Odisha’s Journey in FSSM

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Five Year Report Card: Odisha

**Year 2015 – The Trigger for action**
River Pollution Abatement Study (2014) found 9 major rivers were polluted by untreated faecal waste from 30 towns

**Before 2015**

- Only 40% of the population had access to mechanized emptying
- 2% of wastewater was treated

**Status in 2019**

- 90% of the urban population has access to mechanized emptying
- 70% has access to interim disposal (DRE)
- >50% has access to treatment through STPs, SeTPs
- Strong enabling environment: policy, strategy, guideline and regulation, institutional strengthening and robust community engagement
Key stakeholders implementing FSSM

- **Odisha govt H&UD Dept.**
- **ULBs**
- **Parastatal - OWSSB**
- **TSU-EY, CPR, PA, CSE**

**Major interventions**

- **2015** – 9 SeTPs in AMRUT Towns proposed
- **2016** – 86 new cesspool trucks procured
- **2017** – Sanitation Policy and Strategy published
- **2018** – 6 SeTPs commissioned
- **2018** – 80 low cost safe disposal solutions (DRE) implemented
- **2019** – 26 new SeTPs planned
- State Sanitation Directorate for Non-sewered Sanitation planned
Septage Plants in AMRUT Towns

Population of Odisha: 46 Million
Population in urban areas: 6.88 Million (15%)
Treatment Process: Solids separation + DEWATS

- Manure Nutrient reuse:
  - Drying time: 2 weeks
  - Mass: 7203 Kg/week
  - Mass: 5042 Kg/week
  - Treated effluent: 77.5 m³/d

- Settling-thickening Tank
  - Sludge retention time (SRT): 7 days

- Anaerobic Baffled Reactor
  - AS HRT: 7.3 hr
  - ABR HRT: 32.4 hr
  - AF HRT: 18.4 hr
  - COD: 3829 mg/l
  - BOD: 1532 mg/l

- Planted Horz. Gravel Filter
  - HRT: 3.7 days
  - COD: 288 mg/l
  - BOD: 70 mg/l

- Maturation Pond
  - HRT: 1 day
  - COD: 57 mg/l
  - BOD: 10 mg/l

- Sludge Drying Bed
  - Drying time: 2 weeks
  - Mass: 5042 Kg/week

- Volume: 77.5 m³
Financial flows along Service Chain

Access to Toilet → Emptying & Transport → Treatment → Disposal/reuse

Household → Cesspool Operator → Plant Operator → Farm/Landscape

- Emptying fee
- Incentive for Toilet
- Sanitation Tax
- Fee for lease of Cesspool vehicle
- O&M
- Grant
- Grant

Service Flows
Financial Flows
How are the Policies, Strategies and Regulation enforced?

► Created institutional structures from the grass-root to top level in line with Odisha Urban Sanitation Strategy 2017:
  ► Ward Sanitation Committees, City Sanitation Cells and City Sanitation Task Force
► Institutions empowered:
  ► Clear Terms of Reference with specific roles and responsibilities
  ► Given powers to penalize for contraventions.
  ► 224 officials trained for implementation of FSSM, operational guidelines, SOP for cesspool vehicle and treatment operations
► Coordination among departments: PHEO, transport, traffic and police.
  ► Organised sensitization meeting with traffic and RTO in Bhubaneshwar on FSSM regulation for enforcement
► IEC for citizens.
  ► Campaigns on going through 360 degree approach for IEC and BCC
Setting Standards and creating enabling Framework

- **SeTPs adhere to the norms prescribed by CPCB and CPHEEO**
  - Currently, there are no standards for bio-solids in the country
  - For pathogen removal: sun drying and co-composting with refuse from the lawns.
  - Dried sludge is land filled near SeTP site

- **Providing supporting ecosystem**
  - Outsourcing of operation of ULB Cesspool vehicles
  - Registration of private cesspool vehicles
  - 90% urban population has access to mechanized emptying
    - 270 cesspool emptier vehicles in ULBs functional.
    - improving mechanised emptying
    - double booster pumps for cesspool veh.(Leh model)
    - small size cesspool vehicles (700 to 1500 Ltr capacity) proposed in two pilot ULBs
## Temporary disposal (DRE) Sites

### Disposal and Treatment

**Temporary disposal – Deep Row Entrenchments**

![Temporary disposal images]

### Land Selection Criteria for Deep Row Entrenchments

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Details</th>
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<tbody>
<tr>
<td>Not flood prone or should be above recorded flood level</td>
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<tr>
<td>Not water-logged</td>
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<tr>
<td>Low water table</td>
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<td>Soil type – should be porous and allow soak away</td>
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<td>Reasonably flat</td>
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<td>Sufficient buffer distance to habitable properties (200 m minimum)</td>
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<tr>
<td>Not close to or upstream of water intake, well, exposed aquifer</td>
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<tr>
<td>use for agriculture purposes, downstream (of aquifer)</td>
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<tr>
<td>Accessible by vehicles (road strength, width, bridges, headroom, slope)</td>
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<tr>
<td>Tanker movement should not cause nuisance to neighborhood</td>
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<tr>
<td>Compatible to adjacent and neighboring properties usage</td>
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<td>Close enough to allow logistics of sludge transportation</td>
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Thank You