

Use of SFDs in India: Overview and an Example

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Shit Flow Diagram: Potential and Opportunities for Achieving Sustainable Citywide
Sanitation

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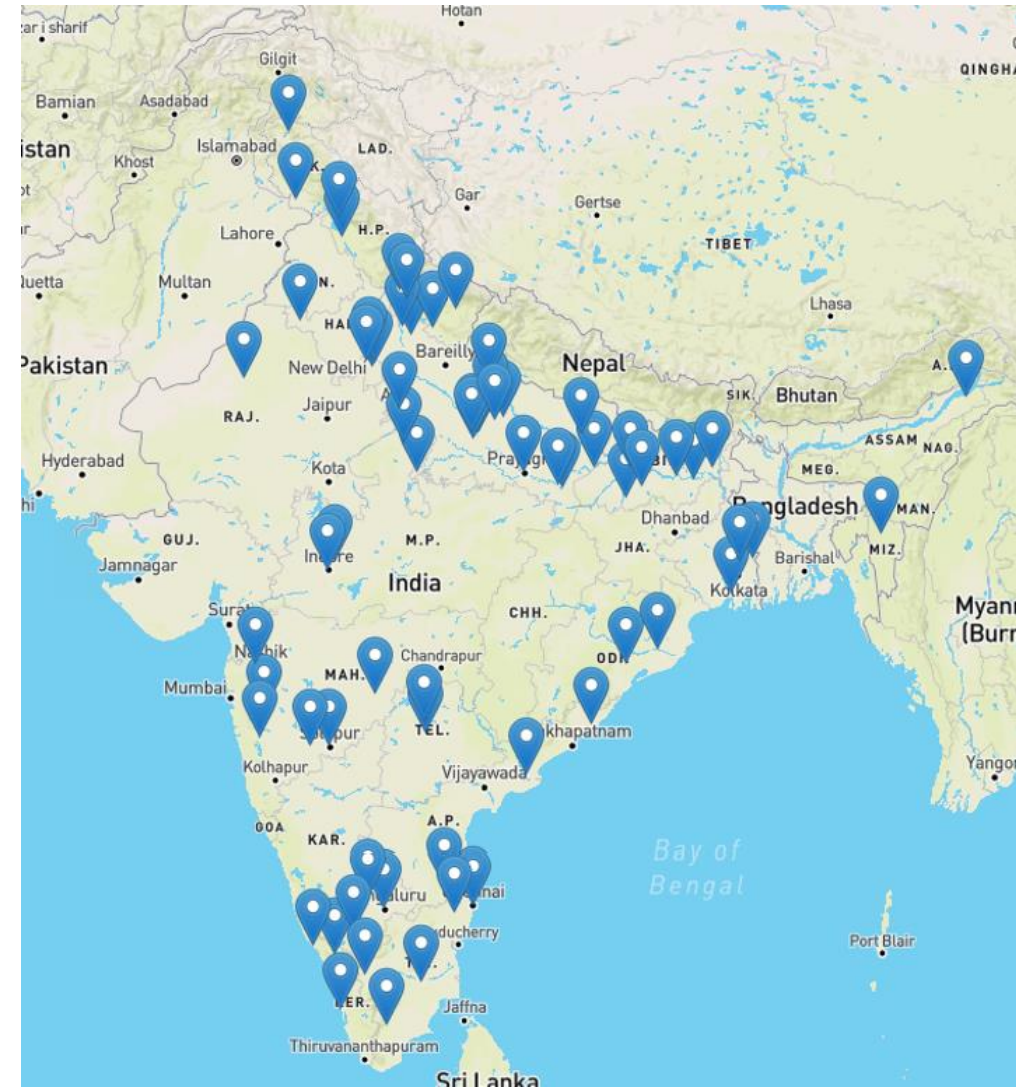
To be discussed

- Use of SFDs in India
- Findings from a cumulative SFD in India
- Example of Alappuzha
- Other opportunities
- Conclusion

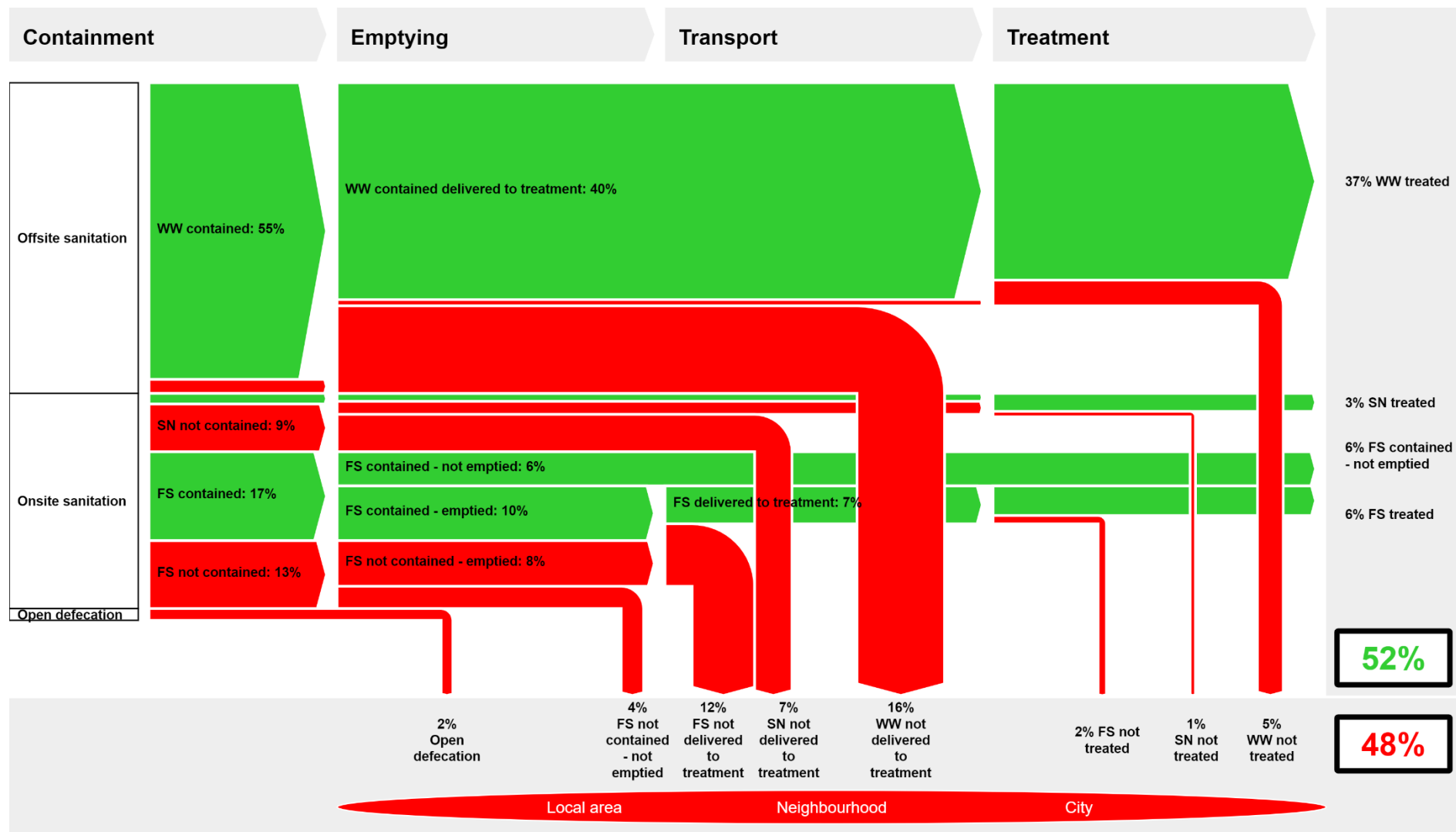
Use of SFDs in India

Use of SFD in India

- 80 SFD reports available at the repository, 72 unique cities
 - City size varies from 12 k to 16 million
 - 14 million plus cities, 58 small cities (< 1 million)
 - Four sub-city reports, Four revised versions
- Spread not uniform
 - 24 from UP
 - 1 each from 4 states (Assam, Himachal Pradesh, Mizoram, Rajasthan)
 - Only two from NE states
- Use mostly through donor support by established organisations



Cumulative SFD of all 72 cities



Findings: Cumulative SFD of Indian cities

- More than 97% have access to toilets, less than 2% practice OD
 - OD reported in SFDs prepared after 2019 when the country was declared ODF
- 57% have toilets connected to sewers, 40% connected to OSS
 - No city with 100% dependence on sewers
 - Dependence on OSS varies from 100% (in 12 cities) to 2%
- A little over half of wastewater and faecal sludge is safely managed

FSM Infrastructure and practices

- 62% OSS produce SN, its management needs urgent attention
- Cities report use of OSS that do not safely contain FS
- Emptying cycle far from desired frequency, reports assume OSS emptied in as many as 10 years to safely contain FS
- Both public and private sectors provide emptying service.
 - Service quality and charges vary
- Manual emptying reported in numerous cities
- Where treated, reuse of FS is not reported. On the contrary, some cities report reuse of untreated waste
 - In Bikaner, farmers sometimes tipped emptiers to dispose FS in their fields

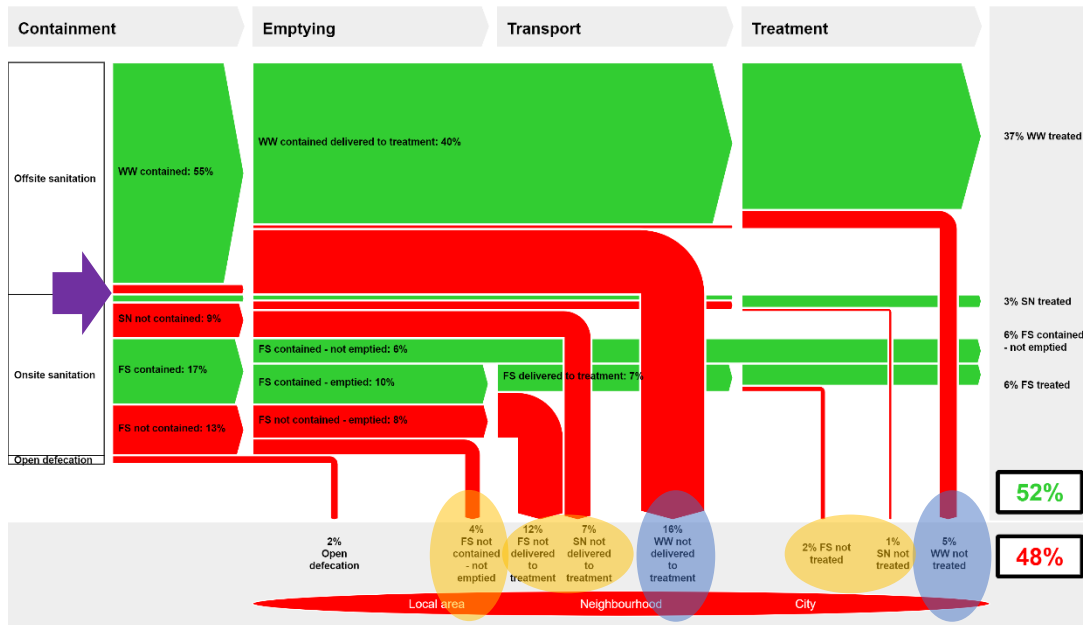
FSM – Sources of information

- Census only source of information for type of OSS
 - SFD reports note discrepancy between census information and on-ground reality, but many forced to rely on census information
 - LGs have information for each plot, not collated
- Information related to management of SN generally not available
 - Most SFDs rely on estimates or assumptions
- Where PSPs are involved, emptying related information is not fool-proof
- Information regarding number of OSS emptied manually is not available
- Treatment related information is generally available
- Information related to reuse of (untreated) FS is not available.



Failures that need attention

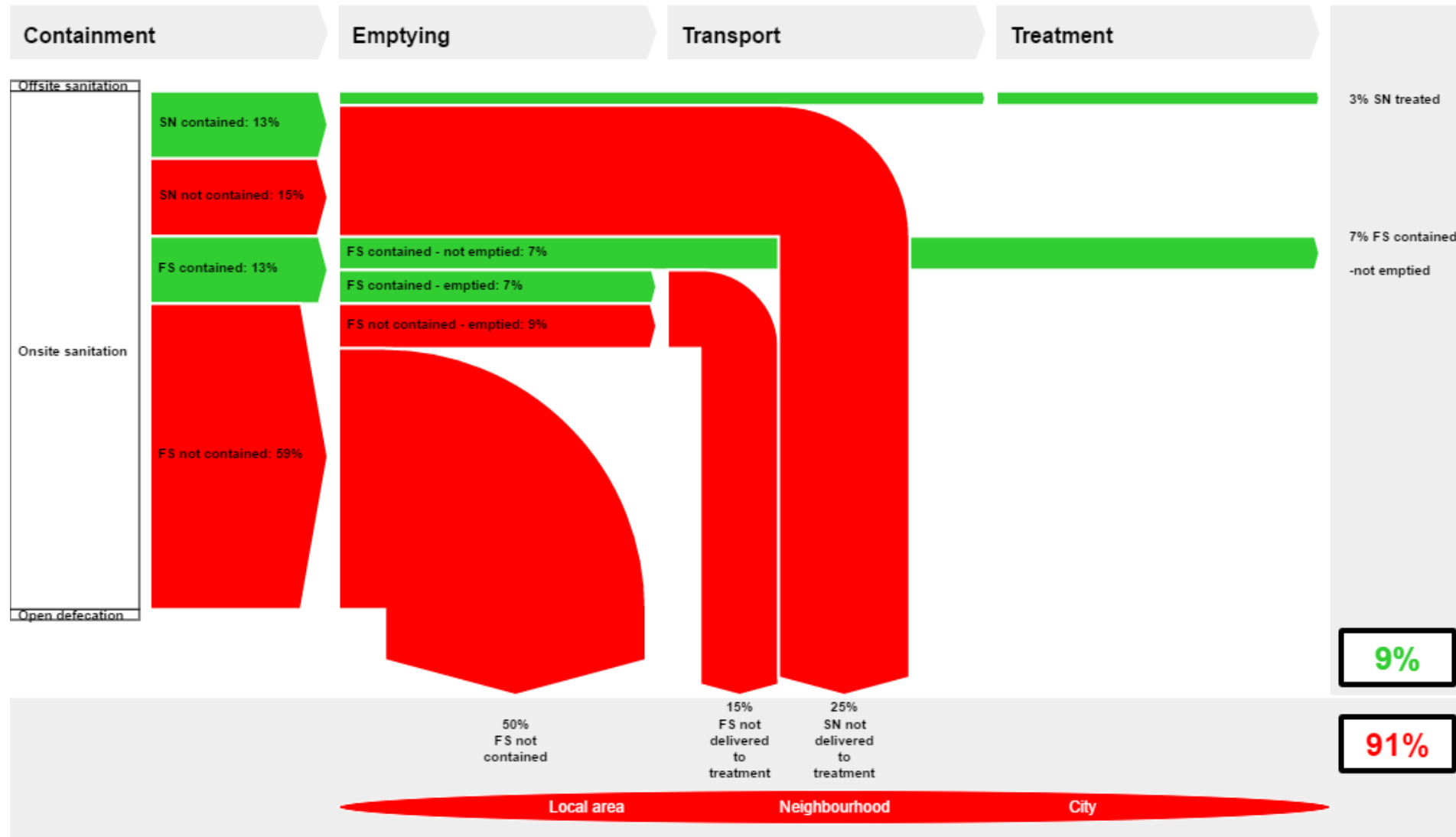
- All the 5 failures identified by an earlier review (Peal et al. 2020) observed in Indian cities
 - wastewater from off-site systems not delivered to treatment (16%)
 - wastewater delivered for treatment, not treated (5%)
 - FS not contained and not emptied from OSS (4%)
 - FS and SN emptied, not delivered to treatment and (19%)
 - FS and SN delivered for treatment, not treated (2%)



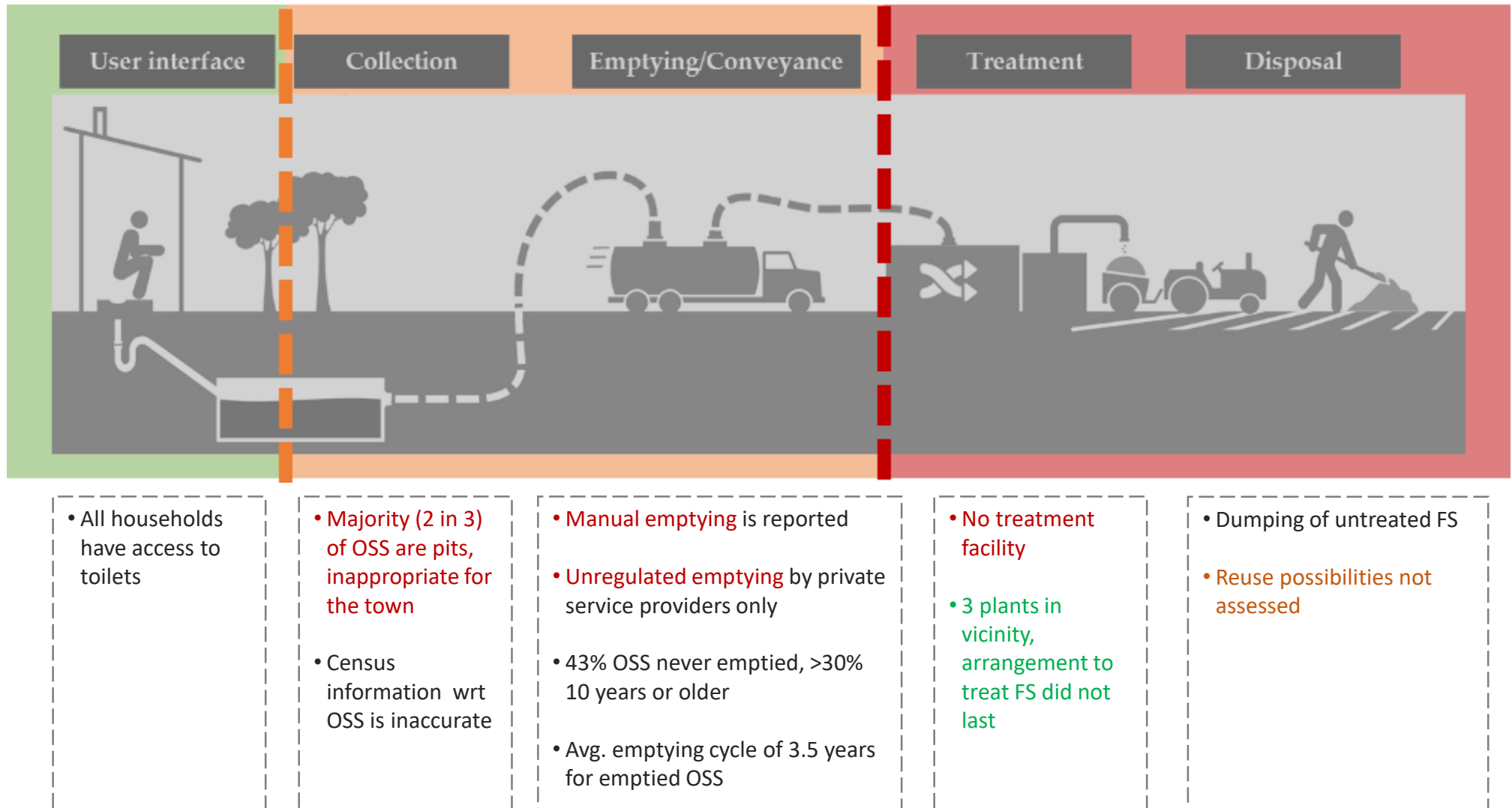
- Other failure: - Wastewater not contained - disposed directly into storm water drains, water bodies, open grounds, etc.
 - Cumulatively, 2% population relies on such toilets
 - As high as 23% toilets in Bikaner belong to this category
- Lack of emphasis on reuse of treated products and reuse of untreated waste
 - Reuse of treated products necessary for circular economy
 - Use of untreated FS in agriculture can be hazardous
- Lack of emphasis on safety of workers

Example of Alappuzha

Context adapted SFD of Alappuzha



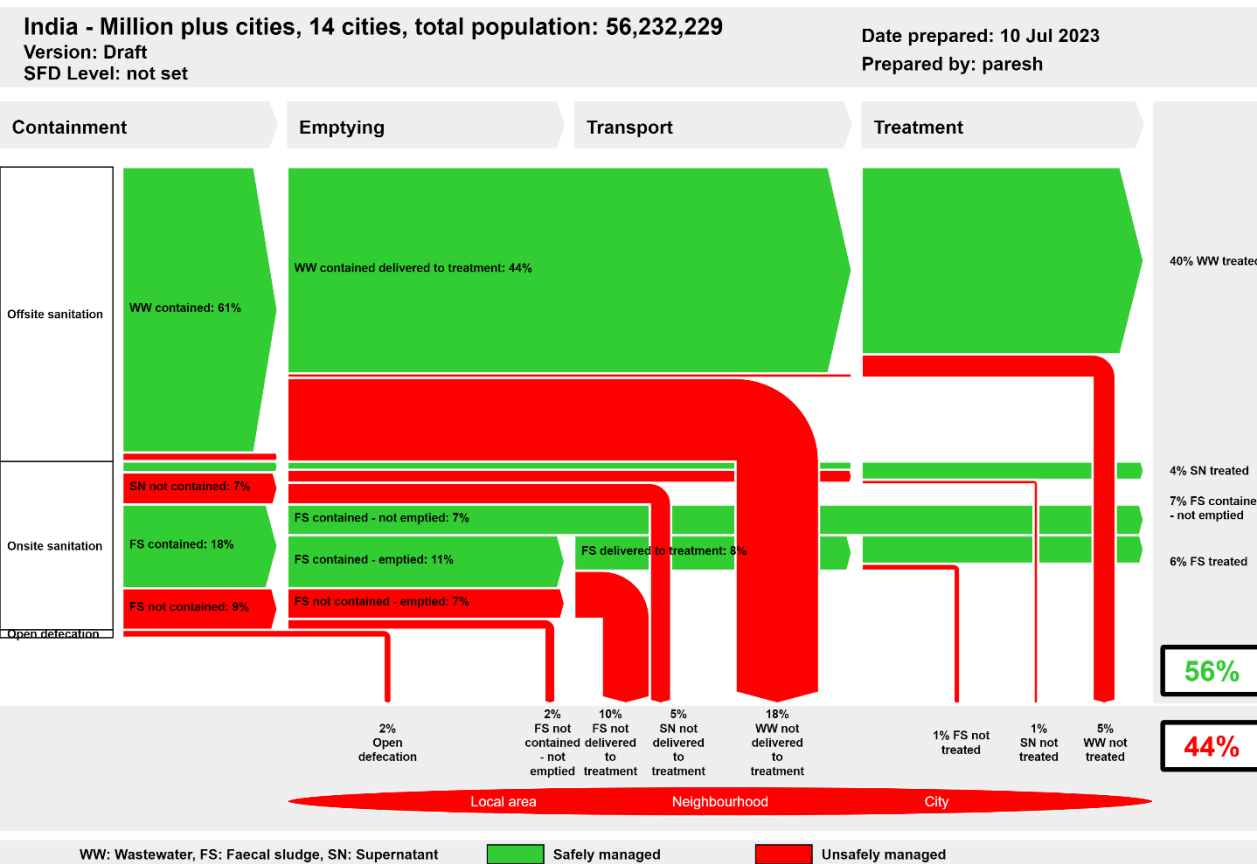
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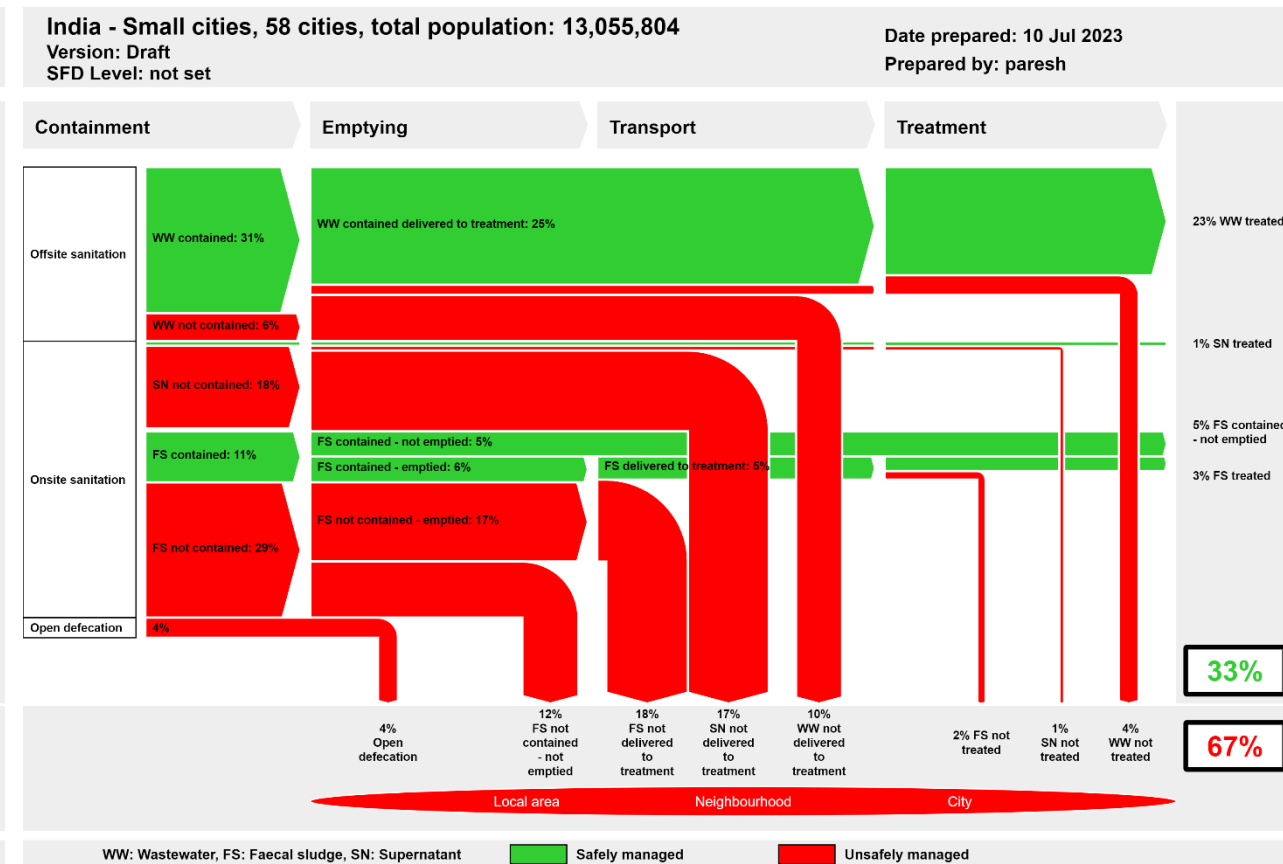
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Other Opportunities

Big cities v/s small cities



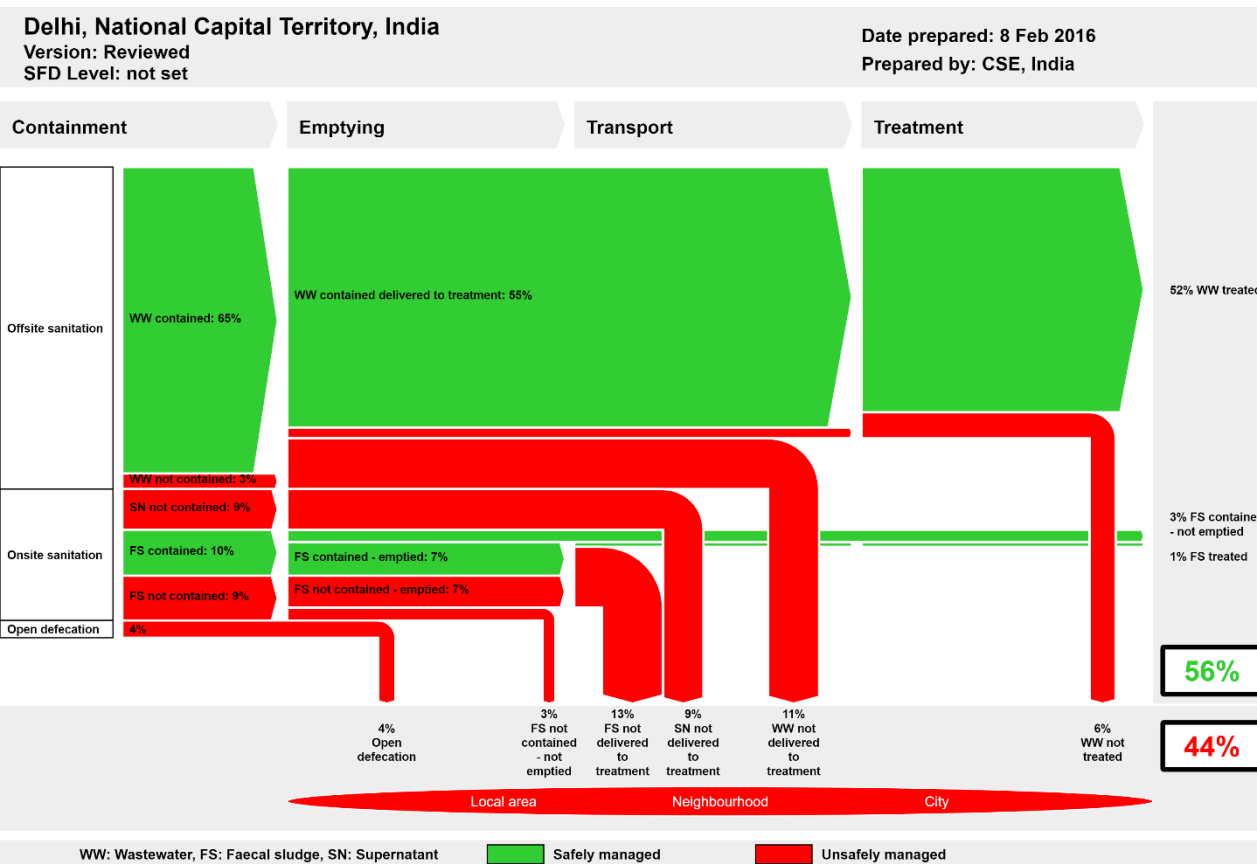
The SFD Promotion Initiative recommends preparation of a report on the city context the analysis carried out and data sources used to produce this graphic. Full details on how to create an SFD Report are available at sfd.susana.org



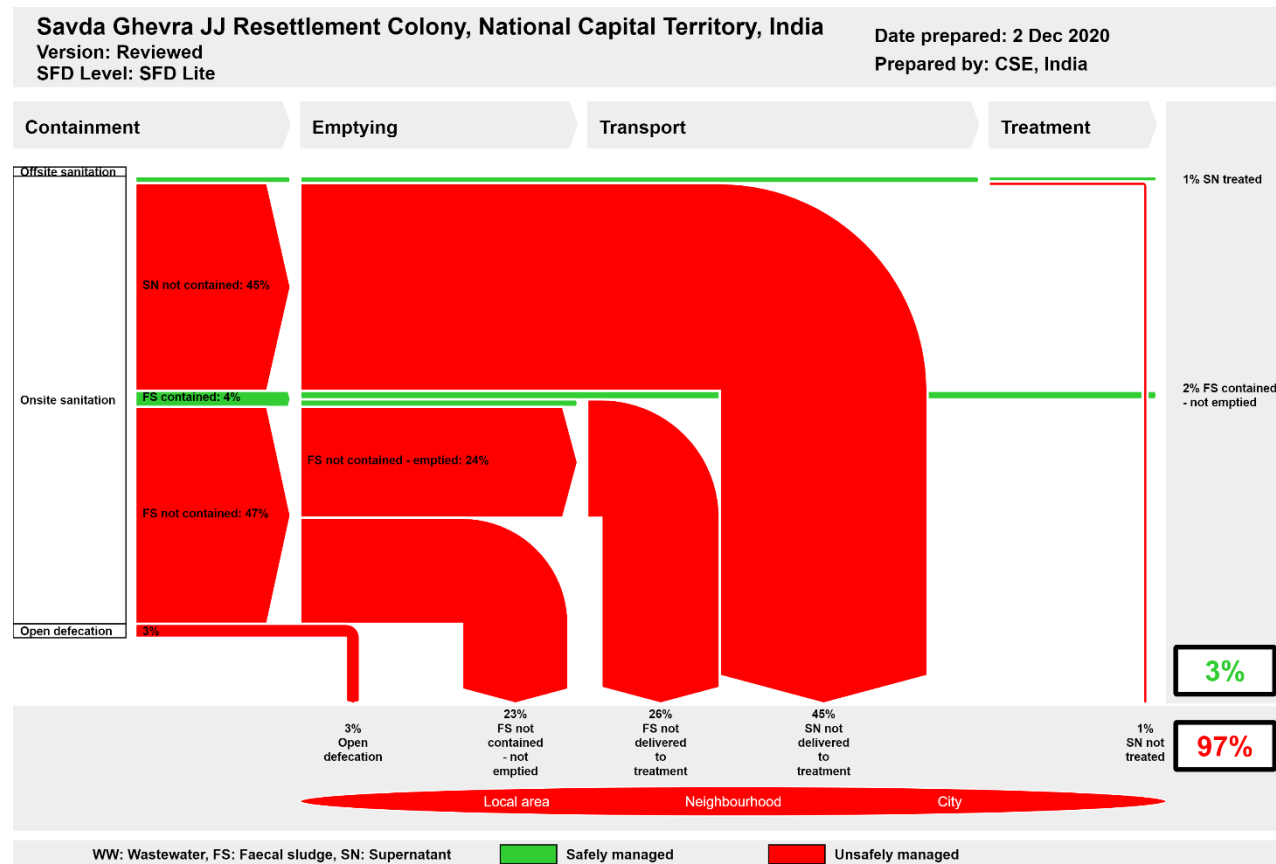
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Inequity within a city



Produced with support from the SFD Promotion Initiative with funding from the Bill & Melinda Gates Foundation.
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Conclusion

SFD - Potential and Opportunities

- Potential for regional and global monitoring (reiterating Peal et al. 2020)
 - Opportunity to contribute to national and state-level policy
- Potential to highlight inequities between cities and within cities
- Opportunity to innovate
 - Example of Alappuzha – A powerful combination of youth, penetration of smart phones, and open-source mobile applications to conduct household surveys
- Opportunity to plug into policies
 - New education policy and Unnat Bharat Abhiyan
- Opportunity to further refine the tool itself



Questions, suggestions, and comments are welcome

Thank you

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