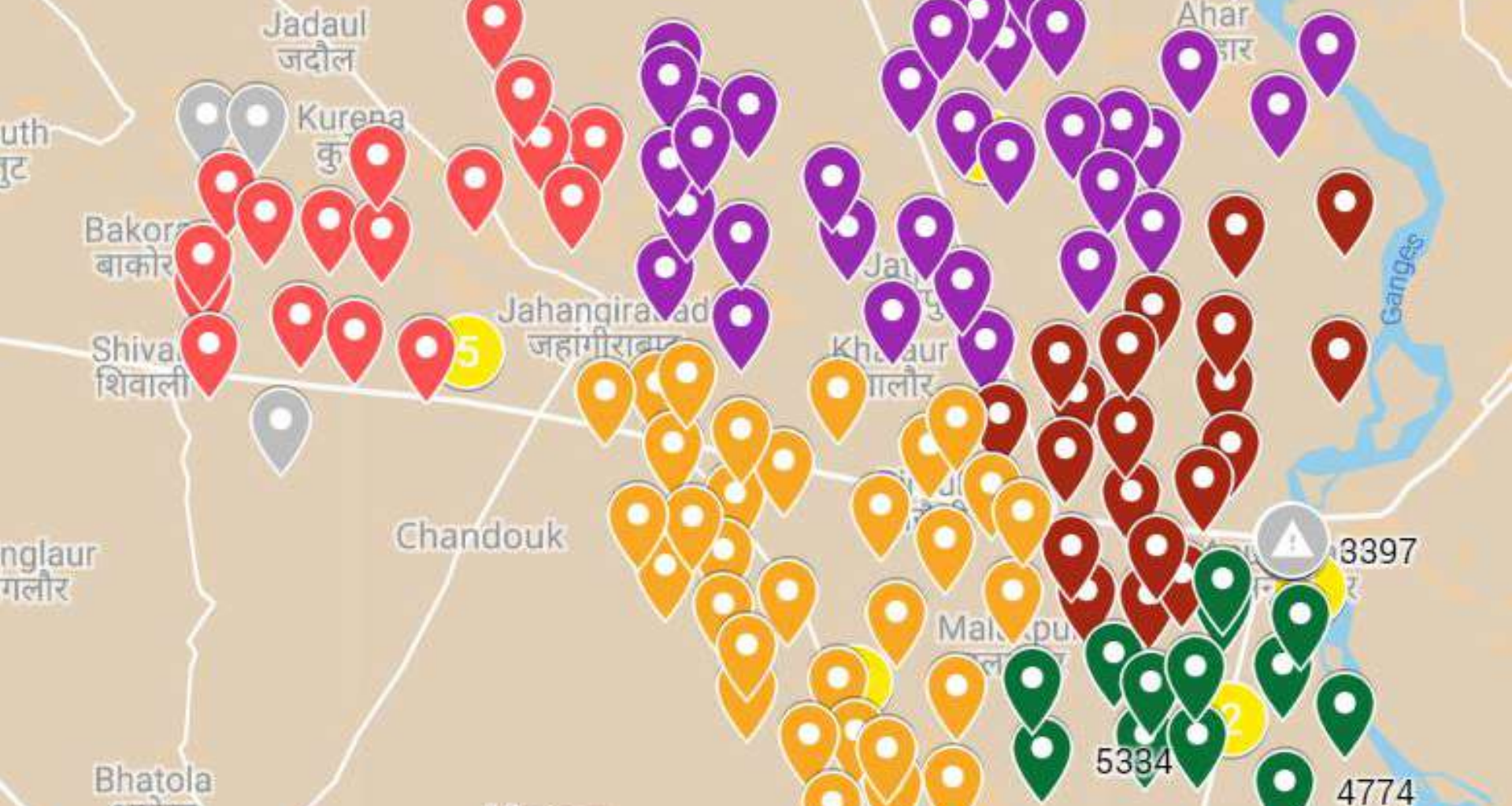
Step 2: Fix your pits!!



Step 5: Get to work!

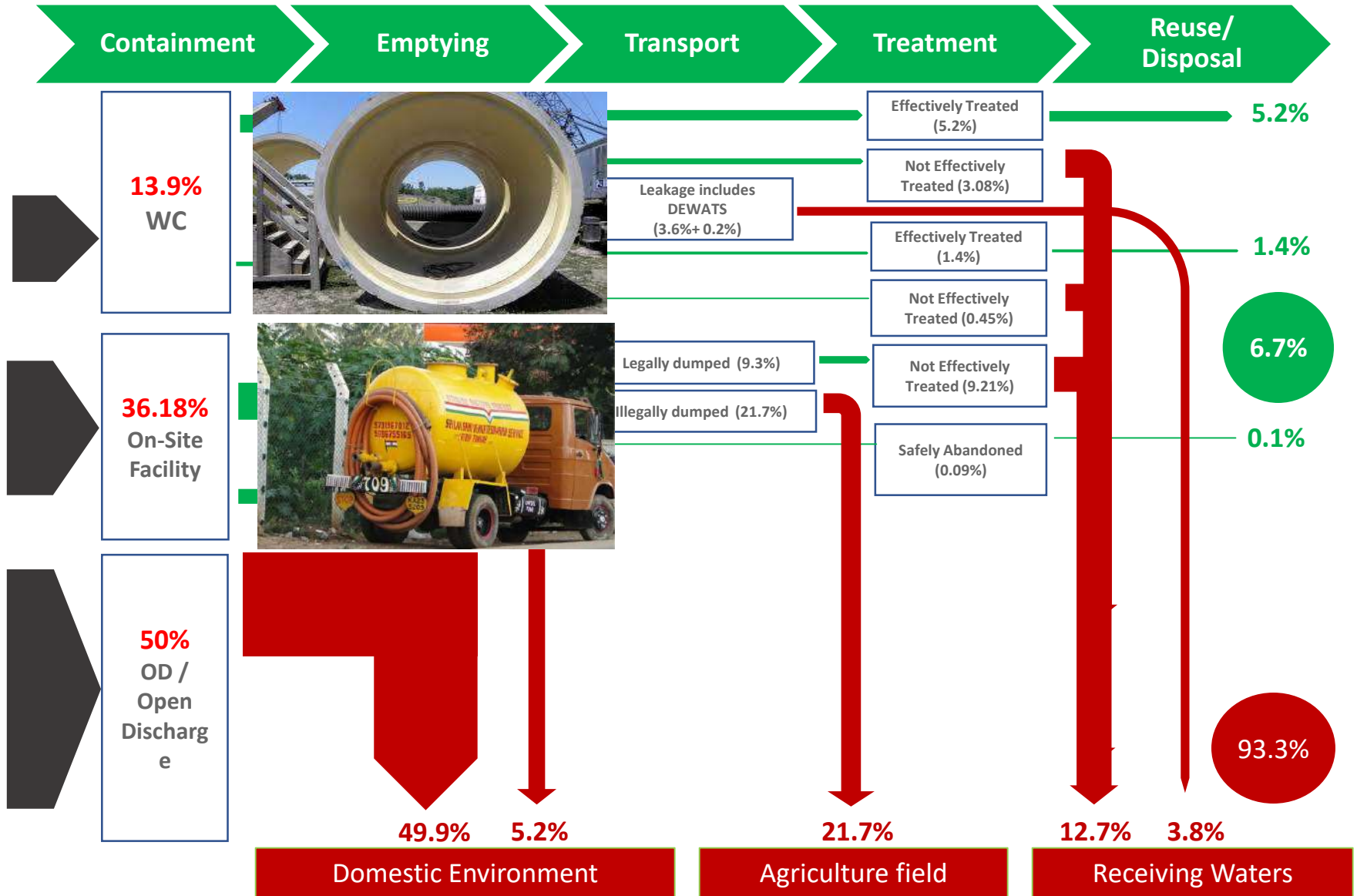


FSM Pilot Cluster - Bulandshahr, UP



- All villages within 10km or 1 hour driving distance of disposal point
- 3 Existing STPs and 6 proposed FSTPs

Shit Flow Diagram : India



ANY QUESTIONS??

THANK YOU