

Processes and Challenges of Faecal Sludge Management in Odisha, India

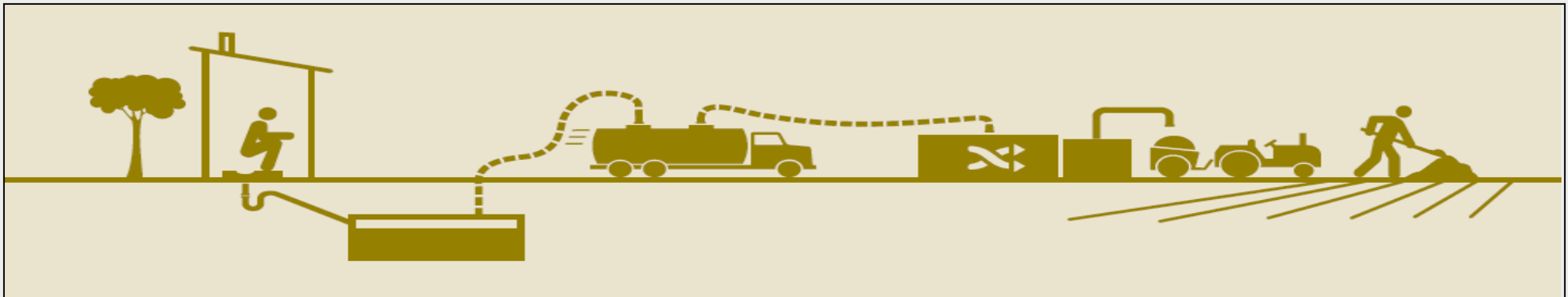
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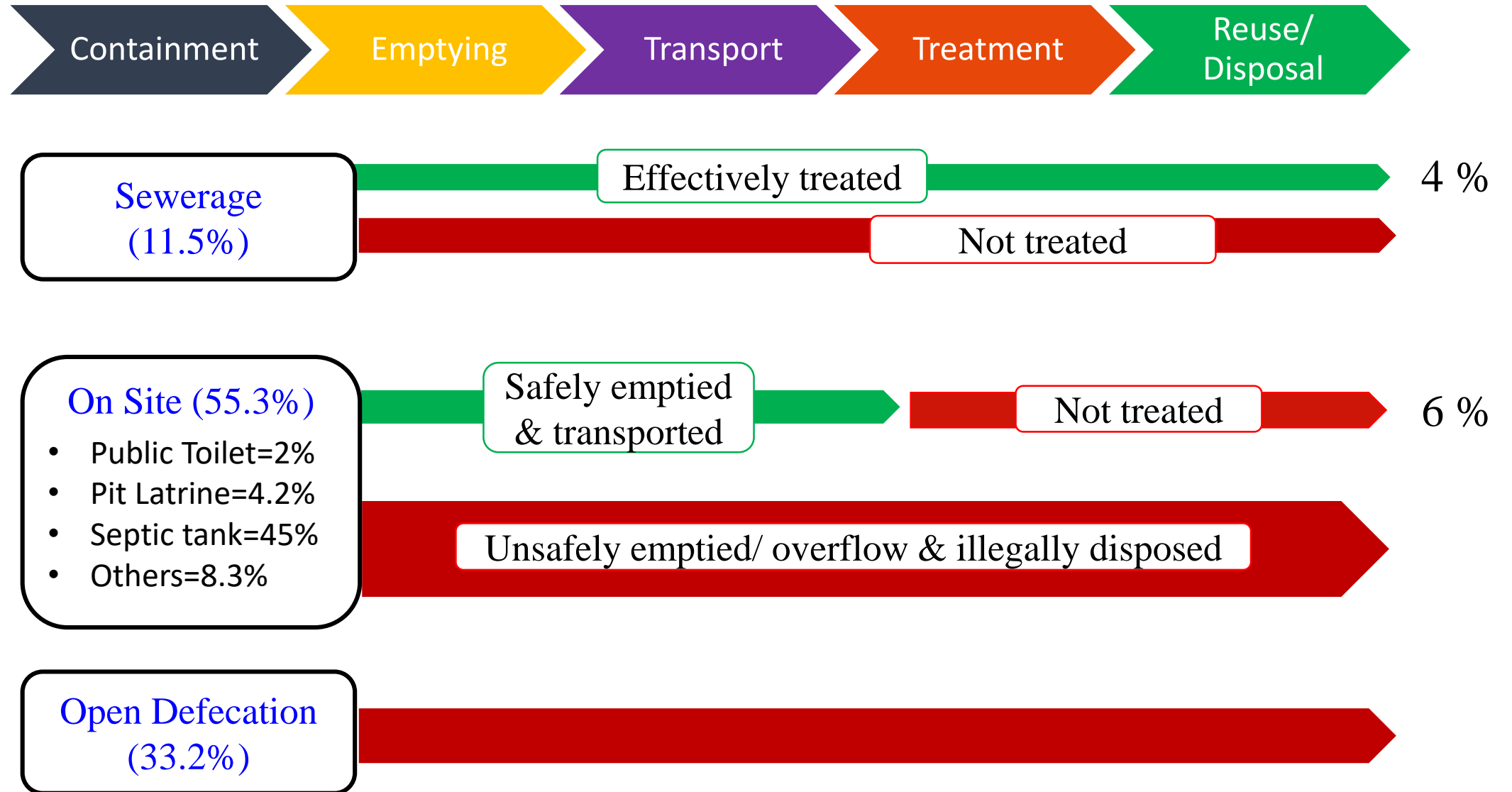
30 August 2017

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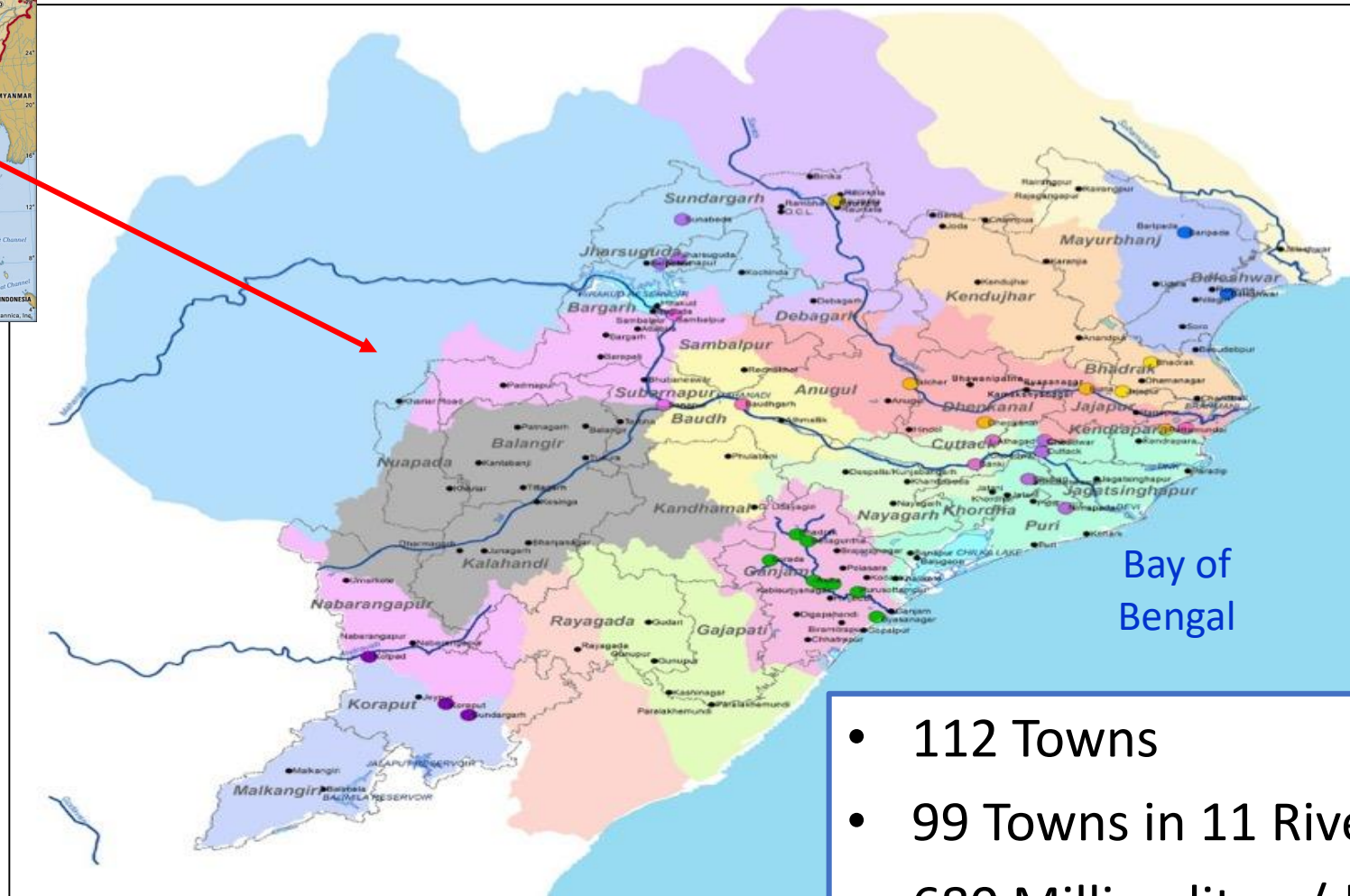
- Sanitation service in urban Odisha
- Faecal Sludge Management in Odisha
- Institutional & financial arrangements for FSM
- Odisha urban sanitation policy
- Key challenges in FSM implementation



Sanitation in Urban Odisha

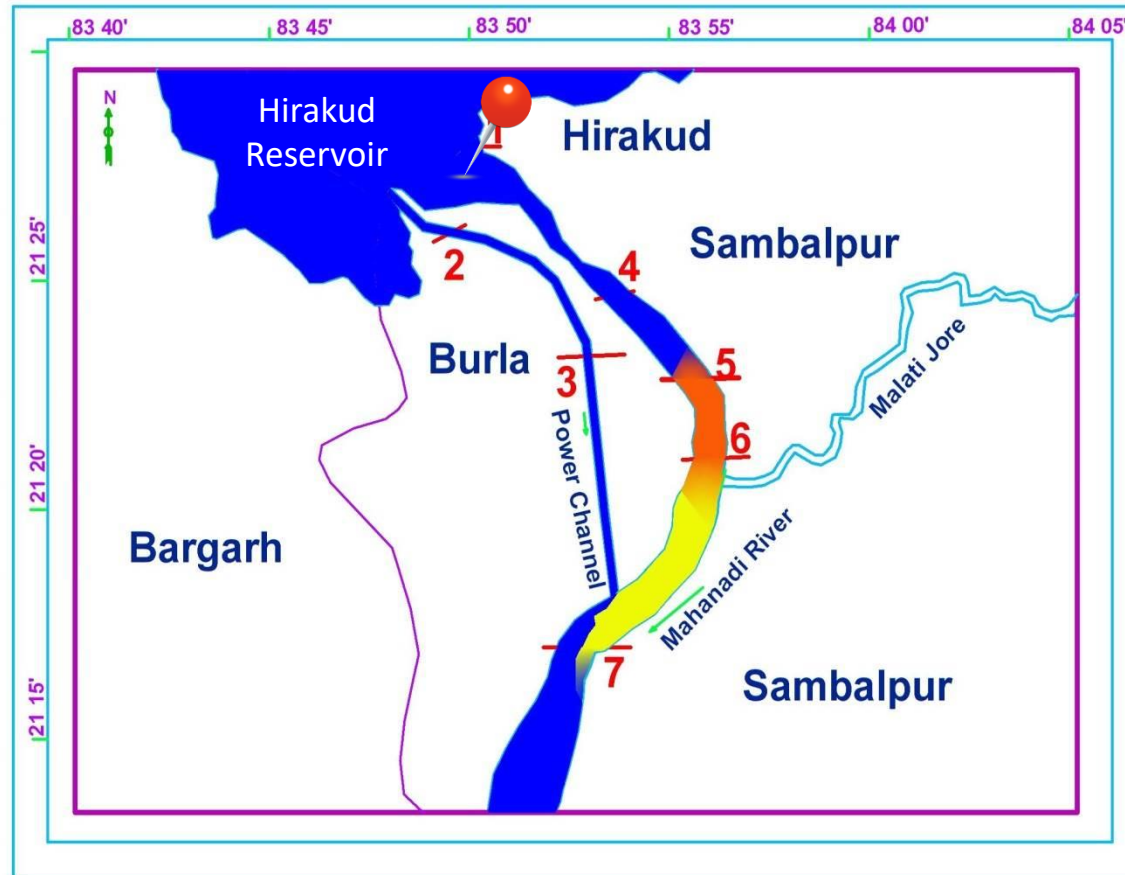


Impact on Odisha's River health



- 112 Towns
- 99 Towns in 11 River Basins
- 680 Million litres/day domestic wastewater discharged untreated

Polluted Stretch of Mahanadi River along Burla, Hirakud and Sambalpur towns



Legends

— District Boundary

Monitoring Stations

1. Hirakud
2. Power Channel U/s
3. Power Channel D/s
4. Sambalpur U/s
5. Sambalpur D/s
6. Sambalpur FD/s at Shankarmath
7. Sambalpur FFD/s at Huma

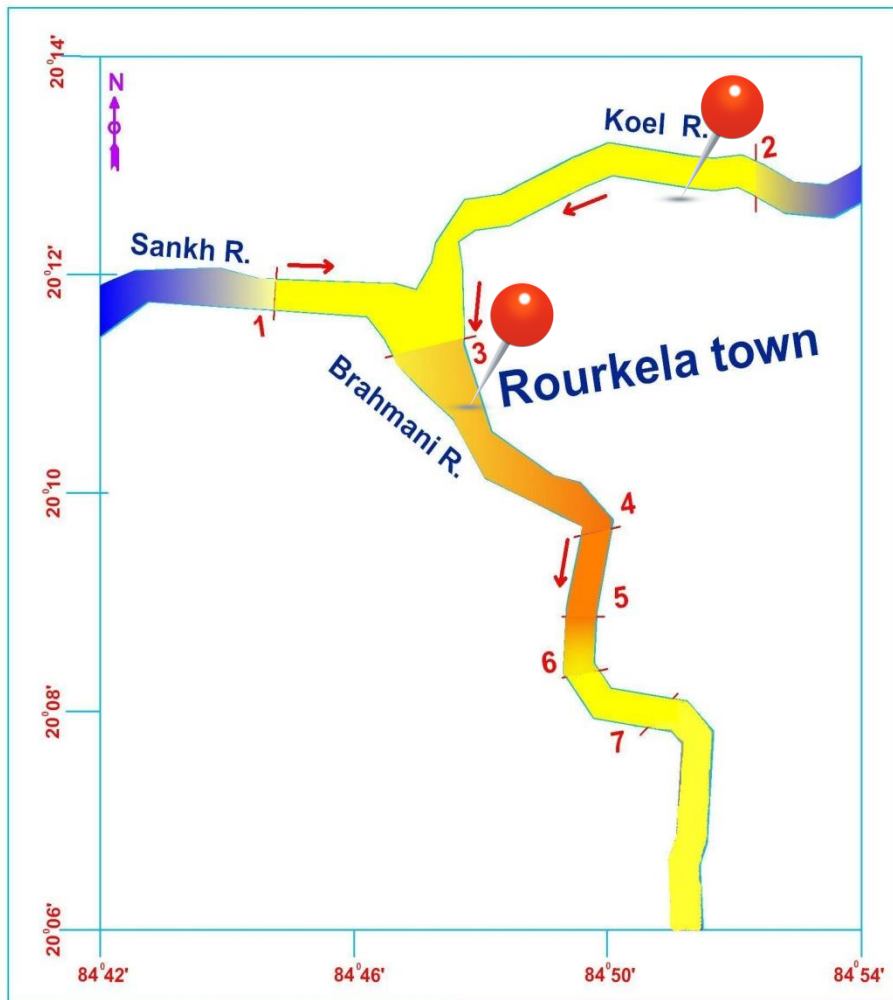
■ Conform to DBU Class C

■ Does not conform to DBU Class C w.r.t. BOD and TC

■ Does not conform to DBU Class C w.r.t. TC alone

● Water Supply Intake location

Polluted Stretch of Brahmani river along Rourkela town



Legends

Monitoring Locations

1. Sankh U/s
2. Koel U/s
3. Panposh U/s
4. Panposh D/s
5. Rourkela D/s
6. Rourkela FD/s at Attaghat
7. Rourkela FD/s at Biritola

→ River

- Conform to DBU Class C
- Does not conform to DBU Class C w.r.t. BOD and TC
- Does not conform to DBU Class C w.r.t. TC alone



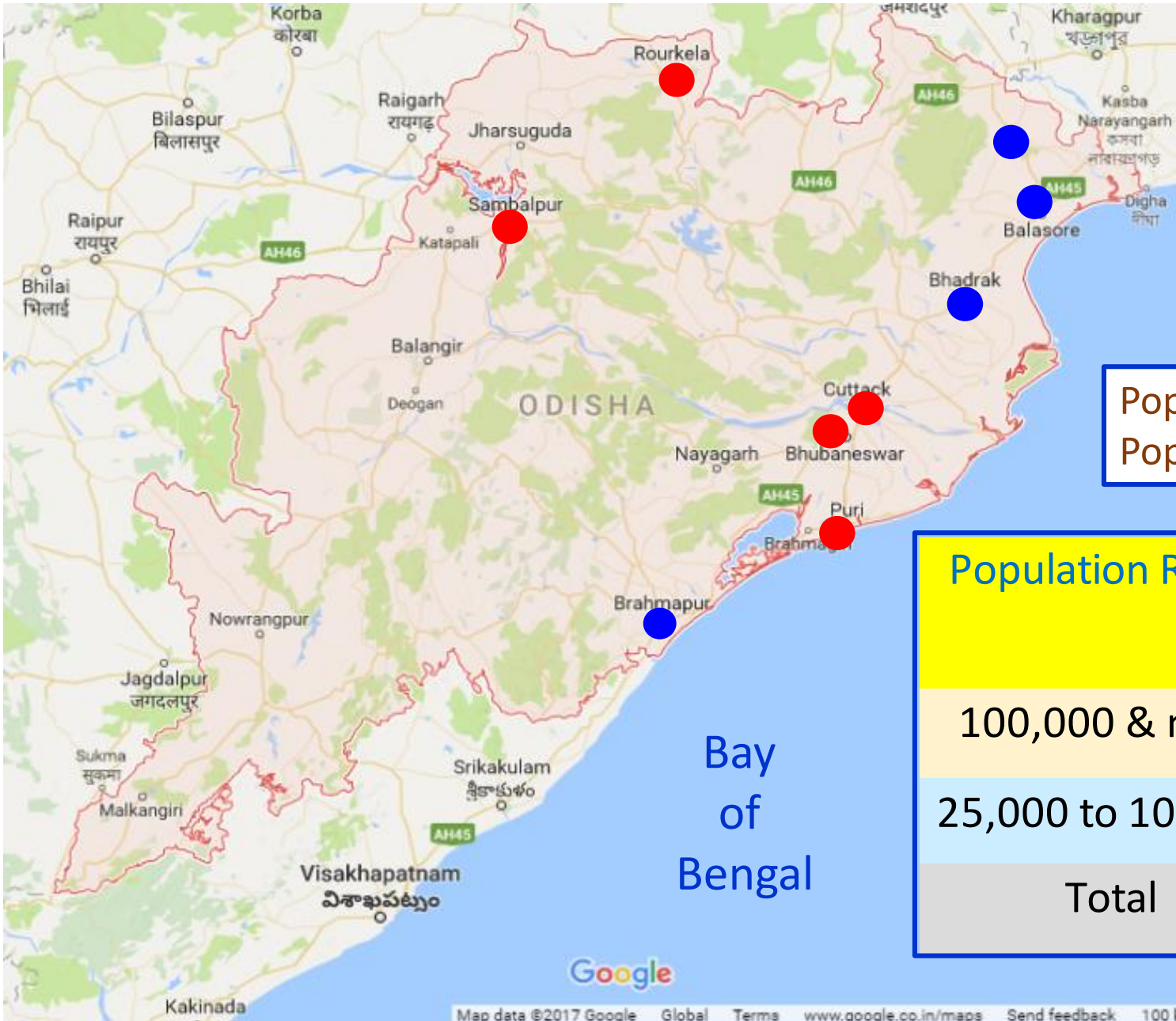
Water Supply Intake location

FSM Planning in Odisha

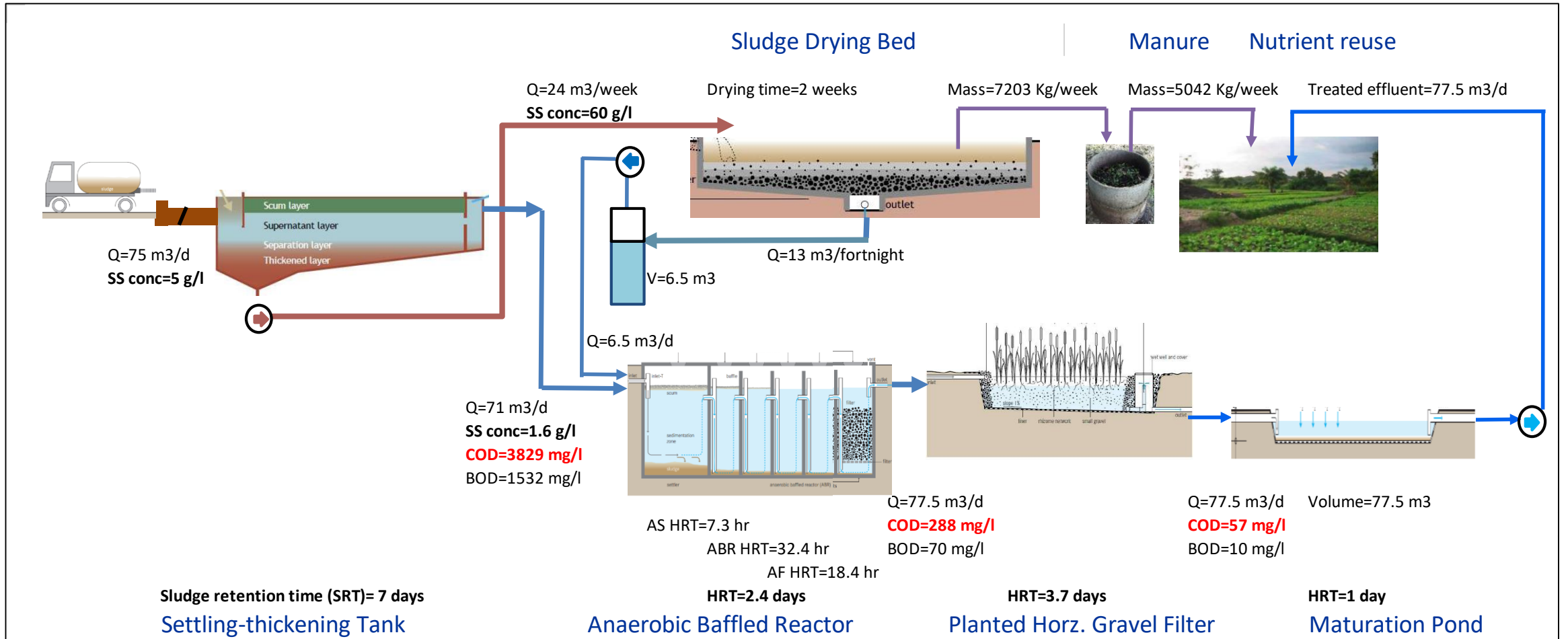
- Sewerage + FSM towns
- FSM

Population of Odisha: 46 Million
 Population in urban areas: 6.88 Million (15%)

Population Range	Number of Towns	Population (Million)	%
100,000 & more	9	3.08	45
25,000 to 100,000	103	3.80	55
Total	112	6.88	100

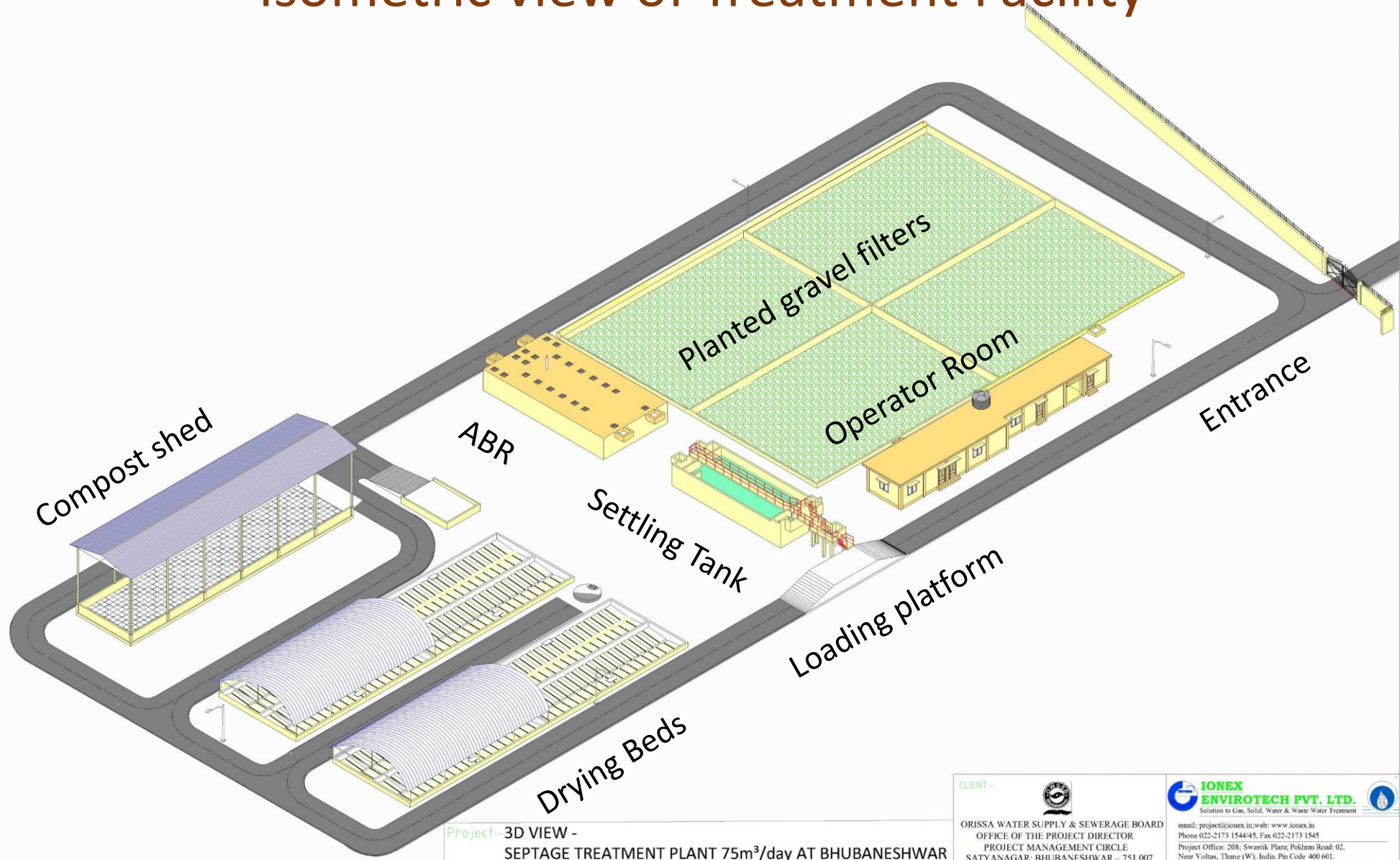


Faecal Sludge Treatment Process



Parameters	COD (mg/l)	BOD (mg/l)	SS (mg/l)	pH	NH ₄ -N (mg/l)	N-Total (mg/l)	PO ₄ -P (mg/l)	Faecal coliform (MPN/100 ml)
Raw FS in 9 towns	7250 - 14800	1400 - 2940	1850 - 6900	6.5 - 7.07	102 - 215	350 - 730	1 - 5	48000 - 80000
Standards for treated effluent	50	10	10	6.5 - 9.0	5	10	2	< 230

Isometric view of Treatment Facility



Project:- 3D VIEW -
SEPTAGE TREATMENT PLANT 75m³/day AT BHUBANESHWAR

CLIENT:-



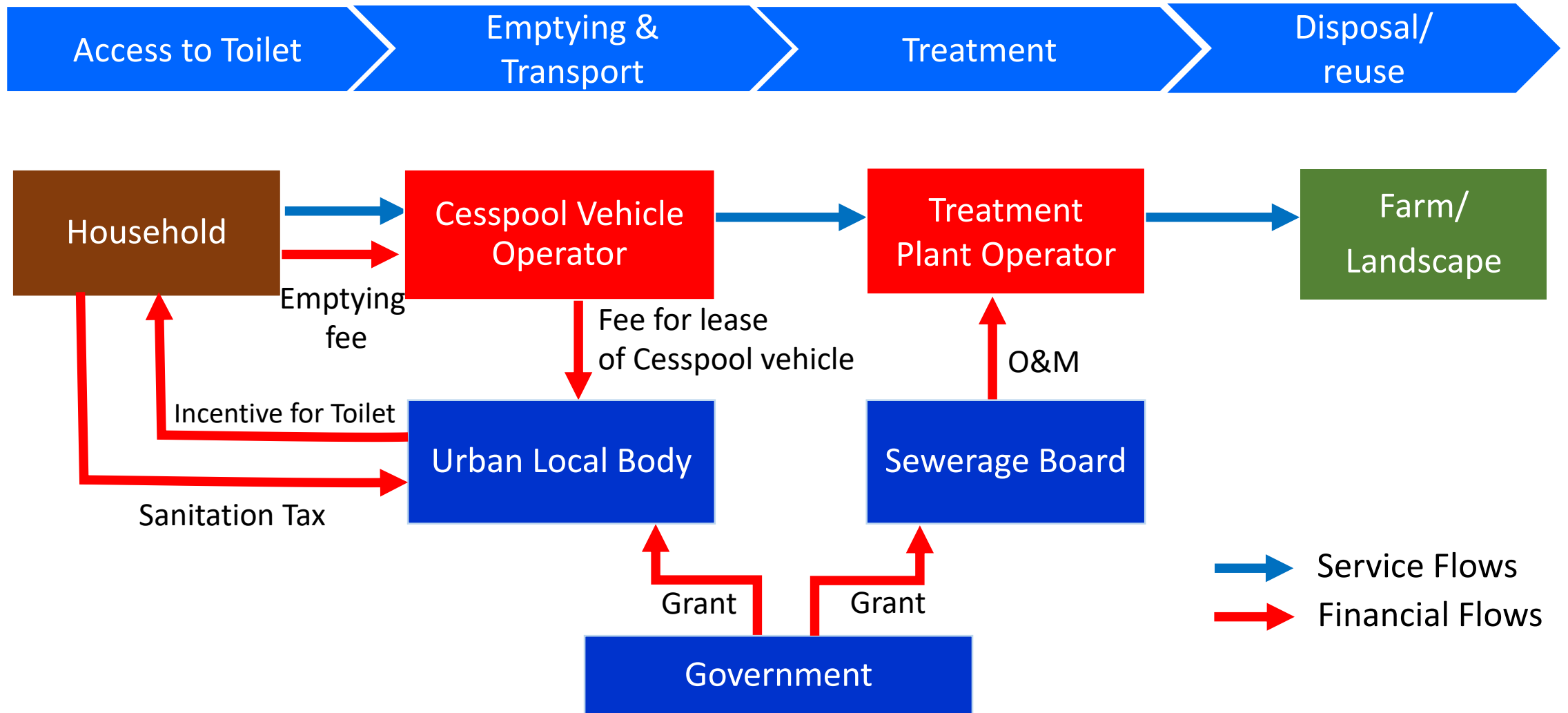
ORISSA WATER SUPPLY & SEWERAGE BOARD
OFFICE OF THE PROJECT DIRECTOR
PROJECT MANAGEMENT CIRCLE
SATYANAGAR, BHUBANESHWAR - 751 007



**IONEX
ENVIROTECH PVT. LTD.**
Solution to Gas, Solid, Water & Waste Water Treatment

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Phone 022-2173 1544/45, Fax 022-2173 1545
Project Office: 208, Swastik Plaza, Pokhran Road-02,
Near Voltas, Thane (W), India. Pin Code 400 601.

Financial flows along Service Chain



Institutional Roles and Responsibilities

Odisha Government

- Provides budgetary **support** for capex and O&M of FSTP to Sewerage Board.
- Provides **incentive** grant to ULBs for improving access to toilet (Clean India Mission)
- Develops and notifies FSM **policy, strategy and guidelines**

Urban Local Body

- Transfers Swachh Bharat Mission (Clean India Mission) incentive to eligible beneficiaries to construct **toilets**
- Lease cesspool **trucks** for a fee
- Collects sanitation **tax**

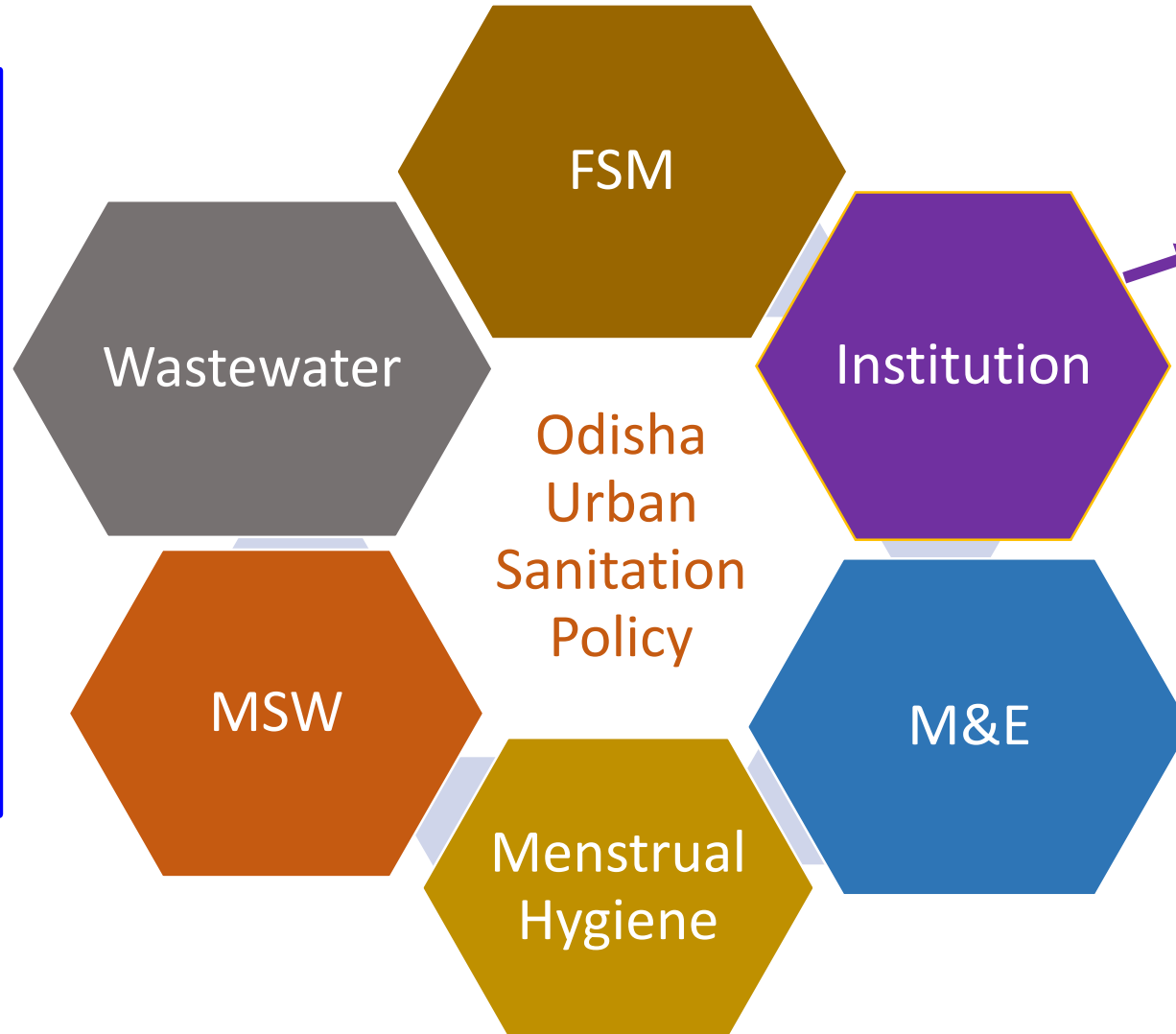
Sewerage Board

- Prepares DPRs, builds FSTPs and provides **technical advice** to Govt. and support to Urban Local Bodies
- Assists **construction** and O&M of FSTP

Elements of Odisha Urban Sanitation Policy, 2017

GOALS

- Eliminate Open defecation
- Safely manage Faecal sludge
- Cities do not pollute rivers
- Safety standards and guidelines are followed



ROLES

- Legislation
- Technology selection
- Engaging informal/private sector
- Capacity building
- Monitoring & Evaluation
- Encourage competition

Key Challenges

1. Early selection of land for treatment facility is key to the FSM programme
 - FSTP can be set up near solid waste management designated sites
 - Awareness on FSM among stakeholders led to resolution of land issue
2. Participation of private operators
 - In small ULBs, cesspool vehicle operation is not financially attractive due to fewer trips/day). Optimum number for breakeven is 4 trips/day.
 - Requires legislation, standardization of septic tanks, enforcement etc.
3. FSM requires Govt. support
 - For Capex & Opex, Capacity Development, IEC etc.

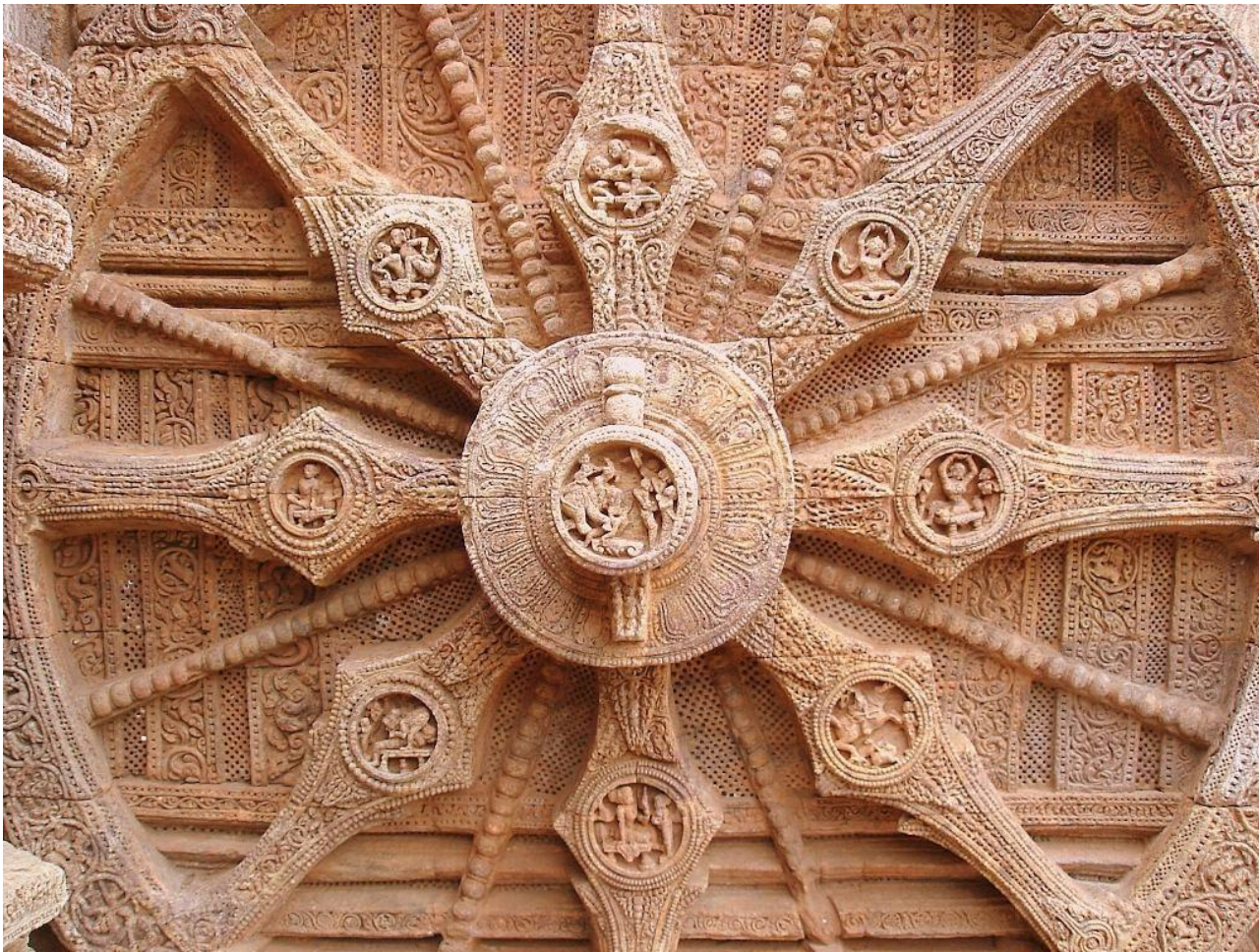


Photo: Wheel of Sun Temple, Odisha

Thank You

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