

SCI-FI : From Research to





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Organisation & Objective



SCALING CITY INSTITUTIONS FOR INDIA

The Scaling City Institutions for India (SCI-FI) programme aims to better understand 'governance scale' in Indian cities in tandem with 'sector specific socio-economic scales'. Through research, the programme aims to inform stakeholders, including the three tiers of the government, to develop better informed policies and programmes enabling improved governance and service delivery. It has two key thematic focus in areas of Land, Housing and Planning, and Water and Sanitation. The SCI-FI programme is nested at the Centre for Policy Research (CPR) since 2013.

Focus Areas



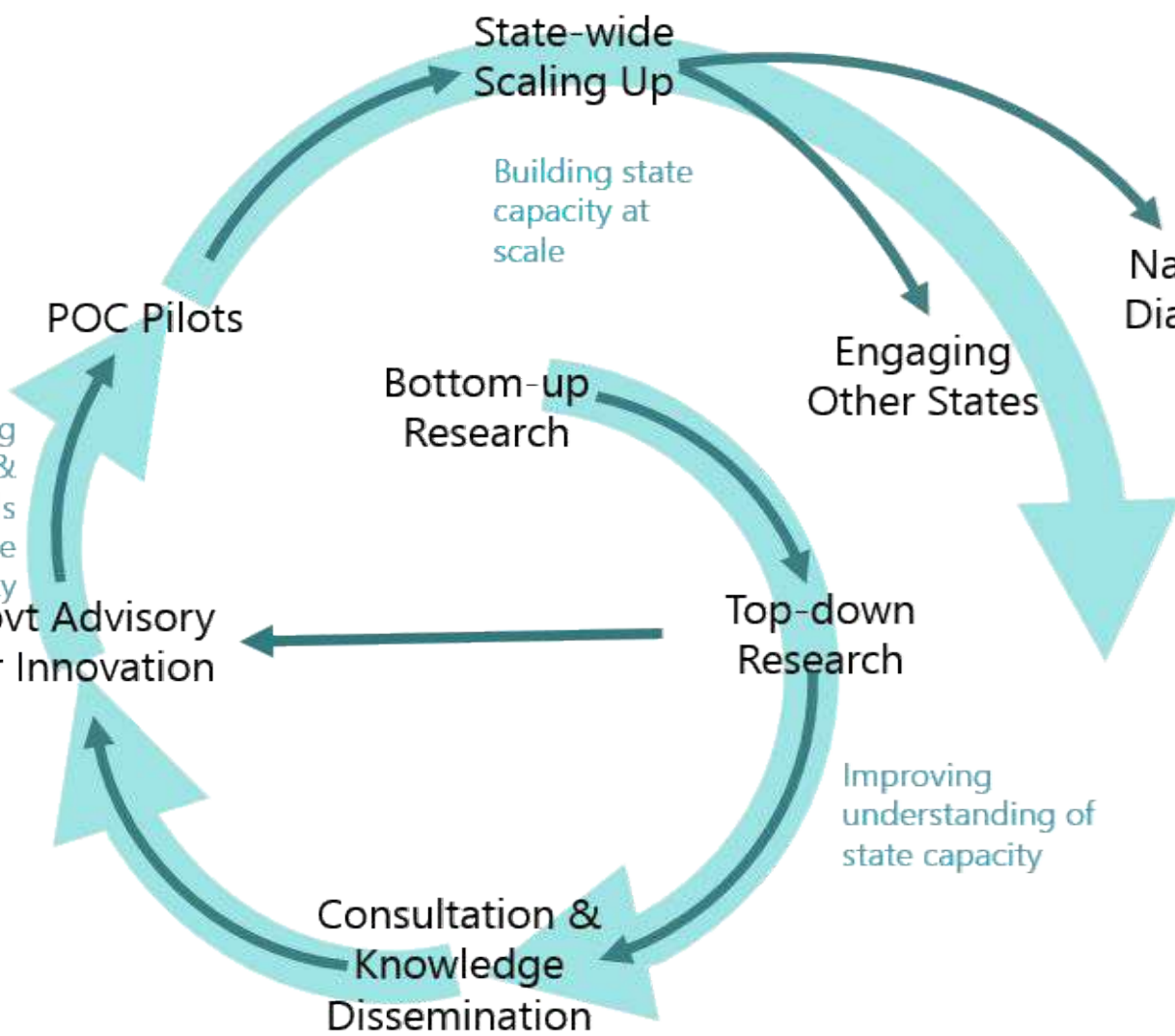
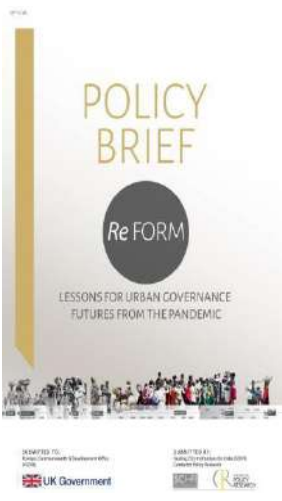
Land, Housing, and Planning



Water and Sanitation



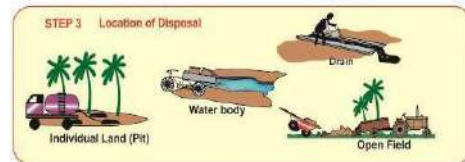
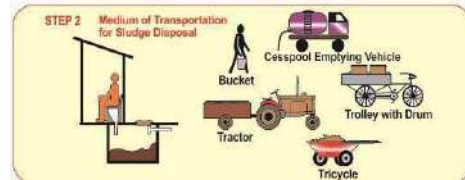
Theory of Change



thequint.com
Securing Property Rights for Slum Dwellers: The Successes From Odisha



Research towards building the case for alternative approaches to city-wide sanitation by-



Pursuing alternate sustainable sanitation technologies & service provision models with special focus on the poor

Analysing the reform appetite & capacity at the state & local level

Inform policy & impact the design & guidelines of state & central sanitation programmes & investments

Research towards strengthening the case for alternative approaches to city-wide sanitation by-



Investigating key institutional issues for adoption, financing, regulation & scale-up of non-sewered urban sanitation solutions

Understanding economic, socio-cultural, caste & gender issues in urban sanitation

Developing evidence base around the importance of safe management of human waste in urban areas

STATE PARTNERSHIPS @ SCI-FI WASH

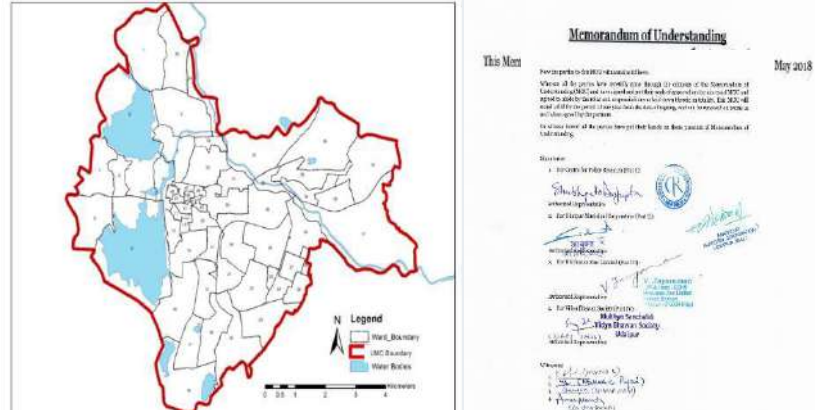
ODISHA, PROJECT NIRMAL



On request of the State Secretary, Housing & Urban Development Department, Government of Odisha for demonstration of sustainable sanitation service delivery for small & medium towns – Angul & Dhenkanal

Increasing coverage for households & institutions through enabling institutional & financial arrangements & alternative service delivery models

UDAIPUR



SCI FI, HZL, VBS, & Udaipur Municipal Corporation, Rajasthan, signed a MoU to institute a faecal sludge management system in the city

Designing & implementing inclusive, participatory & sustainable faecal sludge & septage management strategies & plans

ODISHA, URBAN-RURAL CONVERGENCE



Successful pilot in Dhenkanal leading to state-wide scaling-up; LoU signed between SCIFI, UNICEF, & Panchayati Raj & Drinking Water Department, & Housing & Urban Development Department, Government of Odisha

Leveraging available urban FSTP facility to safely manage faecal sludge generated in the neighboring GPs

SCI-FI @ WASH: Sanitation 2013-19 | OUTCOMES

1. Mainstreaming FSM in state & national level sanitation policy ecosystem

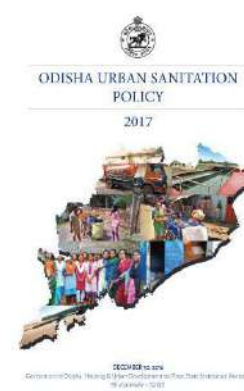
- a) Building consensus of policy makers on FSM as against underground sewerage alone, esp for small and medium towns
 - Top-down analysis & policy notes on advantages of FSM & international city-wide FSM models
 - Focussed national discussions (Reinvent the Toilet Fair 2014, NITI Aayog & MoHUA); state level workshops & academic (CORP), public discussions (national workshops & Op-eds)
- b) Designing pilot interventions in Odisha (Project Nirmal, supplementary grant) & Udaipur (integrating FSM & sewerage including co-treatment)
- c) Lessons & insights from research & implementation feeding into national policy & advisories [SBM guidelines (2014), Urban NFSSM policy (2017), FSM toolkit (2018)]



SCI-FI @ WASH: Sanitation 2015-19 | PROJECT NIRMAL | OUTCOMES

Dhenkanal & Angul are one of the earliest smaller cities in India to have safely managed sanitation

- SCI-FI drafted the first FSM based state sanitation policy – Odisha Urban Sanitation Policy 2017 & Odisha Urban Sanitation Strategy 2017
- Dhenkanal FSTP emerged as the first FSTP in the state's small & medium towns
- Active citizen engagement during the project resulted in curbing of manual emptying practices
- Active women leadership was promoted through slum sanitation committees which had members of Self Help Groups
- Community organisation processes within Project Nirmal got institutionalized within the state policies & informed decisions regarding slum improvements & FSM
- State specific capacity building module & learnings from the project documented as a set of eight learning briefs that informed state-wide action
- Dhenkanal Municipality continues to serve as the learning lab for further innovations in non-networked sanitation, e.g., digital governance & urban-rural convergence



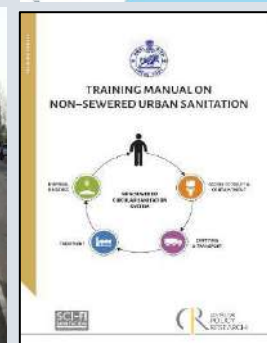
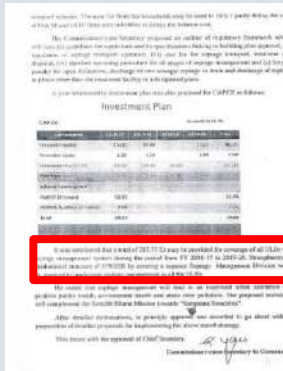
SCI-FI @ WASH: Sanitation 2013-19 | OUTCOMES

2. Creating an enabling environment for achieving sanitation related outcomes

- River Basin Pollution Abatement Strategy in Odisha based on insights from GIS-based Balasore study informed the Odisha Urban Sanitation Policy (2017)
- Capacity building of 11 (9 AMRUT towns & 2 Project Nirmal towns) ULBs & TSU strengthened on FSM through master training programmes. Supported H&UDD in developing FSM strategy for all 114 ULBs in 2016 after exposure to Malaysia workshop
- Streamlining septic tank approval process for improving on-site sanitation systems (Septic Tank Manual) for households in Udaipur Municipal Corporation
- Instituting an interim measure for sludge disposal by designing & implementing decanting station linked to sewer line in Udaipur Municipal Corporation

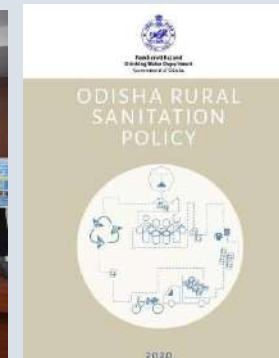
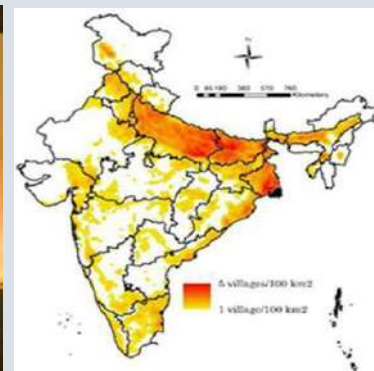
3. Strengthening FSM & institutional & accountability mechanisms

- Developing state regulations on FSTP location parameters; procurement of desludging vehicles & instituting service standards
- Fostering accountability & averting indiscriminate disposal of sludge by GIS-based monitoring system & IoT enabled infrastructure in Udaipur Municipal Corporation
- For monitoring FSM services & to aid in evidence-based decision making, Digit FSM platform with E-Gov developed & piloted in Balasore, Berhampur, and Dhenkanal



FSM SALIENCE

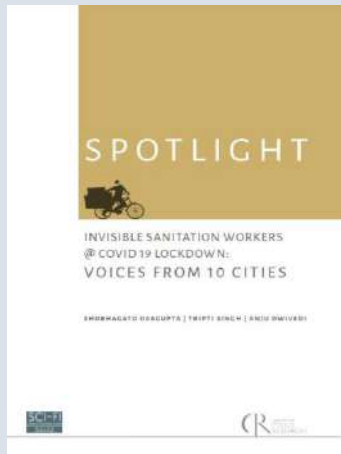
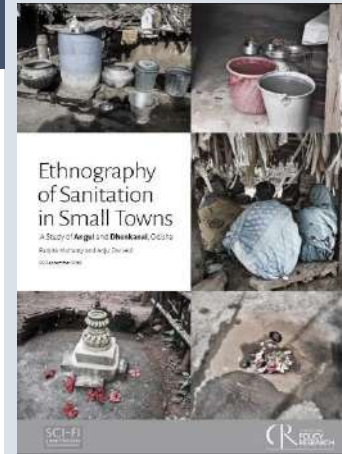
1. Building consensus on large dense villages & urban-rural convergence through FSM
 - a) Studies found traction with Mr Parameswaran Iyer, former Secretary (Swacch Bharat Mission Gramin), Ministry of Jal Shakti, who discussed the findings at FSM4, the global flagship conference on FSM
 - b) Focussed national discussions (NITI Aayog & MoHUA); state level workshops and academic (CORP), public discussions (national workshops and Op-Eds)
 - c) Developed the first state rural sanitation policy – Odisha Rural Sanitation Policy 2020
 - d) Designing a pilot project for urban-rural convergence in Dhenkanal with UNICEF
2. Studies on large dense villages fed into the urban-rural convergence model being taken up by Ms Vini Mahajan, current Secretary, Ministry of Jal Shakti for scaling-up across states



SCI-FI @ WASH: Sanitation 2017-22 | OUTCOMES

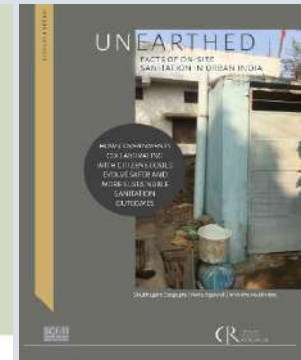
PROMOTING CWIS

1. Ethnographic study on culture & sanitation & the survey of manual emptiers in Dhenkanal & Angul enabled Odisha to formulate Garima scheme & other inclusive policies & legal interventions
2. Gender, equity, & inclusion related research is currently feeding into the conceptualisation & drafting of Odisha Urban Inclusive Sanitation Policy



CIRCULAR SANITATION ECONOMY

1. To advocate for systemic sectoral improvement, findings from research on the typology of on-site sanitation systems in urban India were discussed with national level decision makers, namely Central Public Health & Environmental Engineering Organisation, MoHUA & Bureau of Indian Standards
2. Developing national standards for sanitation technologies as a member of Bureau of Indian Standards Working Groups



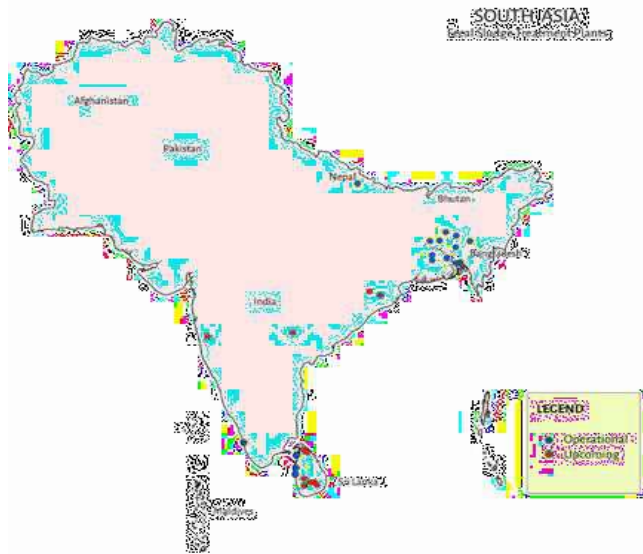
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DDIIGGIITT PPLLAATTFFOORRMM || OBJECTIVE

Understanding the current FSM Status in India

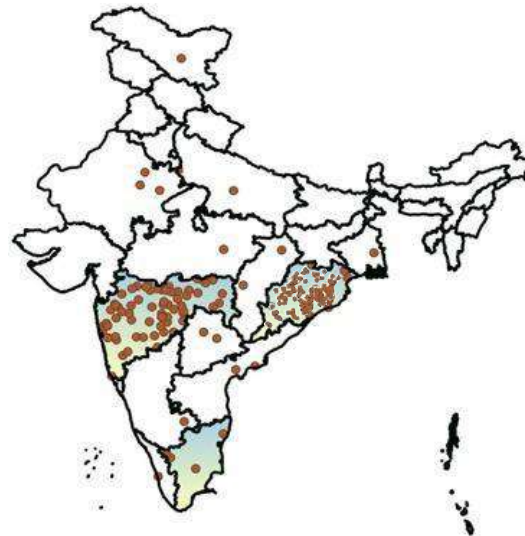
2016

Formal FSM served nearly 0% of 1.3bn



2022

Formal FSM serving about 1% of total population or ~14mn, primarily in urban areas

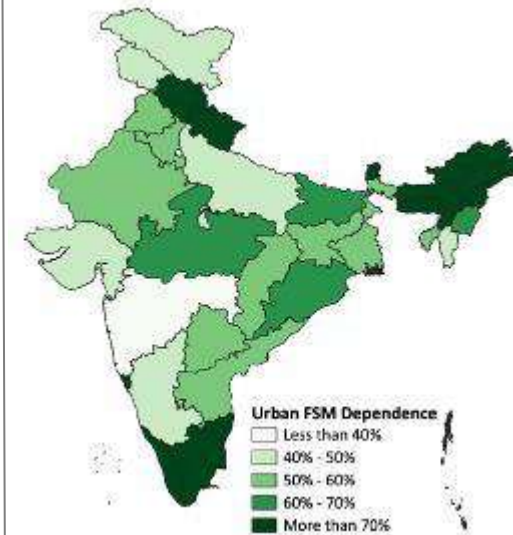


● Operational/Completed FSTPs¹

¹2022 data set for Odisha as per GoO; 2020 data set for the rest of Indian states as per information available on July 16, 2020 from national PMU

2030

While all smaller cities will continue to use FSM, states where population coverage by FSM will be higher are highlighted in green



Rural areas, especially those peripheral to ULBs and characteristically urban, will further bring up the total demand for FSM

FSM to serve sanitation needs of 52% of total urban population or ~290mn

Source: Dasgupta, S., Murali, R., George, N., & Kapur, D. (2016). Faecal Waste Management in Smaller Cities Across South Asia: Getting Right the Policy and Practice. New Delhi: CPR



Past ULB failures in O&M of urban infrastructure e.g. Sewage Treatment Plant management



FSM systems' O&M cost make up 60-75% of total; **cost control critical** esp. when costs compared to sewerage management



Data required to support **policy decisions on costs, tariffs & additional upgrading** requirements



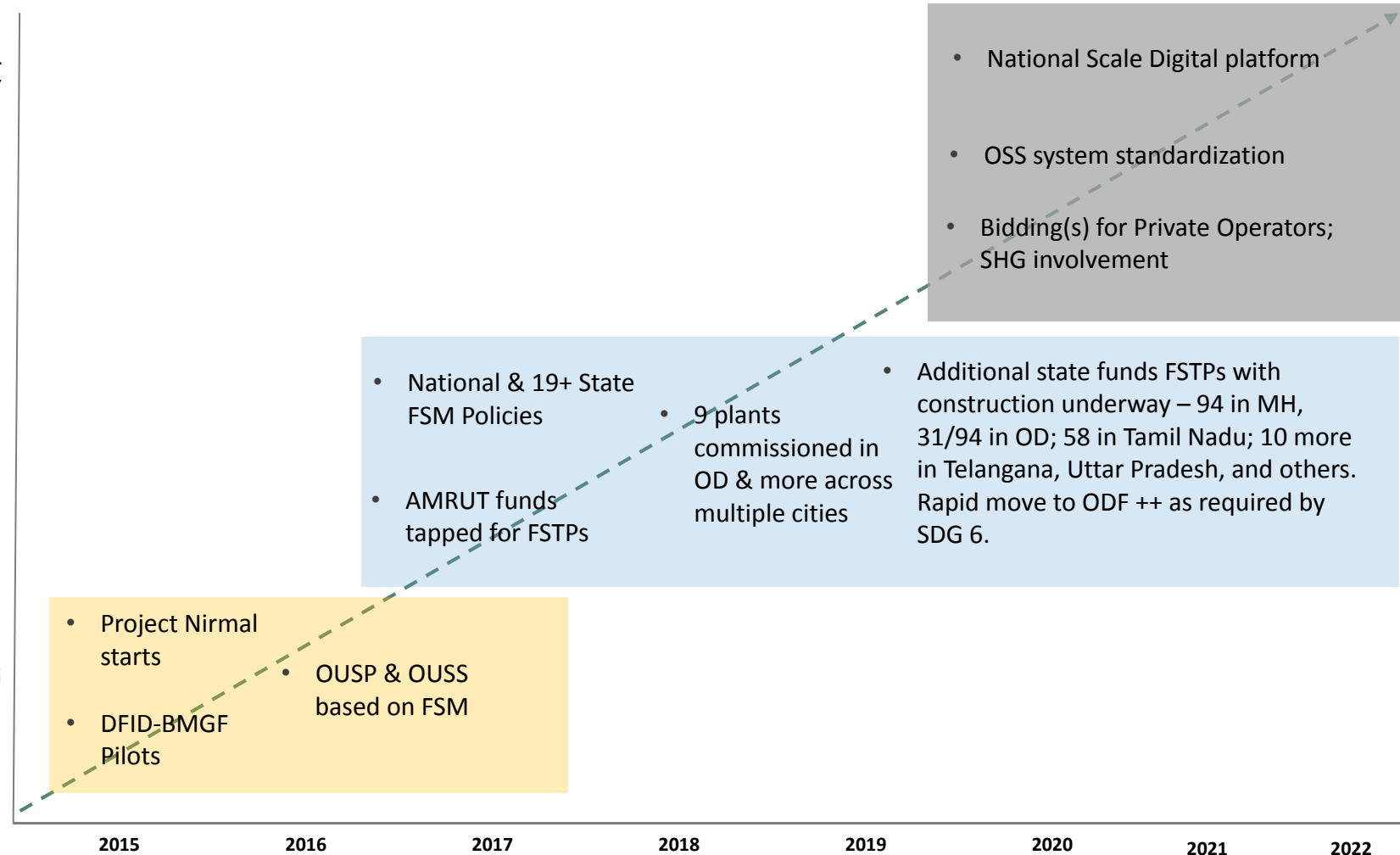
Setting & monitoring **levels of service for citizen satisfaction**

From piloting FSM infrastructure to improving FSM operations

OPERATIONAL SUSTAINABILITY

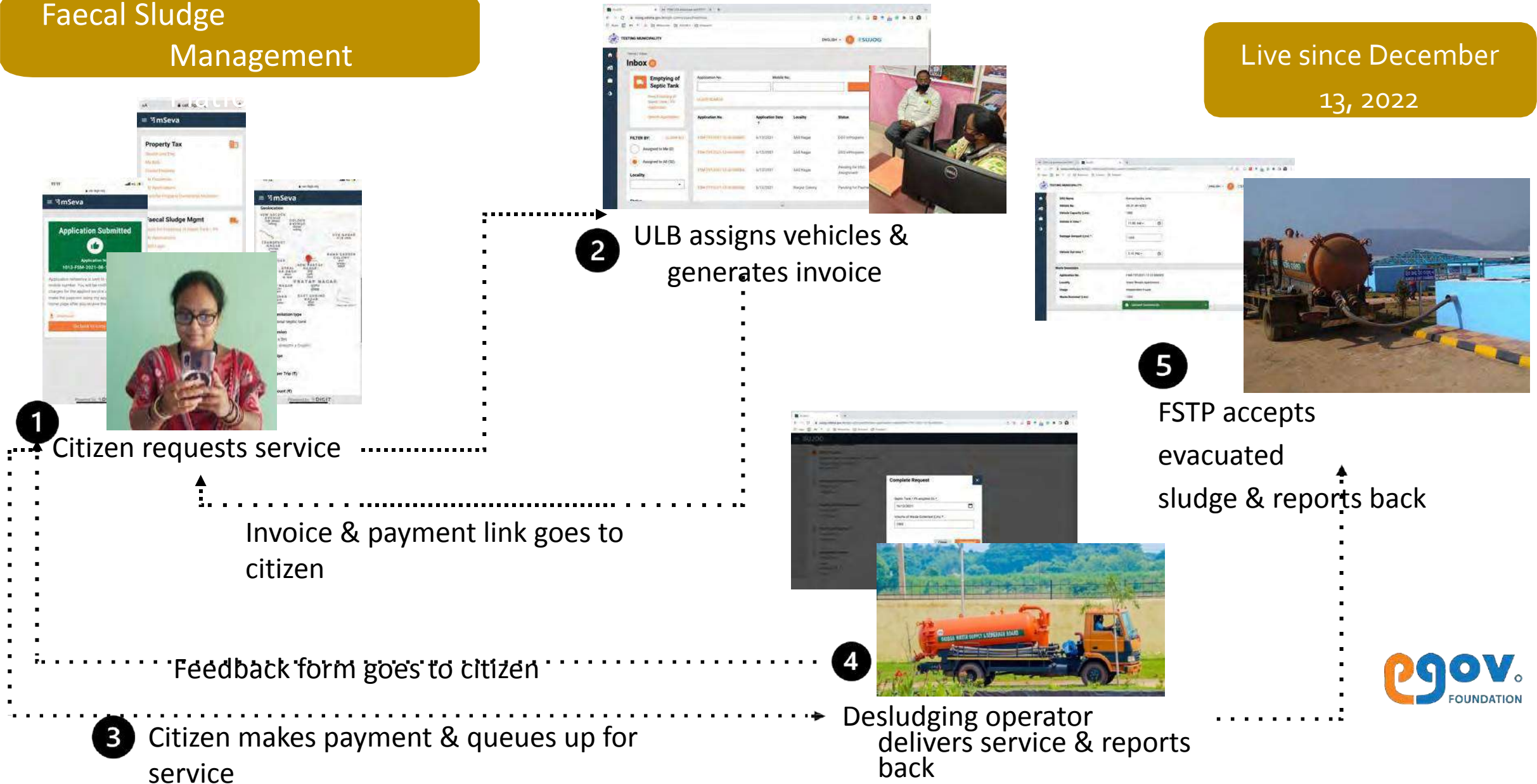
SCALE UP ACROSS STATE

FSM PILOTING



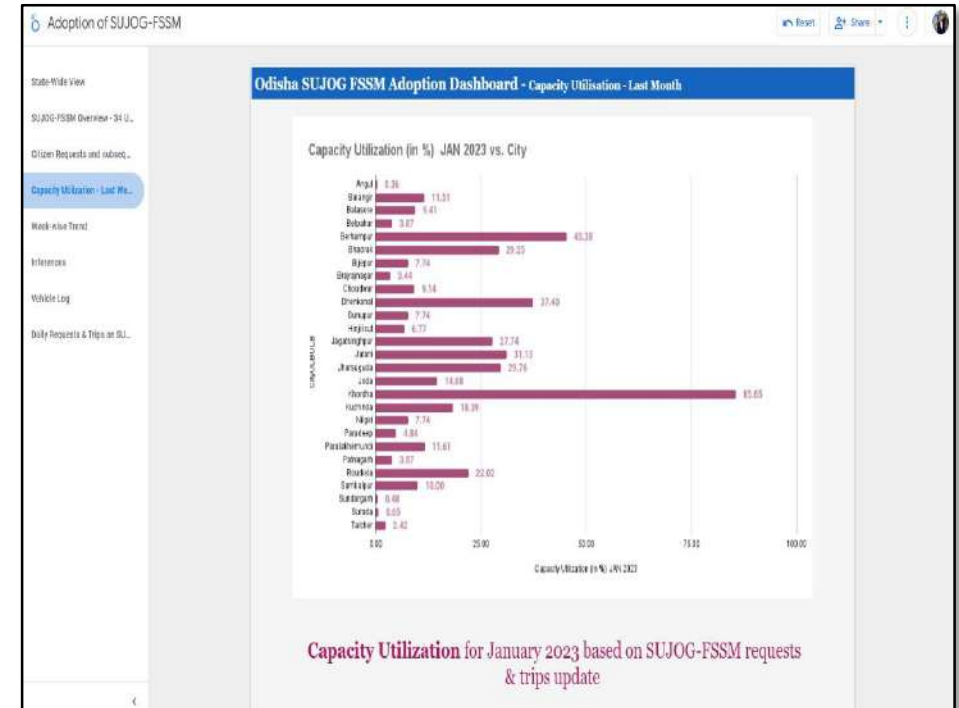
Faecal Sludge Management

Live since December
13, 2022



Safety: Safeguarding Citizens and Communities

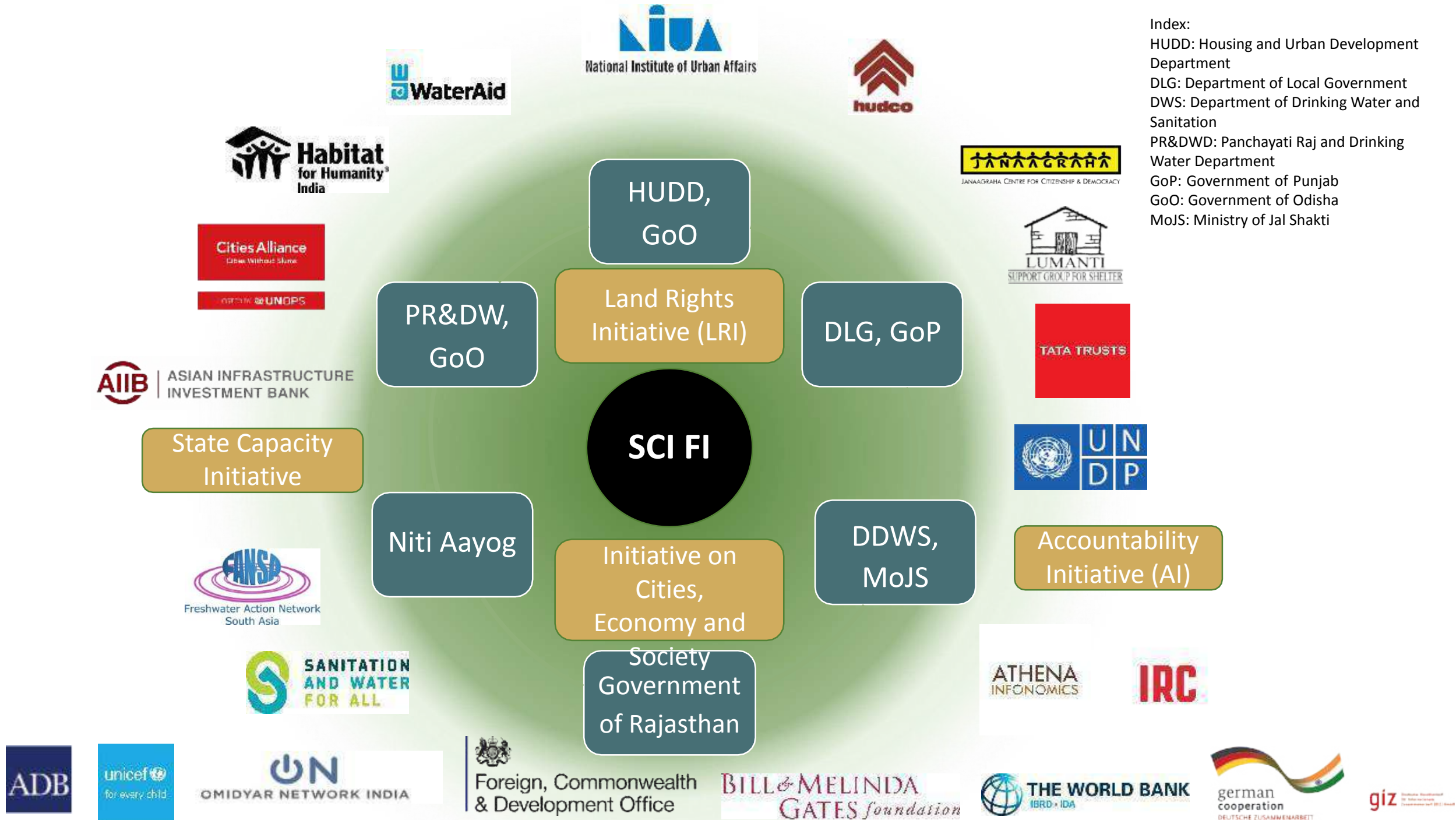
SUJOG FSSM Dashboard



In SUJOG data required for calculating capacity utilization of FSTP is already being collected and tracked for all the cities.

SCIFI and India Alternative Sanitation timeline

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	FSM 3			FSM 4		FSM 5			FSM 6		FSM 7
SCI-FI	Start RTT Fair Research on sanitation in Balasore		Udaipur Partnership Project Nirmal MOU with GoO	New models for CP in ODF U OUSP and OUSS Small FSM operator & Manual Scavenging studies	FSTP const. began Udaipur HZL-UMC Partnership SKA Partnership	Commissioning of 6 FSTPs in the state		11 FSTPs operationalised (incl Angul) Dhenkanal URC pilot started	LoU signed - state gov., SCI FI & UNICEF for URC		106 FSTPs Operationalised Scaling-up of URC state-wide
MoUD Gol		SBM (Urban)	AMRUT & SCM	National FSM Policy			JJM launched				
BMGF India San			2 other State Policy FSM					Garima launched	FSM Digit launched	DIGIT in 35 ULB	OUISP drafted
State Govts		Odisha Policy FSM and AMRUT for 9 Class 1 Cities	6 cities		6 State Policy FSM	BASUDHA launched				Launch of SBM 2.0	
ULBs	Devanhalli, Angul + Dhenkanal	Start Warangal, Wai Trichy	20 cities	Orissa Class 1 cities FSTPs	75 to 80 cities attempting						



SCI-FI : Inclusive pro-poor interventions | OBJECTIVES

Action Research towards inclusive pro-poor interventions by –



Strengthening land tenure for the urban poor as a cornerstone for including the poor and providing them right to the city



Adopting inclusive planning processes and instruments accompanying improved security of tenure



Availability of wider set of participatory incremental housing models to directly benefit the urban poor

ODISHA & PUNJAB | STATE PARTNERSHIPS

MoU signing with Punjab, 2020



MoU signed with Govt Punjab to support the Punjab Slum Dwellers (Proprietary Rights) Act, 2020

MoU signing with GoO, 2020

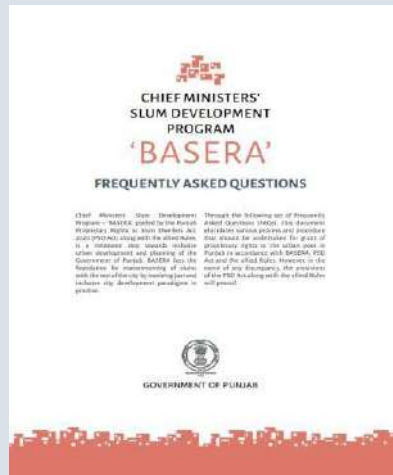
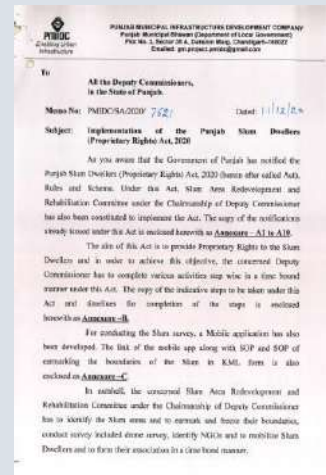
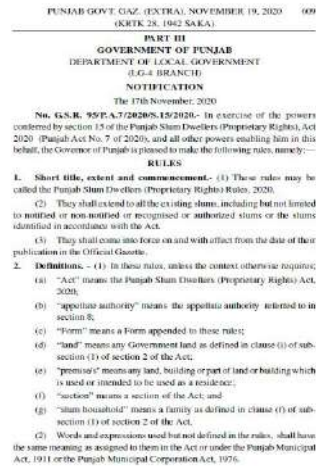
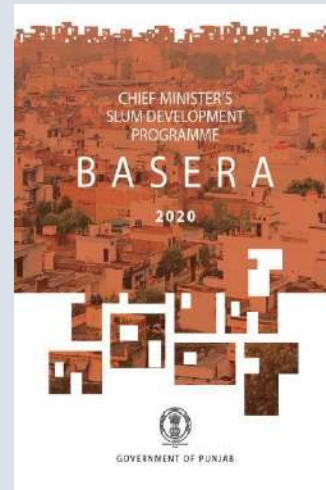


MoU signed with Govt of Odisha to be a knowledge partner in the next phase of implementation under JAGA Mission

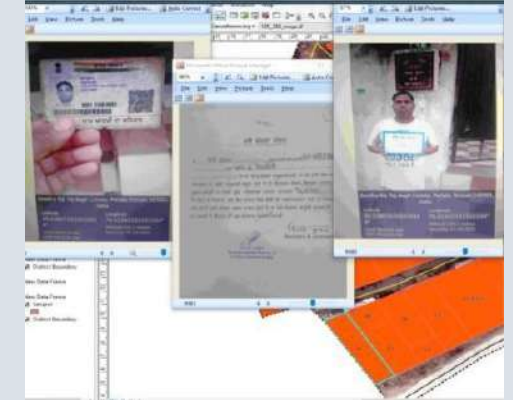
SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

1. Integrating slums/ low income settlements into city fabric

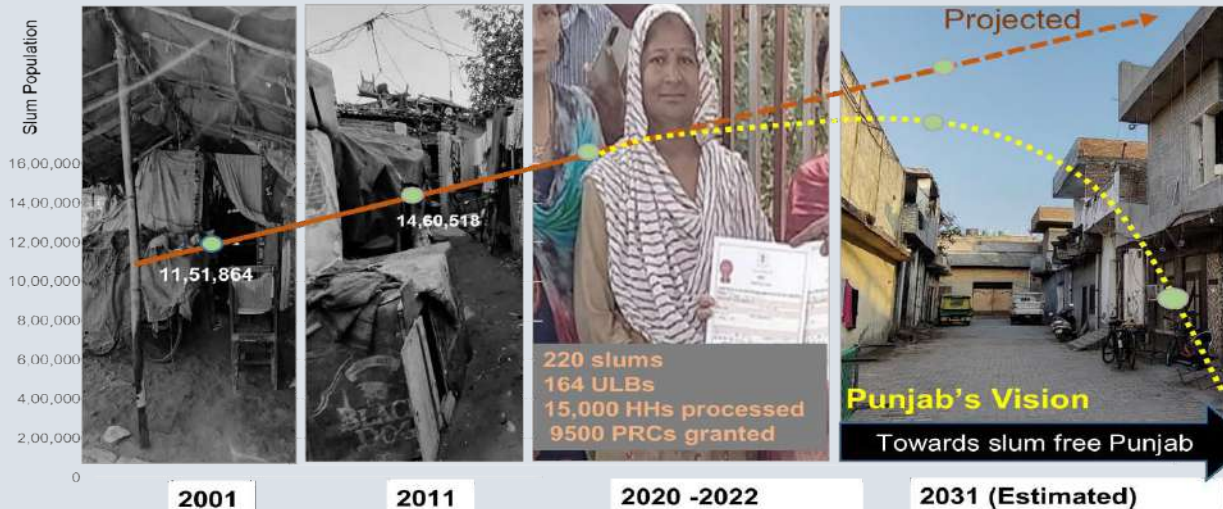
Legal & Regulatory Framework



Process followed



Outcome



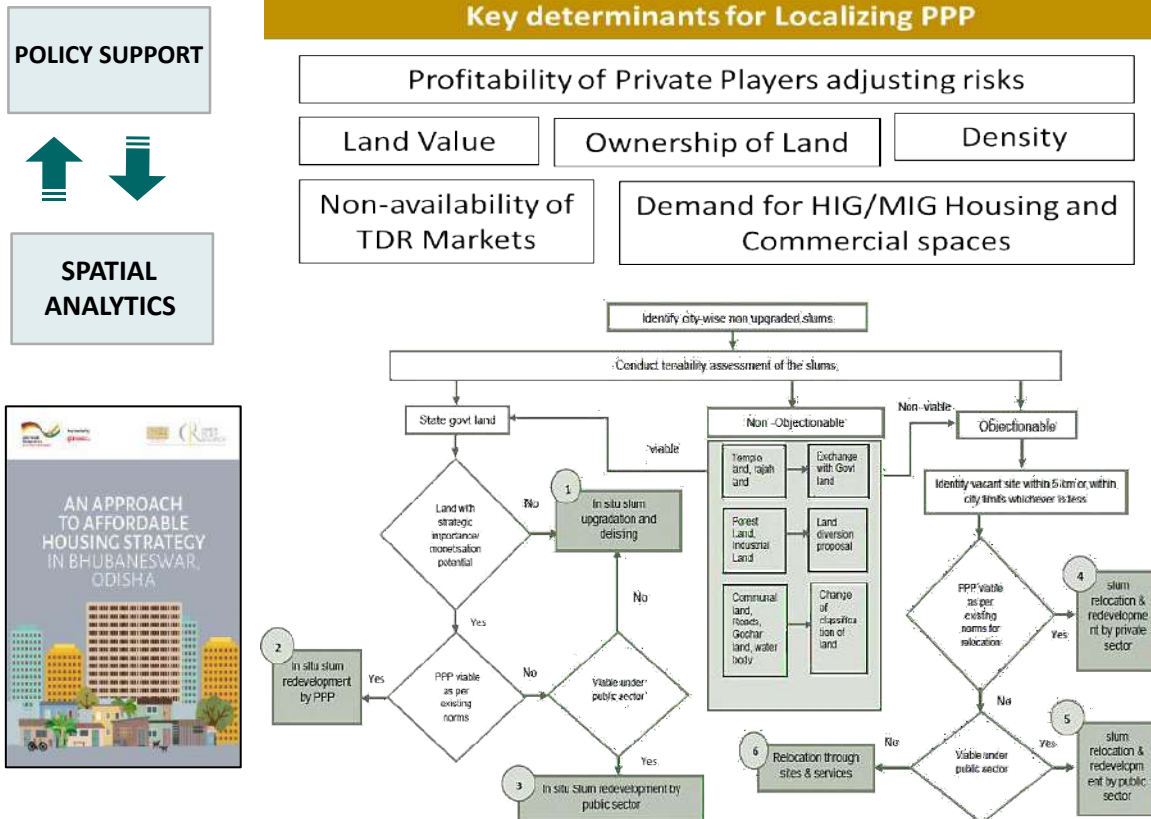
SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

1. Integrating slums/ low income settlements into city fabric

Approach to achieve affordable housing in Bhubaneshwar

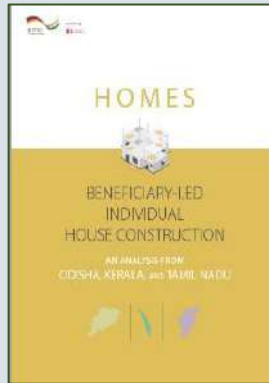
The study devised a strategy for BDA to provide affordable housing for urban poor under Odisha's Policy for "Housing for All in Urban Areas", 2015,

Key determinants for Localizing PPP

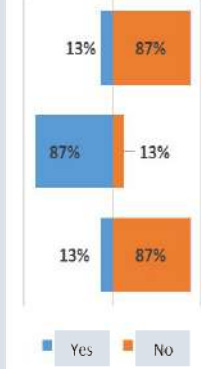


BLC can be leveraged to achieve holistic habitat improvement

Based on the quantitative HH surveys and KIIs, the study sought to understand the processes of the implementation and the experiences of the beneficiaries in leveraging the subsidy



Door to door SW collection



In house electricity

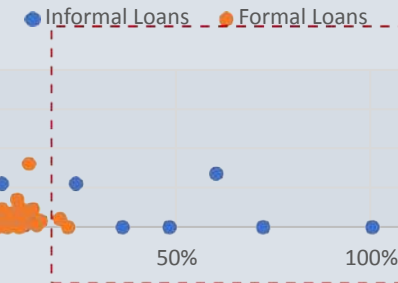
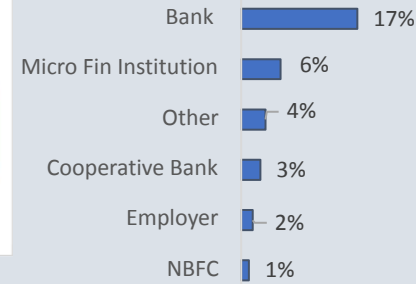
Covered Pucca Drain

On an average 85%

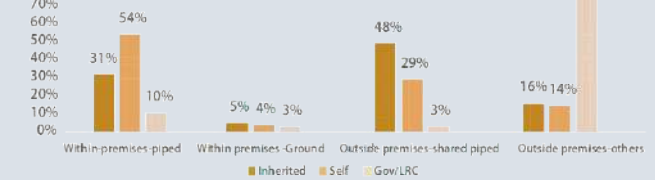
Of the beneficiaries have access to IHHL

On an average only 24%

HHs had HH piped water supply



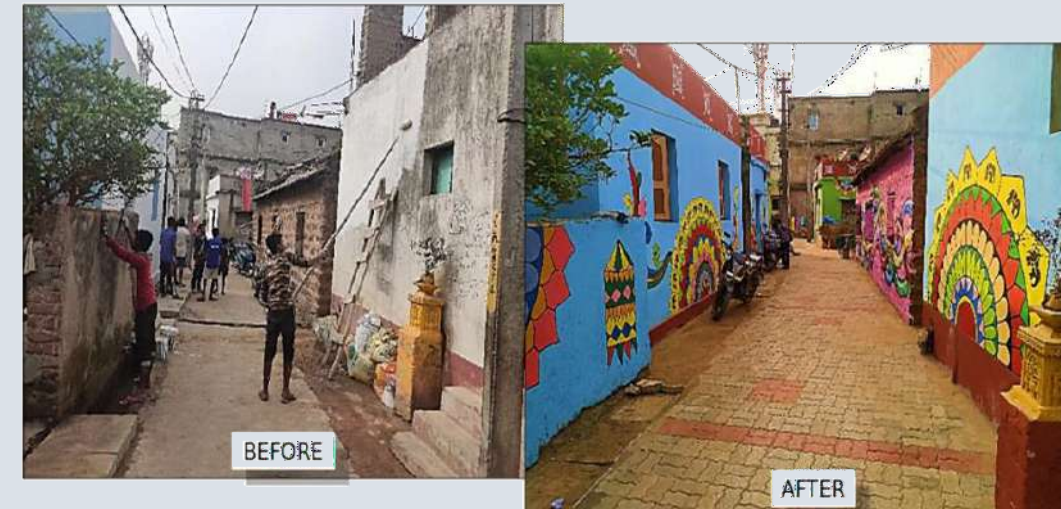
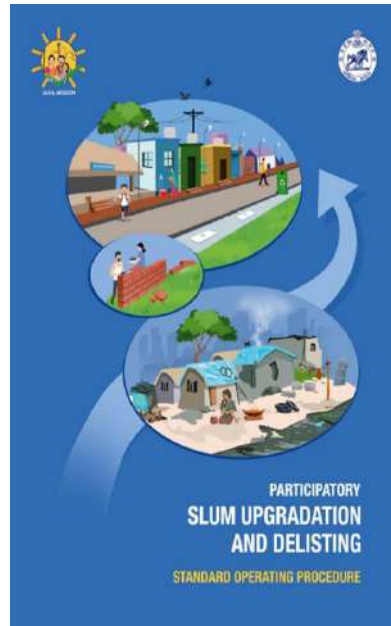
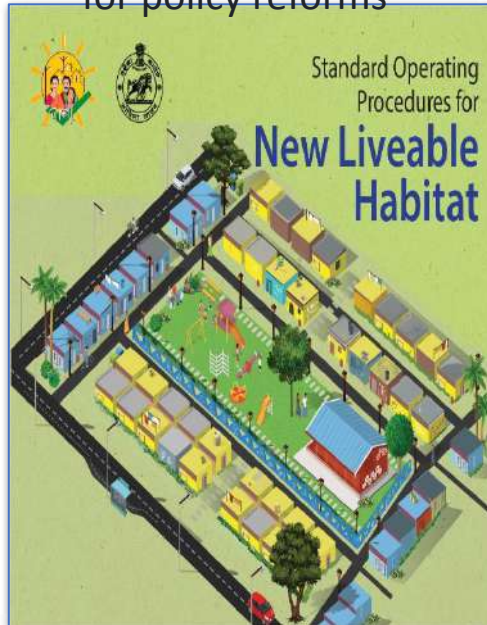
Type of Land determine extent of access to Services



SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

2. Mainstreaming slum upgrading in for Slum free cities

- **Odisha Liveable Habitat Mission (OLHM) - "JAGA" aims at:**
- Transforming the **slums into liveable habitat**
- Continuously **improving the standard of the infrastructure and services**
- Leveraging and **converging various schemes/ programs/ funding opportunities** by strengthening collaborations
- Provide **advisory support to Government of Odisha** to examine options for policy reforms



The Parichaya and Open Spaces are used for various socio-cultural activities and recreational avenues for kids.

SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

2. Mainstreaming slum upgrading in for Slum free cities

2077 SLUMS
Drone surveyed & GIS
Mapped



1,68,141
HHs door to door survey
conducted



109 UASRRC
Formed at ULBs



2919
SDAs

60,000
Families granted LRC in-
situ



1,03,328
Families granted LEC



SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

3. Building economic resilience among the vulnerable

Conversion of UWEI into MUKTA Scheme



Training Module on City GDP



Expanding the knowledge base of the economic structure of the city and the infrastructure needed for sustaining economic growth to ensure resilient and responsive cities.



SCI-FI @ Inclusive pro-poor interventions | OUTCOMES

4. Devising slum proofing strategy



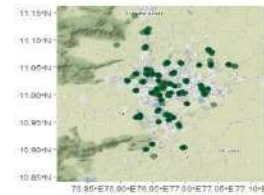
JICA MISSION WORKSHOP ON SLUM PROOF CITIES Date - Feb 17 & 18, 2017			
Day 1 - Thursday, Feb 17			
Visiting the participants and opening address by Mr. G. Nishit, JICA Mission, Principal Secretary, BHO	9 am		
Address by Mr. Shubhagato Dasgupta, JICA Mission & JICA Mission, Principal Secretary, BHO	10:30 am		
Working Group discussion on the Basic Economic Survey of the City: Planning (Session 1)	11:45 am		
Chairman to be selected during the discussion	12:30 pm		
Break	12:30 pm		
Day 2 - Friday Feb 18			
Continuation of Working Group discussion on the Basic Economic Survey of the City: Planning (Session 2)	10 am		
The Break	11:30 am		
Working Group discussion on Preparing Draft Slum Proofing Action Plan for the City (Session 3)	12:30 pm		
Lunch	12:30 pm		
Revisiting the Draft Slum Proofing Action Plan for the Working Group	1:30 pm		
Vote of Thanks by Mr. Shubhagato Dasgupta, JICA Mission & JICA Mission, Principal Secretary, BHO	4:30 pm		

Study on Rental Housing for urban poor

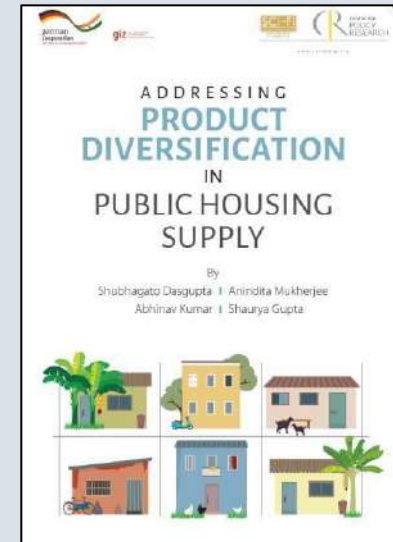
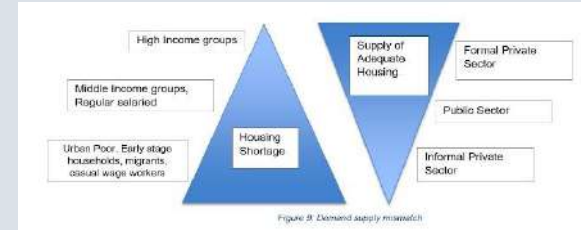
BHUBANESWAR

KOCHI

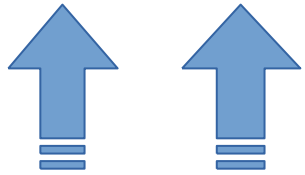
COIMBATORE



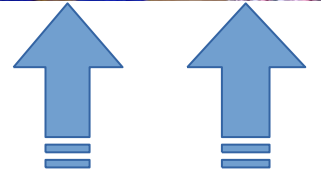
Product Diversification in Public Housing



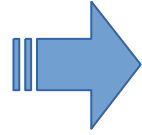
SCI-FI @ Inclusive pro-poor interventions | OUTCOMES | WASH CASE



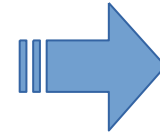
SANITATION WITH LAND RIGHTS (JAGA MISSION)



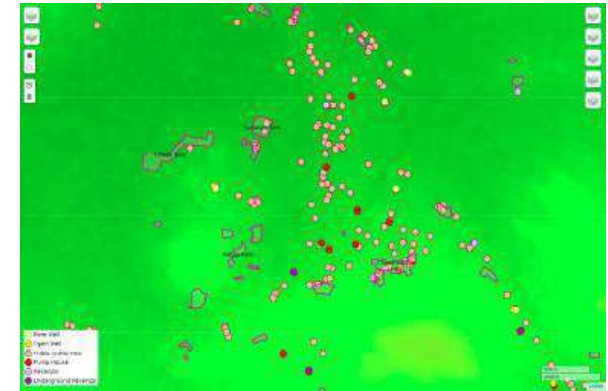
SANITATION
WITHOUT
LAND RIGHTS



JAGA MISSION
SAFETY NET

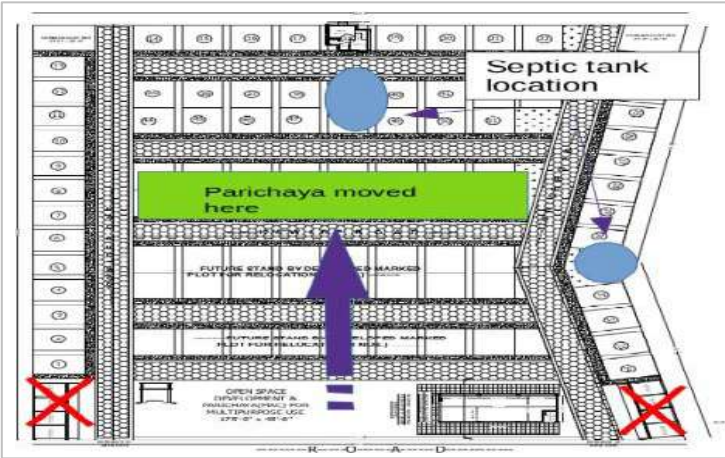
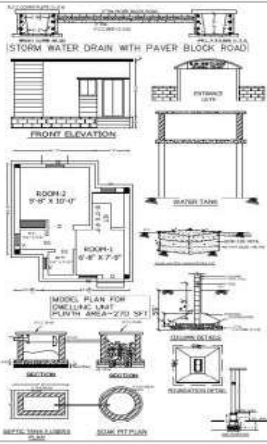


SCI-FI @ Inclusive pro-poor interventions | OUTCOMES | WASH CASE



THE TECH AND THE GRIND

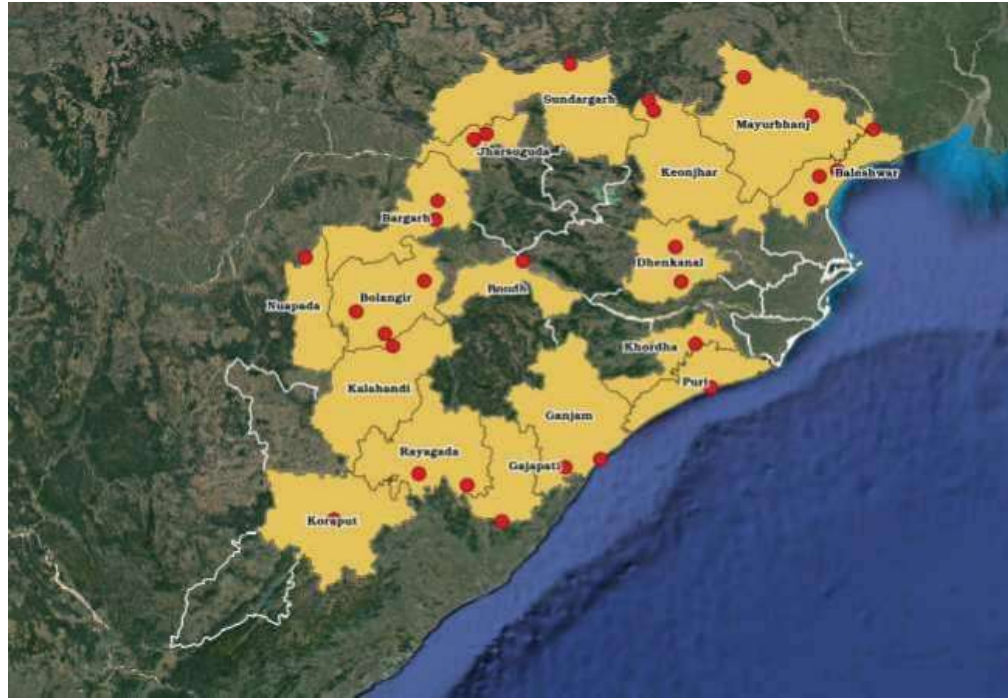




Experience Based Innovation



SCI-FI @ Inclusive pro-poor interventions | OUTCOMES | WASH CASE



Strategic
(maximise
components)

objective: Scaling Up
or minimise sub-

Predictive spatial analytics for mission
success

TENTULIGHAT NUAPADA SLUM - TARVA ULB (LAND ANALYSIS)



Kantabanji NAC - Slums Located on Railway Land

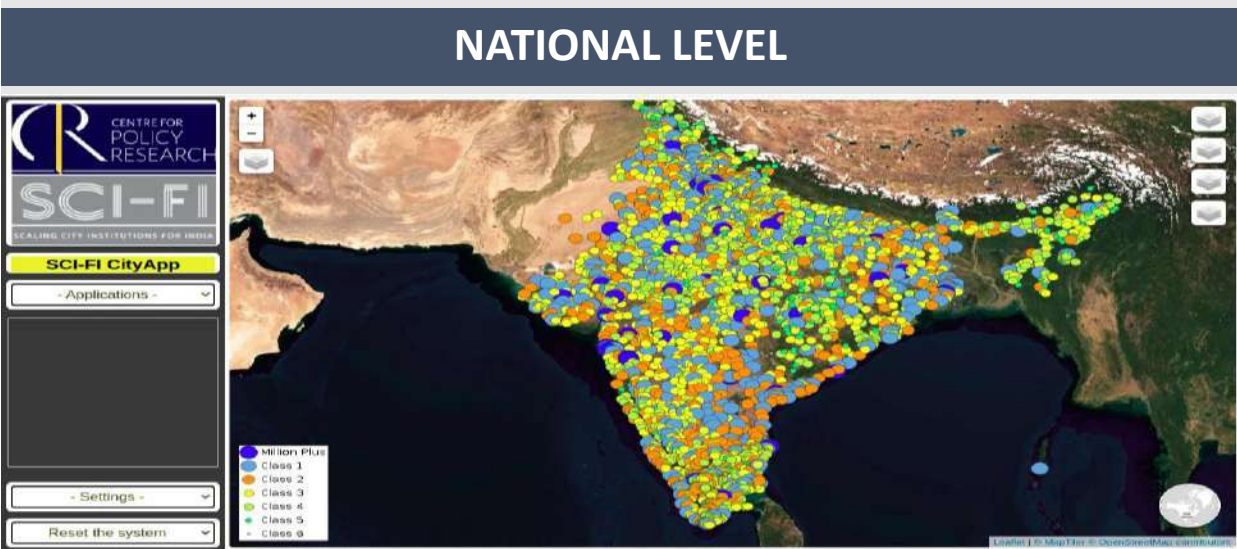
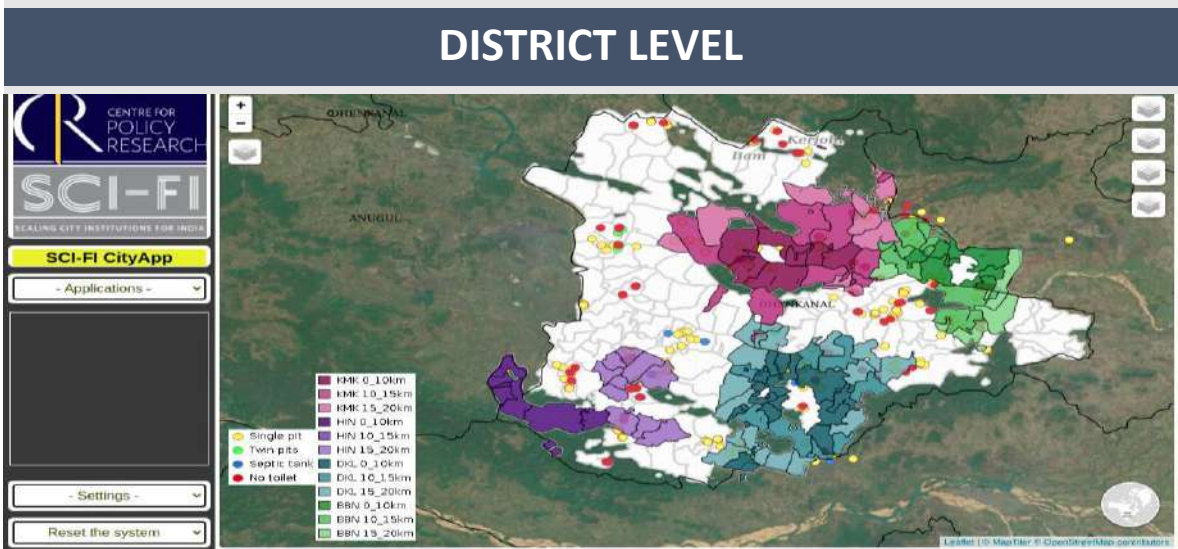
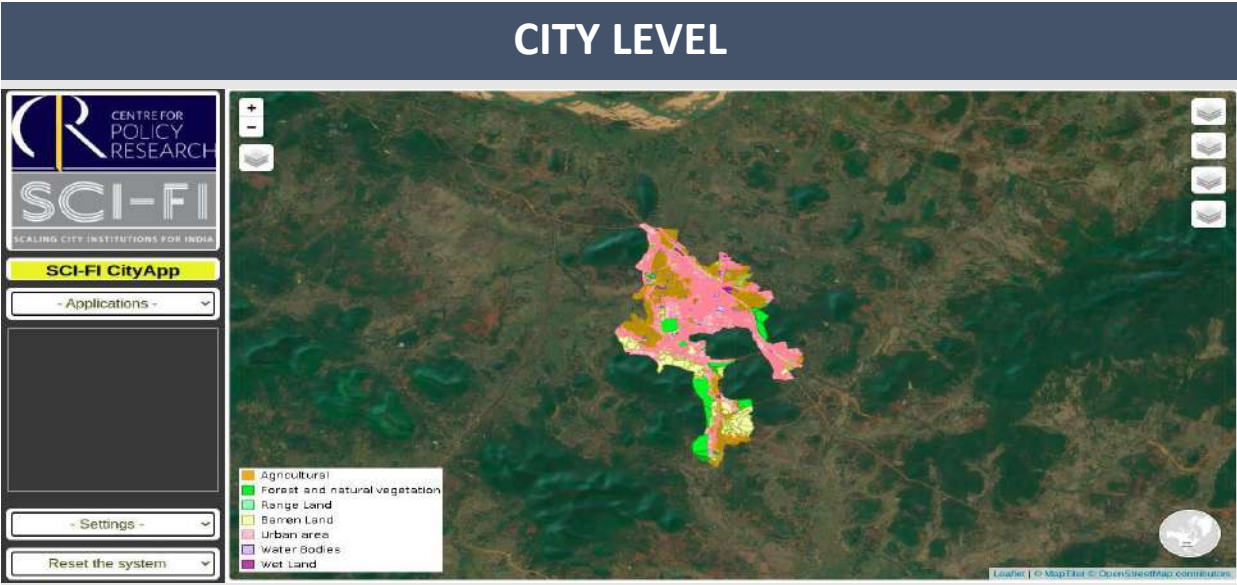


Extra vacant land plots suggested - to be checked by NAC team



Kantabanji NAC - Slums Located on Railway Land





4 Consequential Transformations Supported Through Research



City and state-wide urban FSM



Rural-urban convergence for
WASH



Cross department
frameworks for inclusive
land planning

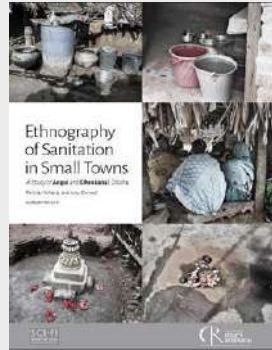
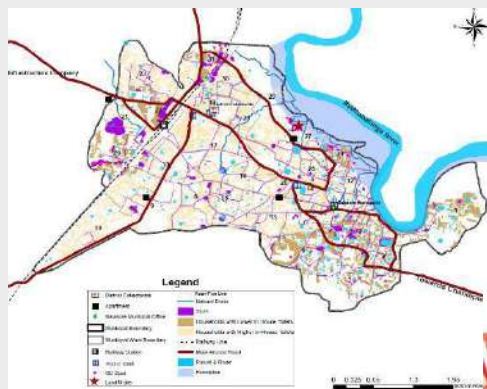


Slum upgrading at scale

SCI-FI@TECHNICAL HUB | Combining scientific evidence and heuristic learning for through co-creation through Pilots...

Research and evidence

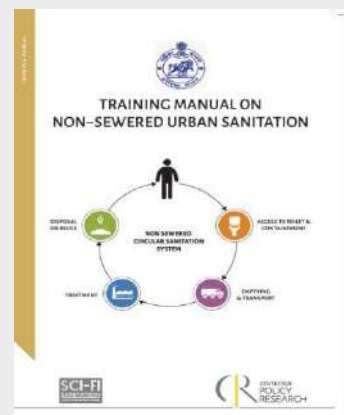
Planning and Financing



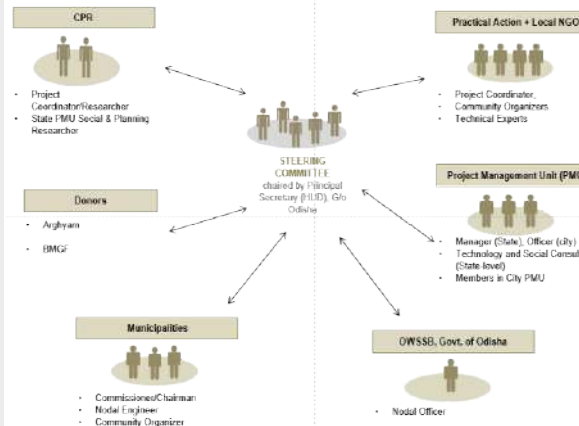
Infrastructure and Service Delivery model

Capacities and Communication

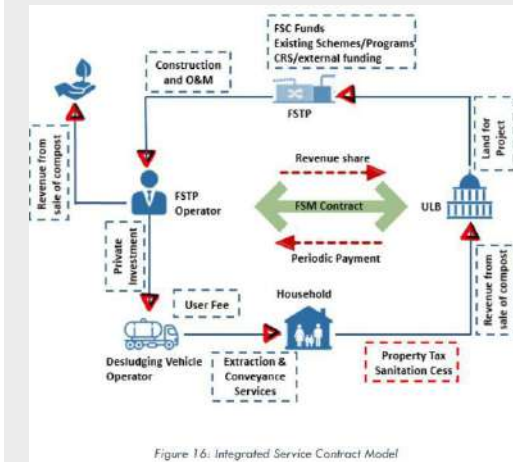
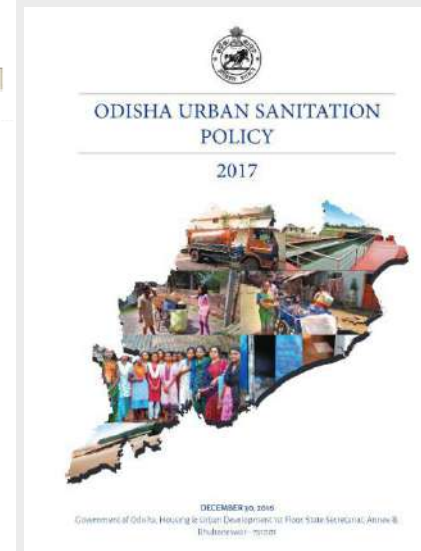
Policy and Regulation



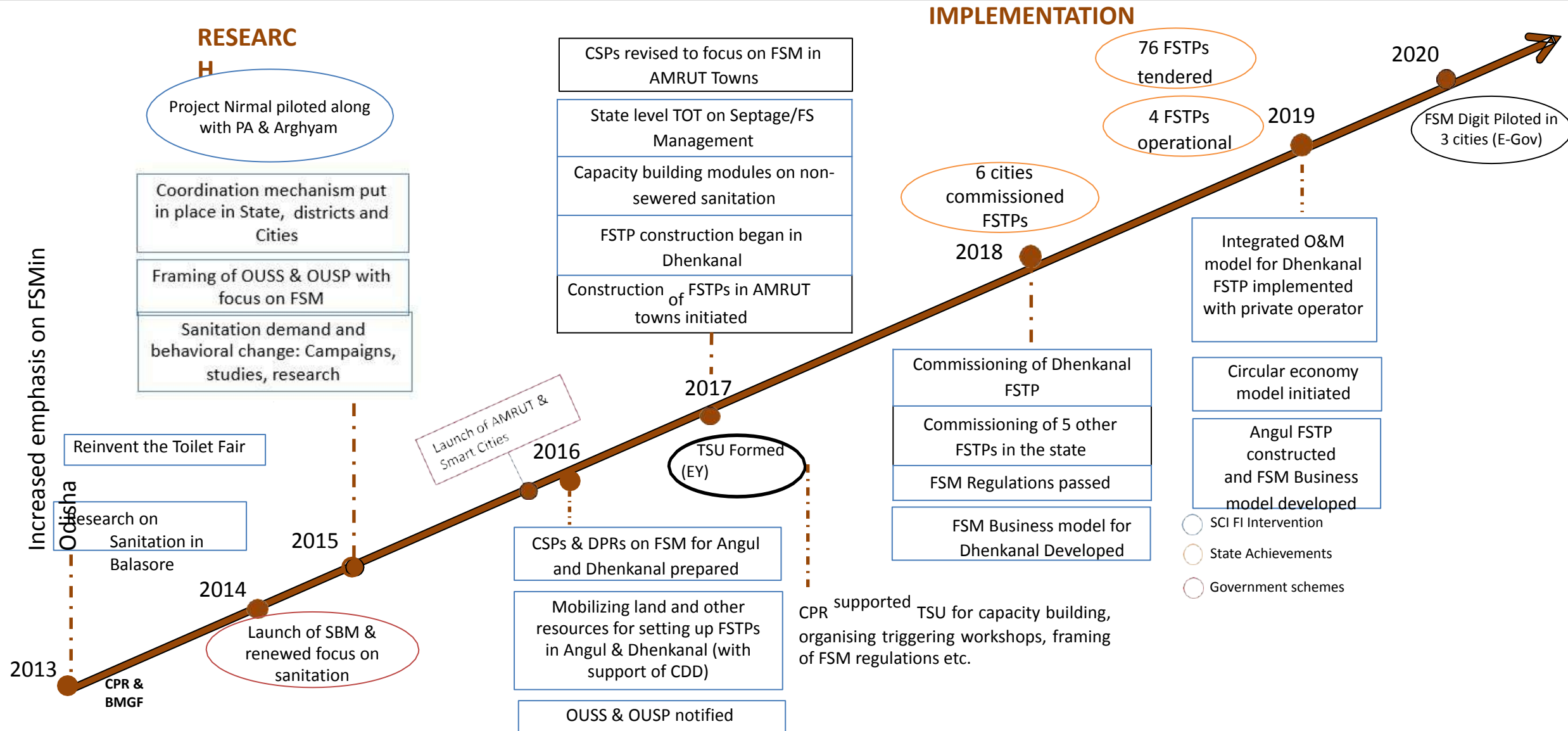
Institutional arrangements



Piloting

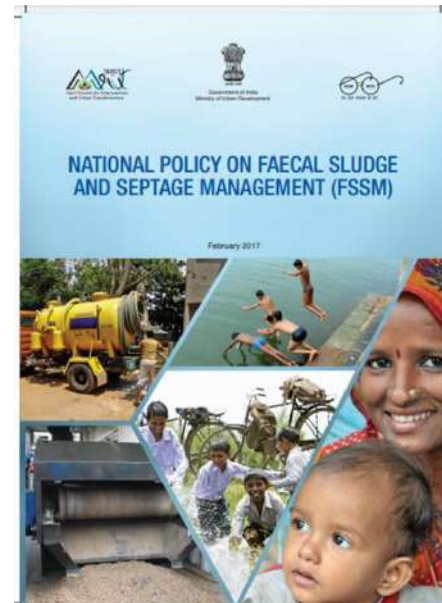
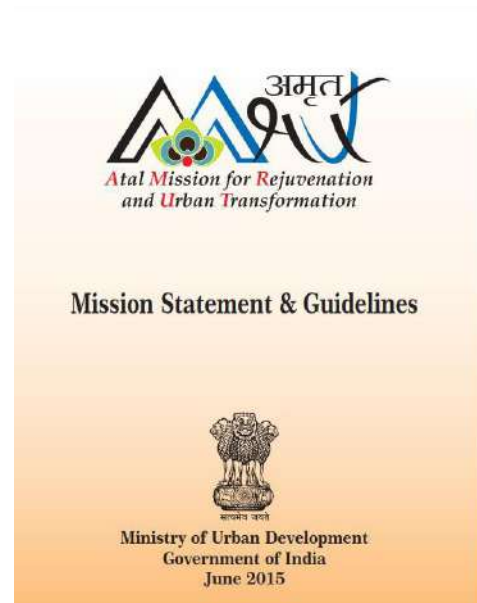


SCI-FI@TECHNICAL HUB | Statewide scale up across all cities in Odisha....



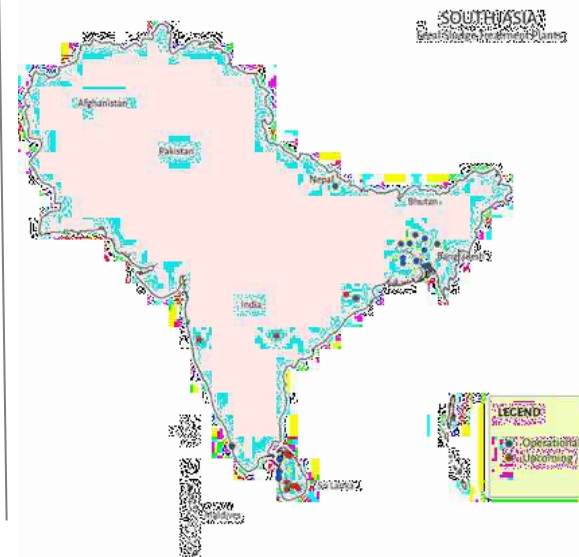
SCI-FI@TECHNICAL HUB | National level acceptance, integration and impacts

Acceptance and integration Impacts



2016

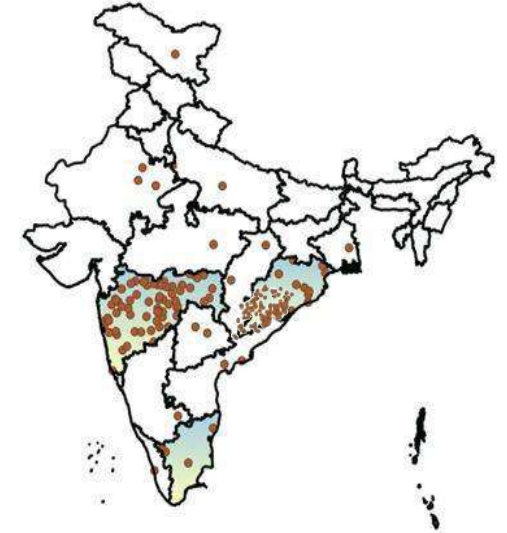
Formal FSM served nearly
0% of 1.3bn



Source: Dasgupta, S., Murali, R., George, N., & Kapur, D. (2016). *Faecal Waste Management in Smaller Cities Across South Asia: Getting Right the Policy and Practice*. New Delhi: CPR

2021

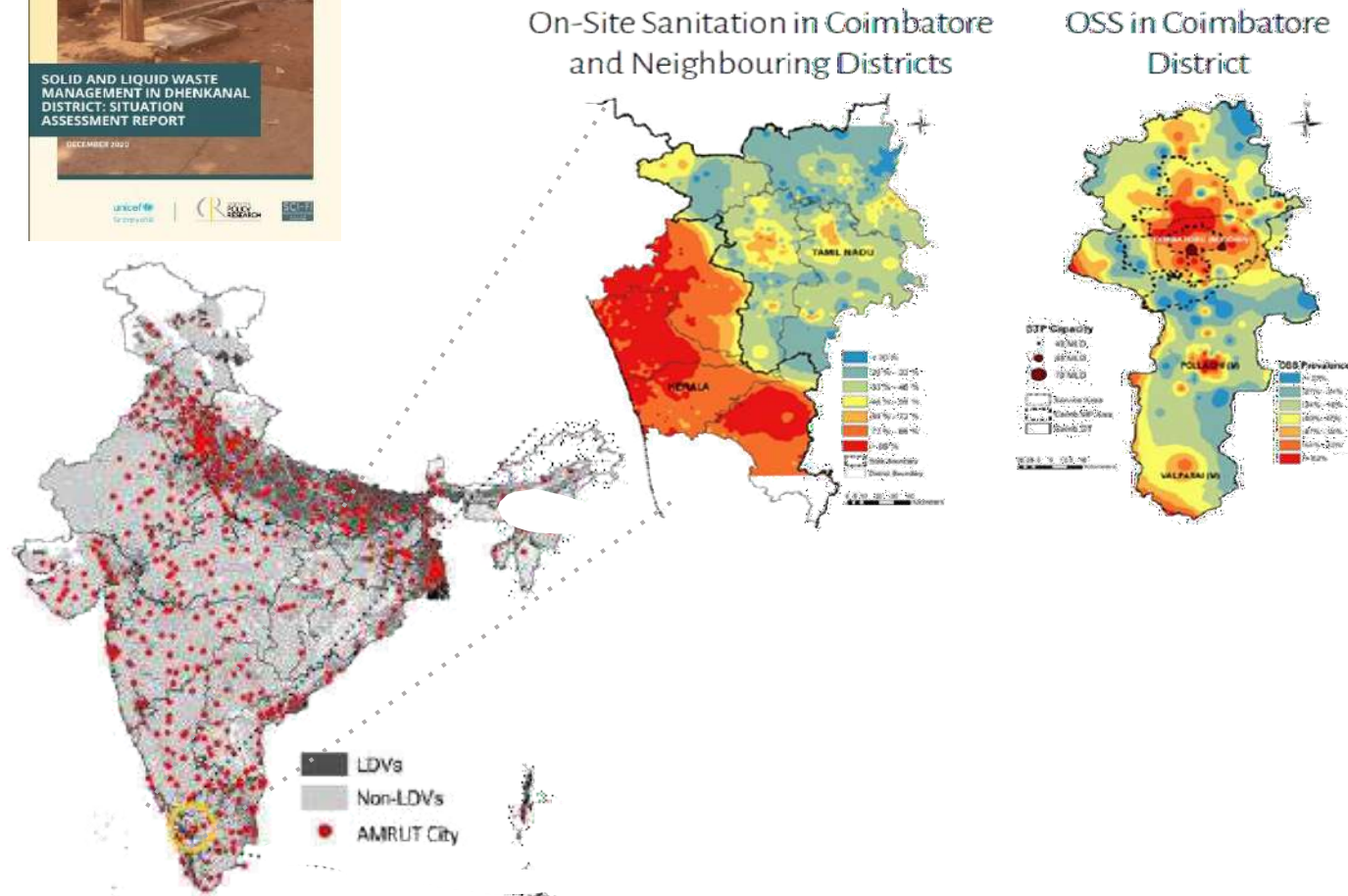
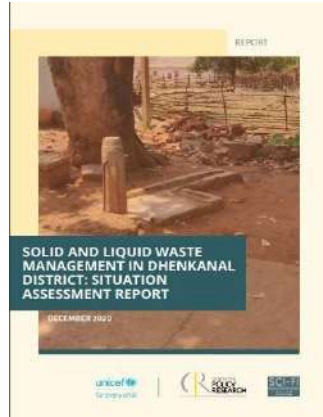
~500 Formal FSTPs serving about
2% of total population or ~25mn,
in urban areas



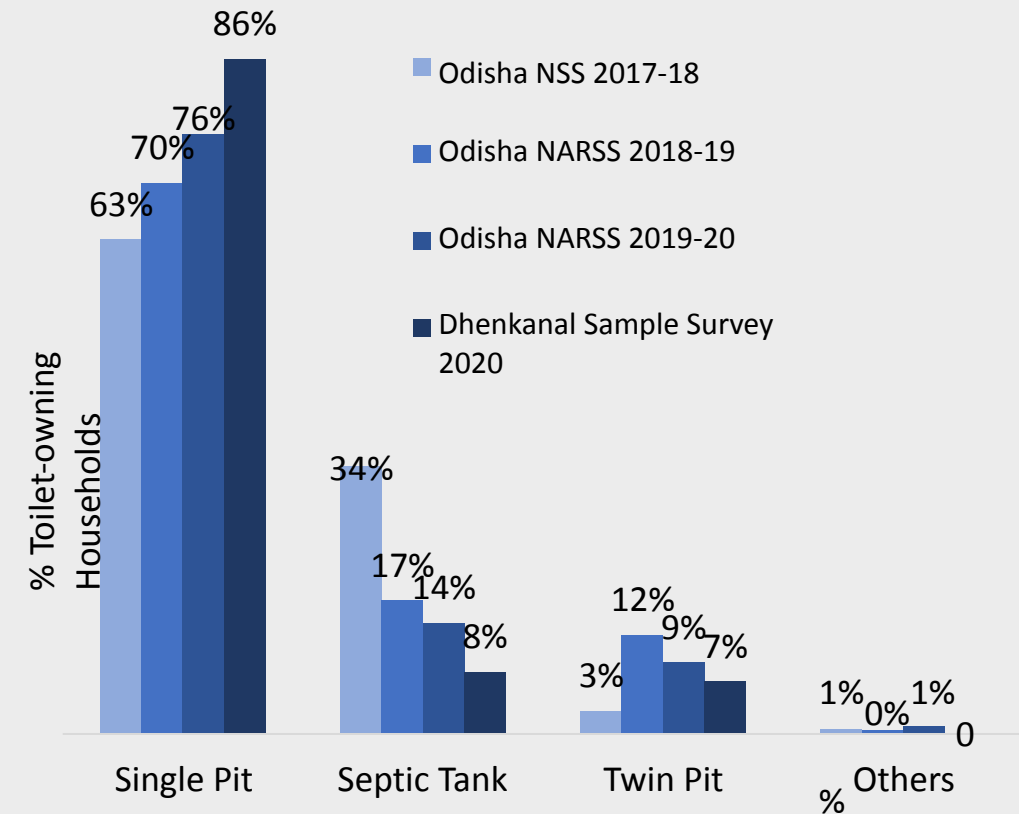
● Operational/Completed FSTPs¹

¹2022 data set for Odisha as per GoO; 2020 data set for the rest of Indian states as per information available on July 16, 2020 from national PMU

Dhenkanal District-wide sample survey, 2020-21 – similar trends were observed across Odisha



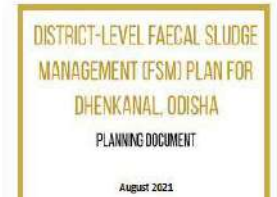
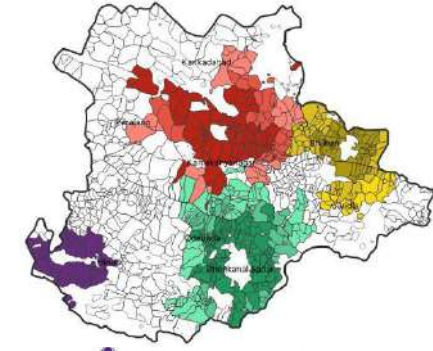
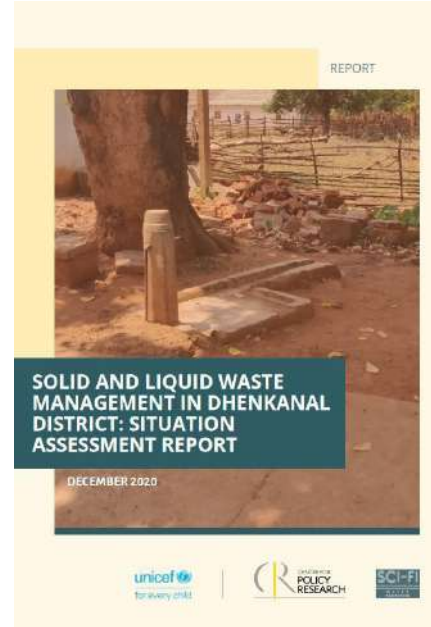
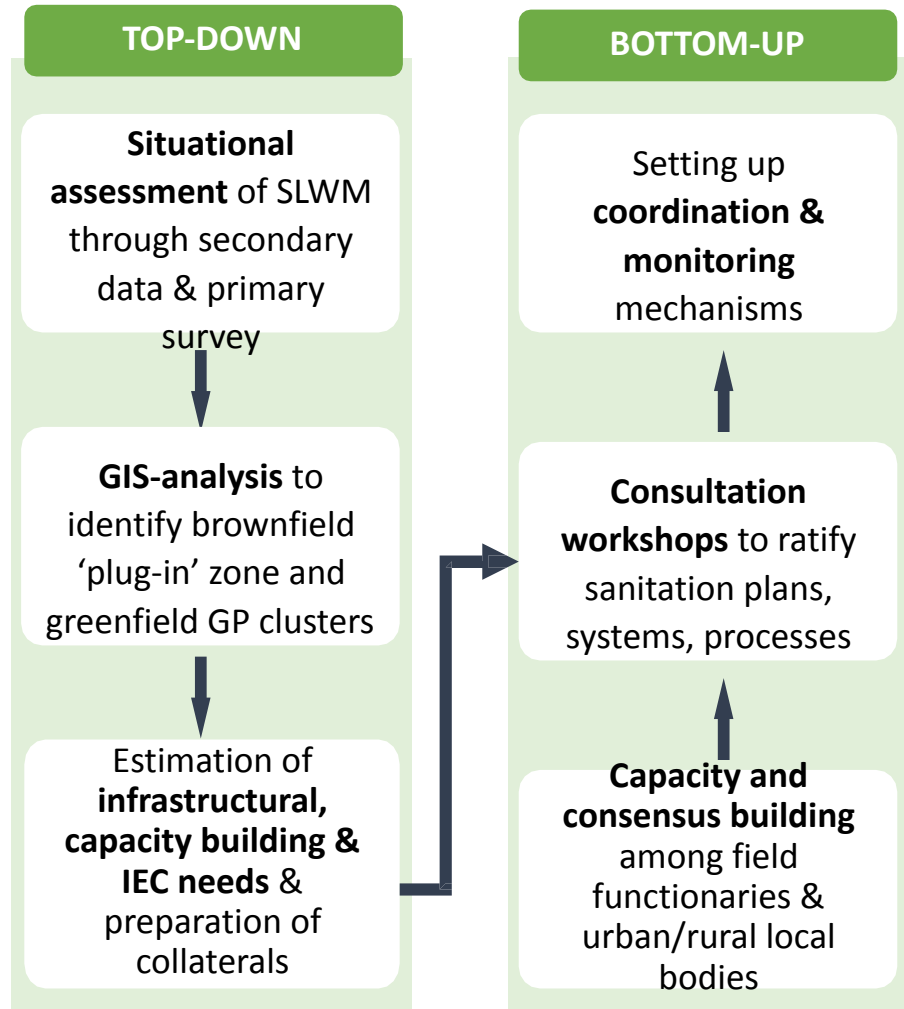
Type of On-Site Sanitation Systems



Evidence, communication, consensus

Plugging-in in Dhenkanal

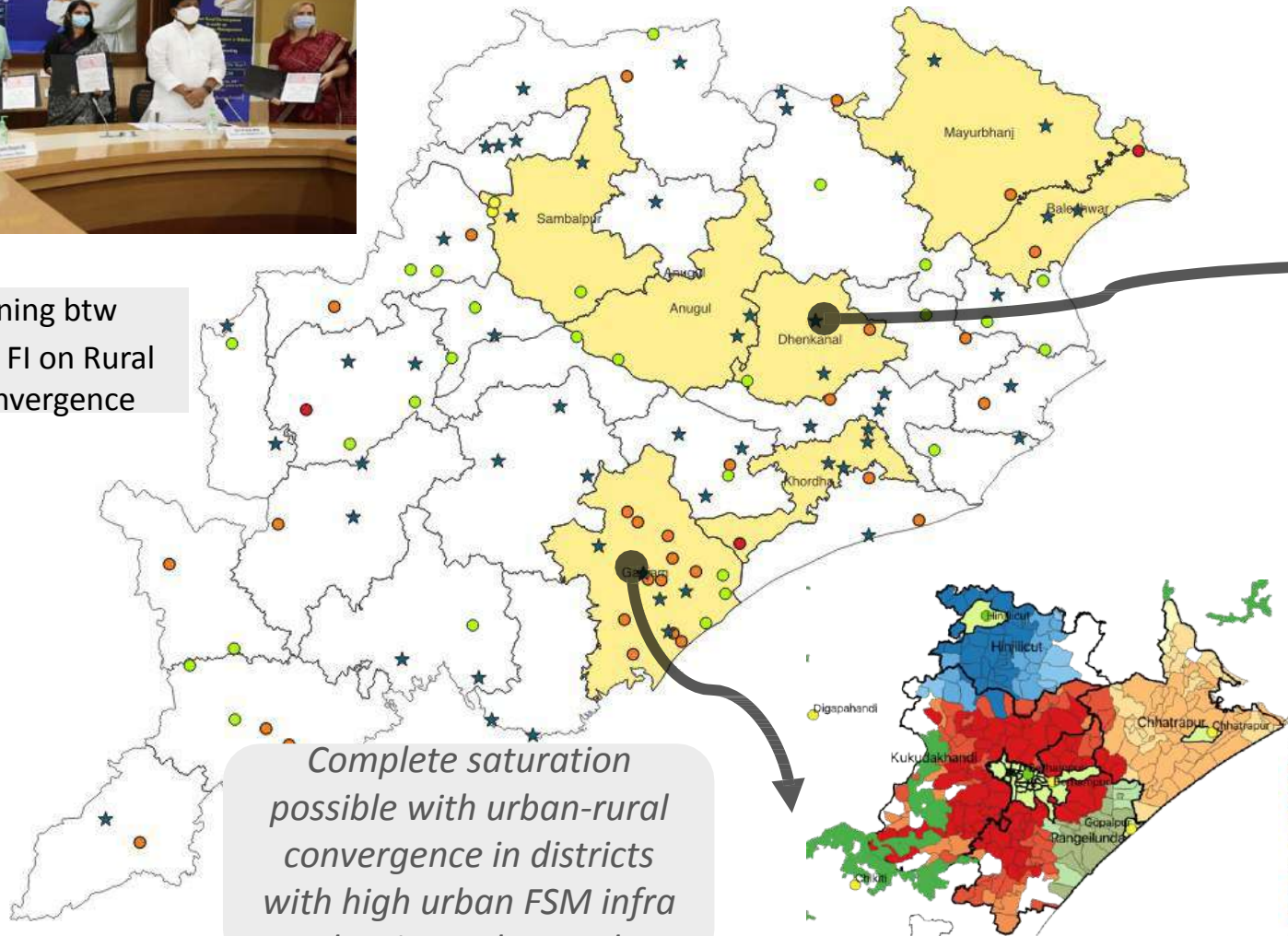
District-level Plan



SCI-FI@TECHNICAL HUB | Combining scientific evidence and heuristic learning for through co-creation through Pilots...

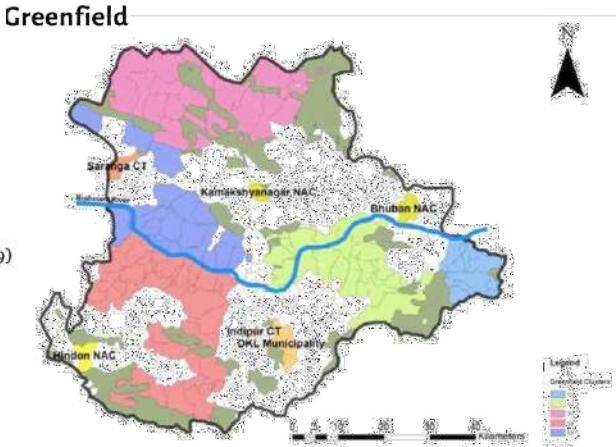
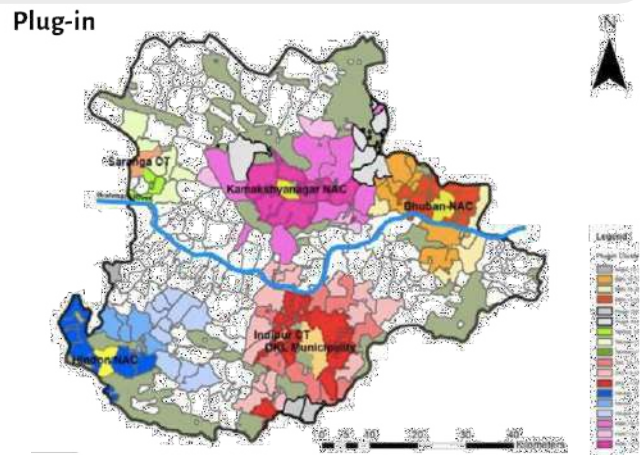


MoU Signing btw
UNICEF-SCI FI on Rural
Urban Convergence

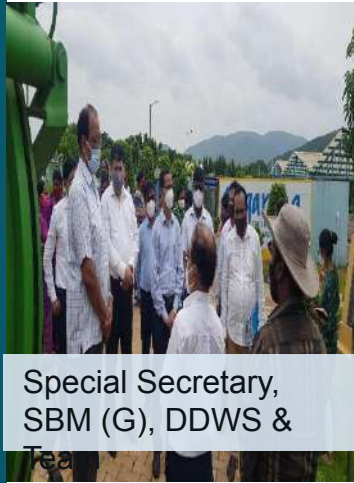


Complete saturation
possible with urban-rural
convergence in districts
with high urban FSM infra
density and spread

A mix of urban-rural convergence & greenfield FSM reqd in districts with low urban FSM infra density & spread



Urban-rural convergence model recognized at the national level

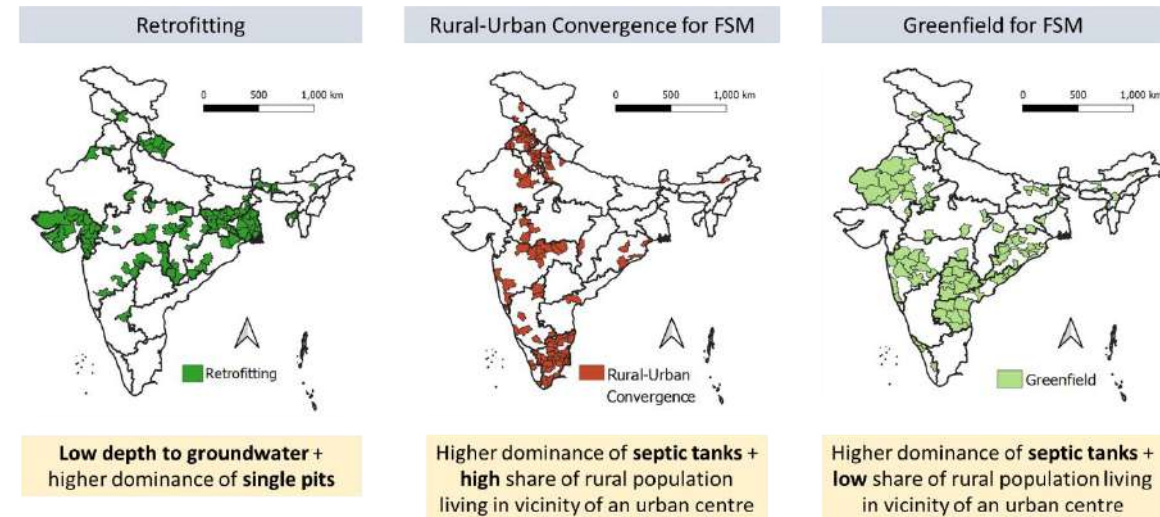
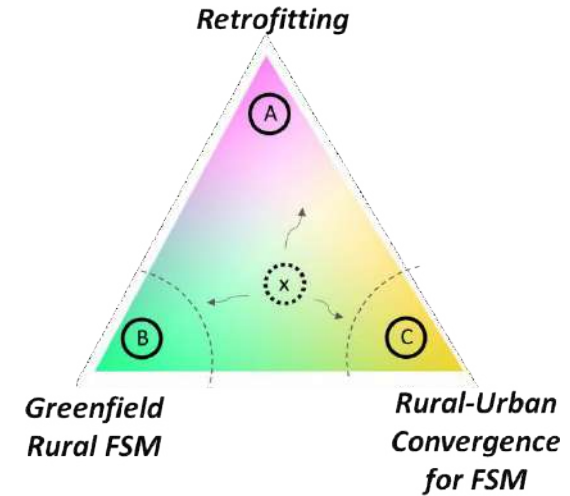


Special Secretary,
SBM (G), DDWS &
Tea



Director, SBM (G), Gol and
UNICEF WASH Team

Towards National Urban Rural Environment Sanitation strategy



BMGF WASH Team

Many state governments are coming for exposure visits



Andaman & Nicobar Islands



Tamil Nadu

THANK YOU



The Scaling City Institutions for India (SCI-FI) programme aims to better understand 'governance scale' in Indian cities in tandem with 'sector specific socio-economic scales'. Through research, the programme aims to inform stakeholders, including the three tiers of the government, to develop better informed policies and programmes enabling improved governance and service delivery. It has two key thematic focus areas of Land, Housing and Planning, and Water and Sanitation.
