
स्वच्छ भारत

Sanitation Mission 2nd October 2019…

- All 4,041 Statutory Towns in scope
- Household toilets for 1.2 crore urban households
- Construct 2.52 lakh public toilets seats
- Construct 2.56 lakh community toilet seats

Sanitation Linked Objectives, under the Mission

- Elimination of **open defecation**
- Eradication of **Manual Scavenging**
- To effect **behavioral change** regarding healthy sanitation practices
- Generate **awareness** about sanitation and its linkage with public health
- **Capacity Augmentation** for ULB's
- To create an enabling environment for **private sector participation**

Sanitation – National Mission Progress

Individual Household Latrines (IHHL)

Mission Target	Target (till March 2016)	Work Commenced	Completed
104.00 lakh	25.00 lakh (100%)*	23.65 lakh (95%)	11.67 lakh (47%)

Public & Community Toilets (CT/PT)

Mission Target	Target (till March 2016)	Work Commenced	Completed
5.08 lakh	1,00,000 (100%)*	1,39,511 (139%)	47,856 (47%)

- Over 19 States are contributing more than their share for Household Toilets (> Rs. 1,333 per toilet)
- An **MoU with CSC** has been signed to help beneficiaries submit IHHL applications through CSC
- Development of an **Online Monitoring Tool** to monitor mission progress on Sanitation Infrastructure development with support from CSC and NIC.
- Monthly **Governance** sessions with Mission Directors and ULB Officials on mission activities
- Engaging DST/ DBT to evaluate & disseminate affordable and innovative **sanitation technologies**

* Percentage value for Applications Received, Work Commenced and Completed is against the Target set for March 2016

Making India Open Defecation Free (ODF)

- **All 4,041 statutory towns/ ULBs to be 100% Open Defecation Free** (ODF) by 2nd October 2019
- **400 ULBs has committed achieving a 100% ODF status by 31st December 2016**. *This includes 42 AMRUT cities, with focus on ODF+ status*
- **54 ULBs declared ODF in the current year** (Maharashtra)
- A notification has been issued to all cities in regards to the **ODF definition and protocol** to be followed

ULBs achieving 100% ODF status by 31st December 2016

S. No.	State/ UT	No. of ULBs
1	Gujarat	79
2	Madhya Pradesh	68
3	Andhra Pradesh	66
4	Maharashtra	60
5	Rajasthan	33
6	Chhattisgarh	32
7	Telangana	14
8	West Bengal	8
9	Tamilnadu	7
10	Haryana	7
11	Bihar	7
12	Punjab	5
13	Jharkhand	4
14	Uttar Pradesh	3
15	Uttarakhand	3
16	Puducherry	2
17	Delhi	1
18	Himachal Pradesh	1
	Total	**400**

ODF Definition & Protocol under Swachh Bharat Mission

"A city/ward is notified as ODF city/ward if, at any point of the day, not a single person is found defecating in the open".

Necessary **conditions** to be achieved before declaring the city/ward as open defecation free:-

- All households that have space to construct toilet, have constructed the one.
- All occupants of those households that do not have space to construct toilet, have access to community toilet within a distance of 500 metres.
- All commercial areas have public toilets within a distance of one KM.
- City has a mechanism in place through which they impose fine on the persons who defecate in open.

Protocol -

- **All wards have to be declared ODF**, without exception, for the city to be declared ODF, along with below sub-declarations,
  - *Every school in a ward provides self-declaration that all students enrolled in it have access to, and are routinely using toilets at home and at school.*
  - *Every self-help group active in a ward gives a declaration that all residents of that ward have access to, and are routinely using, toilets at home.*
- Following this, municipal administration to **pass a preliminary resolution** declaring the city ODF along with a suitable public announcement and **citizen feedback** provision.
- **State to perform 3rd party verification process** (in a time bound process) before formally according the city status of being ODF.

Full ODF Requires Swachh Bharat Mission & AMRUT to Converge

	Swachh Bharat Mission	AMRUT
Mission	Ensuring hygiene, waste management and sanitation across the nation	Providing basic services (e.g. water supply, sewerage) to households and build amenities in cities which will improve the quality of life for all, especially the poor and the disadvantaged
Goals	• Elimination of open defecation • Eradication of Manual Scavenging • To generate awareness & effect behavioral change about sanitation	• Water supply • Sewerage facilities and septage management • Storm water drains to reduce flooding
Scope	• Household toilets • Community & Public toilets • IEC & Public Awareness • Capacity building	• Water Supply • Sewerage & Septage • Reforms and management support • Capacity building
Funding	• Budget Outlay Rs. 62,000 Crore with Rs. 14,623 as Centre Contribution • **Budget Available for 42 Cities – Rs. 1,650 Crores**	• Budget Outlay Rs. 1 Lakh Crore with Rs. 50,000 as Centre Contribution • **Budget Available for 42 Cities – Rs. 4,500 Crores**

This workshop take us one step closer to the ODF Agenda…

#	Time	Session Overview
Day 1		
1	11:30 AM to 01:00 PM	• Overview of Urban Sanitation landscape in India • Policy and Programme Considerations towards an ODF India
2	02:00 PM to 03:30 PM	• Health Linkage of Sanitation • Community Mobilization for Sanitation Behavior Change • Experience sharing from the first Open Defecation Free city – Trichy
3	04:00 PM to 05:30 PM	• Overview of Onsite and Decentralized Septage and Sewerage Solutions • Experience of Indian cities in addressing septage management in a decentralized manner
4	05:30 PM to 06:00 PM	• AMRUT - Programme Aims and Sanitation Commitment • Service Level Improvement Plans of 42 invited cities
Day 2		
1	09:30 AM to 10:00 AM	• Special Address: Namami Gange STP plans to deal with addressing the flow of untreated fecal sludge into the Ganga river
2	10:00 AM to 11:00 AM	• Centralized Septage and Sewerage Solutions - Lessons from Indian cities on range of technologies and governance models for urban sanitation
3	11:30 AM to 02:00 PM	• Individual SLIP presentations by 42 AMRUT Cities • Participatory Citizen Evaluation - Swachh, Smart and Sustainable Cities
4	03:00 PM to 03:00 PM	• Best City Presentations: ODF and ODF Plus city plans

एक कदम स्वच्छता की ओर

Sanitation – National Mission Progress (IHHL)

Back

S. No.	State	Individual Household Toilets		
		Application received,	Work commenced	Completed
1	Andhra Pradesh	3,33,000	1,74,475	90,051
2	Andaman & Nicobar	115	40	0
3	Arunachal Pradesh	31,007	2,585	0
4	Assam	63,100	200	0
5	Bihar	92,179	80,000	5,624
6	Chandigarh UT	13,830	13,830	13,830
7	Chhattisgarh	2,46,000	2,28,518	85,952
8	Daman & Diu	0	0	0
9	Dadra & Nagar Haveli	0	0	0
10	NCT of Delhi	11,117	0	0
11	Goa	5,800	2,053	110
12	Gujarat	4,05,212	4,05,212	4,46,319
13	Haryana	90,573	37,348	7,188
14	Himachal Pradesh	2,820	416	112
15	Jammu & Kashmir	34,933	4,282	0
16	Jharkhand	88,760	50,108	2,767
17	Karnataka	3,00,061	1,45,577	8,669
18	Kerala	1,000	0	0

S. No.	State	Individual Household Toilets		
		Application received,	Work commenced	Completed
19	Madhya Pradesh	3,93,930	4,01,975	1,58,272
20	Maharashtra	2,66,536	1,04,274	1,25,355
21	Manipur	19,682	2,579	126
22	Meghalaya	5,066	0	0
23	Mizoram	2,000	550	300
24	Nagaland	9,330	8,948	3,330
25	Odisha	1,70,000	1,03,000	2,000
26	Puducherry UT	6,590	6,590	2,114
27	Punjab	1,10,125	78,855	17,480
28	Rajasthan	2,43,319	1,00,430	10,990
29	Sikkim	1,290	40	0
30	Tamil Nadu	1,85,436	1,43,126	2,797
31	Telangana	1,14,603	85,483	16,283
32	Tripura	0	0	0
33	Uttar Pradesh	16,58,142	1,51,083	1,54,541
34	Uttarakhand	25,953	21,350	1,166
35	West Bengal	26,014	12,220	12,220
	Total	**49,57,523**	**23,65,147**	**11,67,596**

Sanitation – National Mission Progress (CT & PT)

Back

S. No.	State	Total Community and Public Toilets (No. of seats)	
		Work Commenced	Completed
1	Andhra Pradesh	7,347	2,255
2	Andaman & Nicobar	69	0
3	Arunachal Pradesh	3,815	0
4	Assam	4,800	38
5	Bihar	272	57
6	Chandigarh UT	9,052	1,313
7	Chhattisgarh	9,849	3,571
8	Daman & Diu	0	0
9	Dadra & Nagar Haveli	0	0
10	NCT of Delhi	19,909	5,776
11	Goa	170	40
12	Gujarat	6,264	1,100
13	Haryana	2,527	1,051
14	Himachal Pradesh	0	0
15	Jammu & Kashmir	125	6
16	Jharkhand	1,365	231
17	Karnataka	9,160	577
18	Kerala	0	0
19	Madhya Pradesh	14,280	6,960
20	Maharashtra	5,336	2,689
21	Manipur	170	140
22	Meghalaya	193	0
23	Mizoram	65	36
24	Nagaland	226	68
25	Odisha	4,040	720
26	Puducherry UT	200	60
27	Punjab	5,500	20
28	Rajasthan	8,090	1,880
29	Sikkim	8	8
30	Tamil Nadu	17,156	16,656
31	Telangana	517	144
32	Tripura	0	0
33	Uttar Pradesh	7,646	2,297
34	Uttarakhand	1,360	163
35	West Bengal	0	0
	Total	**1,39,511**	**47,856**

ULBs already declared ODF in FY16

Back

Date to become ODF- Quarter wise		
SN	District	Name of ULB
Cities ODF on 02.10.2015 (19 cities)		
1	Kokan	Mahad
2	Kokan	Matheran
3	Kokan	Roha Ashtami
4	Kokan	Chiplun
5	Kokan	Dapoli Camp (NP)
6	Kokan	Guhaghar
7	Kokan	Khed
8	Kokan	Vengurla
9	Nagpur	Mowad
10	Nashik	Bhagur
11	Pune	Malkapur
12	Pune	Panhala
13	Pune	Mahabaleshwar
14	Pune	Malkapur (NP)
15	Pune	Panchgani
16	Pune	Satara
17	Pune	Wai
18	Pune	Karmala
19	Pune	Kurduvadi

Date to become ODF- Quarter wise		
SN	District	Name of ULB
Cities ODF by 31.12.2015 (35 cities)		
Amravati (1)		
20	Amravati	Chikhaldara
Kokan (4)		
21	Raigad	Murud Janjira
22	Raigad	Pen
23	Ratnagiri	Rajapur
24	Sindhudurga	Malwan
Nagpur (4)		
25	Nagpur	Katol
26	Nagpur	Mohpa
27	Nagpur	Ramtek
28	Nagpur	Umred
Pune (21)		
29	Kolhapur	Murgud
30	Kolhapur	Gadhinglaj
31	Kolhapur	Kurundvad
32	Kolhapur	Kagal
33	Kolhapur	Vadgaon Kasba
34	Kolhapur	Jaysingpur
35	Pune	Baramati

Date to become ODF- Quarter wise		
SN	District	Name of ULB
Cities ODF by 31.12.2015 (35 cities)		
36	Pune	Sasvad
37	Pune	Indapur
38	Pune	Jejuri
39	Pune	Shirur
40	Pune	Talegaon Dabhade
41	Pune	Alandi
42	Pune	Lonavala
43	Satara	Rahimatpur
44	Solapur	Dudhani
45	Solapur	Mangalvedhe
46	Solapur	Akkalkot
47	Solapur	Maindargi
48	Solapur	Sangole
49	Solapur	Pandharpur
Nashik (5)		
50	Ahmadnagar	Shirdi
51	Dhule	Shirpur-Warwade
52	Jalgaon	Faizpur
53	Jalgaon	Savda
54	Nashik	Trimbak

Sanitation's agenda: water-toilet-waste-pollution nexus

Joining the dots for successful implementation of Swachh Bharat

CSE Delhi

Swatch Bharat

- Important opportunity. Top-level national attention
- Important to join the **excreta-dots** – toilets have to be linked to disposal and treatment systems
- Swatch Bharat ++++
- AMRUT ++++
- Ganga Mission ++++

Excreta Matters I

- file://localhost/Users/sunitanarain/Desktop/Excreta matter vol.1 PDF/Final chapters for book/Master Excel Checked.xls

71 city data analyzed
City water-waste profiles
Where does water come?
Where does waste go?
Simple questions
But not asked
Never answered

Water story in cities

Planners obsessed with water, not supply

Water sourced from further and further away

Leads to increasing cost of supply

Leads to high distribution losses

Less water to supply at end of pipeline

Less water means more costly water

Cities not able to recover costs of supply, have no money to invest in sewage

Water=waste

Cities plan for water, **forget waste**

80% water leaves homes as sewage

More water=more waste

Cities have **no accounts** for sewage

Cities have **no clue** how they will convey waste of all, treat it, clean rivers

Excreta: **sums**

- 2009-2015:

Sewage generated = 38,255 mld

Capacity to treat = 11,788 mld (**30%**)

Sewage actually treated = 8,251 mld (**22%**)

78 %-81% sewage is officially untreated and disposed off in rivers, lakes, groundwater

We flush, we forget

Planning for **hardware**

Cities plan for treatment not sewage

- Treatment plants are not simple answers

- Most cities do not have underground sewage But engineers sell pipe-dreams of **catching up with infrastructure**

- We lose rivers. Generations of **lost rivers**

Cities do not have drains
New growth cities are growing without drains
Backlog and front-log impossible to fix
As cities fix one drain, another goes under

% of area covered	
0-10	Cuttack, Guwahati, Jabalpur, Jammu, Ranchi, Thane, Aizawl, Bathinda, Bhilwara, Siliguri, Srikakulam
10-30	Agra, Alwar, Aurangabad, Indore, Mathura, Meerut, Puducherry, Thiruvananthapuram, Dehradun, Dewas, Hubli-Dharwad, Jhansi, Kozhikode, Lucknow, Solapur, Tumkur, Udaipur, Ujjain, Dhanbad
30-50	Allahabad, Bengaluru, Bhopal, Delhi, Lucknow, Patna, Srinagar, Amritsar, Bhubaneswar, Jodhpur, Mumbai
50-70	Faridabad[2], Hyderabad, Jaipur[1], Kanpur, Kolkata, Nagpur, Gwalior, Mussoorie, Nainital, Rajkot, Vadodara, Yamunanagar
> 70	Chennai, Pune, Surat, Gurgaon[2]

[1]Claims 80% coverage in CSE survey, 65% in City Development Plan for JNNURM; [2]Faridabad and Gurgaon: only old-city within municipal limit included
Source: Anon 2011, *71-City Water-Excreta Survey, 2005-06*, Centre for Science and Environment, New Delhi

Excreta Matters II

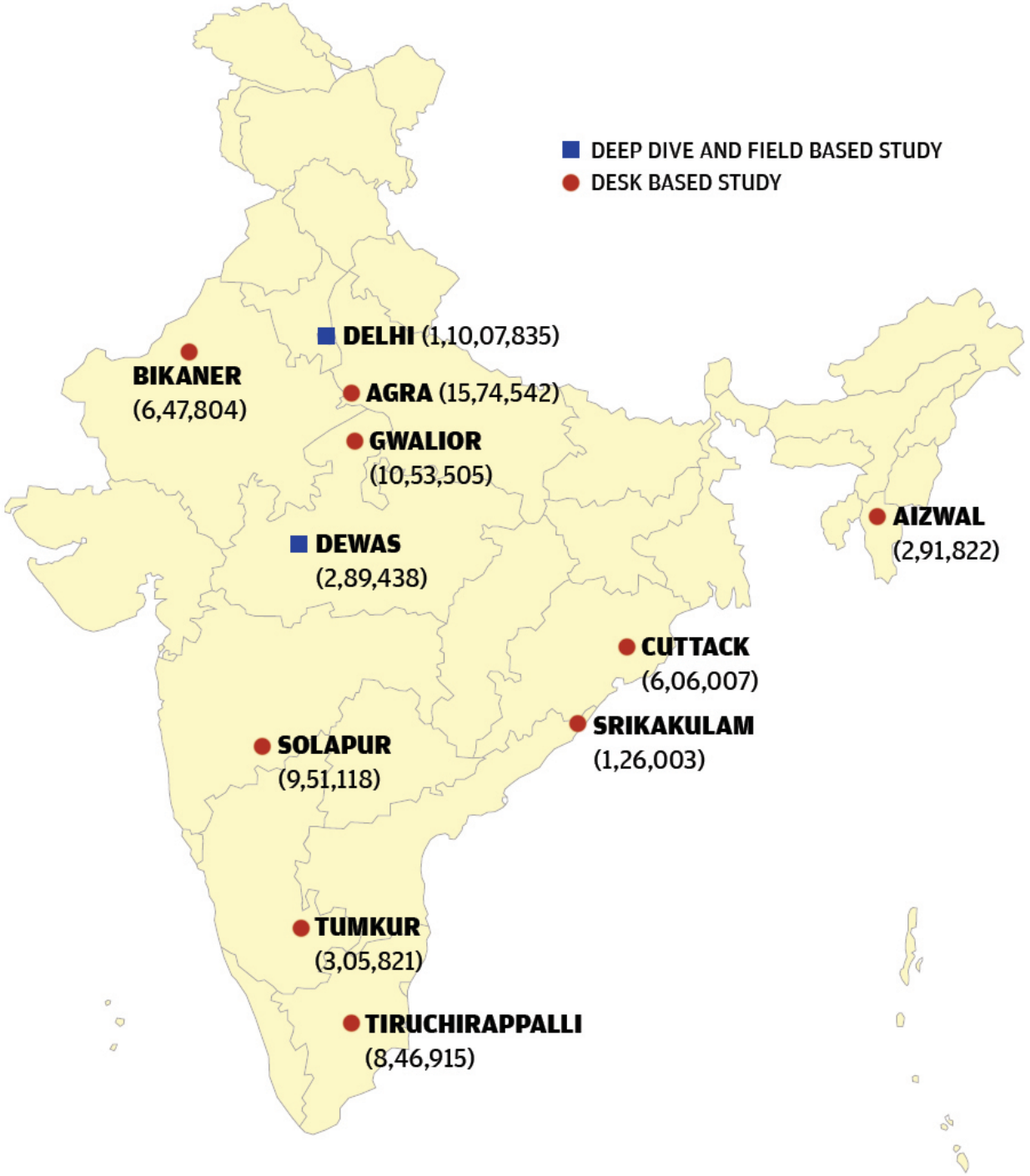
Water-toilet-septage-sewage-treatment-reuse

First count of toilets and their connections: where waste goes

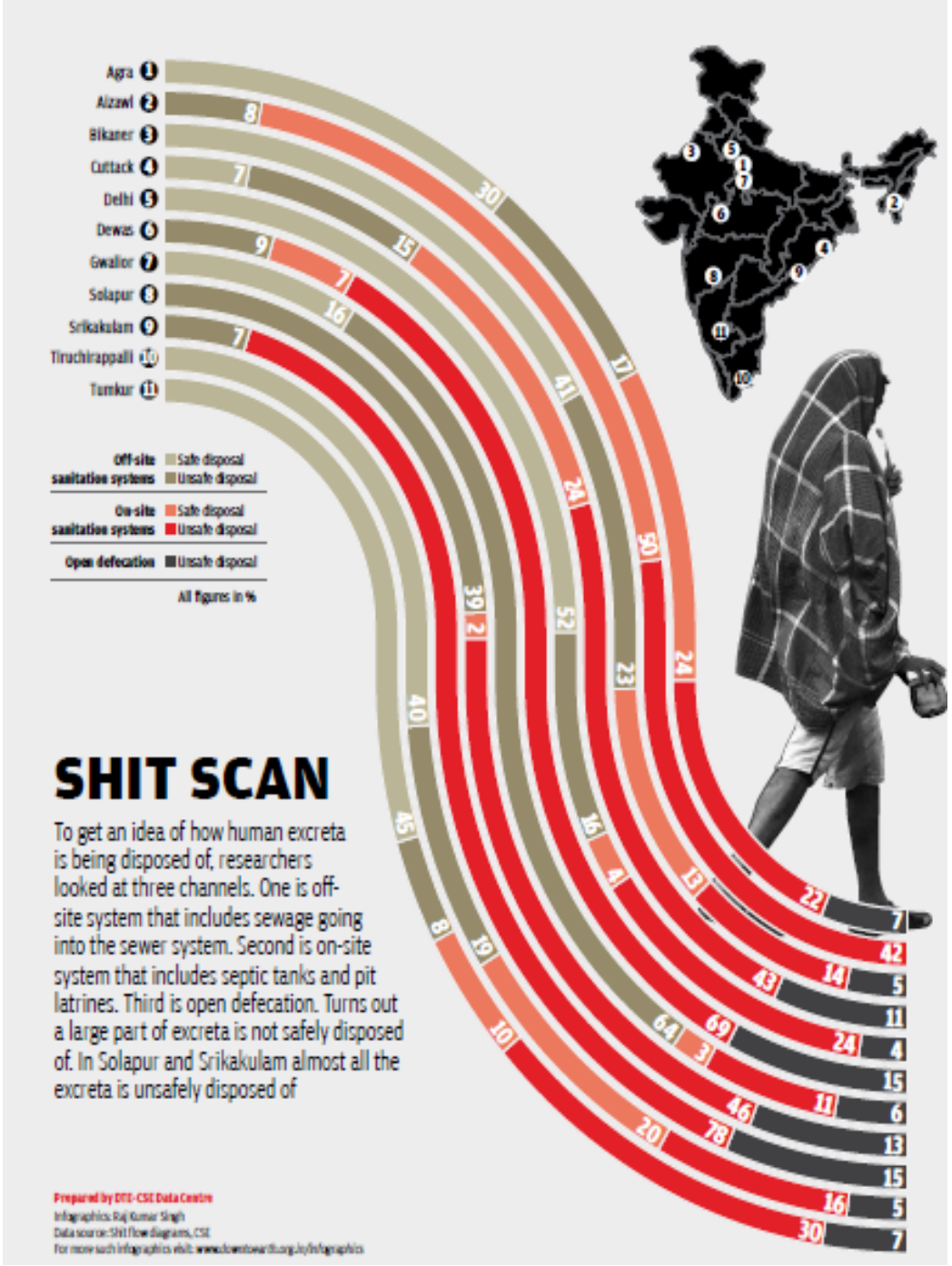
Census 2001	Census 2011	
No latrine	**Flush/pour toilet latrine connected to**	**72.6**
Service latrine	a. Piped sewer system	32.7
Pit latrine	b. Septic system	38.2
Water closet	c. Other system	1.7
	Pit latrine	
	With slab/ventilated improved pit	6.4
	Without slab/open pit	0.7
	Night soil disposed into open drain	1.2
	Service latrine	
	Night soil removed by human	0.3
	Night soil serviced by animals	0.2
	No latrine within premises	
	Public latrine	6.0
	Open	12.6

Source: Census of India 2011, Houses, Household Amenities and Assets: Latrine Facility,

Shit-Flow: mapping the sanitation story of cities



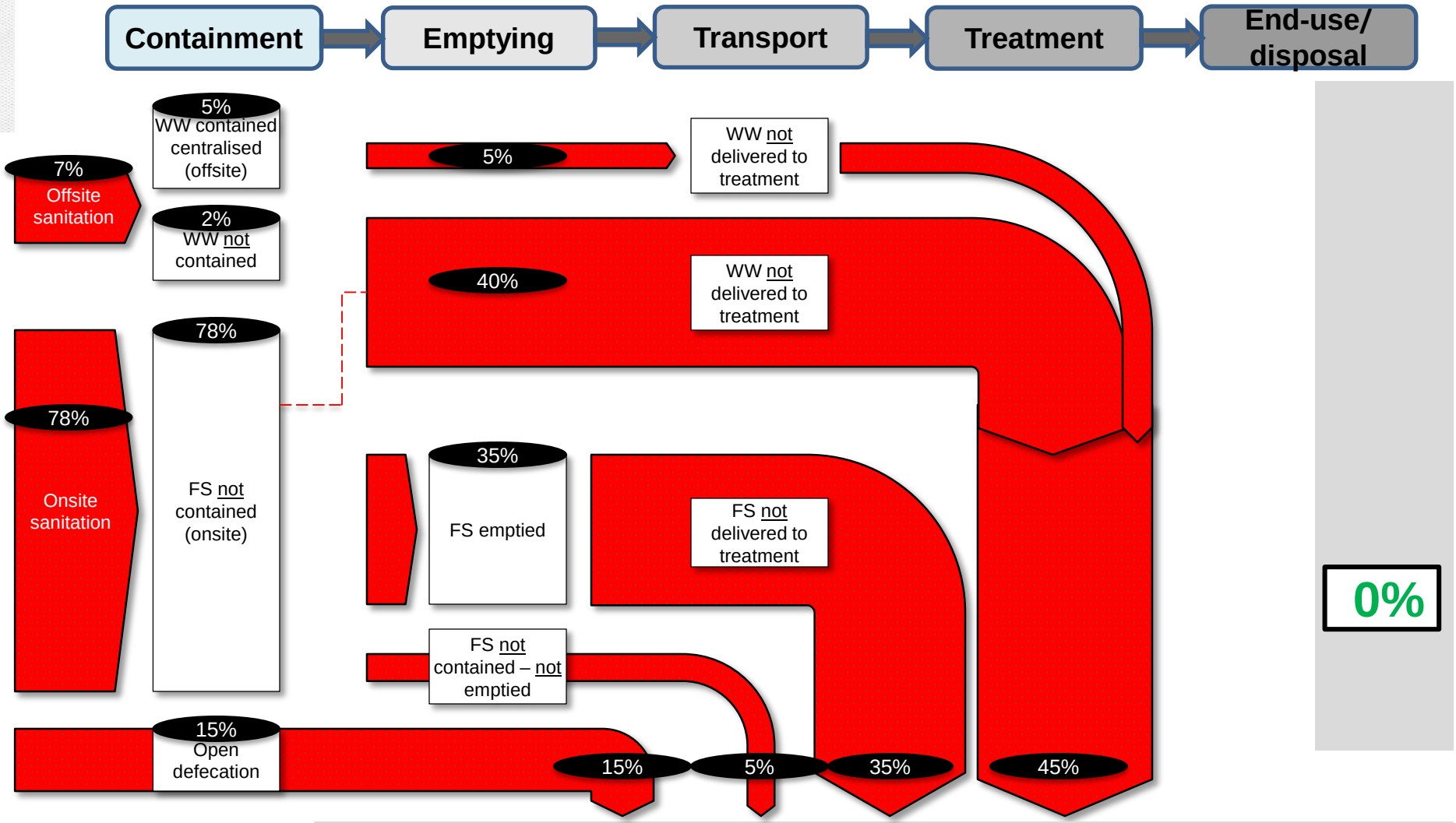

EXCRETA MATTERS


Agra 1
Alzawl 2
Bikaner 3
Cuttack 4
Delhi 5
Dewas 6
Gwalior 7
Solapur 8
Srikakulam 9
Tiruchirappalli 10
Tumkur 11
Off-site sanitation systems
Safe disposal
Unsafe disposal
On-site sanitation systems
Safe disposal
Unsafe disposal
Open defecation
Unsafe disposal
All figures in %
SHIT SCAN
To get an idea of how human excreta is being disposed of, researchers looked at three channels. One is off-site system that includes sewage going into the sewer system. Second is on-site system that includes septic tanks and pit latrines. Third is open defecation. Turns out a large part of excreta is not safely disposed of. In Solapur and Srikakulam almost all the excreta is unsafely disposed of
Prepared by DTE-CSE Data Centre
Infographics: Raj Kumar Singh
Data source: Shit Flow diagrams, CSE
For more such infographics visit: www.downtoearth.org.in/infographics

Srikakulam- 31 July 2015

Desk based

Status: Final



Solapur-01 August 2015
Desk based

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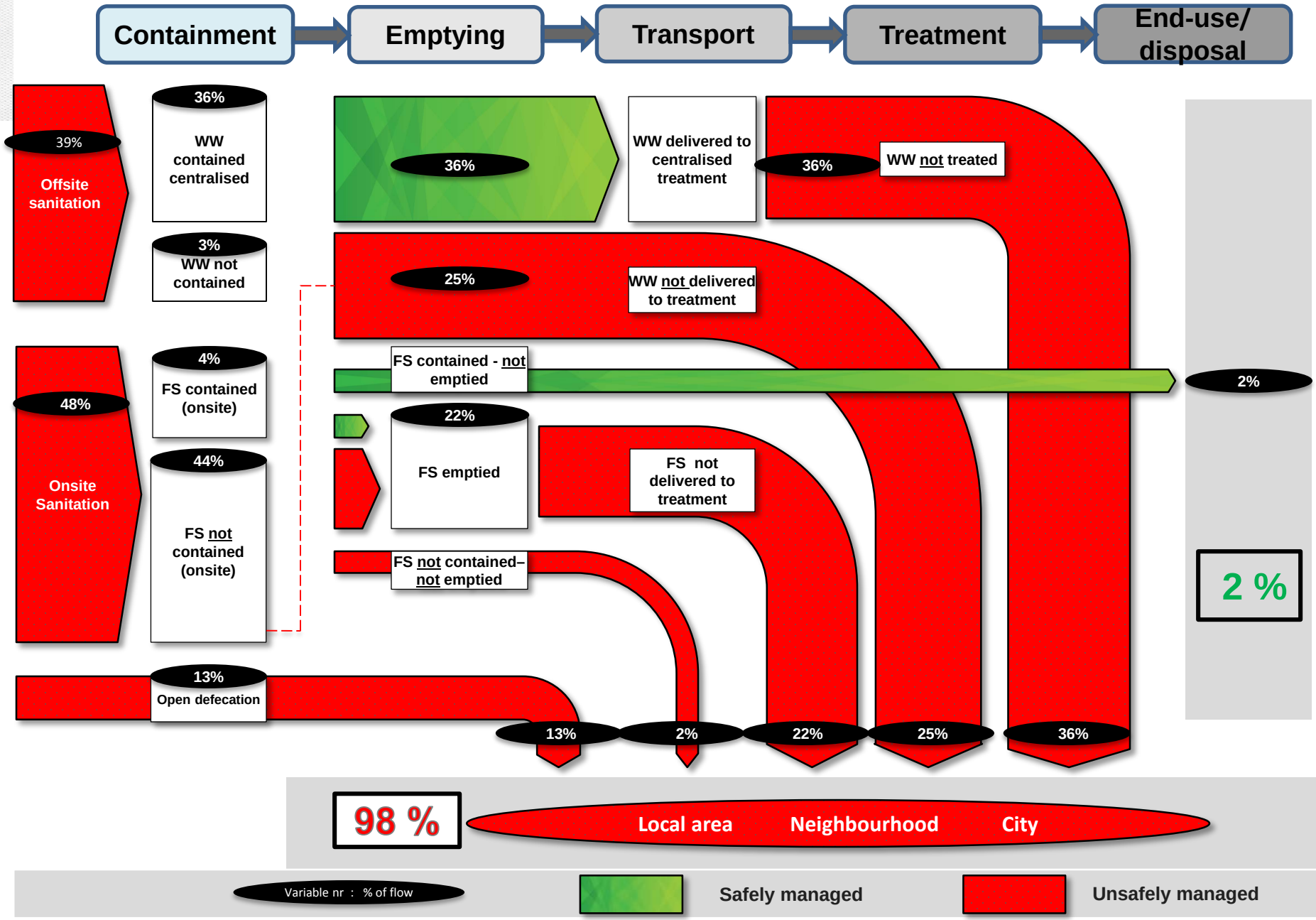

Dewas- 30 January 2016

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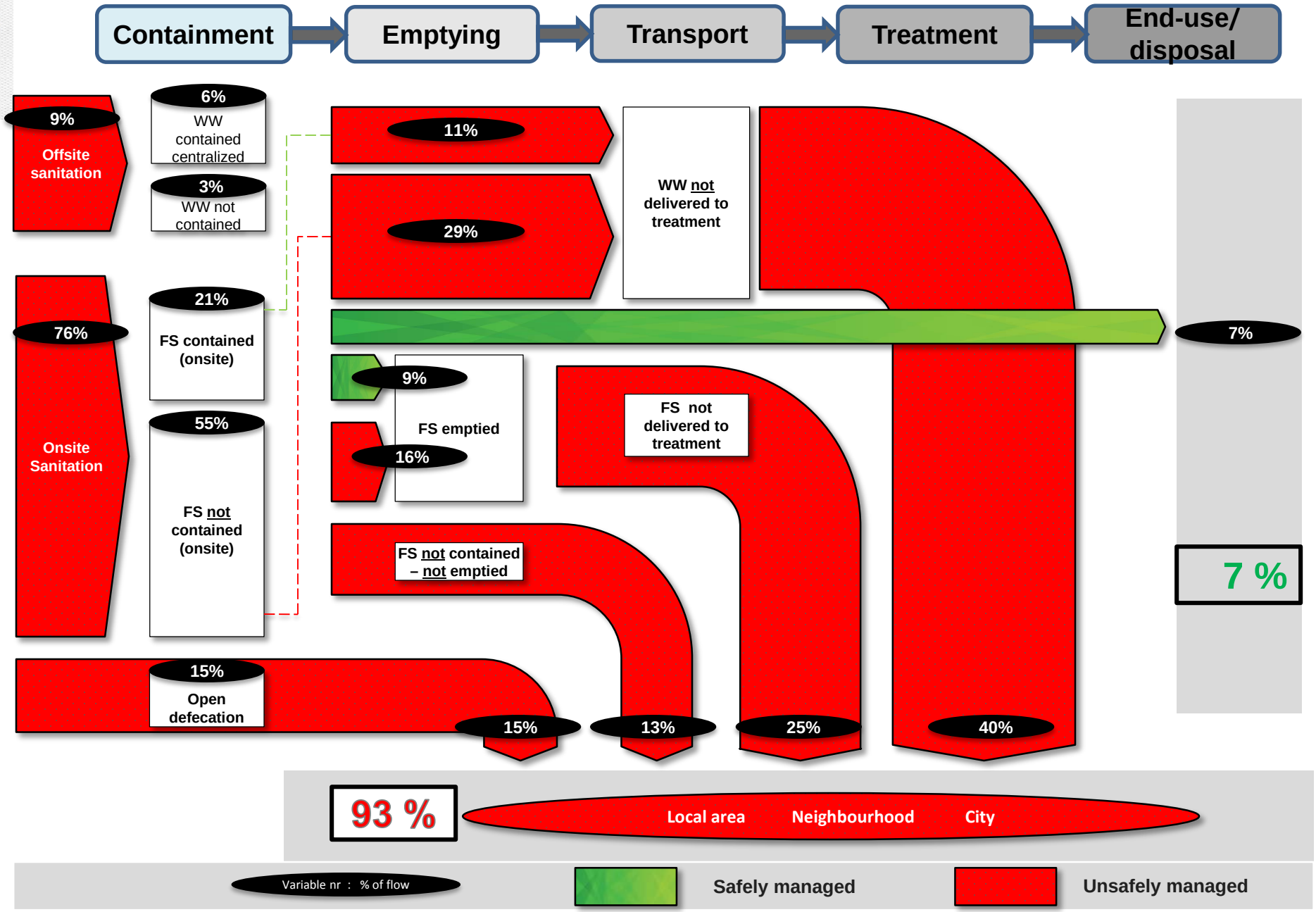

Gwalior-13 October 2015

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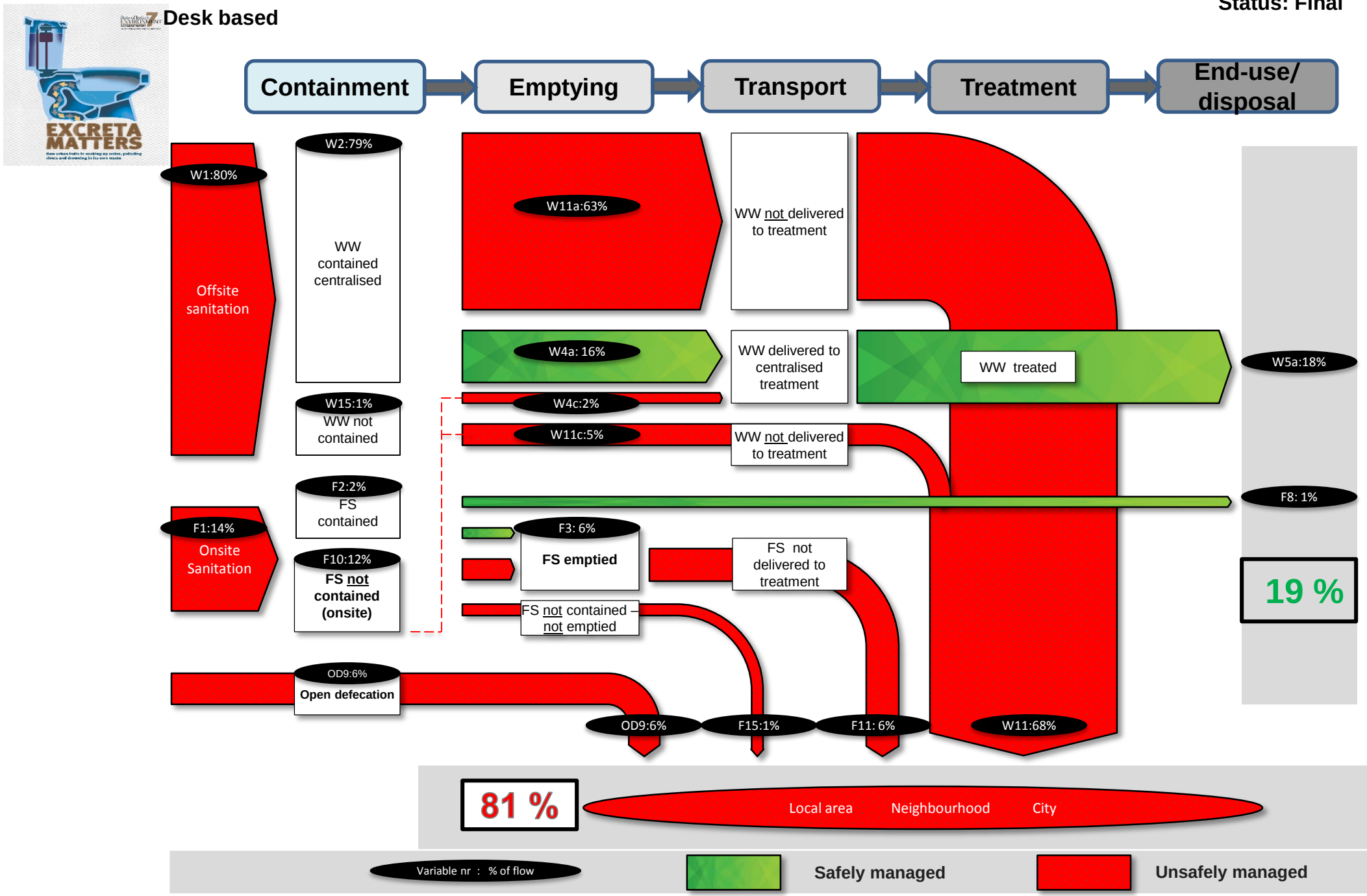

Cuttack- 28 July 2015

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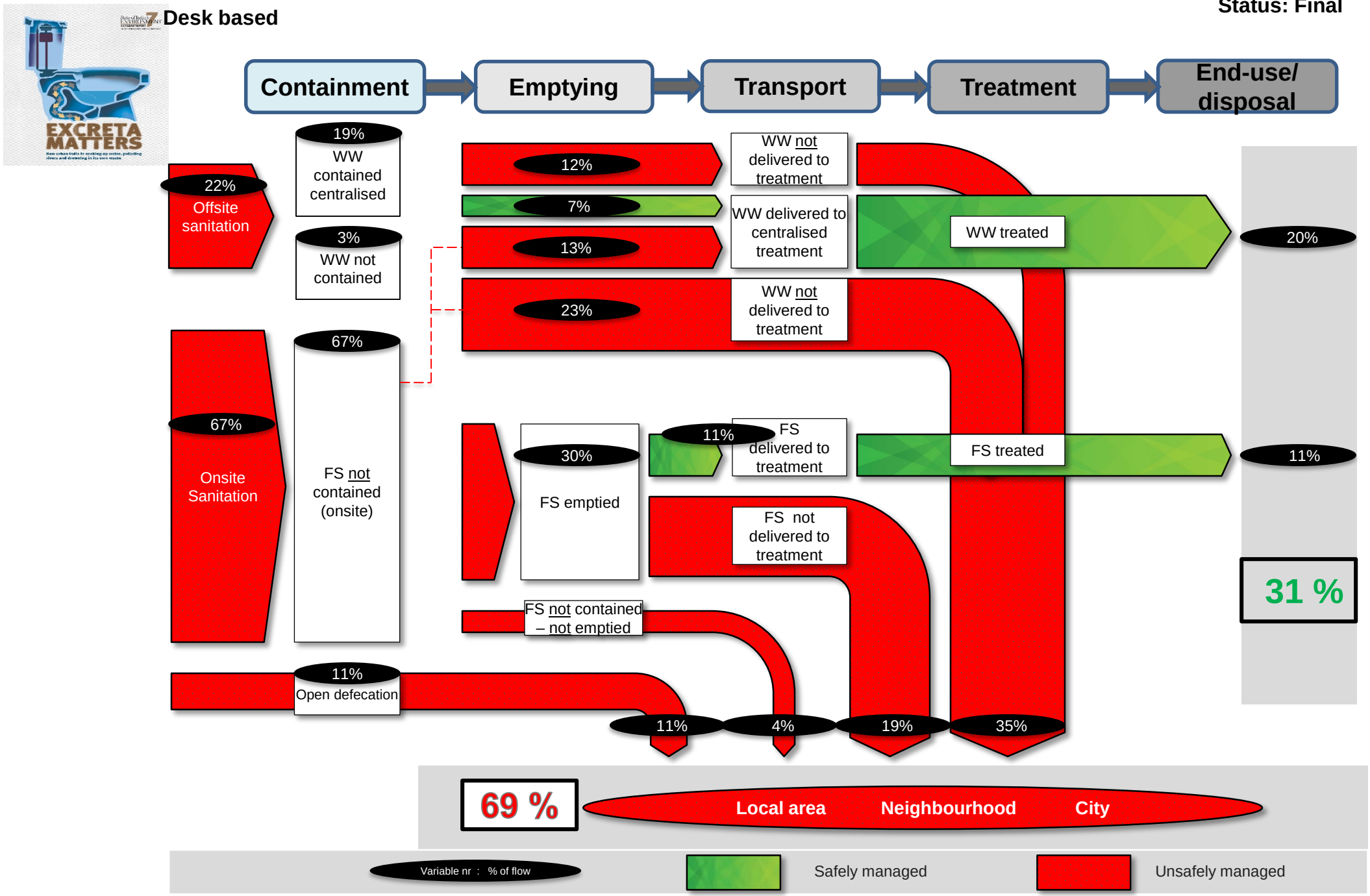

Aizawl- 29 July 2015

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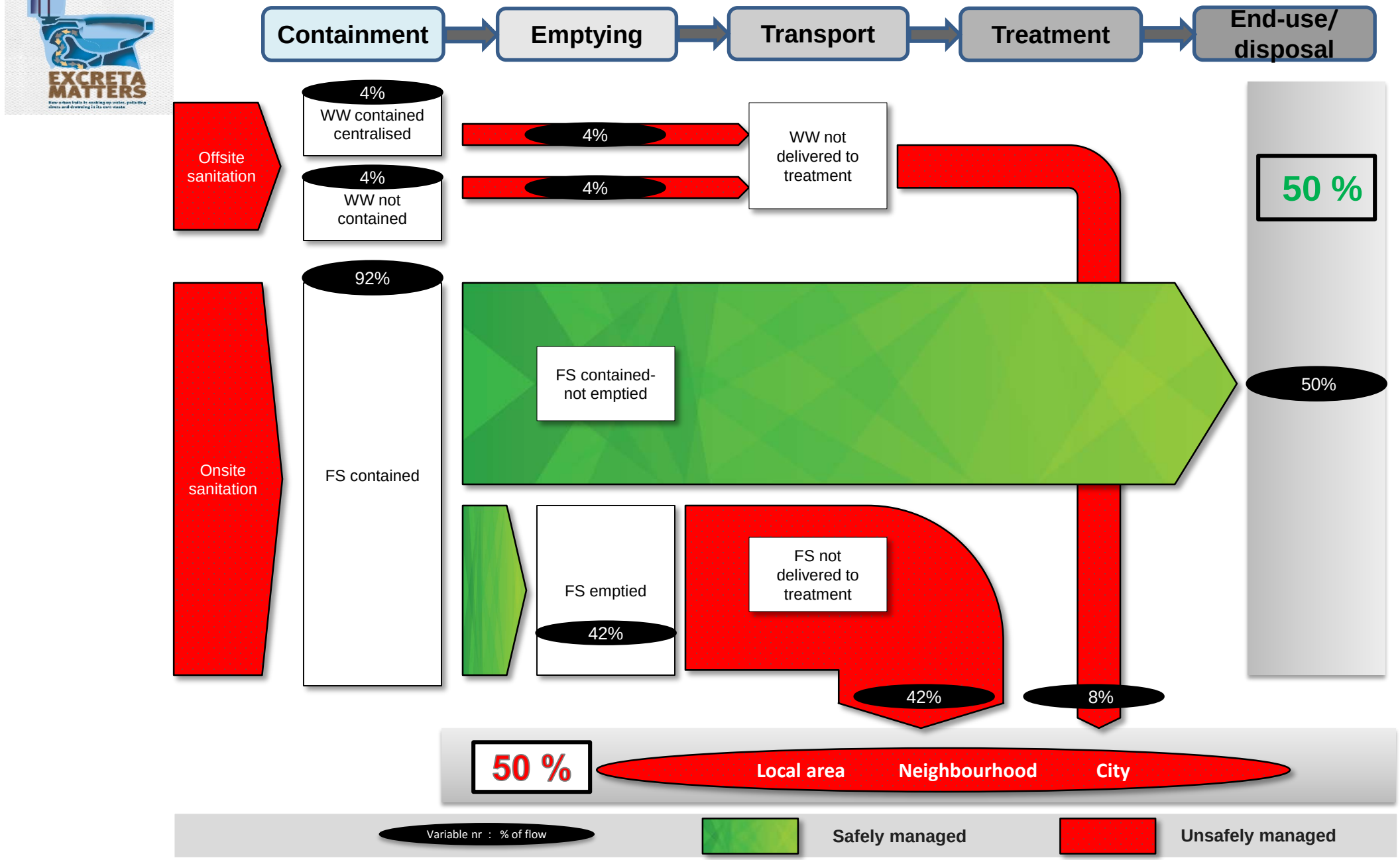

Agra – 21 October 2015

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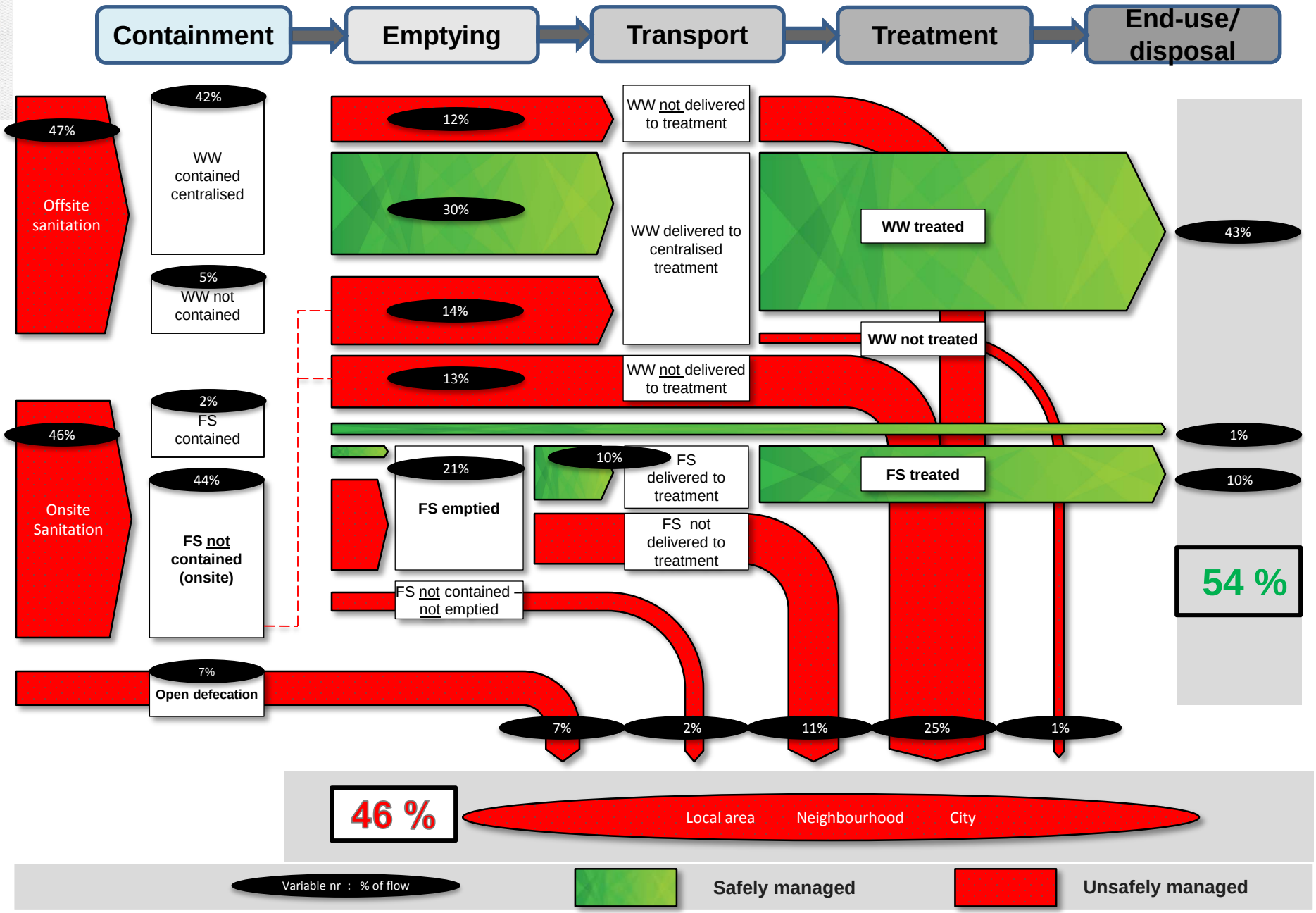

Tumkur- 03 August 2015

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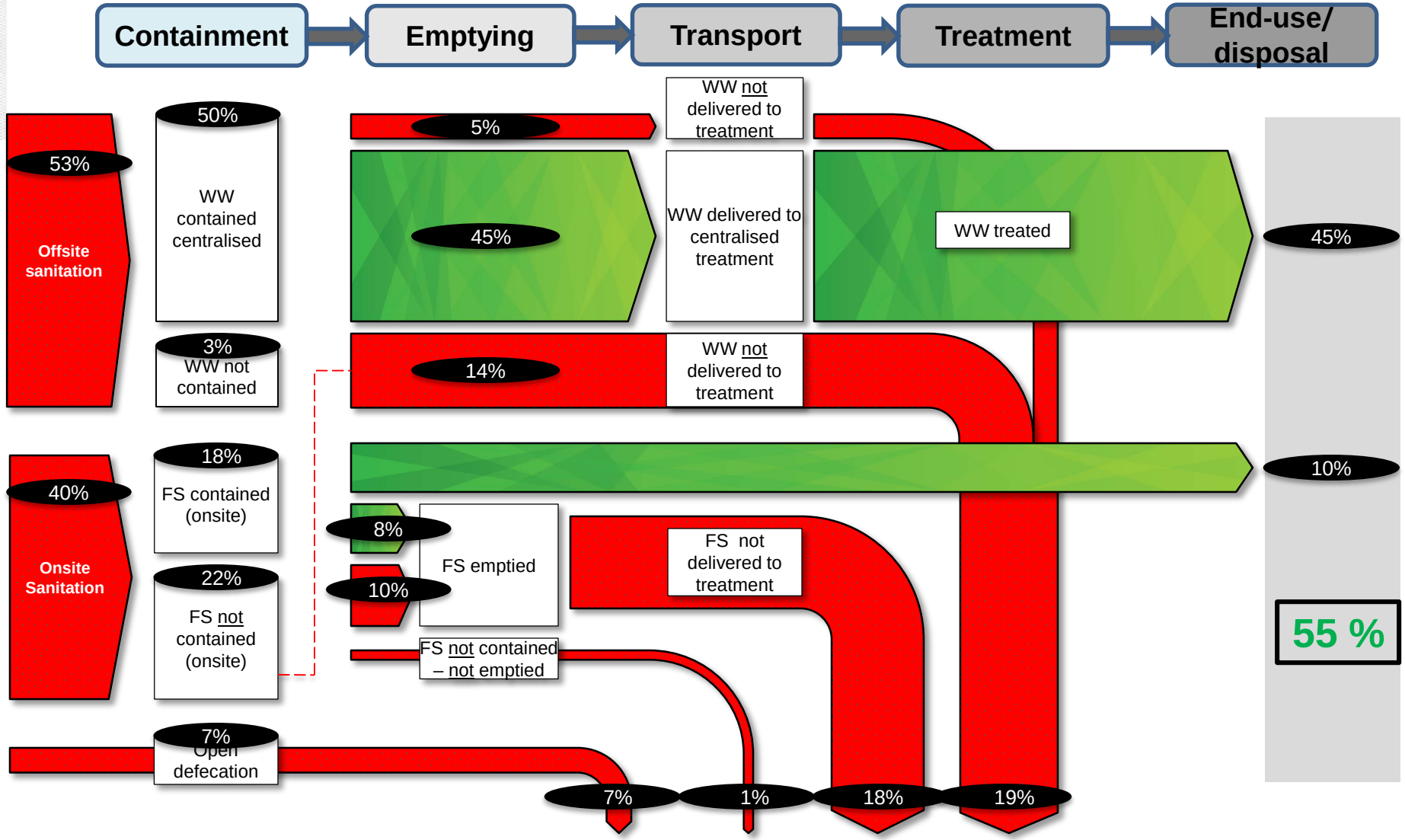

Delhi – 8 February 2016

Field based

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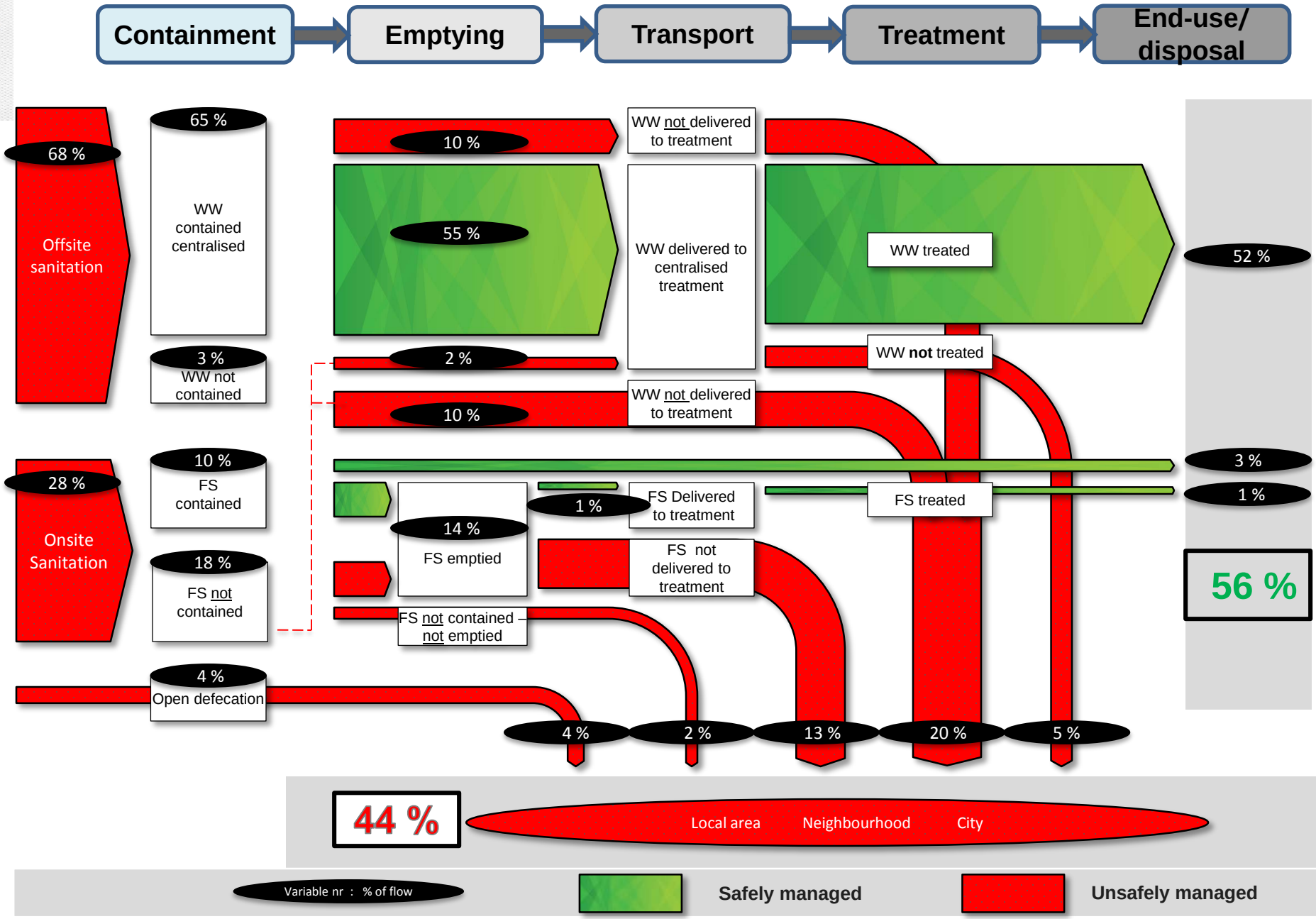

Bikaner- 14 September 2015

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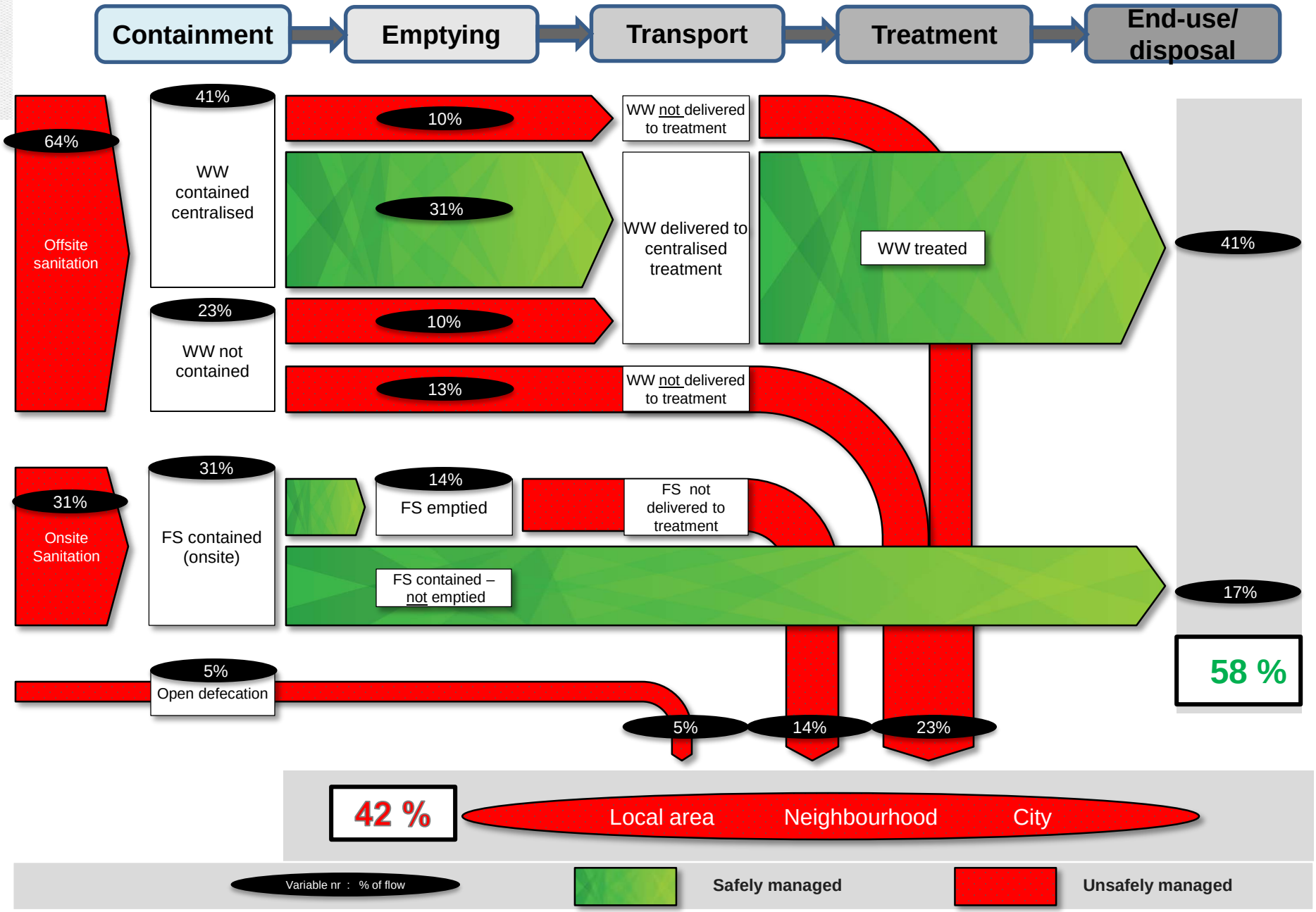

Tiruchirappalli- 26th September 2015

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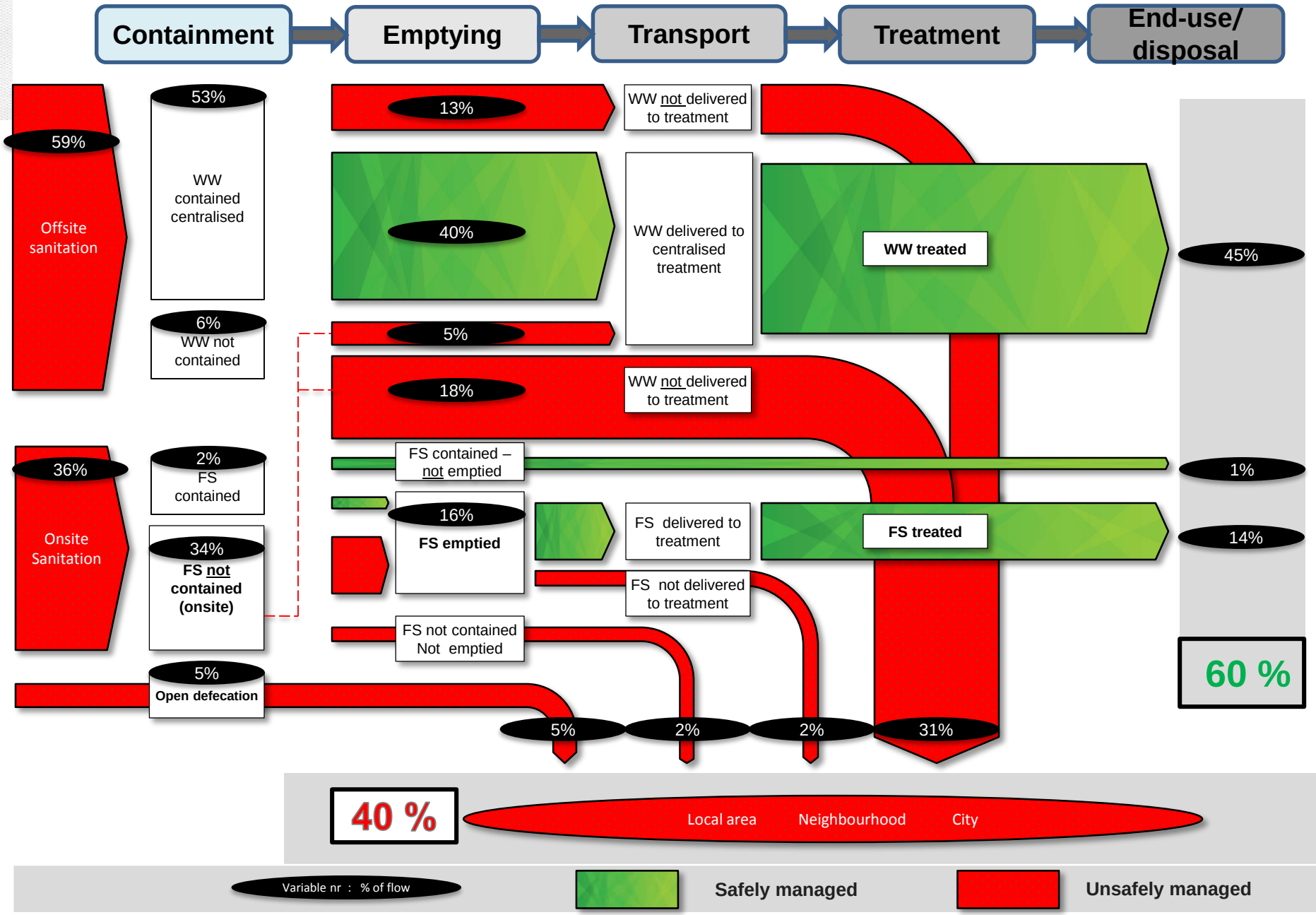


On-site challenges

- Toilet connected to underground ‘box’
- Design quality of septic tank is unknown – in many cases these are tanks, emptied regularly or simply linked to municipal drain
- In most cities Informal (mafia) collects waste for a price – growing and thriving business
- In all cities there is no system for safe disposal of this waste
- In all cities, waste from septic tanks is ‘dumped’ in open sewers; rivers; municipal sewers; fields…

Thriving private business: but where does this go?

Delhi outskirts: untreated faecal sludge dumped in fields


Disposal in storm
water drain
Ghitorni, Delhi

Disposal in Sholapur: garbage dumps

Toilet-STP+++

- Current sanitation focus is on building toilets (important and necessary)
- Current pollution-control focus is on building sewage treatment plants (unnecessary without conveyance
- But people are building septic tanks – there is no official conveyance; no official treatment
- End result is: **pollution**

On-site needs:

- **Recognition**: official acceptance that these are not part of the past but the future
- **Regulations**: construction; collection; treatment
- **Technologies**: disposal and reuse

Opportunity: re-invent future sanitation solutions

- If India can jump-skip-leapfrog the landline-grid route in connectivity in telephones and energy access then why not in sanitation?
- Cost-effective (do not have to plan for underground sewerage for door-to-door conveyance)
- People are managers (if septic tank is overflowing then NIMBY kicks in)
- Already exist – do not have to re-engineer entire cities for sewerage networks

Opportunity: Re-use

- **Water-based** sewage systems destroy the nitrogen-cycle of world
- Water used to flush excreta; water as conveyance; water for disposal
- Nutrients lost
- Food security lost
- Water polluted
- **Land-based** sewage systems can repair this

Land-based: agenda

- Nutrients-Food-Excreta-Nutrients-Food
- Excreta is segregated in septage systems (mostly and challenge is to keep it like this)
- Excreta can be used as nutrients for soil – reused in agriculture or compost
- **How? What is best practice? What is primary treatment required? Who will pay for it? How will city regulate reuse?**

Sanitation agenda: water-toilets-sewage-septage-pollution control-reuse nexus

- Link Swachh Bharat-AMRUT-Clean-India funds to water-sanitation plans (toilet++++)
- Insist on rapid assessments of citywide sanitation – Sanitation Flow Diagrams – **and plans for disposal and reuse**
- Include on-site systems; regulations in city sanitation plans
- Include on-site reuse and treatment in city sanitation plans

Massive opportunity

Lets not waste it

Can get it right – fast and make India waste-free

The nation needs to know

Where does your water come from?

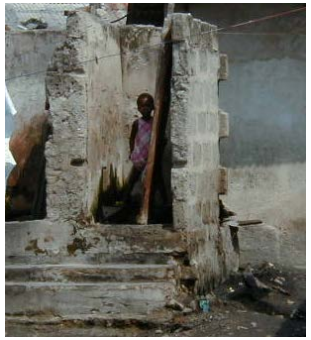
Where does your excreta go?

https://www.youtube.com/watch?v=QU098R2pKHk

Improving Sanitation through ODF and ODF

- A step towards ***"Sampurn Swachhta"***

Open defecation



Unhygienic toilet

Abandoned Community Toilet

Open washing places

URBAN

Sanitation scenario

Overflowing sewer

Industrial effluent

Polluted open Drain

Urban Statistics -Odisha

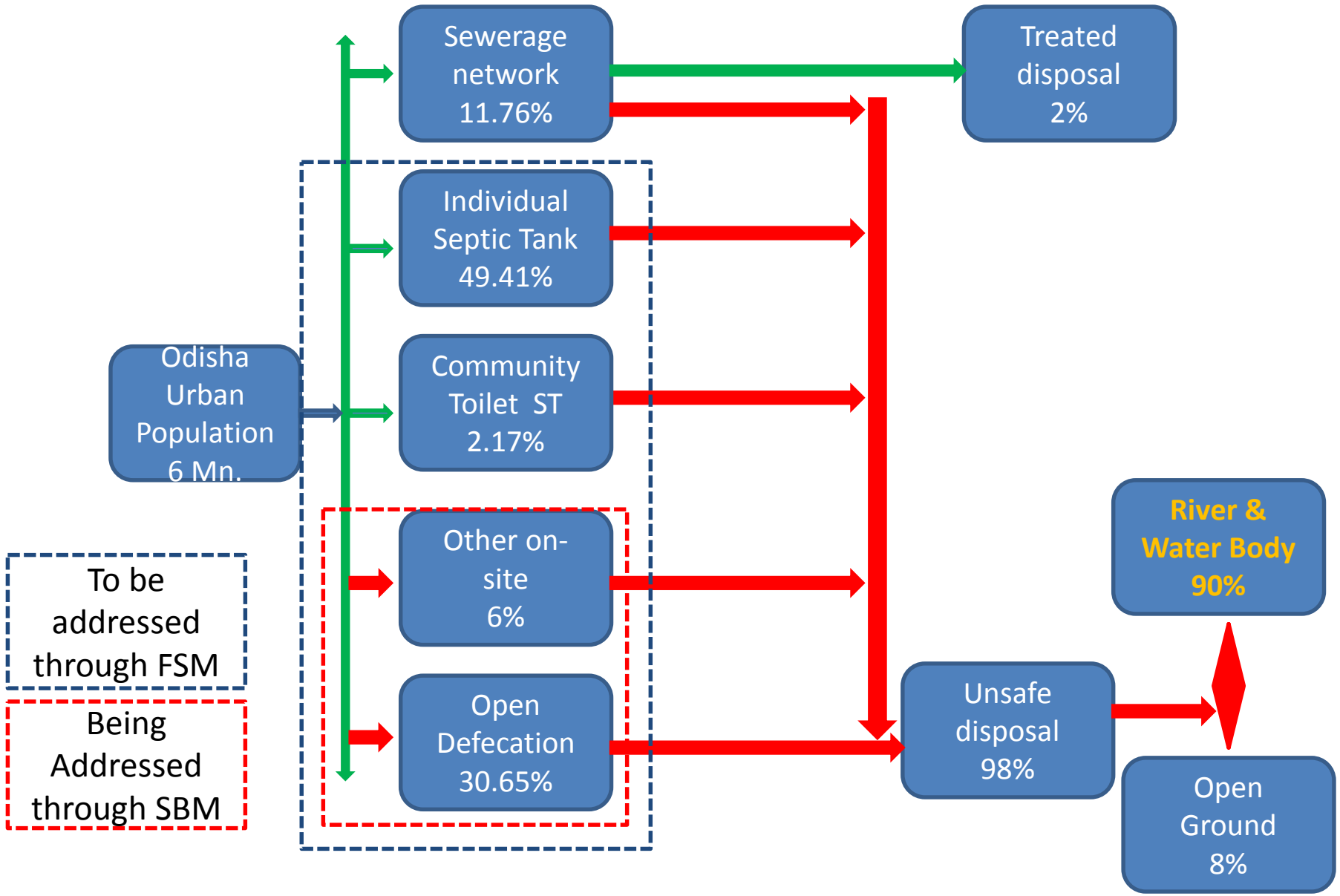
Description	Data
Total no. ULB	110
No. of Corporation	5
No. of Municipalities	45
No. of NACs	60
Total Urban Population (statutory towns)	59,69,842
Total Urban Households	13,35,888
% of urban population in the state	16.7%
Decadal Growth Rate (urban)	26.8%

Population Range	No. of Towns	Population	Percentage
5 lakh & above	2	14,53,591	25.5%
1lakh to 5 lakhs	7	13,49,251	23.6%
50,000 to 1 lakh	14	10,02,889	17.6%
25,000 to 50,000	27	10,25,761	18.0%
Less than 25,000	60	8,75,966	15.3%

Urban Sanitation Status in Odisha

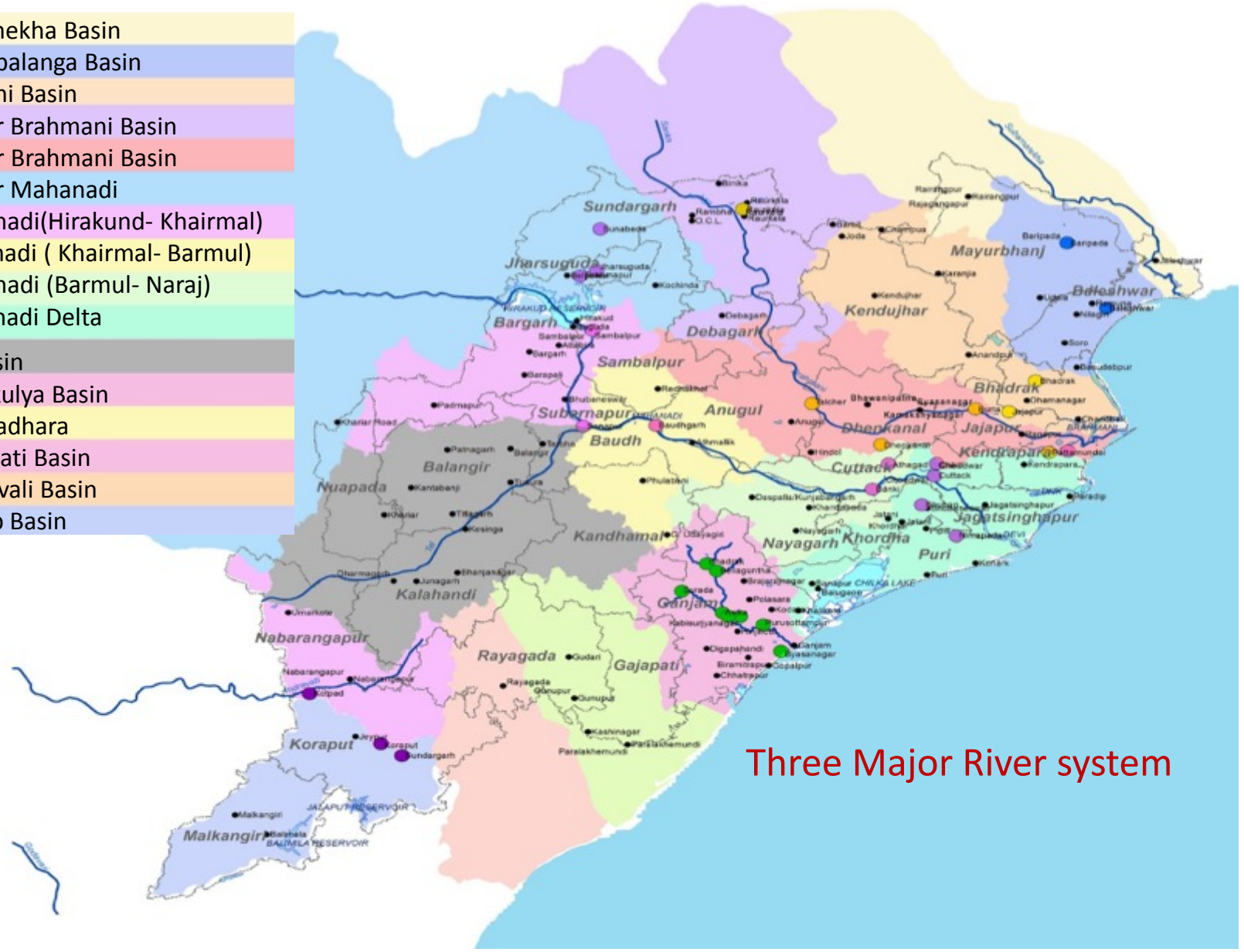
Description	Data (2011)	
Total Urban Households	13,35,888	
1. Total HH with Latrine within Premises (IHL)	**8,97,459**	67.18%
a. Sewer network & community septic tank	1,57,145	11.76%
b. Individual septic tank	6,60,051	49.41%
c. Pit Latrine	55,453	4.15%
d. Insanitary Latrine	24,810	1.86%
2. Total HH not having IHL	**4,38,429**	32.82%
a. Community Latrine	29,031	2.17%
b. Open Defecation	4,09,398	30.65%
3. No. of Cities having partial Sewerage system	3	

Sanitation Flow Diagram



River basins affected by the sewage flow from ULBs

1. Subranekha Basin
2. Burhabalanga Basin
3. Baitrani Basin
4a.Upper Brahmani Basin
4b.Lower Brahmani Basin
5a.Upper Mahanadi
5bMahanadi(Hirakund- Khairmal)
5cMahanadi (Khairmal- Barmul)
5dMahanadi (Barmul- Naraj)
5eMahanadi Delta
6. Tel Basin
7. Rushikulya Basin
8. Vanshadhara
9. Indrabati Basin
10. Nagavali Basin
11. Kolab Basin

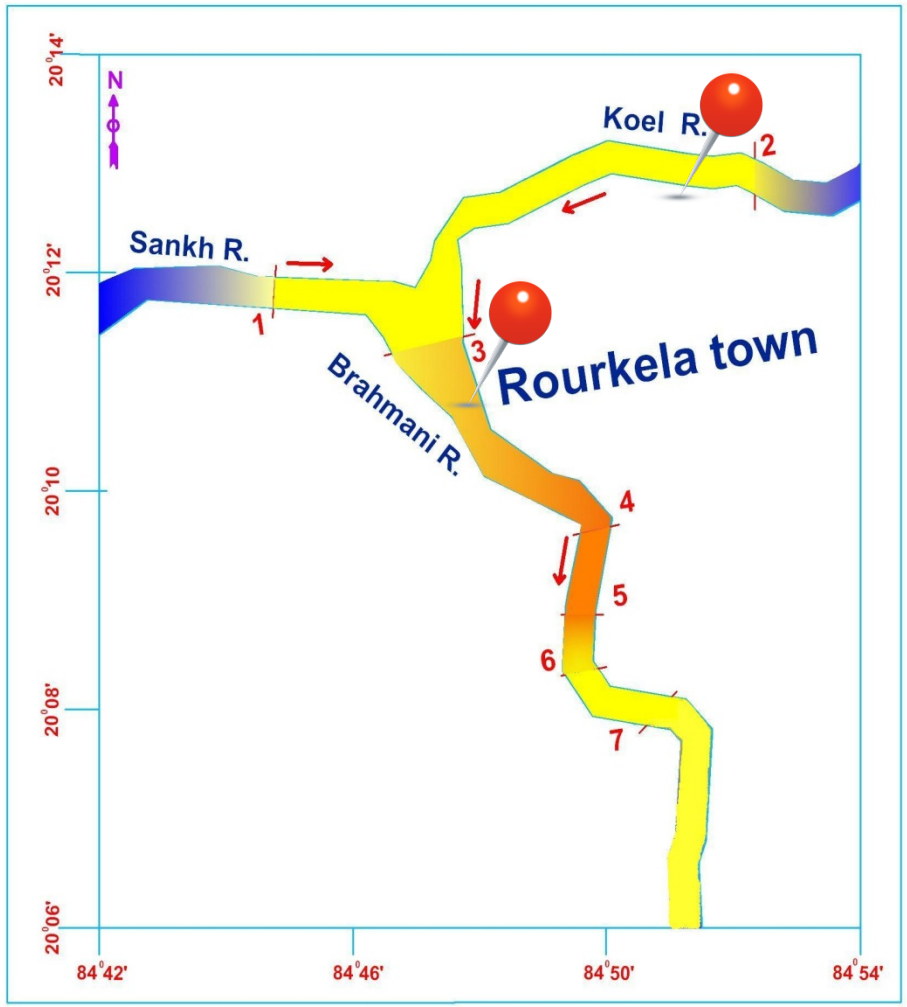


Back

Satellite image of confluence of Guradih nallah with river Brahmani at Jalda, Rourkela

Guradhi nallah carrying wastewater from RSP and Rourkela Steel townships

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

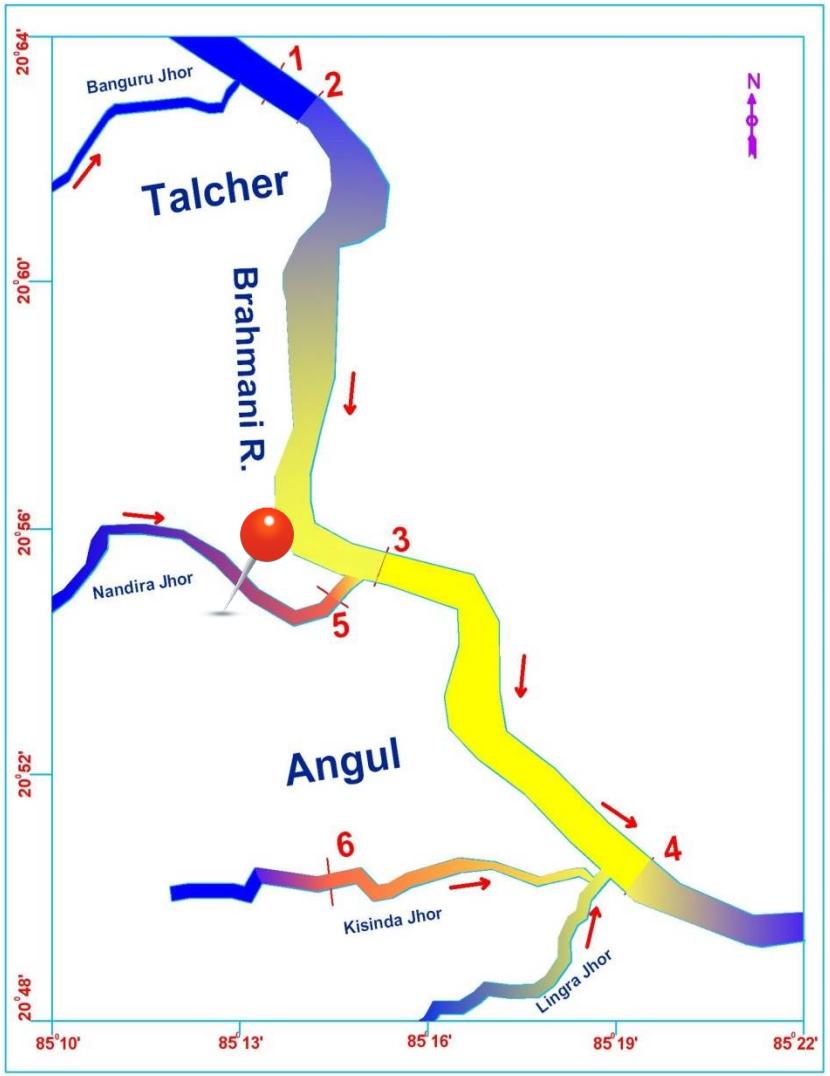
Conform to DBU Class C

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

Polluted Stretch of Brahmani river along Talcher and Angul towns



Legends

Monitoring Locations

1. Talcher FU/s
2. Talcher U/s
3. Talcher D/s
4. Talcher FD/s
5. Nandira D/s
6. Kisinda Jhor

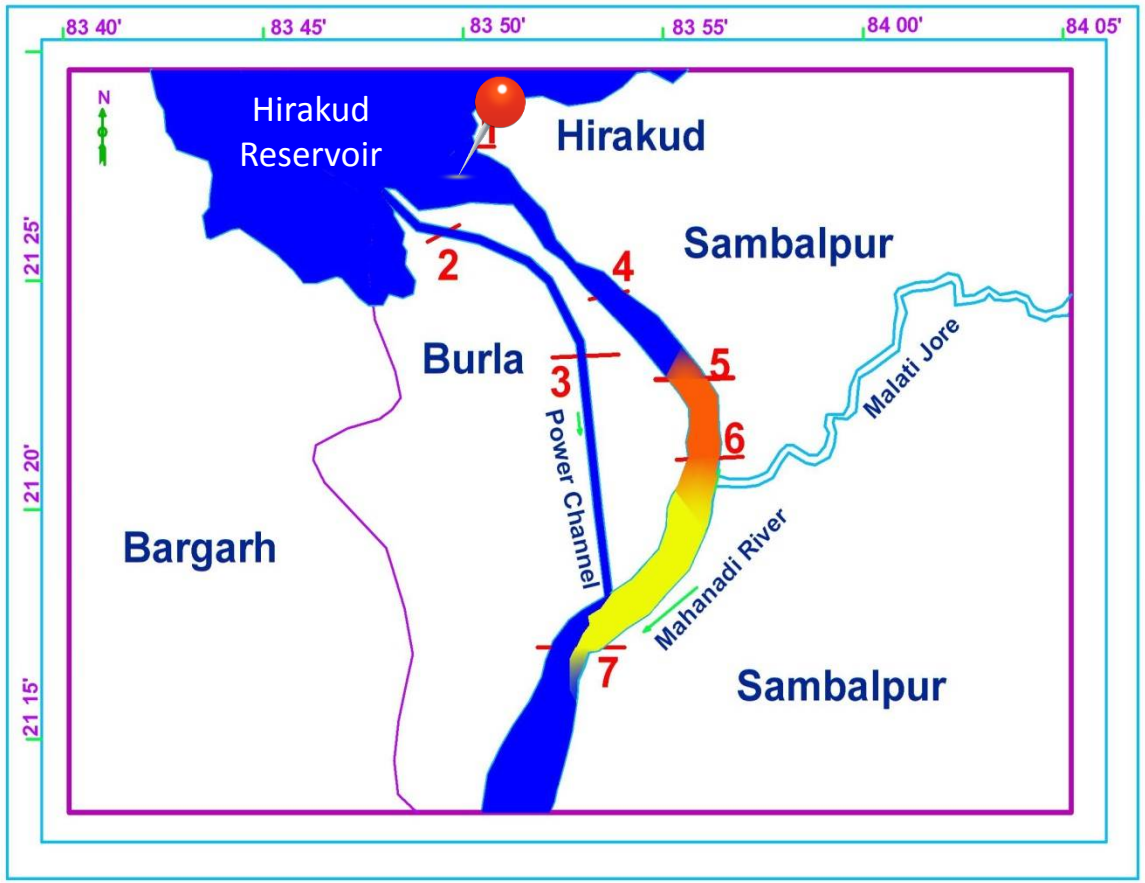
River

- 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

Municipal Drain of Sambalpur Town

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



Legends

- District Boundary

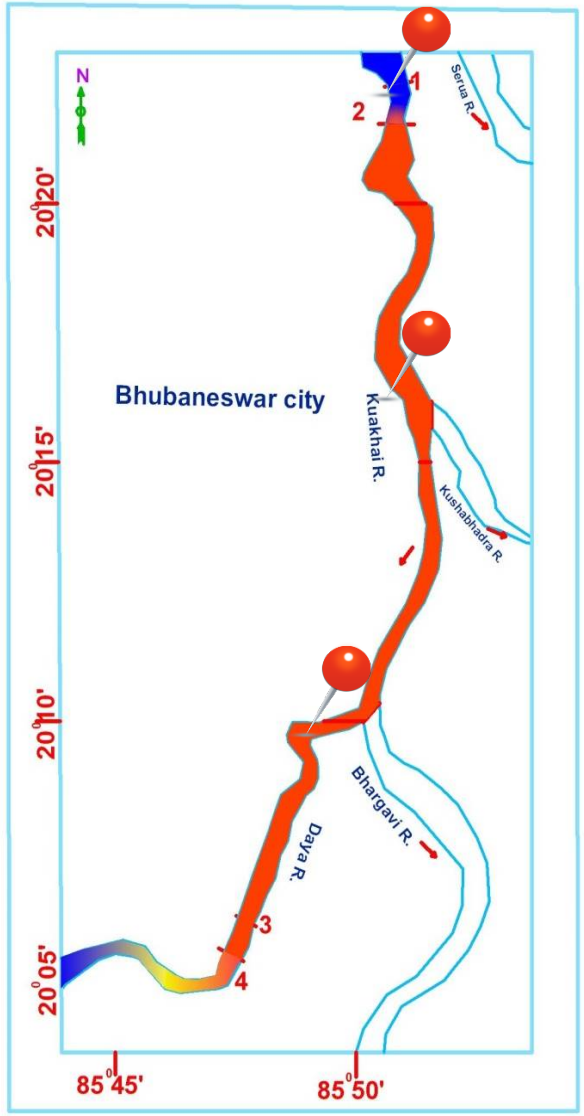
Monitoring Stations

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 Kuakhai and Daya rivers along Bhubaneswar city



Legends

Monitoring Stations

1. Bhubaneswar FU/s
2. Bhubaneswar U/s
3. Bhubaneswar D/s
4. Bhubaneswar FD/s

River

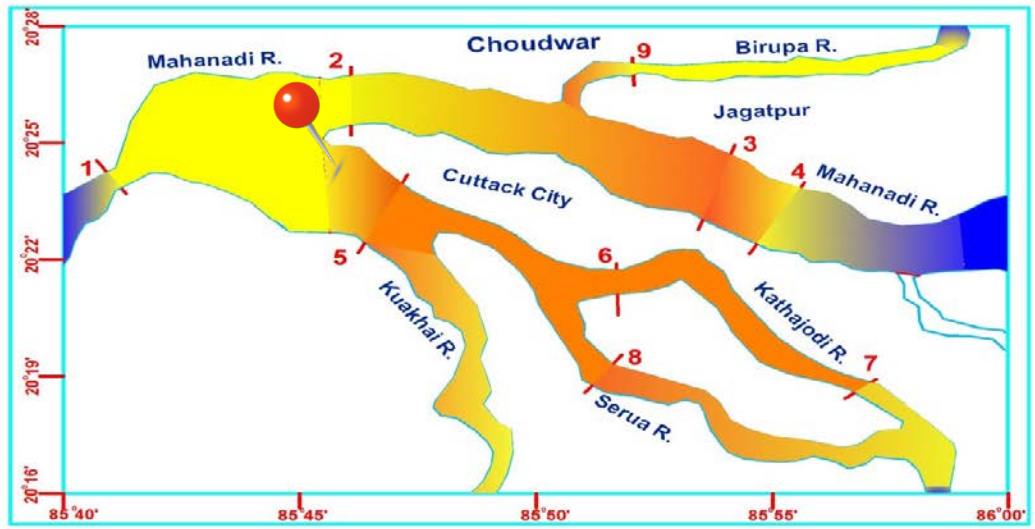
Conform to DBU Class C

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

Satellite image of confluence of Gangua nallah with river Daya at Barimula village



Legends

Monitoring Locations

1. Munduli
2. Cuttack U/s (Mahanadi)
3. Cuttack D/s (Mahanadi)
4. Cuttack FD/s (Mahanadi)
5. Cuttack U/s (Kathajodi)
6. Cuttack D/s (Kathajodi)
7. Cuttack FD/s at Mattagajpur (Kathajodi)
8. Cuttack FD/s at Sankhatrasa (Serua)
9. Choudwar D/s (Birupa)

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

Satellite image of wastewater outlet from CDA Bidanasi, Cuttack mixing with Kathajodi river

Satellite image of wastewater outlet at Khannagar, Cuttack mixing with Kathajodi river

Wastewater drain of Cuttack City near Khannagar discharge to river Kathajodi

Satellite image of confluence of Sambalpur Municipal drain with river Mahanadi at Sambalpur

Satellite image of wastewater outlet of STP, Mattagajpur, Cuttack mixing with Kathajodi river

Wastewater drain of Cuttack City at Jobra discharge to river Mahanadi

Present Practice

Discharge to Open Field or Natural Drains

City Sanitation Ranking - Odisha Performance

73 cities	476 cities	423 cities	
Rank 2016	Rank 2014	Rank 2010	City
		14	Rourkela Industrial Township
59	296	73	Cuttack
		79	Baleshwar
	298	90	Puri
		107	Brahmapur
24	331	125	Bhubaneswar
		130	Baripada
		134	Rourkela
	467	269	Sambalpur

No.	Category	Description	Points
1	Red	Cities needing immediate remedial action	< 33
2	Black	Needing considerable improvement	34-66
3	Blue	Recovering	67-90
4	Green	Healthy and clean city	91-100

Vulnerable Points of Environmental & Health Impact

- Open Defecation affecting neighbourhood including water bodies
- Insanitary latrines within the premises
- Sewage flowing into the drains, rivers and sea
- Sewage getting mixed with drinking water
- Under designed septic tanks and irregular cleaning
- Septage disposal into drains, open area and rivers
- Sewage mixed drain water into the cultivation lands

Cost Vs Facility

Under Ground Sewerage System

Ideal solution
high investment
and O & M costs
Longer execution period

Septage Management

DESIRABLE
Efficient & effective,
low-maintenance
high impact solutions

Ineffcient & ineffective
No Cost– No impact solutions

Cost

Facility

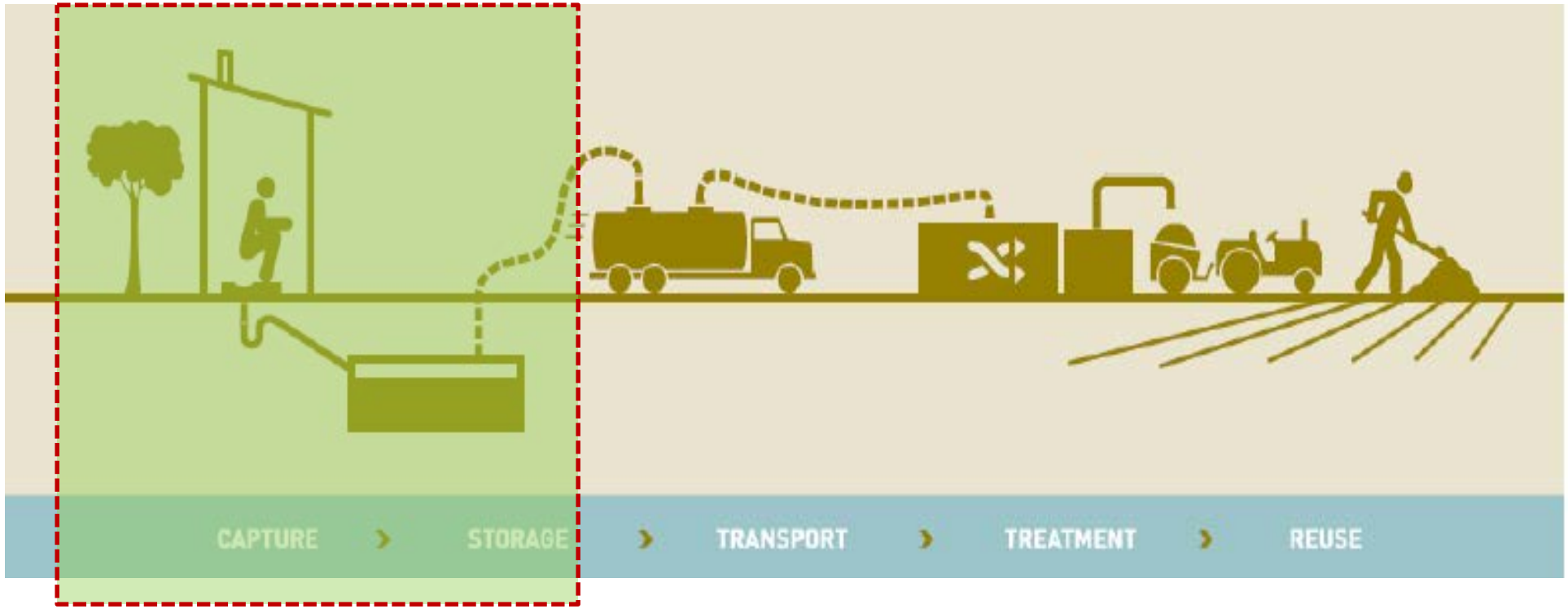
Septage Management or Fecal Sludge Management

- Desirable & Doable Interventions

Why Should We Implement…?

- Eliminating manual scavenging- other than handling night soil
- Implementation of SBM will lead to more household with septic tanks
- Requirement to control pollution of rivers
- Large no. of PILs/ NGT directives/court directives
- High cost and long implementation period for under ground sewerage system
- Absence of structured approach to liquid waste management – (more of an unorganised/informal sector)
- Complements Swachh Bharat Mission

Septage management chain



Swachh Bharat Mission

Odisha urban sanitation strategy (draft) - *Focus*

1. Open-defecation Free (*ODF*)
2. Sewage, septage / faecal sludge and liquid waste is *safely managed, treated, and disposed*

3. *Solid waste* is safely managed & treated
4. Cities/towns do *not pollute the river basins* of Odisha
5. Women and girls have access to *safe menstrual hygiene management*
6. *Processes & Safety standards* are followed in management of waste - backed by *Legislation and guideline*

Open Defecation Free – *Initiatives*

1. Incentive to vulnerable category for IHL construction increased to Rs.8000 as against Rs.5300
2. Introduction of concept of hybrid community toilet ("*Ama Sauchalaya*" – our toilet)
3. MOU with Sulabh International to construct 5957 toilet seats in next three years
4. Convergence with state housing mission & PMAY- addressing sanitation issues in slums
5. Strong monitoring framework with district level PIU at DUDA and involvement of district administration
6. State and ULB level IEC activities

Issues related to Septage Management

- Many Septic tank do not meet the specifications
- Outlet of septic tank connected to storm water drains
- Routine De-sludging are not done
- Lack of institutional framework
- Lack of regulatory framework
- Highly unregulated de-sludging & transport operators
- Untrained operators
- Lack of Septage / faecal Sludge treatment facility

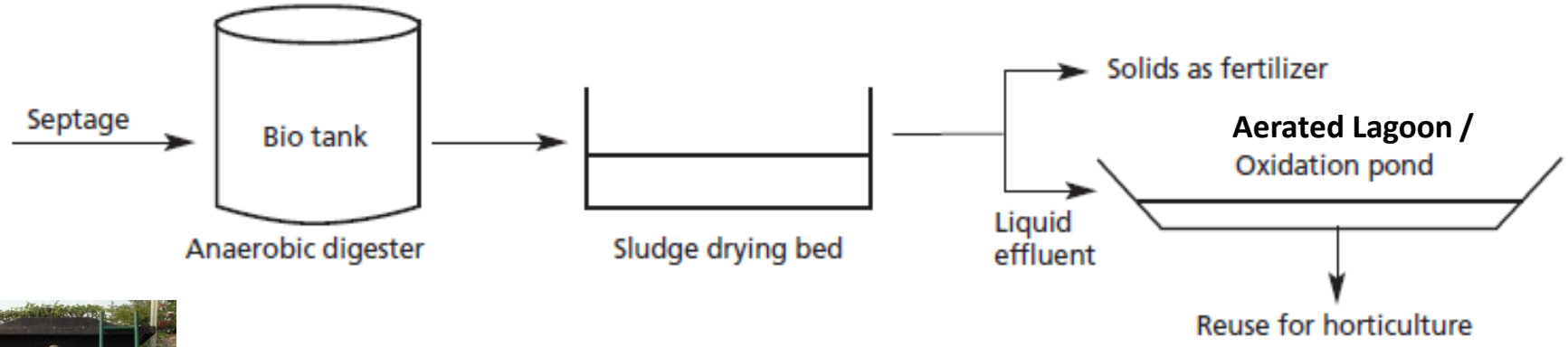
Technology Options

Trenching

- *The Informal Sector*

- **Long Drying period**
- **Not feasible at places with high water table**
- **Possibility of ground water contamination** (geo-synthetic membrane can be used)
- **Reuse is not advisable in its raw form**

Basic Treatment Model



Inlet
Tank

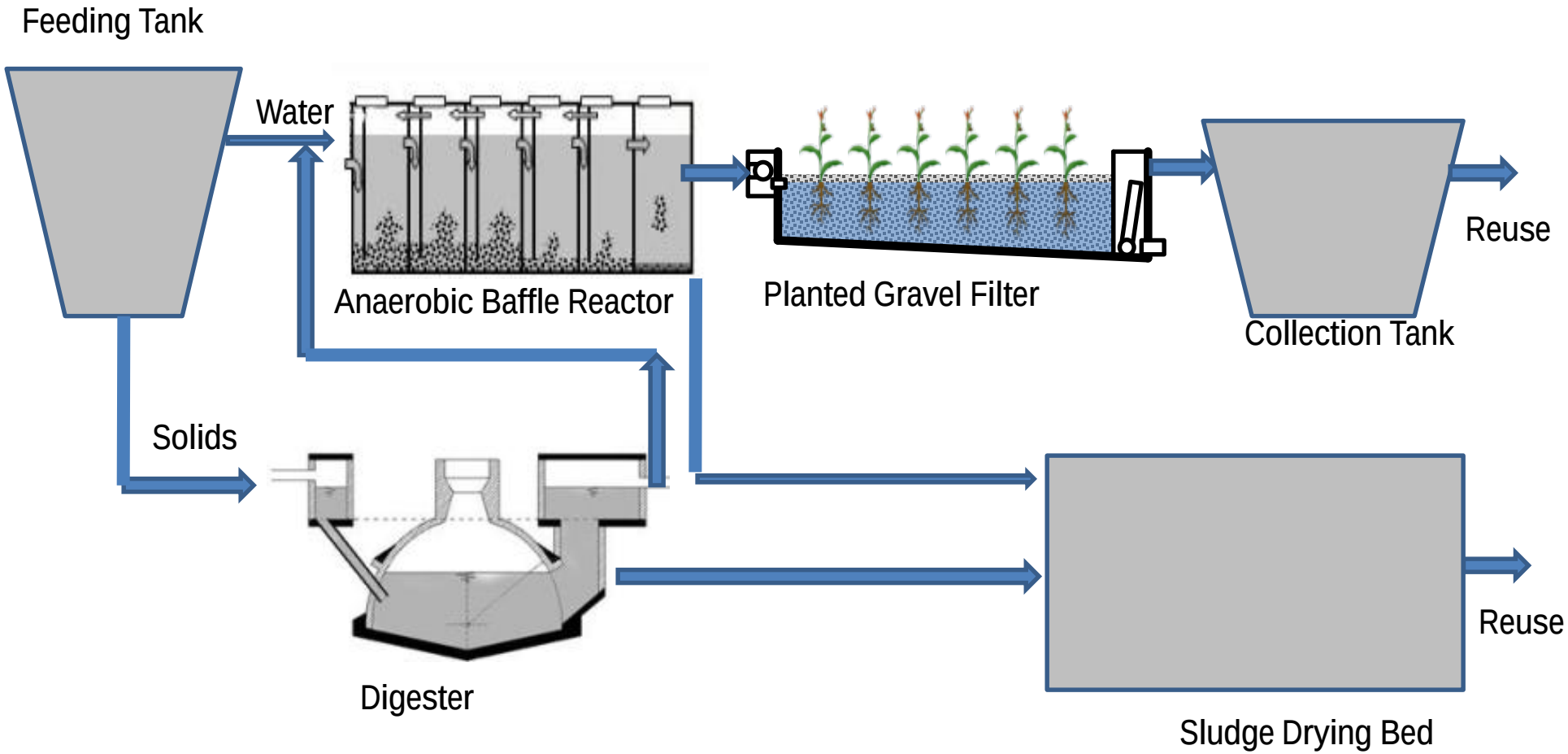
Bio
Digester

Drying
Bed

Aerated
Lagoon

- **Land Requirement is high**
- **High Energy consumption**
- **Reuse would need further treatment**

Advanced Treatment Model



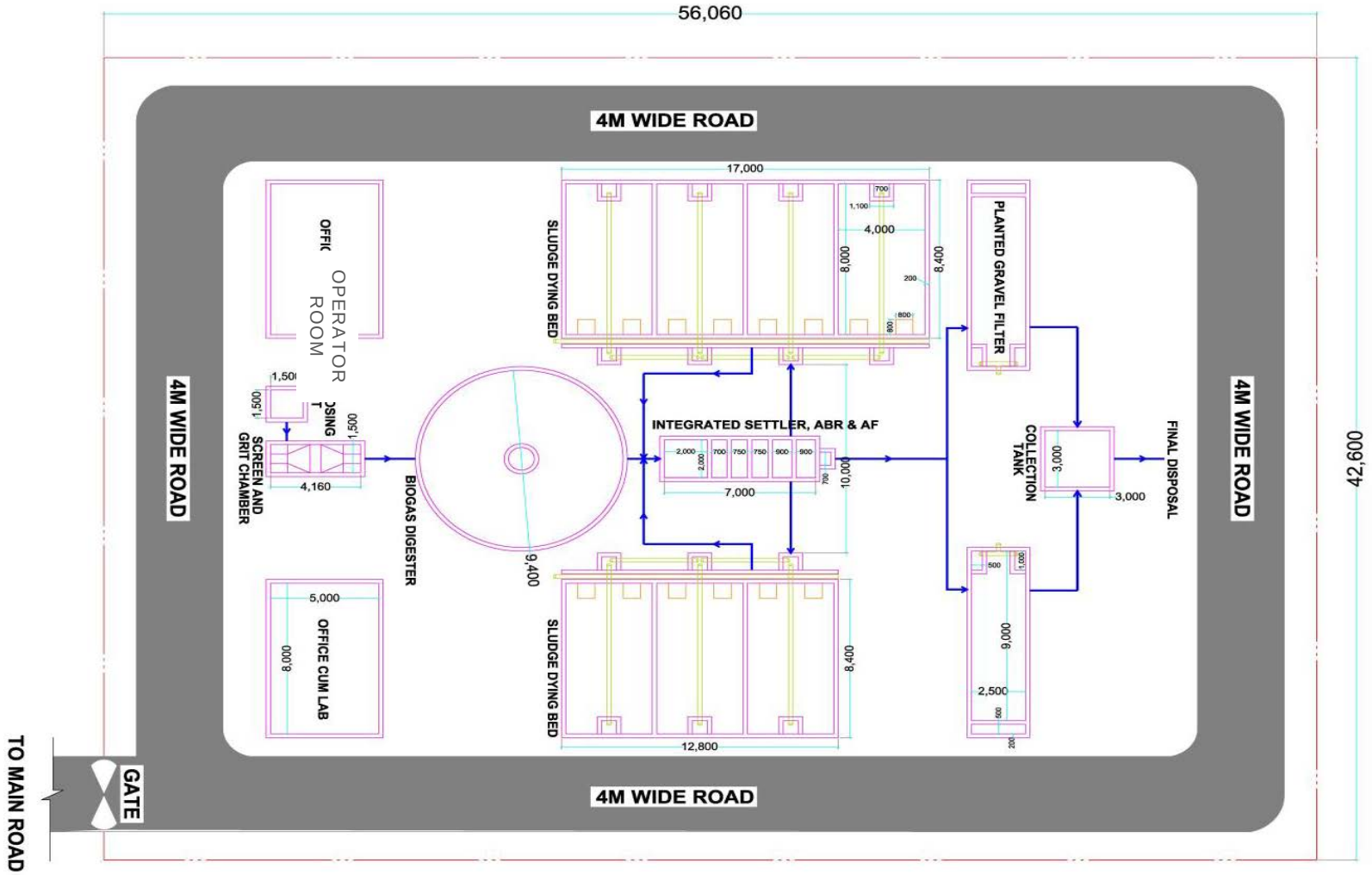
Treated Water Reuse

1. Horticulture
2. Pisciculture
3. Irrigation
4. Avenue Plantation
5. Forestry

Dried Solid Reuse

1. Horticulture
2. Urban Parks
3. Rural market
4. Avenue Plantation

Land Requirement - *Typical Layout*

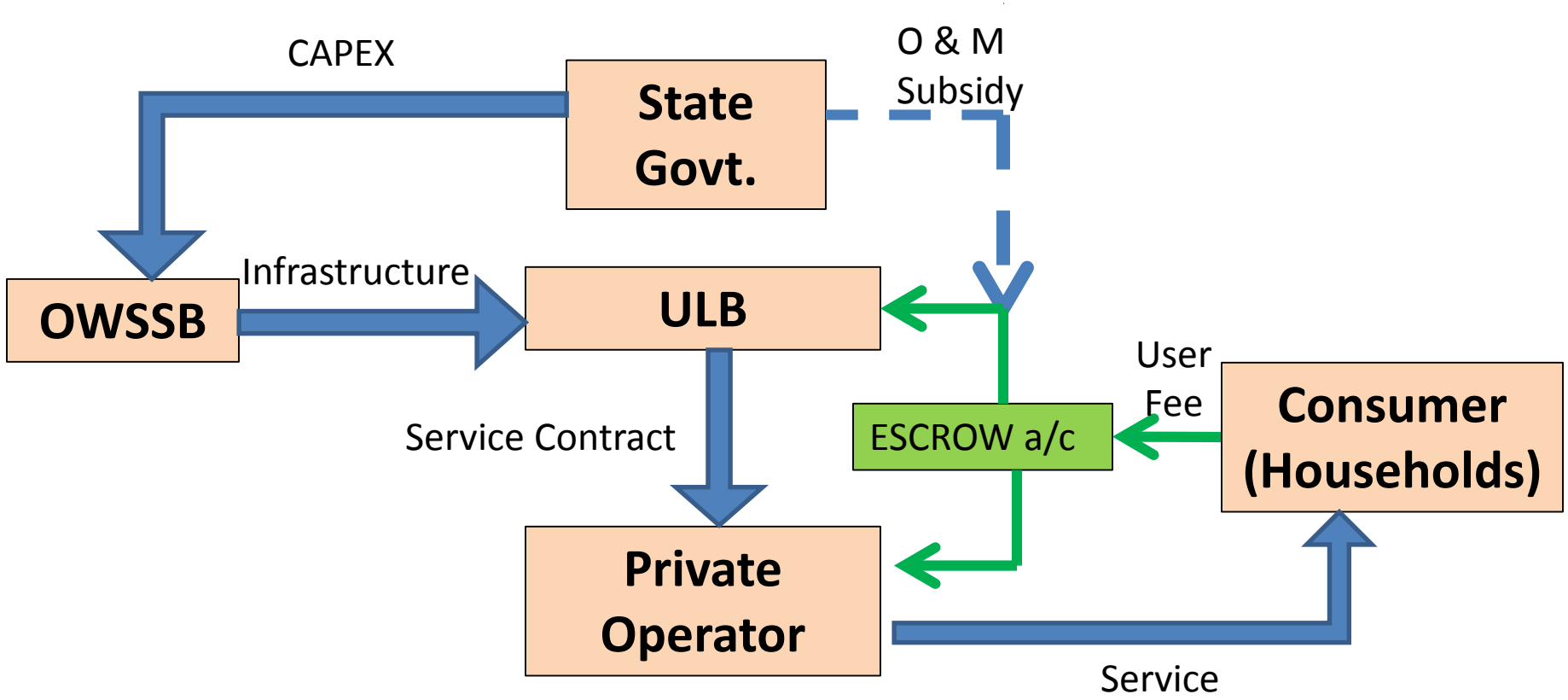


25000 population – Land required 55m x 45 m (2500 Sqm) or Ac 0.5

50000 – Ac 1.0

1 lakh – Ac 2.0

Institutional Framework



Performance based Service Contract
– basic model of PPP /PSP

Regulatory Framework

- Provide guidance note on septic tank specifications with linkage to building approval conditionality
- Regulation & Registration for septage transport operators
- Roles and responsibilities of major stakeholders
- Standard operating procedure for all components of septage management (i.e. desludging, transportation, treatment and disposal)
- User fee structure
- Penalty provision for
  - Practising open defecation
  - engaging manual scavengers
  - Discharge latrine waste directly into drains
  - Discharge of septage at places other than the designated site

Action Plan – *Liquid Waste Management*

- IHL and Hybrid community toilet to be taken up under SBM with funding from centre, state and OUIDF (15 – 19)
- All ULBs to be provided with required Cesspool emptier (Existing 120 nos., 86 added during 15-16 & 212 proposed during 16-18)
- SeTP to be constructed in all ULBs (9 under AMRUT, 3 under NIRMAL & 98 under State Plan during 16-18)
- 23 Towns in 3 river system in the 1st Phase
- Legislation, rules, guidelines are being be framed – *in progress*
- Institutional structure shall be strengthened at state and district level to provide support to ULBs
- IEC campaign is being taken up at state as well as ULB level

Outcome

- Improved sanitation situation
- Positive health impact
- Prevention of contamination to drinking water
- Abatement to river pollution
- Compliance to PCB norms
- Positive environmental impact- Huge
- Complements SBM towards “*Sampurn Swachhata*”

Cuttack Jobra Colony – *A Case Study*

Issues

- Unplanned Settlement with 2088 households
- Approx. 50% Toilets directly connected to drains
- Non functional ISTs
- Water supply house connection crossing the drain – mostly unauthorised
- Area topography - Flat land with High subsoil water table
- Regular out break of Jaundice (currently >50 jaundice affected)

Cuttack Jobra Colony – *A Case Study*

Proposed Action plan

- Survey & GIS mapping of HH,IHHL, IST & WS
- Gap finding & Gap filling with IHHL, IST, CST & hybrid toilets Including Rehabilitation of IHHL & IST
- Desludging of all existing septic tanks
- Construction and connection to community septic tank & soak pits
- Construction of covered drains
- Rehabilitation of water supply house connection
- Construction of community toilets on saturation mode
- Involve NGOs and CBOs for awareness, behavioural changes and induce peoples movement

THANK YOU

Govt. Of Gujarat

MAHATMA GANDHI SWACHHTA MISSION
SWACHH BHARAT MISSION

Moving Towards Open-Defecation Free Gujarat

Rakesh Shankar
Mission Director , MGSM

7th April 2016
New Delhi

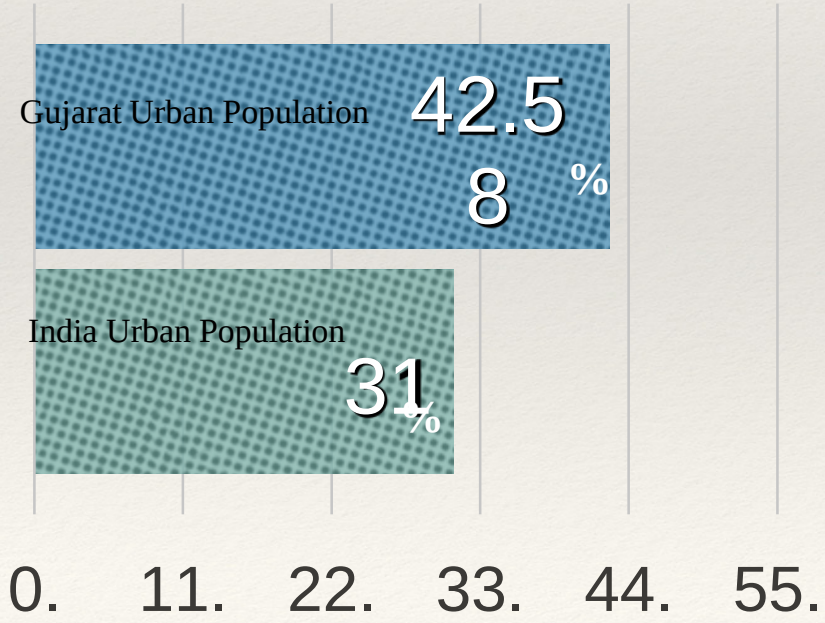
Demographic Profile for Gujarat State

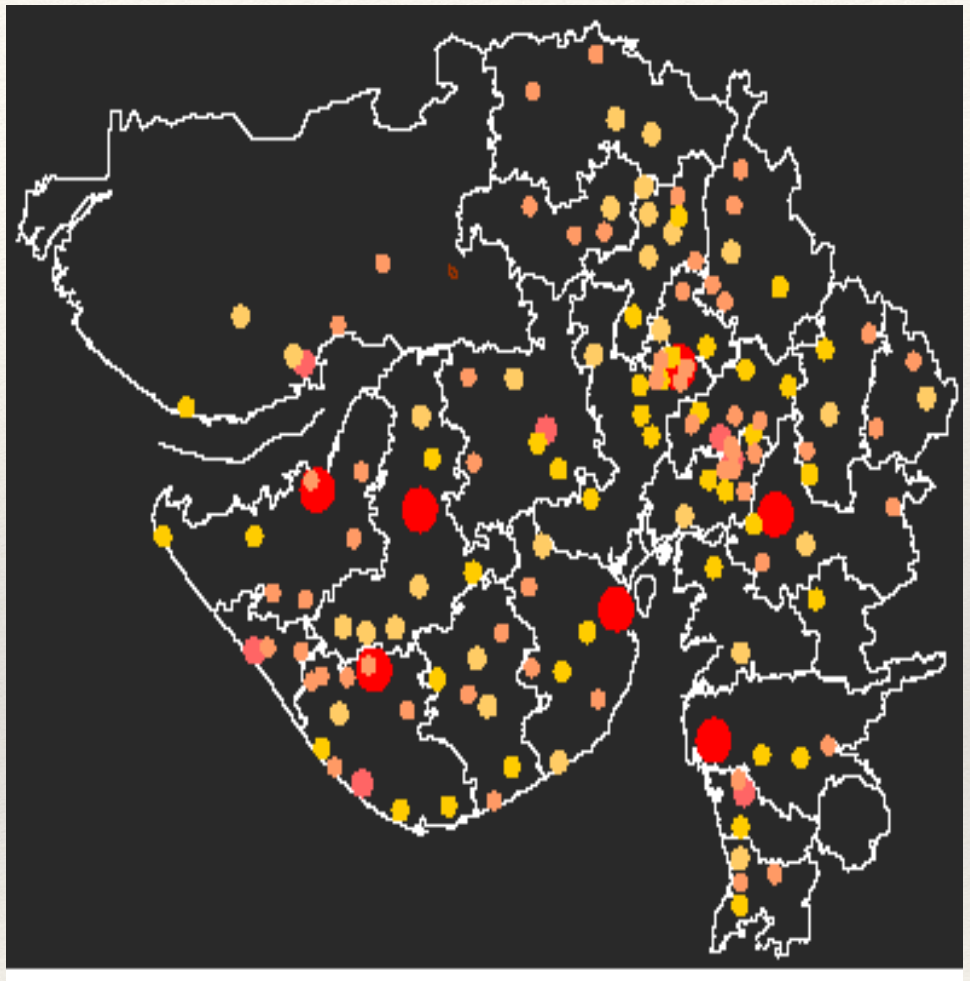
8 Municipal Corporations

1 mega city [Ahmedabad]

3 million plus cities
[Surat,Vadodara, Rajkot]

162 Municipalities





Source : Census 2011

Background of Mahatma Gandhi Swachhata Mission (Urban)

- State Government's vision of **"Clean Air, Clean Water and Clean Land"** : Creation of **NIRMAL GUJARAT** as cleanliness drive during the years 2005-2012
- **Components included in Nirmal Gujarat : Individual Toilets, Pay & Use Toilets**, Kailashdham Yojana, Safai Vera Anudan Protsahan Yojana, Nagar Nandanvan Yojana, Amrutdhara.

Sr. No	Components	Physical	Financial
		Achievements	
1	Individual Toilets	3.73 Lakhs.	169
2	Pay & Use Toilets	1010	46
3	KailashdhamYojana	44 N.P.	7
4	Safaivera Protsahan Yojana	140 N.P.	85
5	Shaher NandanvanYojana	133 N.P. & 203 Projects	35
6	Amrut dhara	80 N.P.	270
	Total		612

- Continuing the Cleanliness Campaign, State Government launched Mahatma Gandhi Swachhata Mission (MGSM) on 26/02/2014 with a vision to make Gujarat

Open Defecation Free,

Cities with Zero Waste,

Dust Free and Green.

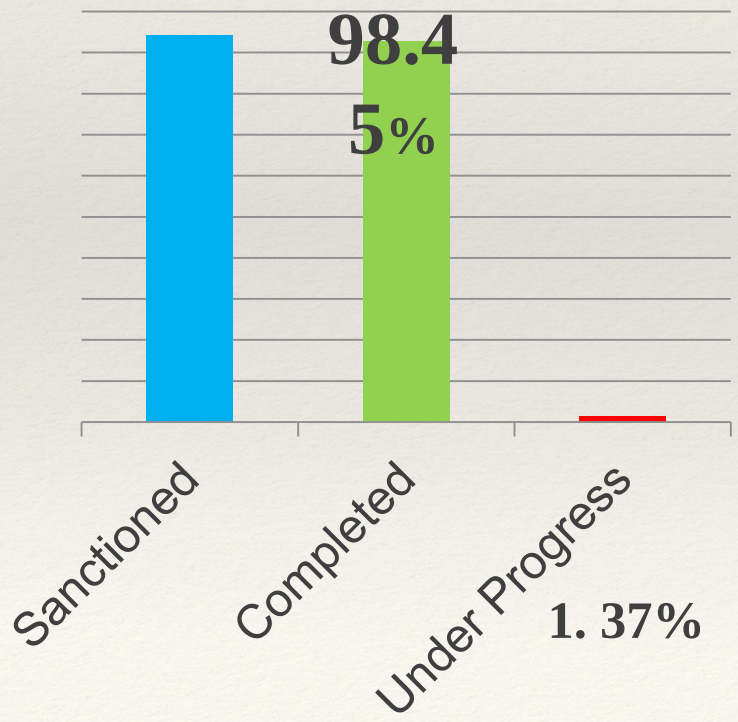
Road Map for Mission Components

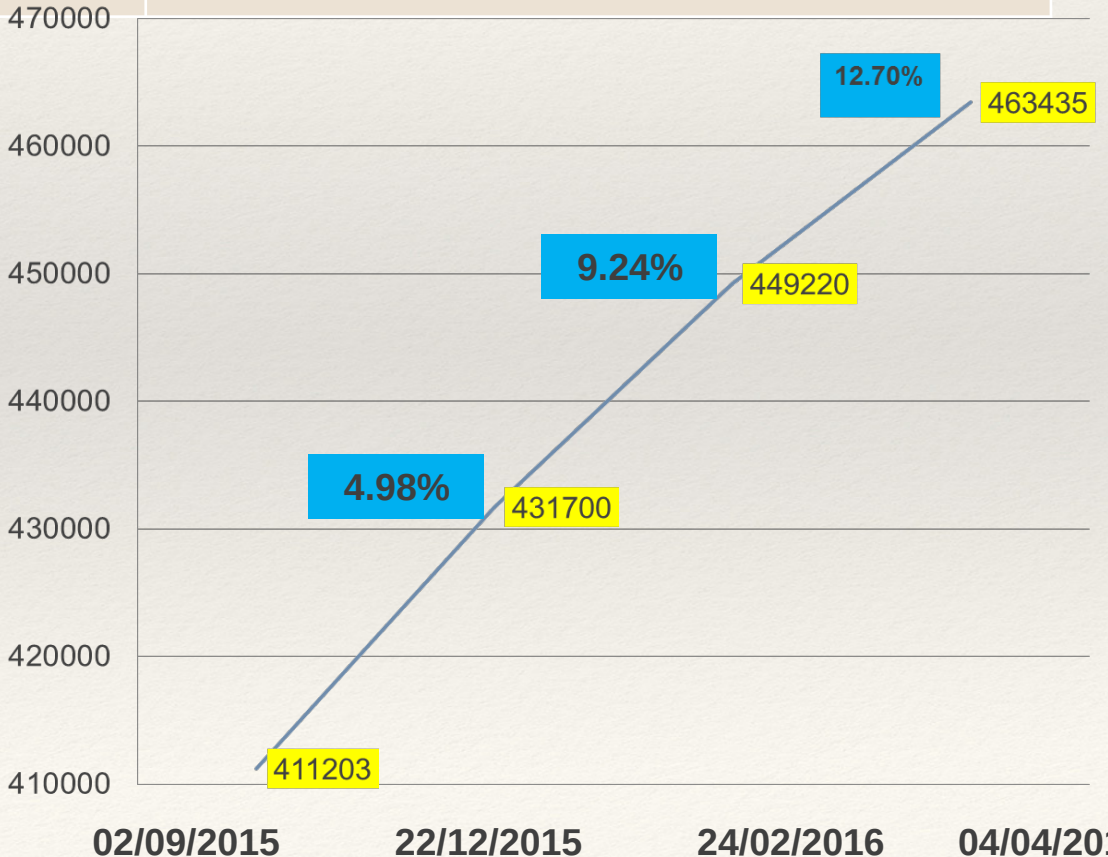
Road Map – Mahatma Gandhi Swwachhta Mission

Programme	2014-15	2015-16	2016-17	2017-18	2018-19
Solid Waste Management					
100% Collection of Waste Generated & transportation					
Cleaning of Public Places & Roads					
100% Processing / Treatment/Re-use/ Re-cycling of SW					
100% Scientific Disposal of SW					
Liquid Waste Management					
Construction of Underground Drainage & STP					
Re-use & Re-cycling of Treated Sewage					
Provision of Machines for Disposal of Fecal Sludge					
Toilets					
Construction of Individual Toilets					
Construction of Community/Pay & Use/Shared Toilets					
Water Bodies: Conservation of Water Bodies					
Others					
Public Awareness					
Training/Capacity Building					
Health Check-up of Sanitation Workers					
KailashDham Yojana					

Achievement of Individual Household Toilet- MGSM

Detail	No. of Toilets
Approved	4,69,902
Completed	4,63,435
Under progress	6,467





100% Completed Individual Household Toilets

Municipal Corporation(8)
100% Completed Individual Household Toilets

Ahmedabad, Gandhinagar, Vadodara, Surat, Rajkot, Bhavnagar, Junagadh, Jamnagar

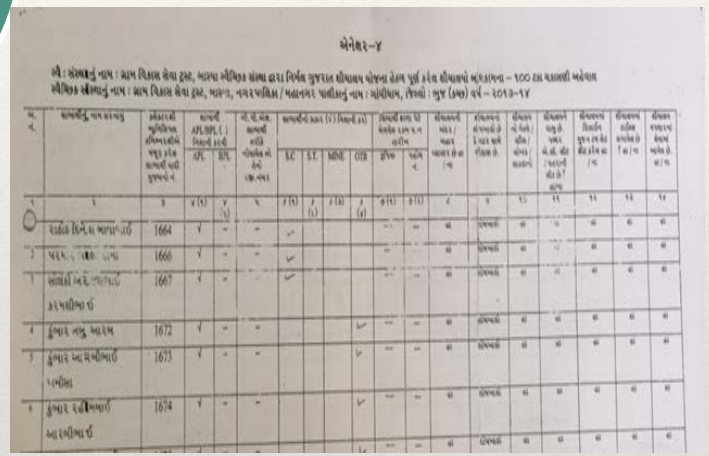
Municipalities (139)
100% Completed Individual Household Toilets

Viramgam, Bareja, Bavala, Sanand, Jafrabad, Rajula, Lathi, Damnagar, Anand, Borsad, Petlad, Karamsad, Umreth, Vallabhvidyanagar, Anklav, Boriavi, Oad, Sojitra, Modasa, Bayad, Palanpur, Deesa, Dhanera, Tharad, Bhabhar, Thara, Bharuch, Jambusar, Amod, Mahuva, Palitana, Gariyadhar, Shihor, Talaja, Vallabhipur, Botad, Gadhada, Barvada, chhotaudepuar, Dahod, Zalod, Salaya, Mansa, Veraval, Kodinar, Sutrapada, Talala, Dhrol, Kalavad, Sikka, Keshod, Mangrol, Manavadar, Chorvad, Vanthali, Visavadar, Nadiad, Chaklasi, Kapadvanj, mahemedabad, Dakor, Kheda, Mahudha, Kathlal, Kanjari, Thasra, Gandhidham, Anjar, Bhuj(K), Rapar, Balasinor, Santrampur, Mehsana, Kadi, Visnagar, Vadnagar, Vijapur, Morbi, Halvad, Rajpipla, Navsari, Bilimora, Vijalpor, Gandevi, Godhra, Holol, Kalol(P), Shahera, Patan, Chansma, Probandar, Chhaya, Dhoraji, Gondal, Upleta, Jasdan, Bhayavadar, Idar, Khedbhrahma, Talod, Vadali, Bardoli, Mandvi(S), Kanpur-kansad, Tarsadi, Sachin, Vadhvan, Limbadi, Vyara, Songadh, Dabhoi, Karjan, Padra, Savli, Valsad, Vapi, Pardi, Dharmapur, Umargam, Dwarka, Khambhaliya,Kutiyana, Savarkundla, Jamjodhpur, Khabhat,Radhnapur, Harij, Surendranagar, Patdi, Prantij, Kadodara.

Uniqueness of our toilet construction methodology

Construction by NGO's

- **Final Payment** of NGOs linked to TPI report



Third Party Inspection

- **100% Third Party Inspection** of all toilets constructed in the state
- **Qualified TPI agencies** with team leaders as environmental/ urban planners and trained sanitary inspectors
- **All India Institute of Local Self Government & Ray Infrastructure**
- Geo Tagging by TPI's

ODF declaration process

For Nagarpalikas:

- Declaration by Schools of Concern Ward
- Declaration by Self Help Group of Concern Ward
- Ward-wise meetings/ Ward Sabha
- Declaration & Publication of ODF by Chief officer & President
- Objection & Suggestions within 15 days
- Report to be submitted to Collector Office.
- Report to be submitted to State level by Collector office.
- TPI by MGSM

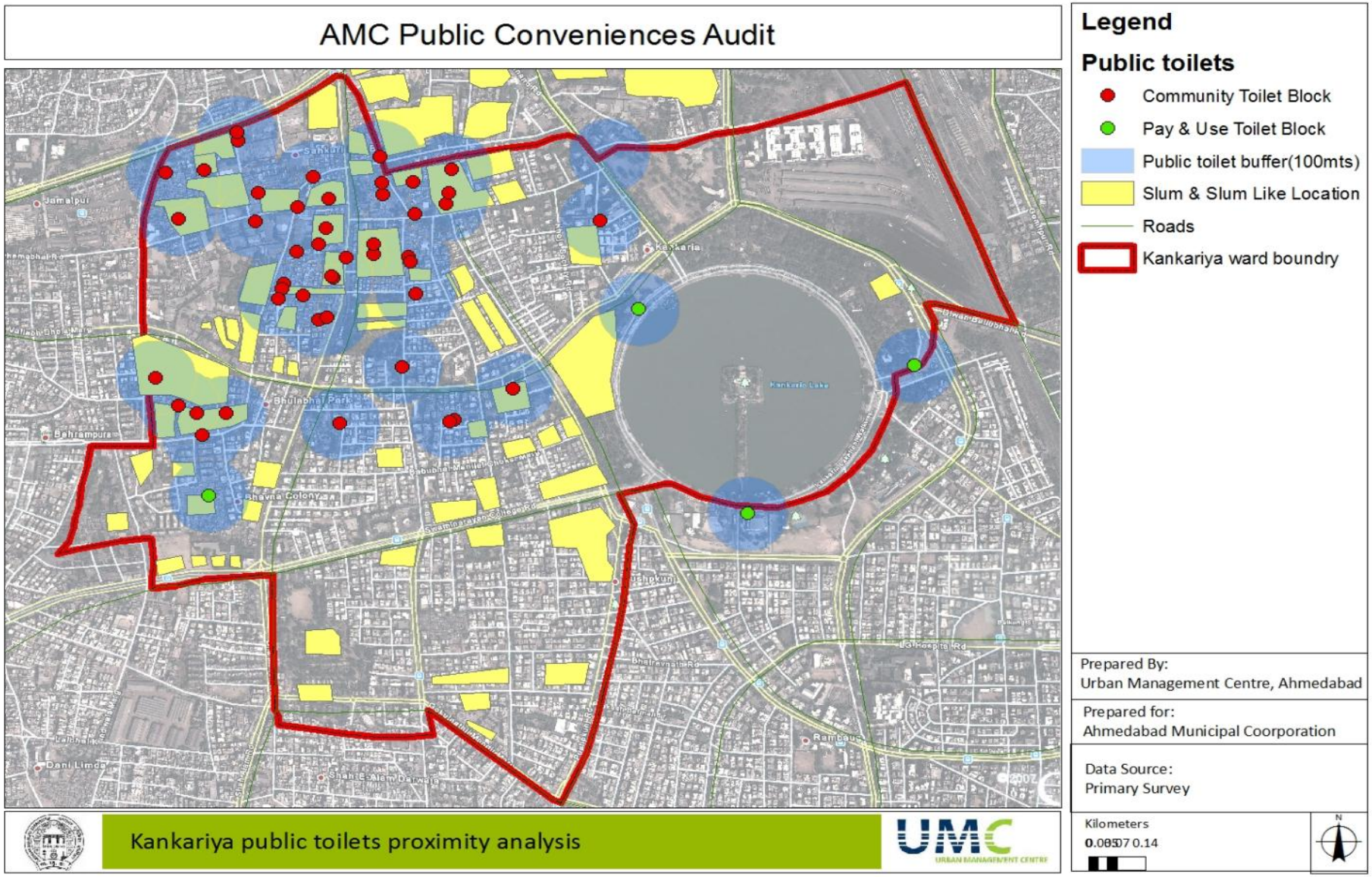
For Municipal Corporation:

- Declaration by Schools of Concern Ward
- Declaration by Self Help Group of Concern Ward
- Ward-wise meetings/ Ward Sabha
- Declaration & Publication of ODF by Commissioner & Mayor
- Objection & Suggestions within 15 days
- Report to be submitted to State level by Municipal Corporation.
- TPI by MGSM

Timeline for ODF Cities, Gujarat

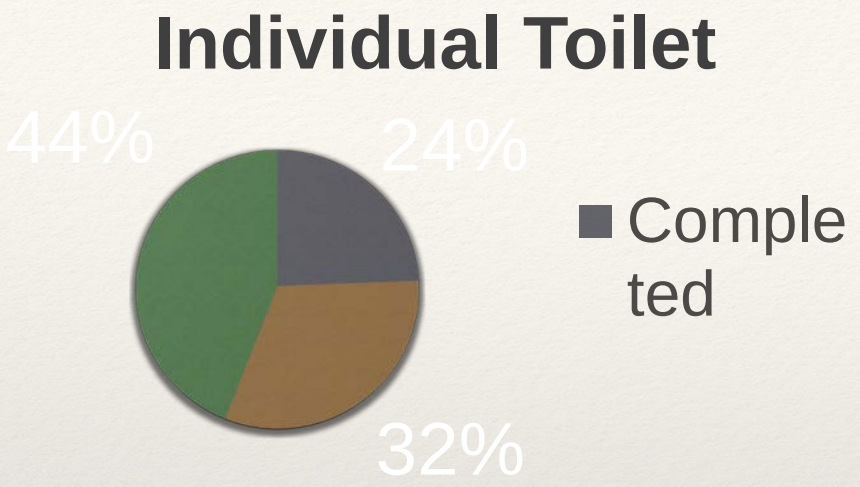
Timeframe	Wards of Corporation to be declared ODF	Nagar Palikas to be declared ODF
1st May 2016	50 wards	24 Municipalities
30th June 2016	45 wards	30 Municipalities
15th August 2016	76 wards	108 Municipalities

Assessing proximity of slums to public facilities, Ahmedabad



Swachh Bharat Mission

Status of Pay & Use Toilets



New Pay & Use Toilets	
Status	No. of Toilets
Approved	432
Completed	110
Under progress	142
Yet to start	180

Sr no	Grant Allotted	Expenditure
1	Rs. 24.45 Cr	Rs. 11.94 Cr

Renovation of Pay & Use Toilet

- Renovation of Pay & Use Toilet : 475 Block and 5255 Seats
- Grant Allotted: Rs. 10.50 Cr.

Mobile Toilets

- Mobile Toilet: 103 Units and 949 Seat
- Grant Alloted: Rs. 4.18 Cr.

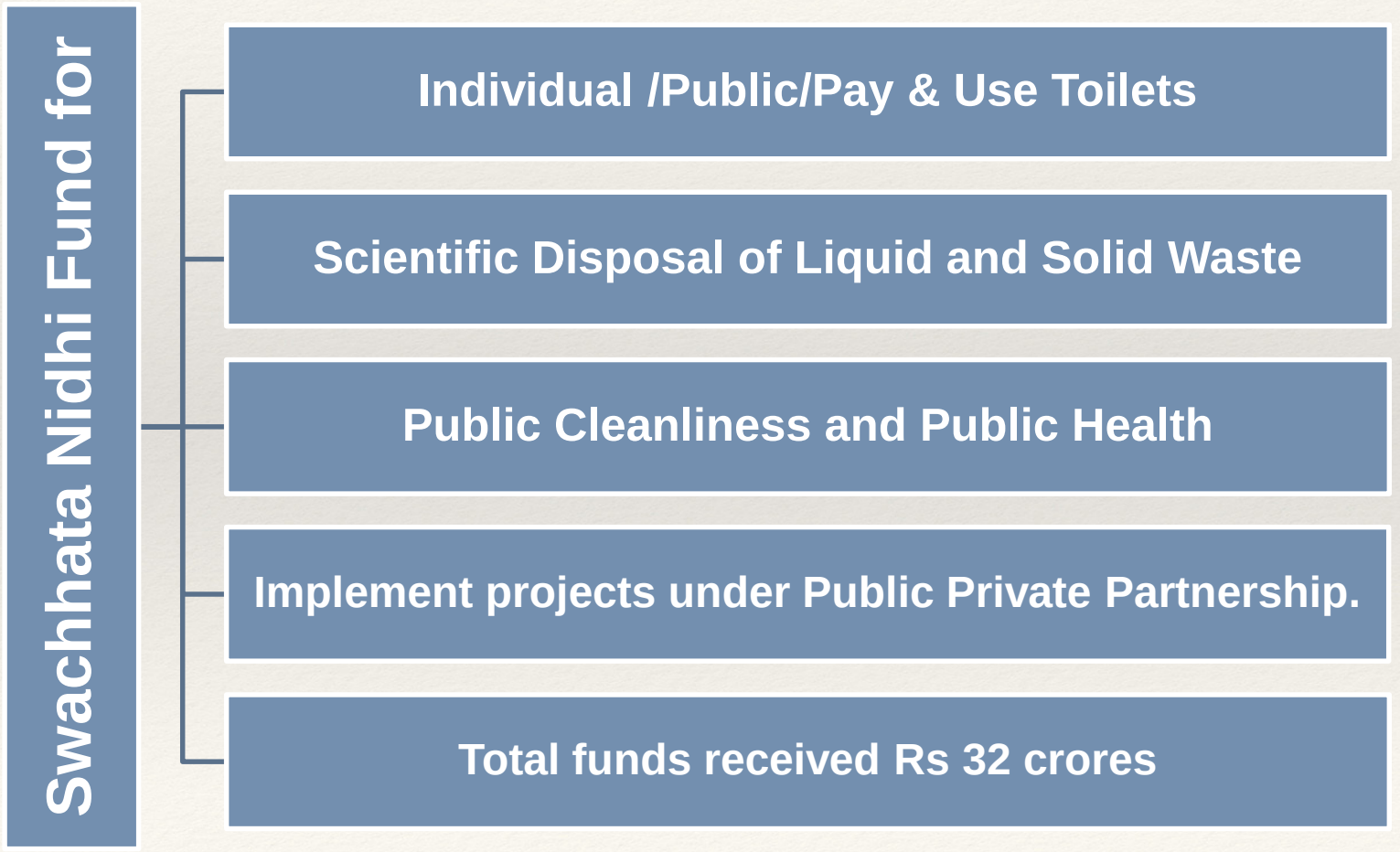
Pay & Use Toilets (Bardoli N.P & Vadodara M.C)

Individual Toilets (Talod Nagarpalika)

IEC and BCC Campaigns

Motivation and Monitoring

- **Constitution of task force for 32 Districts for supervision and monitoring**
- **Health check-up of 15179 Safai Kamdar**



Building Sanitation Index

Sr. No	Category	Description	Points
1	Red	Buildings/ premises on the brink of public health and environmental 'emergency' and needing immediate remedial action	<2
2	Amber	Needing considerable improvements	2 to 3
3	Blue	Recovering and needs some improvements	3 to 4.5
4	Green	Healthy and clean building/ premises	>4.5

- **Total Number of Inventory of 26 Departments is 3360.**
- **Number of Buildings with rating < 2 = 825**
- **Number of buildings with rating 2 to 3 = 704**
- **Number of buildings with rating 3 to 4.5 = 1766**
- **Number of buildings with rating > 4.5 = 65**

Summary of steps being taken in MGSM

- ODF Camps.
- Open defecation free Gujarat by 2nd October 2016.
- Repairing and revamping for **93 Vermi Compost Plant (VCPs)** to be completed and **15 Sanitary Land Fill Sites clusters** taken up on priority basis.
- Waste to energy projects for Ulbs. Implementation through clusters.
- Declaration of **Public Health Bye laws**.
- City Rating/ Awards for Excellence Performance. Implementation of City Sanitation Index.

Thanks

For more information:

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mgsm.gujarat@gmail.com
http://www.mgsm-gujarat.in/

Meeting Urban Sanitation Challenges: Positive Response

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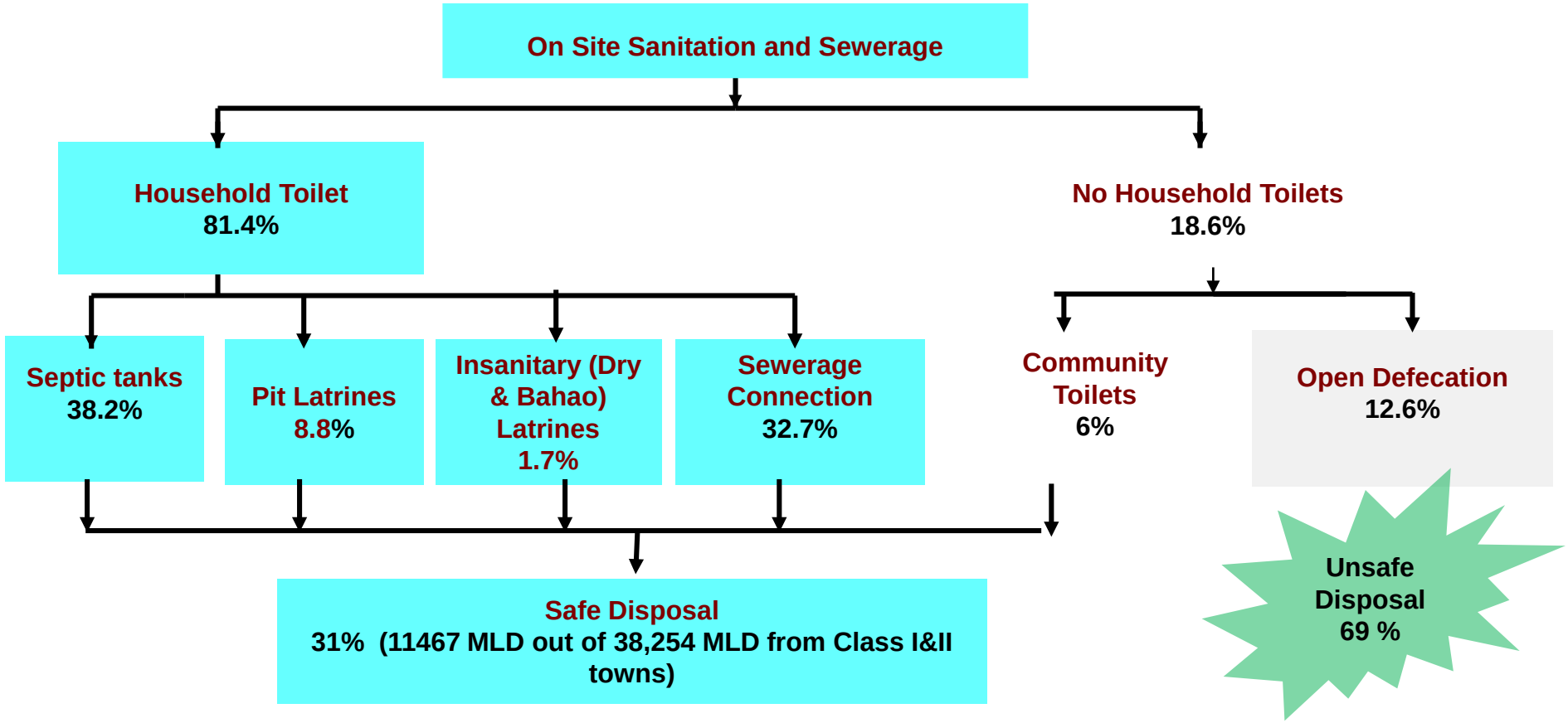
Urban Sanitation Situation in India

(Census 2011)



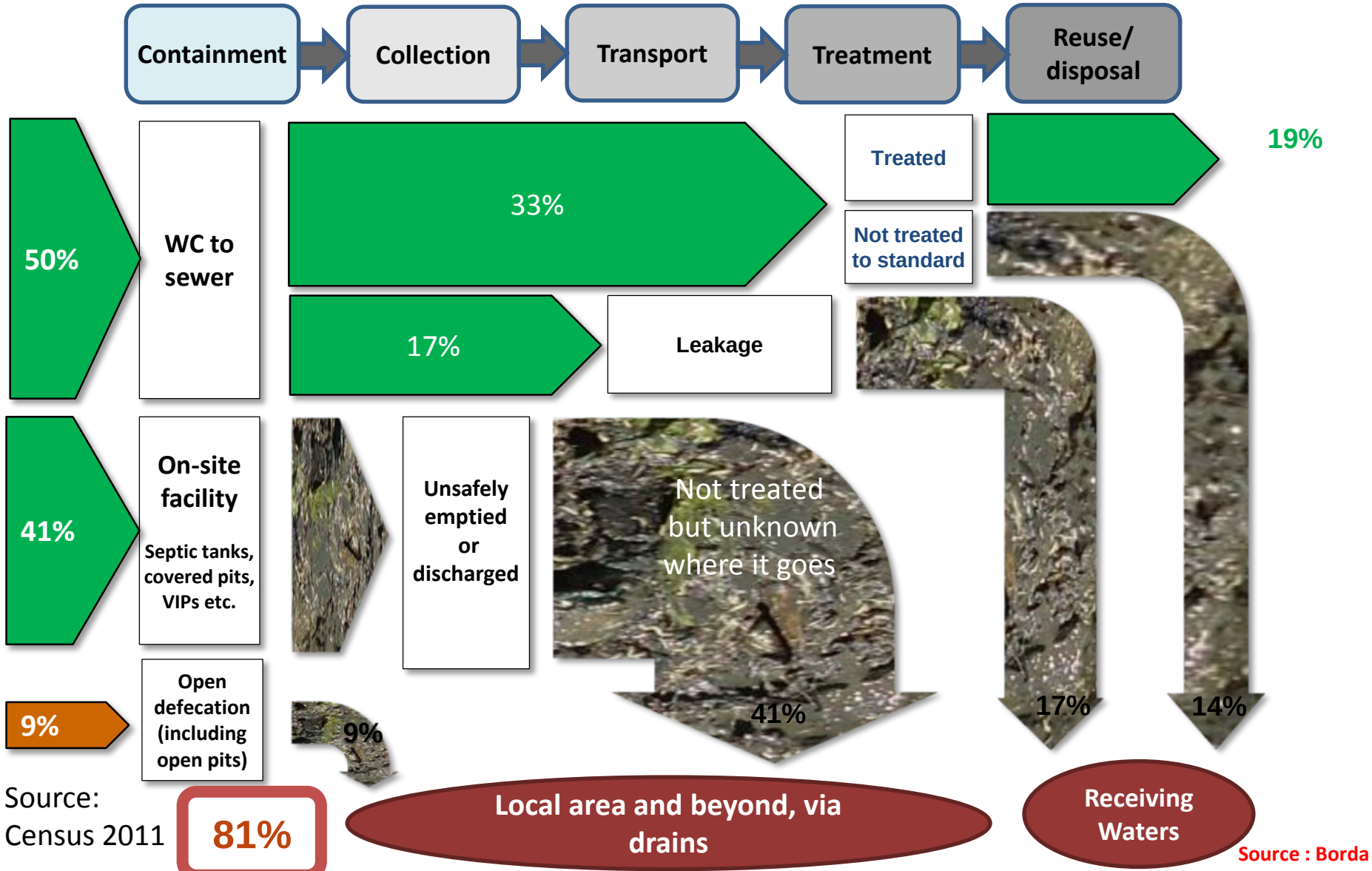
- 75% of fresh water resource which is being used for drinking purpose is contaminated.
- Sewage contributes 60% of total pollution load.
- 93% of total domestic wastewater is generated in Class-I cities.

Ref.: CPCB Report, 2009

Source : MOUD

Urban India

Sewer coverage	No of Cities	% of population
<10 %	191	16.45%
10 - 30%	158	20.10%
30 - 60%	75	24.22%
>60%	78	39.23%

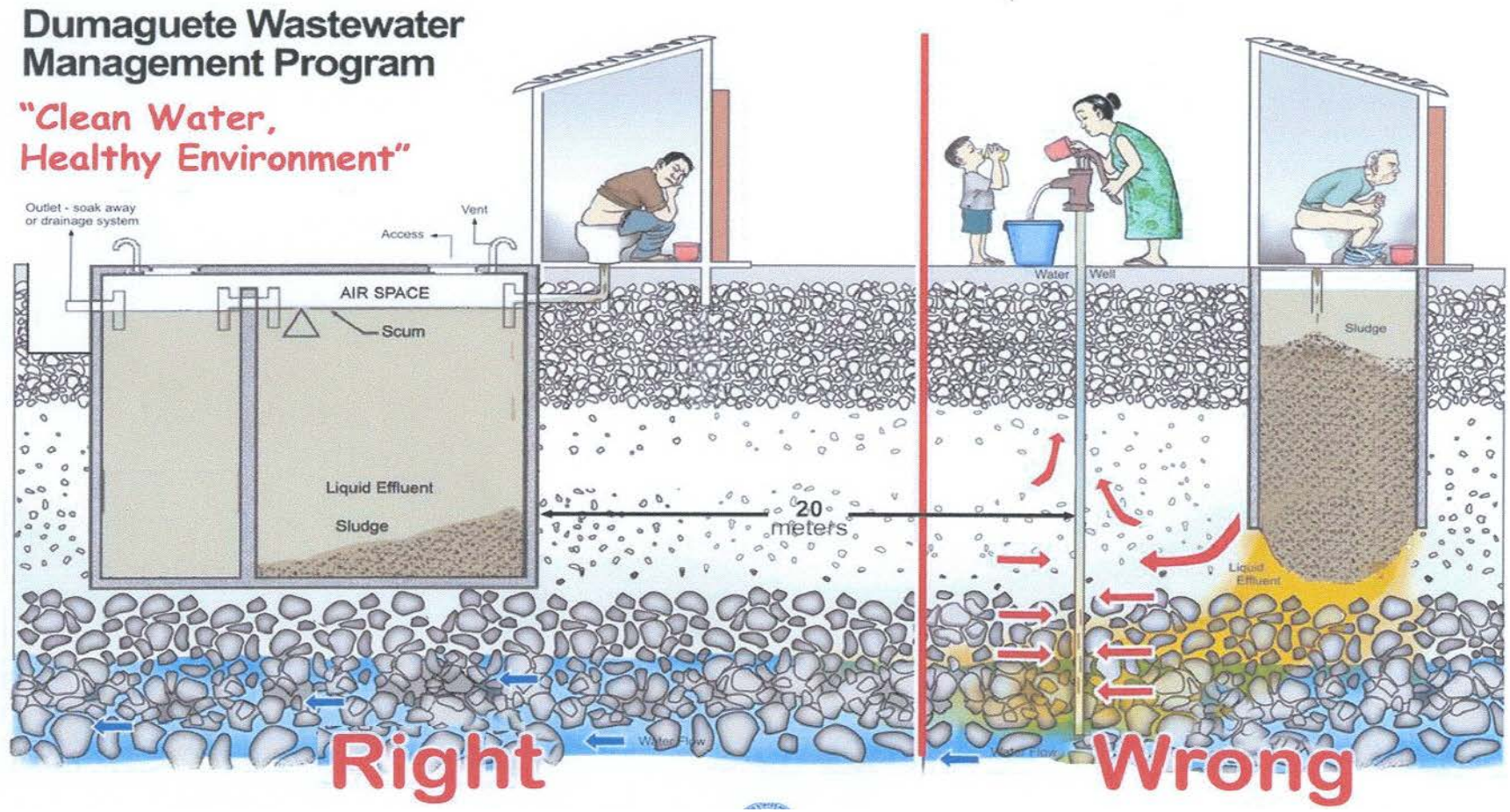


Source: Census 2011

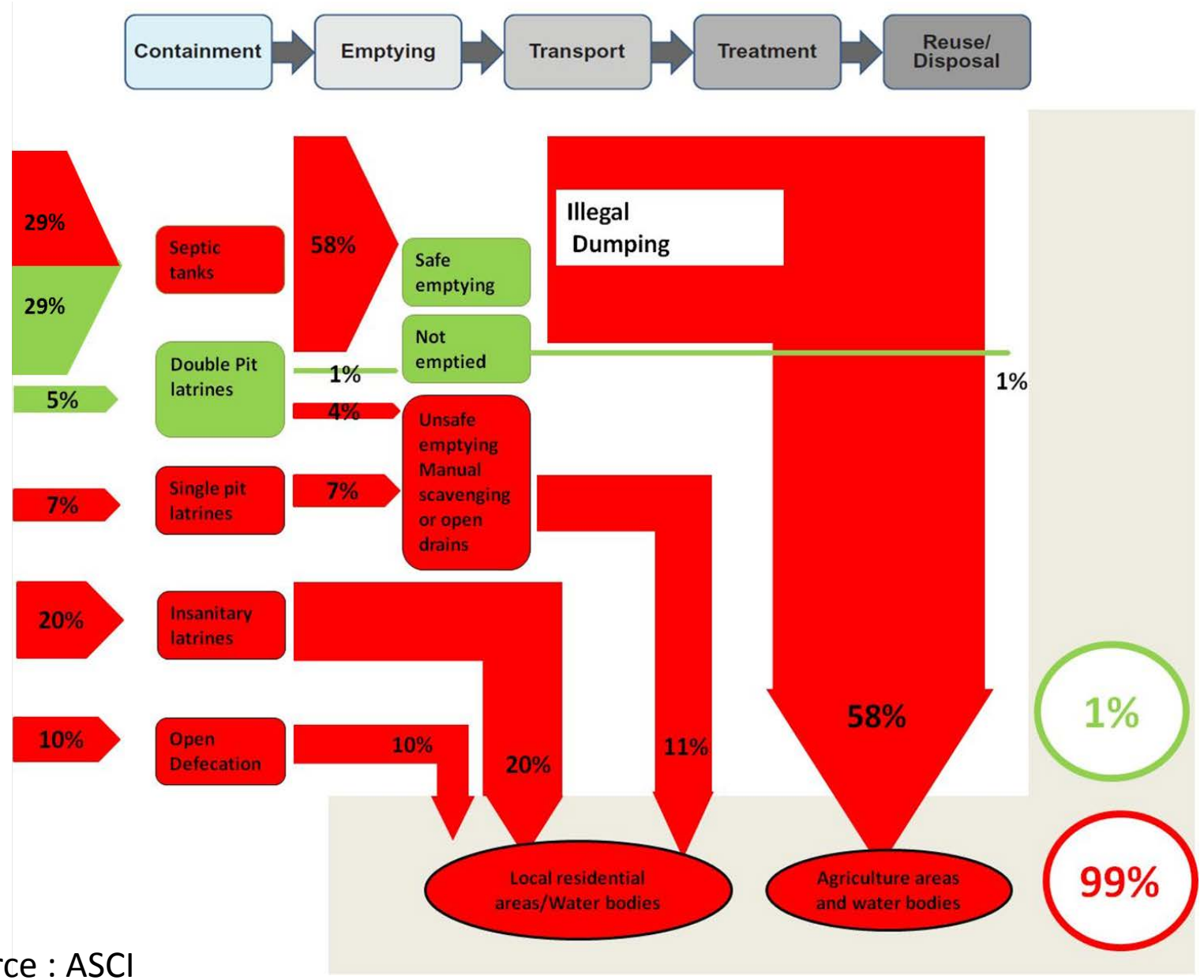
81%

Source : Borda

The Correct Septic Tank



Fecal Waste Flow Diagram - Warangal

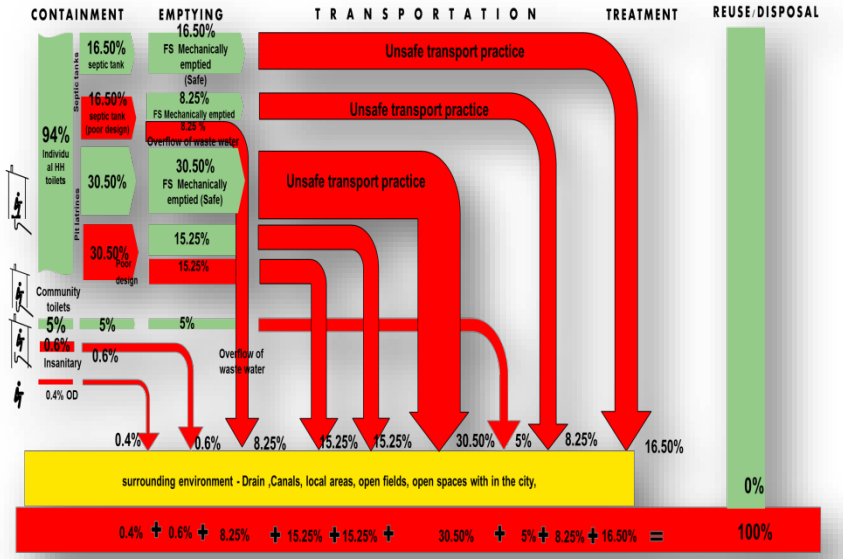


Source : ASCI

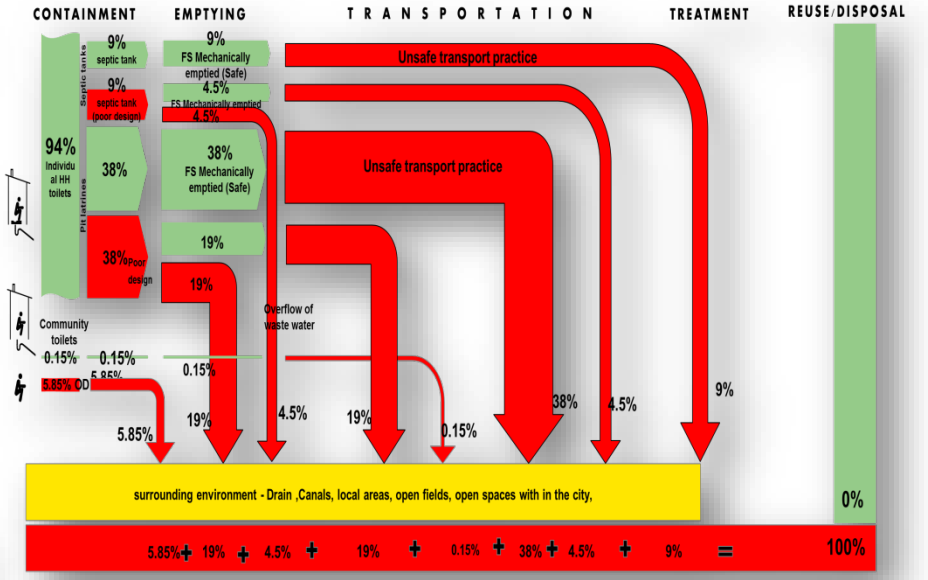
SFD - Situation Assessment

Shit Flow Diagram

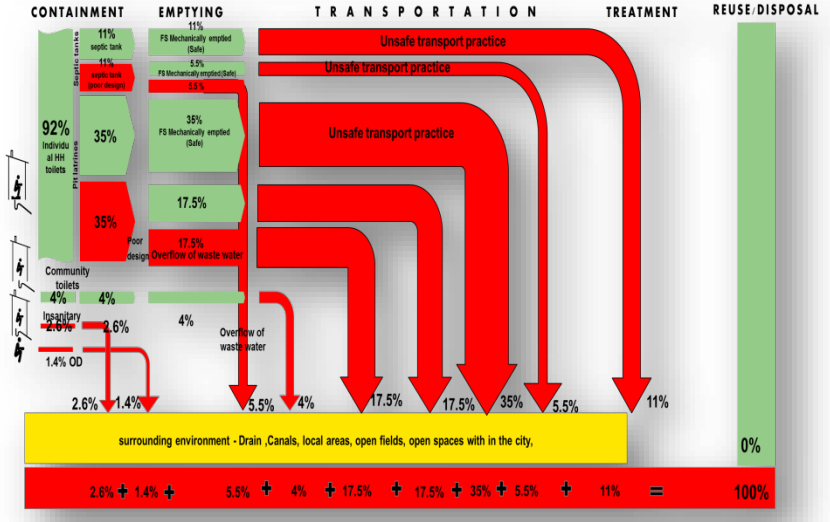
Narsapur



Kovvur



Palacole



- 80% of septage collected is unsafely transported.
- Septage is discharged into drains, canals and open fields without treatment.


GULFAR

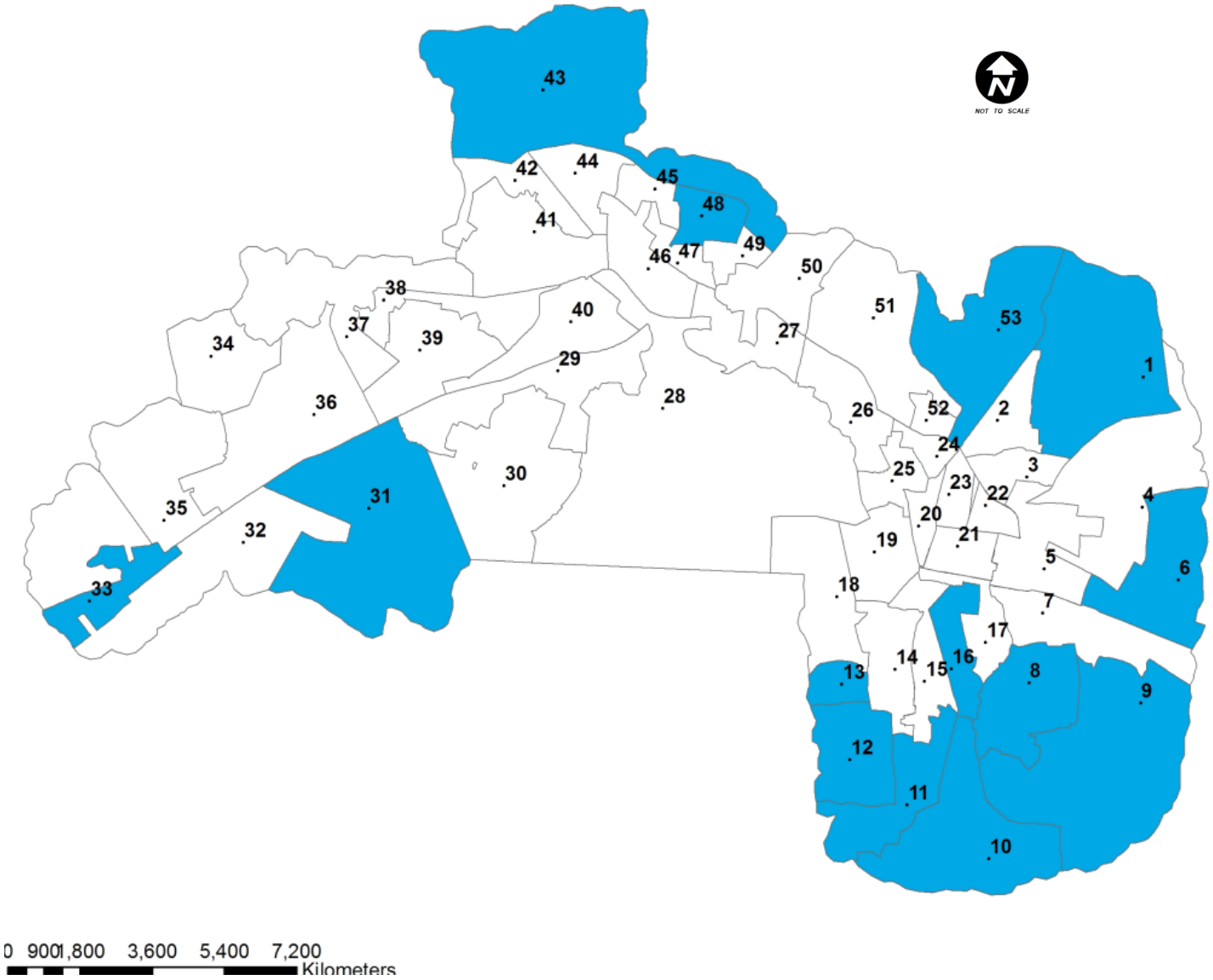
Typical disposal location

Fecal Sludge Management

PRIVATE OPERATOR

- NO TREATMENT
- **Disposed in agriculture fields and other areas**
- **Price and quality norms not regulated.**

Wards with Septage Disposal points



Situation Assessment

Emptying & Transportation

- Private operators are engaged in emptying and transportation
- Septic tanks and pits are emptied on an average once in 10 years.
- Adequate safety procedures are not followed.
- There are no regulations or guidelines for their operations in the towns.
- Price per trip is INR 1500-2000.

Treatment & Disposal

- There is no treatment and safe disposal practices are being followed.
- Sepatge is disposed in drainage canals and agricultural fields.
- Operators have indicated their support in favour of a septage treatment plant.

GREATER WARANGAL MUNICIPAL CORPORATION

Preamble to the Council

RocNo.F1/5425/2015 Dt: 25.03.-2016

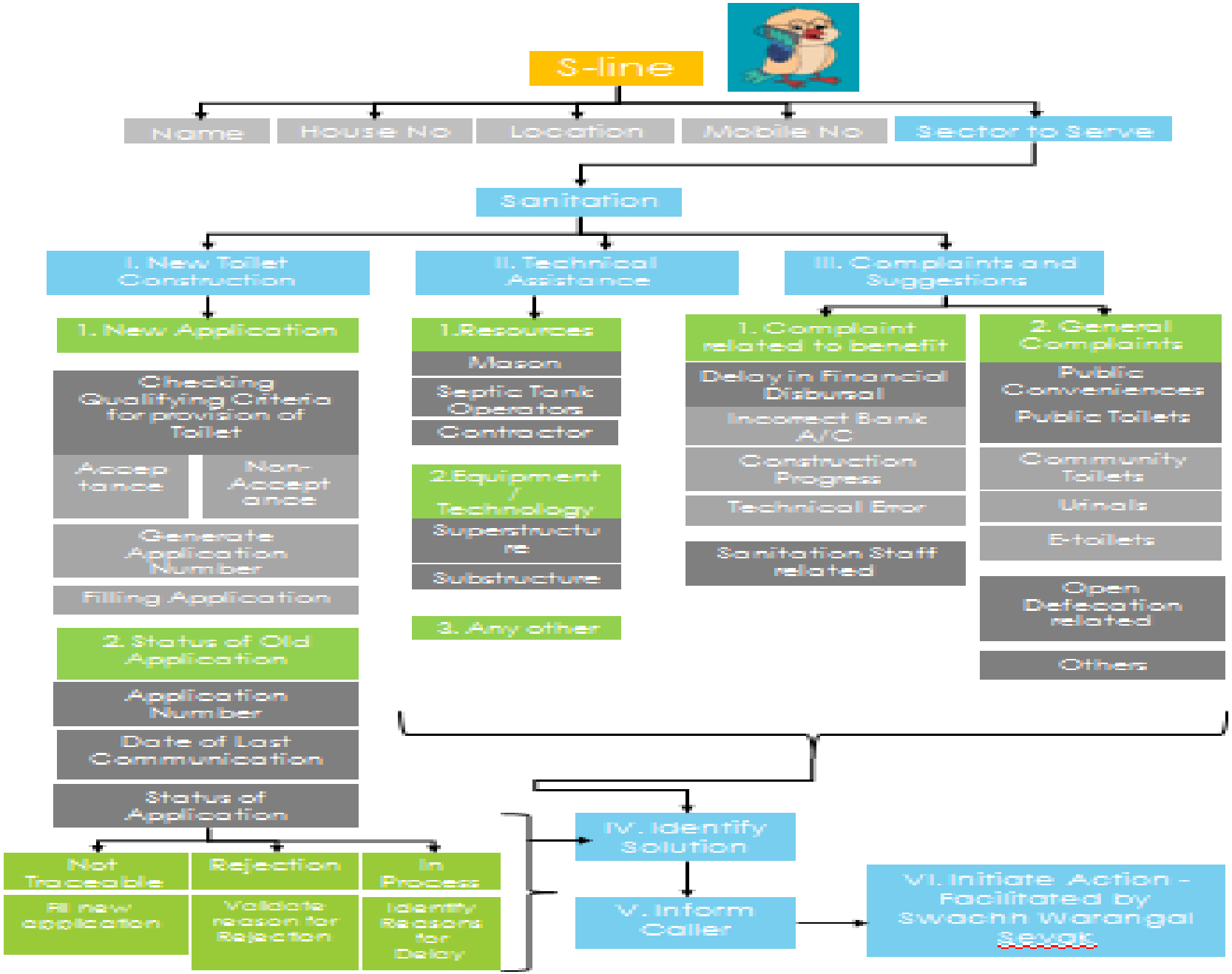
Sub: Greater Warangal Municipal Corporation – Public Health Branch – Septage Management in GWMC – Implementation of Operative guidelines – Council Resolution – Request – Regarding.

***

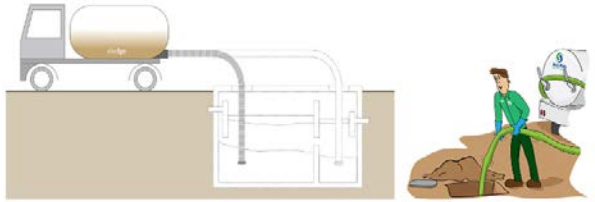
The Greater Warangal Municipal Corporation (GWMC) is mandated with the function of "public health, sanitation, conservancy and solid waste management" in accordance with the Constitutional Amendment Act, 1994. The Municipal Corporation Act has provided comprehensive powers to the Council and Commissioner for effective collection, transportation, treatment and disposal of sewage (the definition of which includes septage) within municipal jurisdiction.

Septage Management – Key components of regulatory framework

Design and Construction of Septic Tanks	Conversion of Insanitary Latrines into Sanitary Latrines	Pumping and Desludging
Septage Transportation	Septage Treatment, Disposal and Reuse	Information, Education and Communication (IEC)
Training Programs	Record keeping and MIS	Help Line for Septage Management


S-line
Name
House No
Location
Mobile No
Sector to Serve
Sanitation
I. New Toilet Construction
II. Technical Assistance
III. Complaints and Suggestions
1. New Application
Checking Qualifying Criteria for provision of Toilet
Accep tance
Non-Accept ance
Generate Application Number
Filling Application
2. Status of Old Application
Application Number
Date of Last Communication
Status of Application
Not Traceable
Fill new application
Rejection
Validate reason for Rejection
In Process
Identify Reasons for Delay
1.Resources
Mason
Septic Tank Operator
Contractor
2.Equipment / Technology
Superstructu re
Substructure
3. Any other
1. Complaint related to benefit
Delay in Financial Disburesal
Incorrect Bank A/C
Construction Progress
Technical Error
Sanitation Staff related
2. General Complaints
Public Conveniences
Public Toilets
Community Toilets
Urinals
E-toilets
Open Defecation related
Others
IV. Identify Solution
V. Inform Caller
VI. Initiate Action - Facilitated by Swachh Warangal Sevak

Training of Operators on Safety , Health and Environment



Treatment and Disposal

Amenable for PPP