Status Paper on Urban Toilets

Engaged Citizen, Responsive City

Preface

'Ensuring availability and sustainable management of water and sanitation for all' is one (SDG 6) of the 17 Sustainable Development Goals (SDGs). One of the targets of SDG 6 states- "by 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls". Another target of SDG 6 is to improve water quality by reducing pollution and halving the proportion of untreated wastewater.

The role of toilets is very critical to achieve availability and sustainable management of water and sanitation. The user interface part of toilet is necessary to respond to the nature's call of all human beings and maintaining hygiene, while toilet containment (in on-site systems) has a very strong environmental connection associated with it. Two major aspects related to toilets- access to the facility and arrangements of disposal of faecal matter dominate the discourse around toilets.

Census of 2011 and subsequently NSSO's sample survey in 2015 revealed substantial gaps in access to toilets and status of facilities in urban India. In the recent years, a lot of programmatic and other interventions have been taking place around toilets. As a result, access to toilets, technological aspects, their typology, maintenance regime and other attributes have been changing.

Under the European Union supported 'Engaged Citizens Responsive City' (ECRC) program running in three cities Ajmer (Rajasthan), Jhansi (Uttar Pradesh), and Muzaffarpur (Bihar), various interventions are being undertaken aiming at improved access to toilets, which primarily include individual household toilets and community toilets in the informal settlements and public toilets across the city. Access to sanitation facilities in these cities were studied through sample survey of households, whereas to cover public and community toilets a separate study was conducted.

This paper tries to elucidate the existing situation of toilets- individual household, public and community toilets in these three cities. Status at national and state levels has been analysed through secondary data. The report ends with conclusion and discussion on strategic ways forward.

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List of Abbreviations

BMGF	Bill & Melinda Gates Foundation
CBO	Community Based Organization
CT	Community Toilet
DRDO	Defence Research and Development Organisation
DUAC	Delhi Urban Art Commission
ECRC	Engaged Citizens Responsive City
EU	European Union
FSM	Faecal Sludge Management
IHHL	Individual Household Latrine
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
MIS	Management Information System
NGO	Non Governmental Organization
NSSO	National Sample Survey Office
NUSP	National Urban Sanitation Policy
ODF	Open Defecation Free
PRIA	Participatory Research in Asia
PSE	Participatory Settlement Enumerations
PT	Public Toilet
RUIDP	Rajasthan Urban Infrastructure Development Project
SBM	Swachh Bharat Mission
SIC	Settlement Improvement Committee
SDG	Sustainable Development Goals
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULB	Urban Local Body

1. Executive Summary

This paper is an attempt to capture the status of urban toilets, both individual and public toilets at three levels of governance. The findings presented in the paper are based on data from secondary as well as primary sources. The study presents data of three states—Rajasthan, Uttar Pradesh and Bihar—and three cities in these states—Ajmer, Jhansi and Muzaffarpur.

A major impetus in delivery of toilet infrastructure came with Swachh Bharat Mission (SBM) – Urban, launched in 2014 with 'elimination of open defecation' as one of the mission objectives. Under SBM, toilet facilities have been created at a massive scale across the country. As per the SBM data upto February 2019, a total of 56,63,042 Individual Household Latrines (IHHL) have been completed, which accounts for around 57% households defecating in open enumerated in urban India in 2011 census. In all over India, a total 3,258 towns have been declared 'open defecation free'(ODF). In Rajasthan, Uttar Pradesh and Bihar, the numbers are 168, 300 and 99, respectively as per January 2019 data.

Survey data from cities shows that households with own household toilets in informal settlements of Ajmer, Jhansi and Muzaffarpur are ranging from 81% to 84%. Toilets in these cities are mostly dependent on pour-flush type of arrangement for flushing in latrines and septic tank as containment system. Many households are getting connected to the sewerage system in Ajmer. Pit latrines were observed only in Muzaffarpur.

The cities face numerous challenges in achieving a universal coverage through toilets. At the household level, lack of finances remains the biggest reason for not having individual household toilets in the three cities under survey indicating a need to revisit the amount of incentives for IHHL and alternate funding mechanisms. In these cities, a low proportion of households were found applying for incentives and instances of application rejection were found to be higher. A granular data on toilets especially for low-income settlements, collected through a participatory enumeration methodology would greatly help ULBs in overcoming implementation challenges of IHHL. A pro-active approach from the ULB's side is required to fill the gaps of IHHLs and link the households further for a sustainable management of septage. Availability of water for use in toilets has also been seen as another reason behind lack of willingness to have individual household toilets.

Percentage of wards with operational public or community toilet facility is varying from 33% in Muzaffarpur to 72% in Jhansi, while in Ajmer 52% of wards are having functional public or community toilets. Similarly, the number of public and community toilet per 1 lakh population is the highest in Jhansi (13.2), followed by Ajmer (10.9) and Muzaffarpur (7.3). Forty-two per cent of public/ community toilets in Muzaffarpur do not have separate facilities for women. Only 18% of the standalone urinals in Ajmer and 21% in Jhansi have facilities for women. Other urinals in these cities serve only men. Majority of the public toilet facilities are not accessible to differently-abled persons. To achieve full geographical coverage through public and community toilets, GIS should be used as a decision support system. A systematic provision of operation and maintenance of community toilets by the community (or CBOs) may address the maintenance issues.

There are significant disparities in terms of facilities and practices related to toilets like availability of flush toilets, prevalence of pit latrines, availability of sewer connections, use of manual methods of cleaning

of septic tanks across formal and informal settlements in 3 cities. An initiative of organising urban poor communities through formation of voluntary groups called Settlement Improvement Committees (SIC) has helped in improving sanitation situation in these cities. Multi stakeholder forums also have a significant role to play in improving condition of low income settlements of the cities.

It has emerged from the survey conducted in these three cities that around 50-85% households never emptied their toilet tanks, while percentage of households using some kind of manual intervention for empting is varying from 10% to 68%. This indicates towards need of an extensive awareness generation drive on functioning of septic tanks, their role in keeping water resources clean and environment- health linkage. Capacity building of stakeholders directly linked with delivery mechanism like masons has a good potential to build appropriate containment systems moving ahead.

To sum up, it may be reiterated that moving forward the emphasis on sustaining the infrastructure created and achieving the complete coverage with integrated septage management approach is required for which a widespread citizen engagement and multi-stakeholder capacity building is the key.

2. Introduction

2.1 Background: Toilets and the Sanitation Value Chain

Toilets are one of the key micro infrastructure on which we are dependent in our daily lives. They are equally important as other essentials like places providing food and water needed to sustain the life in city. The connection of toilets with the environmental elements and therefore health makes it an even more critical element of living in urban areas. Improving access to the toilets is one of the keys to achieve Sustainable Development Goal (SDG), as one of the targets of Goal 6 of SDGs is to "achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030"[1].

Toilets, based the conveyance system of sewage in the city/ settlement, are of two categories. Toilets having only user interface are found in off-site systems, while toilets in on-site systems are equipped with collection and treatment tanks (usually underground) along with the user interface. Since, 60%[2] of the household latrines in India are having access to on-site systems, the term toilet connotes 'toilets with a collection/ treatment tank' or 'toilet having user interface and treatment system both'.

Since, the nature of the need of toilets is like that, everyone should have access to toilets irrespective of time and place of one's presence. Especially for women, whose sanitation needs are different, toilets become very necessary to maintain personal hygiene. Therefore toilets are required at every place of human activity round the clock. While, having a toilet at place of residence becomes a basic need, its absence at work places and place of occasional visit, may create almost equal amount of inconvenience.

About 17.0%[3] of the urban population of India, lives in informal settlements (slums), which primarily house the urban poor. Informal settlements are unplanned settlements in cities, often located on unauthorised land and characterised by high density, smaller dwelling units and narrow roads, lack of individual identity or property ownership documents. Informal settlements in some of the cities having off-site systems are not having access to the sewer system of the city. Therefore informal settlements are often mostly dependent on on-site systems.

2.2 About the Paper

The paper attempts to investigate the existing status of toilets (individual household latrines and public/ community toilets) in three mid-sized smart cities and draws the lessons from the ground realities. It starts from programmatic analysis of SBM (Urban) with special emphasis on targeting methods and benefit structure along with other aspects. It narrows down to the states and further to the city level for getting into nuances in terms of actual status of toilets, accessibility aspects, the way initiatives are being implemented and the role of citizens. The paper takes a deep dive into aspects like accessibility to the facilities and

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[1] http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-6-clean-water-and-sanitation. html#targets

[2] Percentage of households with latrine facility within premises but not having piped sewer system, HH-8: Households by Availability of Type of Latrine Facility, Census of India , 2011

[3] Census of India, 2011

implementation mechanisms prevailing in the cities with respect to the programme elements and tries to derive the implementation and policy lessons for improvement.

2.3 Objectives of the Paper

- To review the programmatic and policy paradigm for provisioning of toilets (individual household latrines and public/ community toilets)

- Highlighting key accessibility challenges and implementation lessons from mid-sized smart cities

- Investigating citizen engagement and participatory elements in provisioning of toilets

- Identifying policy implications from ground realities

- Bring out recommendations for improved programme design and effective implementation of toilets

2.4 Methodology and Limitations

The methodology adopted for preparing this status paper is a combination of primary and secondary research techniques. The report draws heavily from the primary surveys on sanitation status conducted in three cities. The surveys were undertaken at Ajmer and Jhansi during December 2016- May 2017. It was conducted at Muzaffarpur during March–June 2018. Discussions with the key informants in cities have been conducted to capture the shades of processes, issues and institutional mechanisms related to provisioning of toilets. For public and community toilets, the paper sources data from another survey conducted by PRIA in Ajmer and Muzaffarpur. For public and community toilets in Jhansi, data collected from the Municipal Corporation of Jhansi have been used. ArcGIS 10.5 have been used to map the states and cities to see the spatial dimensions. Key secondary sources of data used on paper are Census of India, Nation Sample Survey Organisation (NSSO) and Swachh Bharat Mission (Urban) website (MIS).

The paper does not cover the FSM full value chain—especially transportation and treatment. The paper does not cover the financial progress of the missions and process/ achievements under state level programmes in detail.

3. Policy and Programmatic Paradigm for Provisioning of Toilets in Urban Areas

3.1 Evolution of Sanitation Programmes: NUSP and SBM (Urban)

Major impetus in urban infrastructure development came with the JNNURM launched in 2005. One of the sub-mission of JNNURM was focused on basic services to the urban poor. Sewerage, solid waste management and community toilets were among other sectors covered under this. UIDSSMT covered smaller towns. A policy specific to sanitation in urban areas came into existence in 2008 with the introduction of National Urban Sanitation Policy (NUSP). 'Open Defecation Free Cities' was one of three broad goals set by the NUSP besides awareness generation, behaviour change, operation and maintenance of all sanitary installations. Swachh Bharat Mission (SBM)- Urban was launched in 2014 with 'elimination of open defecation' as one of the mission objectives having a target of building 1.04 crore individual toilets and 5.08 lakh public and community toilets[4].

Figure 1: Timeline of major policy and programme interventions on toilets
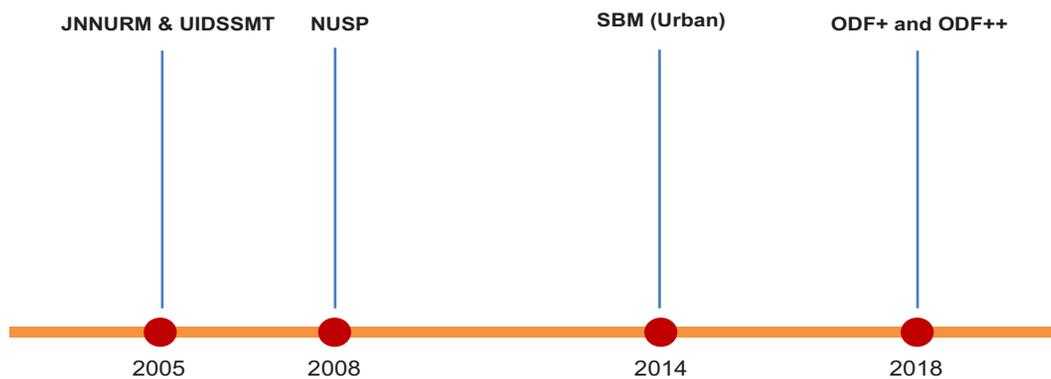
3.2 Swachh Bharat Mission (Urban)

3.2.1. Programme structure

Household toilets, including conversion of insanitary latrines into pour-flush latrines, community toilets, public toilets and urinals are among the six mission components of SBM (Urban). The provisions for augmenting urban toilets mentioned in the revised guidelines of SBM (Urban) are discussed below:

Coverage

All statutory towns are covered under SBM (Urban).

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4   http://swachhbharaturban.gov.in/writereaddata/mission_yearwise_targets.pdf

Target population

The mission guideline does not specify any target group of population for toilet components. However, it is obvious that two of the components: household toilets and community toilets are focusing on the urban poor, mainly residing in informal settlements of the urban areas. While the component on public toilets and urinals intents to cater all segments of urban population.

Implementation structure

The ULB is entrusted with responsibility of implementation of toilet component, including project preparation, approval, procurement etc. There is a provision of having a maintenance contract for a minimum of five years for community and public toilets and urinals.

Targeting mechanism

The targeting mechanism adopted for two components specifically meant for urban poor are described below:

Table 1: Targeting mechanism for toilet components under SBM (Urban)

	Household Toilets	Community Toilets
Beneficiary definition	Any household not having access to an individual household toilet or has an insanitary toilet	The beneficiary has been defined as 'a group of households ("beneficiary household group") whose members practice open defecation and who neither have a toilets nor constructing a new one is feasible The Guidelines state that the benefits are not linked with the type of slum and tenure security
Target Definition	80% of the open defecating households and all households with insanitary/ single pit latrines	20% households defecating in the open
Process/ method of identification and selection	The selection of the beneficiary shall be as per the strategy of ULB. Some of the guiding principles for beneficiary selection include campaign to create awareness, creating a baseline data through door-to-door survey and identifying beneficiary for individual toilet or planning for community toilet	The procedure of identification is to be designed by ULB. The method may be application based or survey based with or without participation of community

Source: MoHUA (2018), 'Guidelines for Swachh Bharat Mission (Urban)- revised on 5th October 2017'

Benefit structure

Individual toilets: The benefit under SBM (Urban) for constructing individual household toilet is in the form of a grant of Rs. 4,000 per household in all states except north eastern and hilly states. The grant amount is expected to be released in two installments. The guidelines do not put any cap on the states or ULB's contribution. There is a provision of depositing the incentives directly in the beneficiaries' account using the electronic transfer mode [1].

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Community toilets, public toilet and urinals: The benefit for construction of community, public toilets or urinal is in the form of the Centre's grant covering 40% of the cost, which amounts to Rs. 39,200 per seat for community or public toilet and Rs.12,800 per unit for urinal. The state's contribution (all states except north eastern and hilly states) has been defined as a minimum of Rs. 26,134 per seat for public / community toilet and Rs. 8,534 per unit for urinal [1].

Convergence

SBM (Urban) seeks convergence in the form of co-ordination among various departments of state governments and also with the Railways for putting up toilets on the railway's land.

3.2.2 Certifications under SBM (Urban)

Aiming to eliminate defecation in open from all 4,041 statutory towns by October 2019, SBM (Urban) initiated ODF Certifications [2]. Later in 2018, ODF+ and ODF++ were initiated. The condition of ODF states that at any point of the day, not a single person is found defecating in the open. For ODF+, additionally all community and public toilets should be functional and well maintained. ODF++ requires added aspects of safe management and treatment of faecal sludge and septage [3].

3.2.3 Progress under SBM (Urban)

In all over India, 3,258 towns in total have been declared ODF. In Rajasthan, Uttar Pradesh and Bihar, the numbers are 168, 300 and 99, respectively, as per January 2019 data[5].

As per the SBM data upto February 2019, a total of 56,63,042 Individual Household Latrines (IHHL) have been completed, which accounts for around 57% households defecating in open and 39% of the households without household toilets enumerated in urban India during 2011 census. The total public and community seats completed under SBM (Urban) are 4,83,649. Maps showing the total number of individual household latrines and public/ community toilets completed till February 2019 are shown on the next page.

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[5] Source: ODF Status – INDIA available at http://sbmodf.in/ accessed on 27th Jan 2019

Figure 2: Status of implementation of individual toilets, community and public toilets under SBM (Urban)
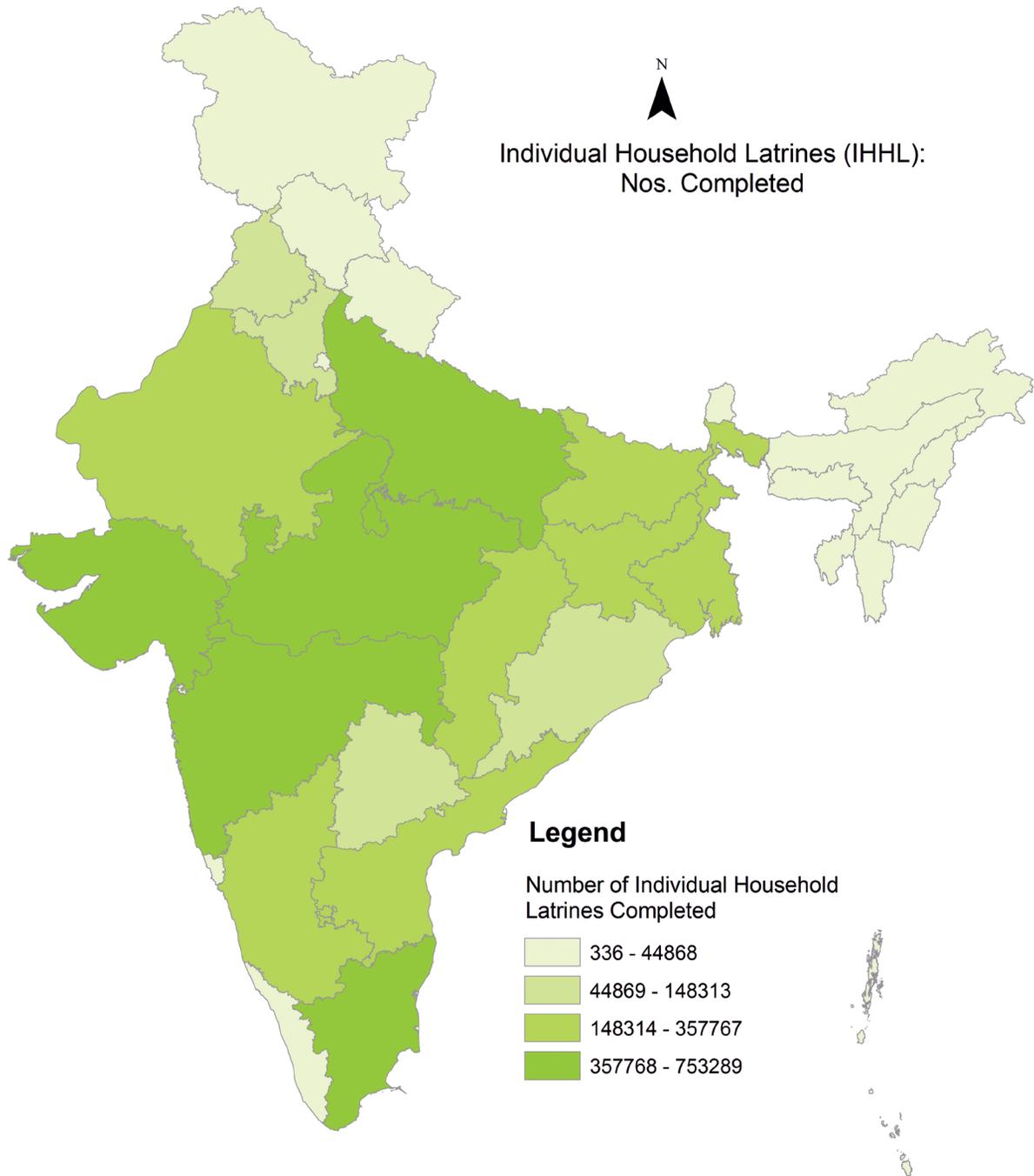
Individual Household Latrines (IHHL):
Nos. Completed

Legend

Number of Individual Household
Latrines Completed

	336 - 44868
	44869 - 148313
	148314 - 357767
	357768 - 753289

Source: State-wise Status of Implementation of Various Components under SBM upto February 2019, MoHUA &
Survey of India- https://indiamaps.gov.in/soiapp/

OP/2019/003E

N

Community Toilets:
No. of Seats completed

Legend

Number of Community
Toilet Seats Completed

	0 - 471
	472 - 1386
	1387 - 7536
	7537 - 27862
	27863 - 65840

Source: State-wise Status of Implementation of Various Components under SBM upto February 2019, MoHUA &
Survey of India- https://indiamaps.gov.in/soiapp/

N

Public Toilets:
No. of Seats completed

Legend

Number of Public Toilet Seats
Completed

0 - 1739

1740 - 5236

5237 - 10736

10737 - 26457

26458 - 40427

Source: State-wise Status of Implementation of Various Components under SBM upto February 2019, MoHUA & Survey of India- https://indiamaps.gov.in/soiapp/

N

Public and Community Toilets:
No. of Seats completed

Legend

Number of Public & Community
Toilet Seats Completed

	46 - 1422
	1423 - 5707
	5708 - 10530
	10531 - 54319
	54320 - 106267
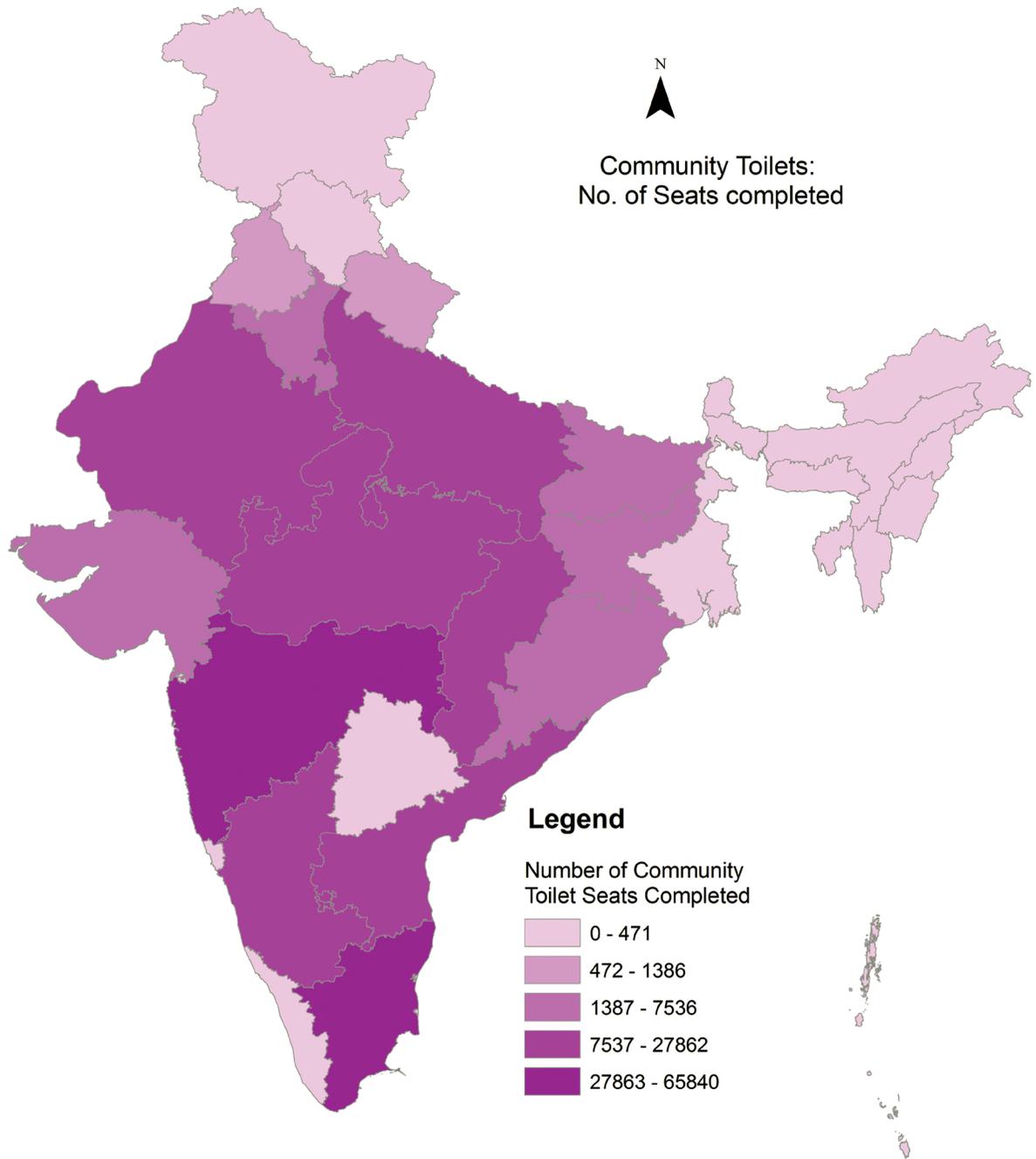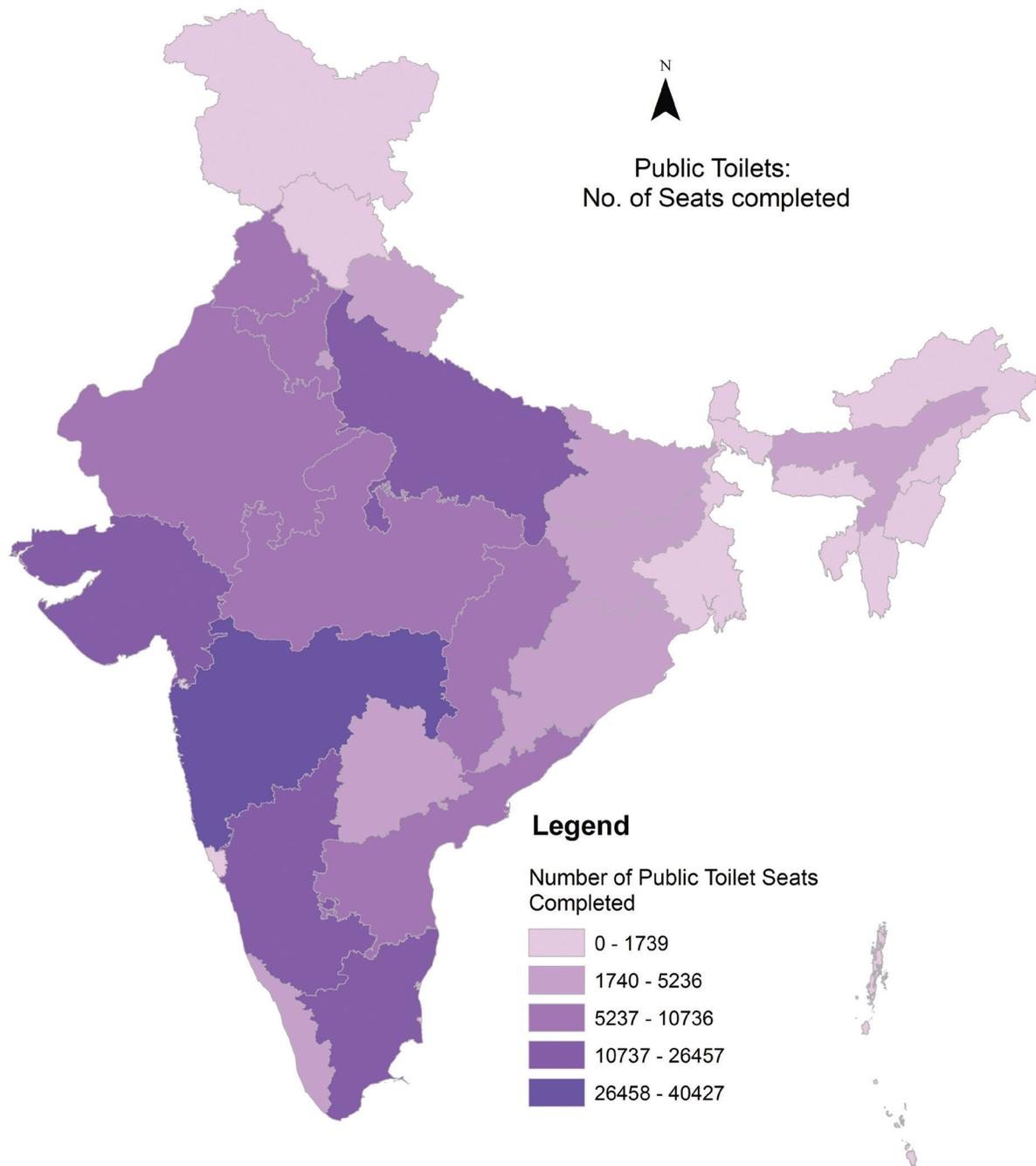
Source: State-wise Status of Implementation of Various Components under SBM upto February 2019, MoHUA & Survey of India- https://indiamaps.gov.in/soiapp/

The maps above show that Maharashtra, Madhya Pradesh, Gujarat and Uttar Pradesh are leading in completion of individual household latrines, while Tamil Nad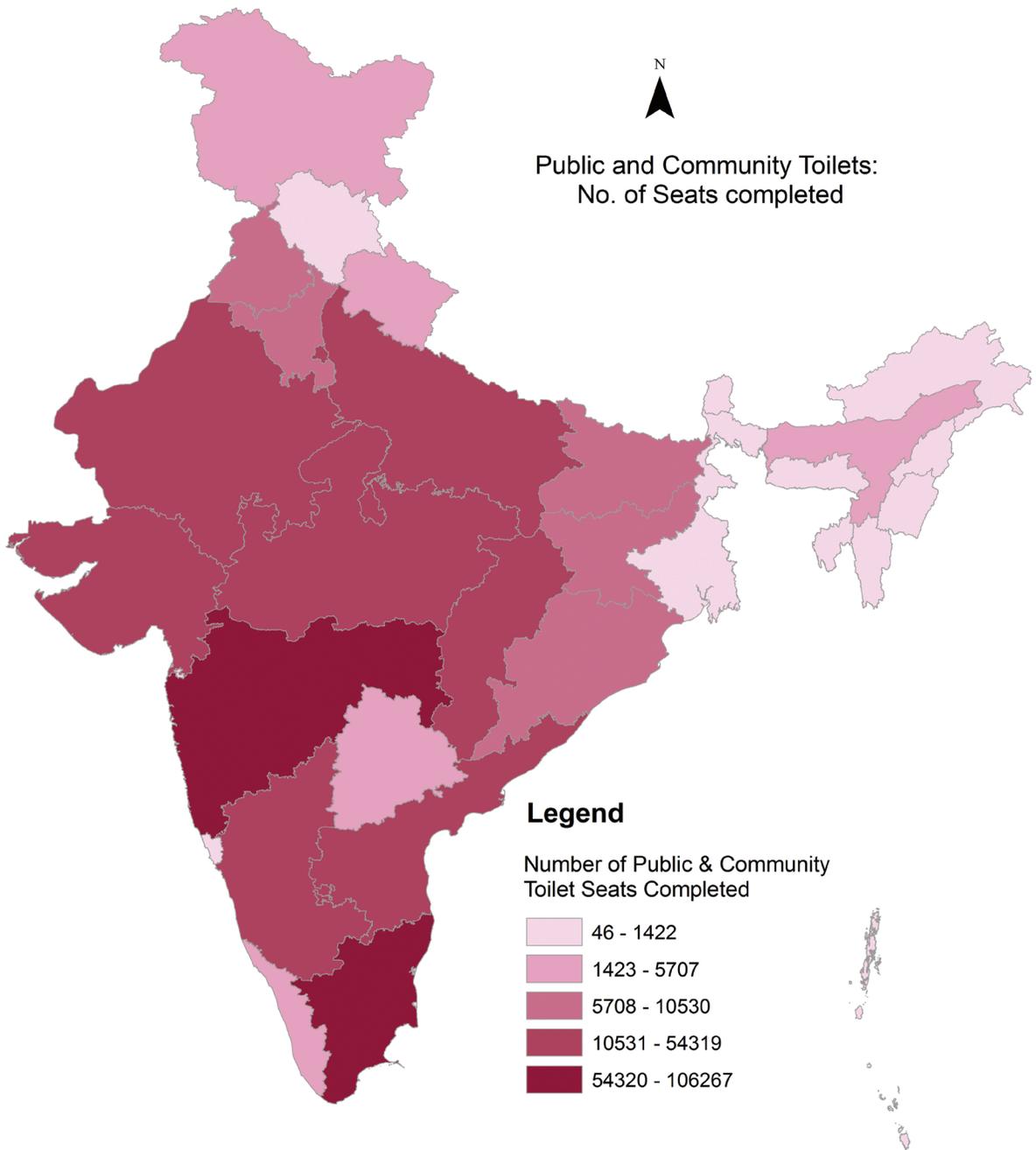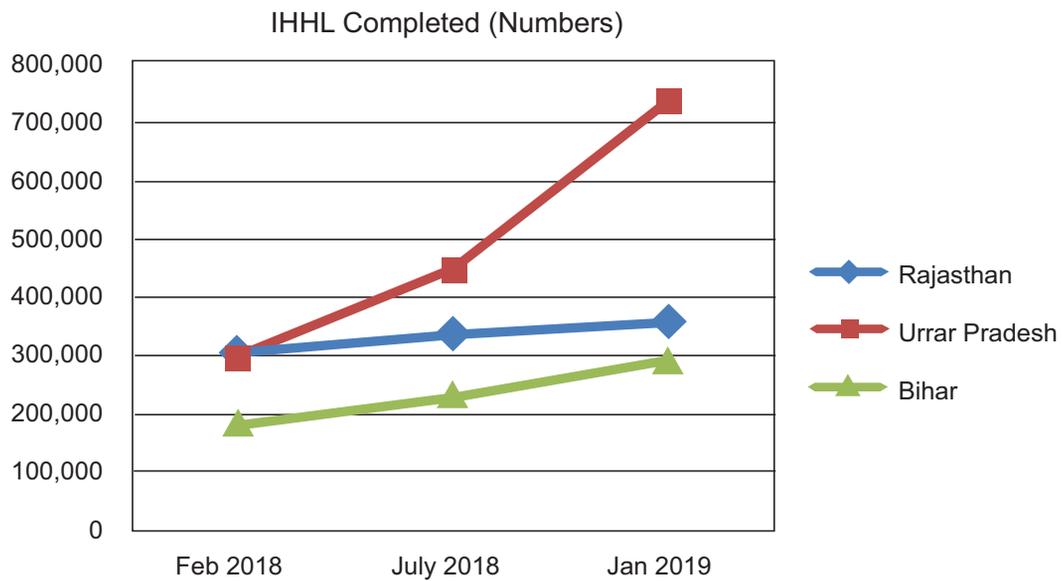u and Maharashtra are among the states where the highest number of public and community toilets has been constructed. Till January 2019, a total of 373 Urban Local Bodies have been certified as ODF+ while 165 as ODF++ [4].

Figure 3: Trends in completion of IHHL (numbers) in 3 states

IHHL Completed (Numbers)

Source: State wise status of implementation of various components under SBM upto Feb. 2018, Jul 18 and Jan 2019 from SBM (Urban) website

Figure 4:Trends in completion of public and community toilets (seats) in 3 states
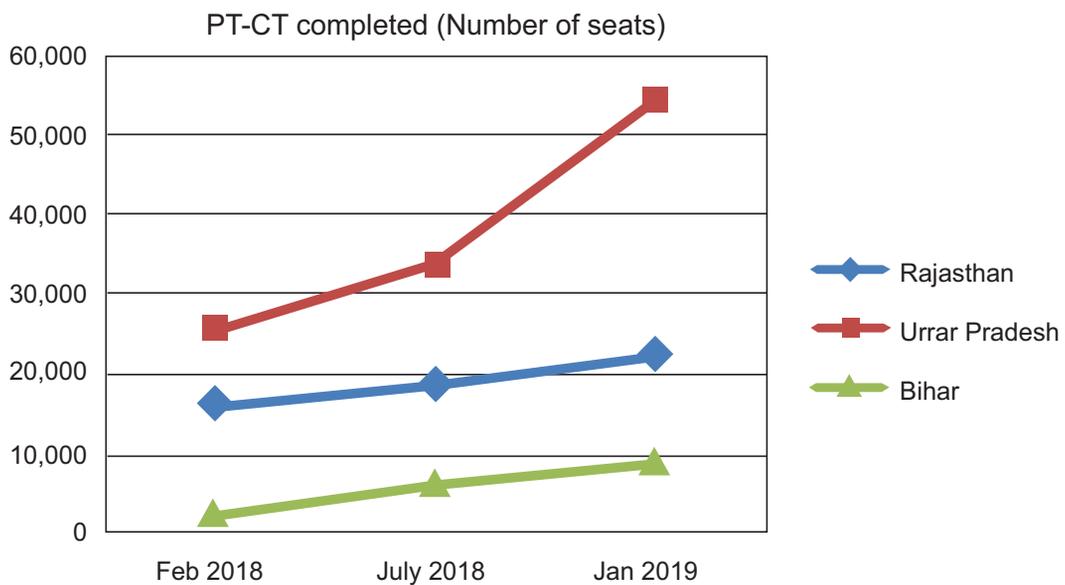
PT-CT completed (Number of seats)

Source: State wise status of implementation of various components under SBM upto Feb. 2018, Jul 18 and Jan 2019 from SBM (Urban) website

The trends on construction of toilets show a rapid increase in Uttar Pradesh, while in Bihar and Rajasthan, it has increased at a slower rate.

3.3 State's Missions and Programmes for Toilets (Rajasthan, U.P. and Bihar)

Rajasthan seems not to have any state-level scheme focusing on toilets. Launched in 1998 with support of Asian Development Bank and Government of India, Rajasthan RUIDP focuses on waste water collection and treatment systems along with other urban infrastructure[6]. In Uttar Pradesh, there are *Dindayal Upadhyay Adarh Nagar Panchayat Yojana* and *Dindayal Upadhyay Nagar Vikas Yojana*, taking care of infrastructure development in towns. In Bihar, under *Sat Nischay* mission, toilet facility for each household (*Sauchalaya Nirman Ghar Ka Samman*) is one of the seven resolves *(Nishchay)* that aim at providing toilets to each household and target open defecation free Bihar.

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[6] http://urban.rajasthan.gov.in/content/raj/udh/ruidp/en/home.html

4. Status of Individual Toilets

4.1 Status of Availability of Individual Household Toilets in 3 States

The status of toilet facilities in urban areas was comprehensively quantified by Census 2011 for the first time in country. The qualitative aspect of the type of prevailing toilet facilities like nature of containment systems and public toilets were covered for the first time. Some of the facts from Census 2011 reflecting the macro picture at India and at level of the three states under study are presented below:

Figure 5: Percentage of households not having toilet facility in urban areas of 3 states and India - 2011
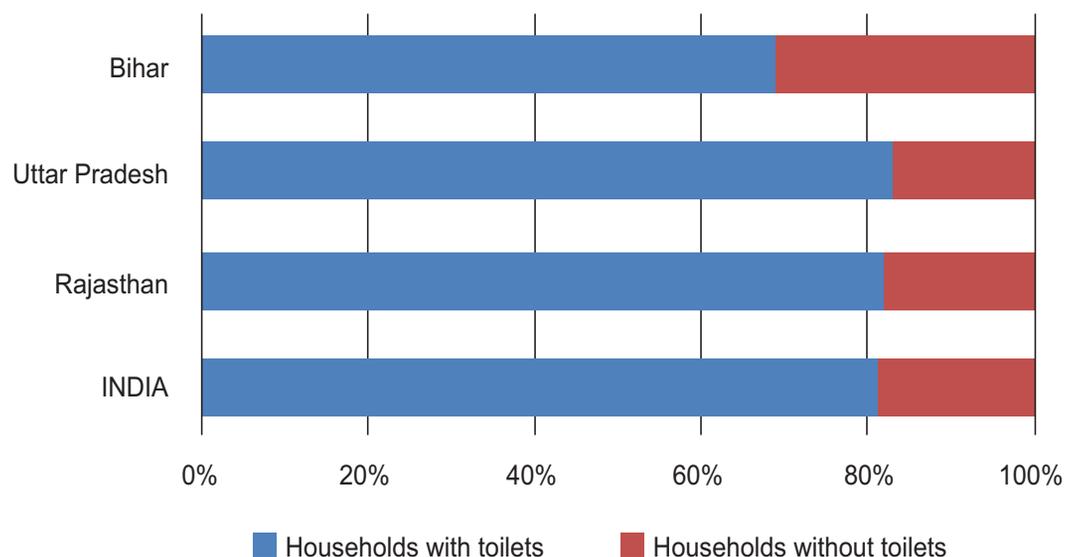
Source: HH-8: Households by availability of type of latrine facility, Census of India 2011

Figure 6: Percentage of households not having toilet facility using public toilets in urban areas- 2011
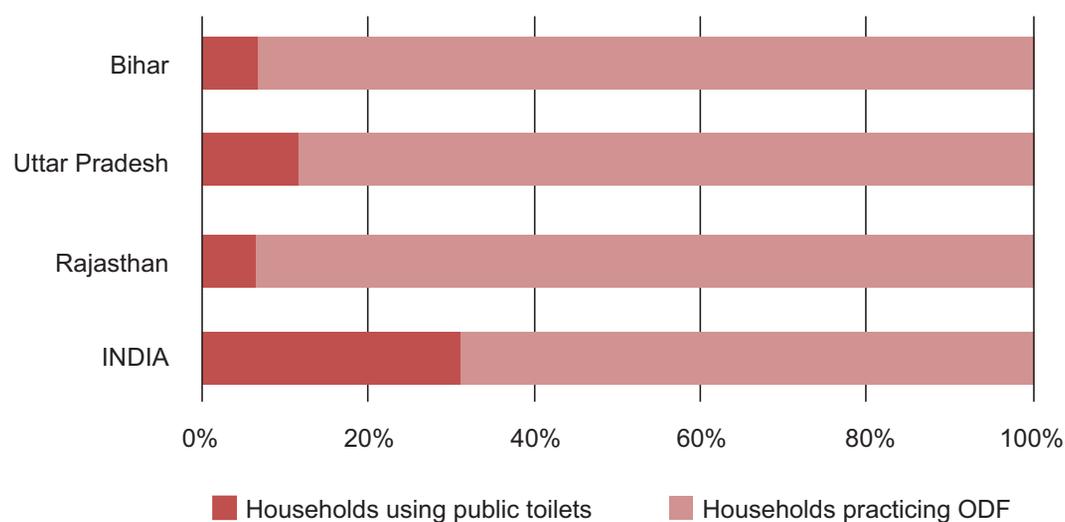
Source: HH-8: Households by availability of type of latrine facility, Census of India 2011

The percentage of households not having toilet facility within the premises was found much higher in Bihar in comparison to Rajasthan and Uttar Pradesh. In Rajasthan and Uttar Pradesh, the percentage of toilet-less households was found lower than the national figure. Out of households not having toilets, the proportion of households resorting to public facilities was found to be much lower than the national figure.

Figure 7: Type of toilet facility in urban areas-2011

Source: HH-8: Households by availability of type of latrine facility, Census of India 2011
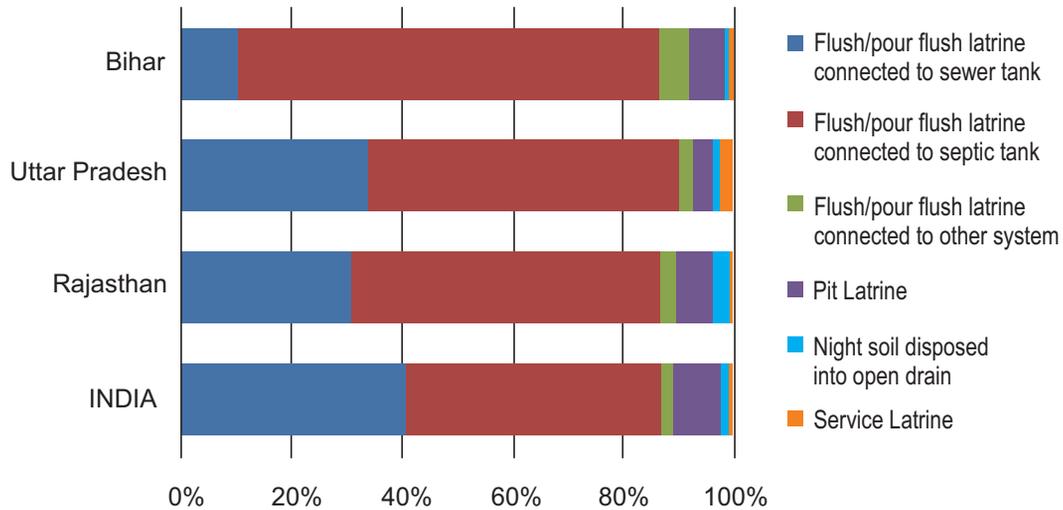
The percentage of non-sewered toilets in urban India was around 60%. In Rajasthan and Uttar Pradesh, the percentage of households depending upon on septic tank was found to be 56%, while in Bihar it was 76%. Practices like use of pit latrines, open drain disposal and service latrines were found ranging from 7% to 11%.

In 2015, NSSO captured the status of sanitation facility covering toilets in a rapid survey on Swachh Bharat Mission concurrently with the 72nd round of NSS. This sample survey revealed further aspects like:

- Access to water for use in the household toilets

- Percentage of persons in respective age category going for open defecation

- Percentage of households having sanitary toilet[7]

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[7] Sanitary Toilet is defined as a toilet which ensures safe confinement and disposal of faeces (excreta) and does not require the need for human handling. *Source: [5]*

Table 2: Percentage of households having access to water for use in household toilets out of the households having toilets

	Percentage of households having access to water for use in household toilets out of the households having toilets
INDIA	99%
Rajasthan	98.9%
Uttar Pradesh	99.2%
Bihar	94%

Source: National Sample Survey Office NSSO (2016), 'Swachhta Status Report 2016'

Table 3: Percentage of persons in respective age category going for open defecation in urban areas

	Old (>60 years)	Adult (15-60 years)		Children (<15 years)	Total
		Male	Female		
INDIA	6.5	6.6	6.5	10.1	7.5
Rajasthan	10	8.9	8.5	11.9	9.8
Uttar Pradesh	5.9	5.4	5.4	8.5	6.4
Bihar	9.8	12.4	12.3	16.1	13.4

Source: National Sample Survey Office NSSO (2016), 'Swachhta Status Report 2016'

The NSSO data reflects a considerably higher percentage of children going for open defecation in comparison to the other age groups. There is no significant variation across genders.

4.2 Status of Individual Household Toilets in 3 Cities

The analysis in this section is mainly based on the PRIA's surveys on sanitation services in the three cities under study during 2017-18. The survey attempted to look into the micro-level status of toilets with various shades of accessibility and institutional mechanisms. Formal settlements and informal settlements are separately analysed and presented to give a clear-cut perspective on the status of facilities across the socio-economic and geographical segments of these cities. Below are the key points of analysis of data on the status of toilets from Ajmer, Jhansi and Muzaffarpur.

4.2.1. Coverage and type of household toilets

Figure 8: Households with own toilets
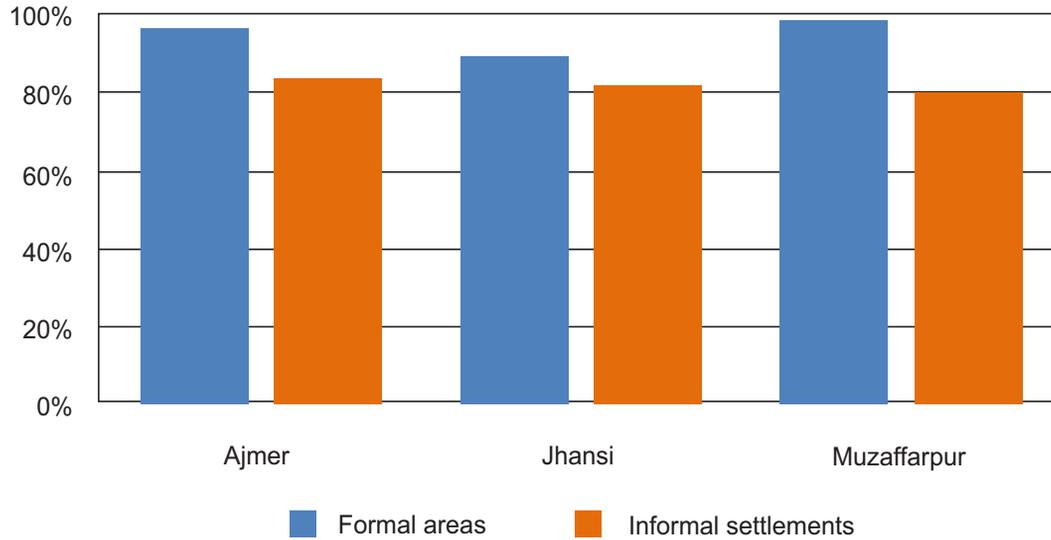
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

Coverage of household toilets

Among the three cities, Muzaffarpur and Ajmer exhibited a higher percentage of households of formal settlements with own toilets. The proportions of households with own toilets are higher in formal settlements of all the three cities. The disparity between formal and informal settlements appeared the highest in Muzaffarpur.

Figure 9: Use of shared toilets and public/ community toilets in informal settlements
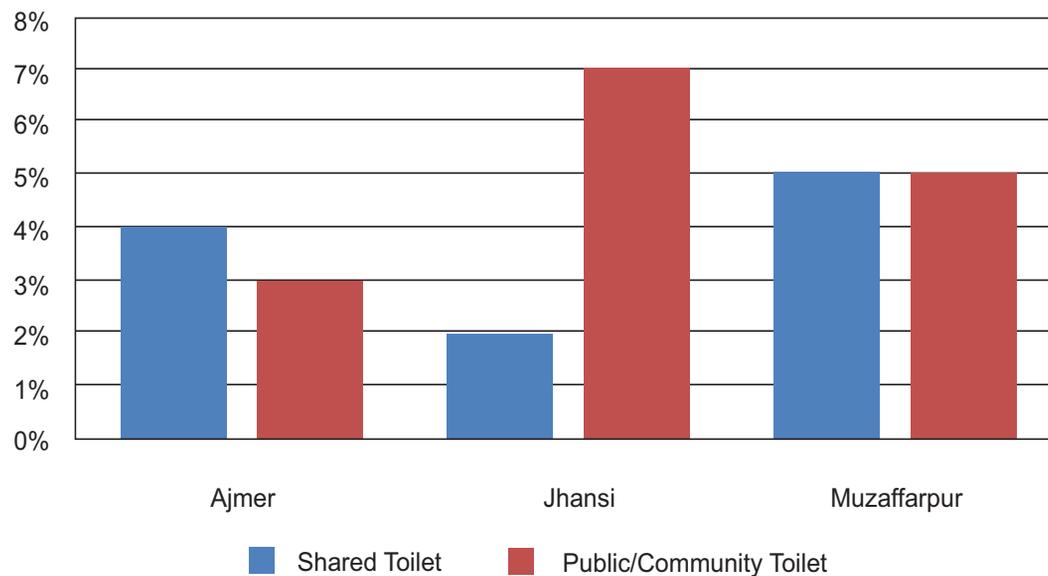
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

Among the informal settlements of these three cities, Jhansi is having the highest share of households using public and community toilets, whereas it is the lowest in Ajmer. Muzaffarpur has the highest percentage of households using shared toilets.

Type of toilets: Toilets in these three cities are mostly dependent on pour-flush type of arrangement for flushing in latrines. Flush toilets are present in the highest proportion in Ajmer and lowest in Jhansi. The presence of pour-flush toilets in informal settlements is significantly higher in informal settlements of Ajmer and Jhansi, while in Muzaffarpur it is lower in informal settlements due to a significant presence of pit latrines with no flushing, which is also clearly coming out in the graph of types based on containment systems (Figure 11).

Figure 10: Type of toilets: based on flushing
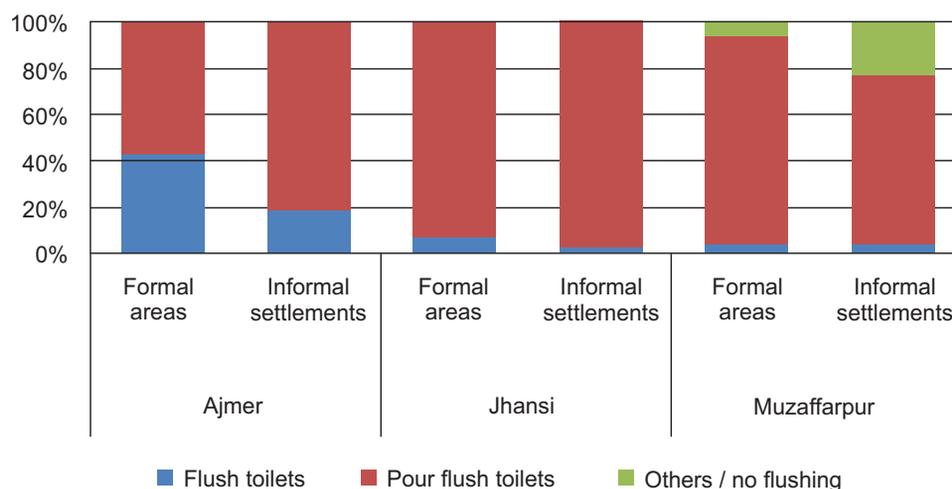
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

Figure 11: Type of toilets − based on containment/ conveyance system
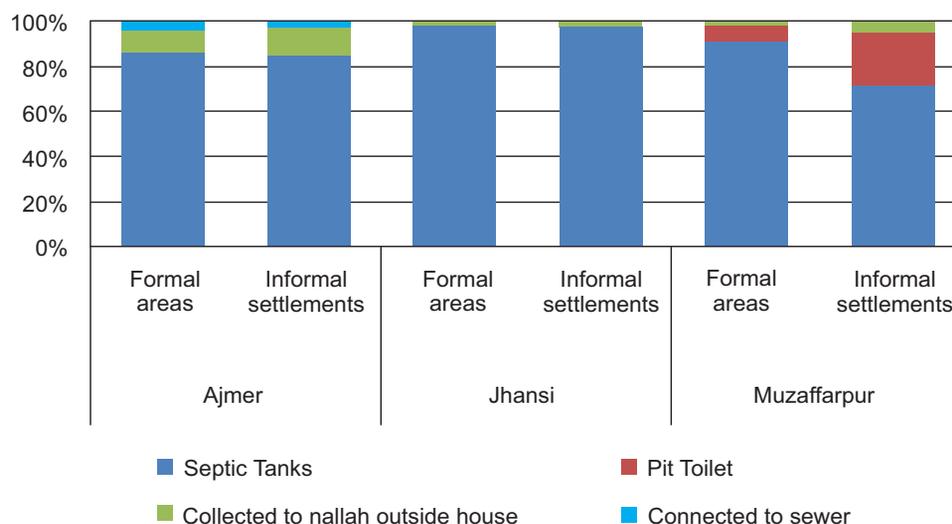
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

The presence of pit latrines is only seen in Muzaffarpur especially in its informal settlements. In Ajmer, households are getting connected to the sewer system, but the percentage of such households was very low at the time of surveys. Jhansi displays nearly full dependence on septic tanks. A faecal sludge treatment plant at Jhansi, which is now operational, is expected to catalyse better maintenance and enhanced efficiency of septic tanks of the city.

4.2.2 Accessibility dimensions

Figure 12: Reasons of not having individual household toilets
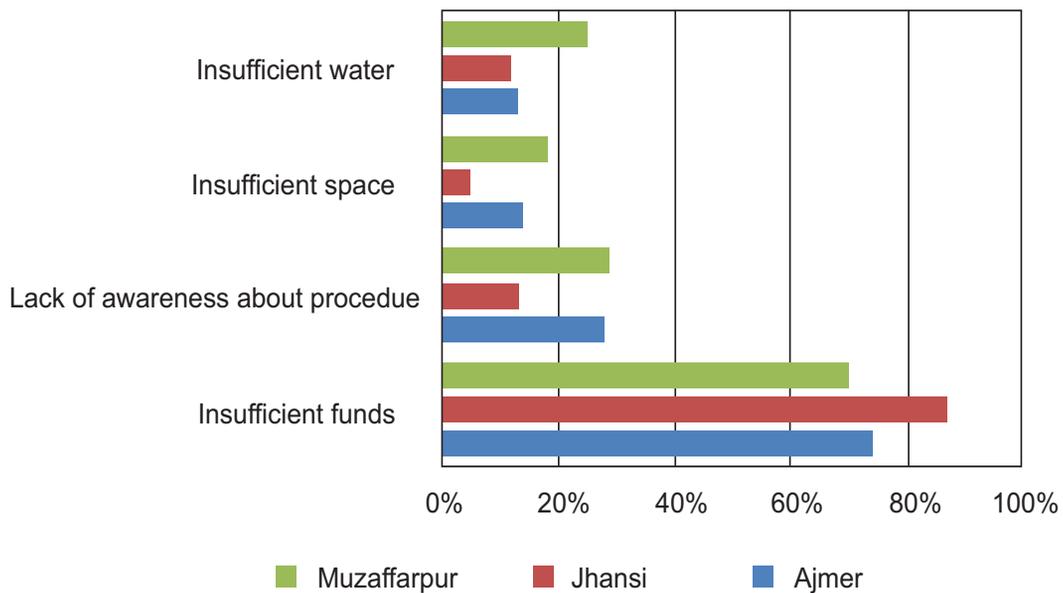
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

Lack of funds remains a major reason in all the three cities for not having individual toilets. Moreover, lack of awareness about the process was another important reason across cities, which was investigated to highlight the status of application for individual household latrines. This is presented on the next page:

Figure 13: Application for individual toilets and acceptance of application by ULB

Households not having toilets, who applied to ULB

Muzaffarpur, No, 74%

Jhansi, No, 66%

Ajmer, No, 73%

Yes, 27%

Yes, 34%

Yes, 26%

Acceptance of application for toilets by ULB

Ajmer, Rejected, 40%

Jhansi, Rejected, 41%

Muzaffarpur, Rejected, 91%

Accepted, 9%

Accepted, 59%

Accepted, 60%
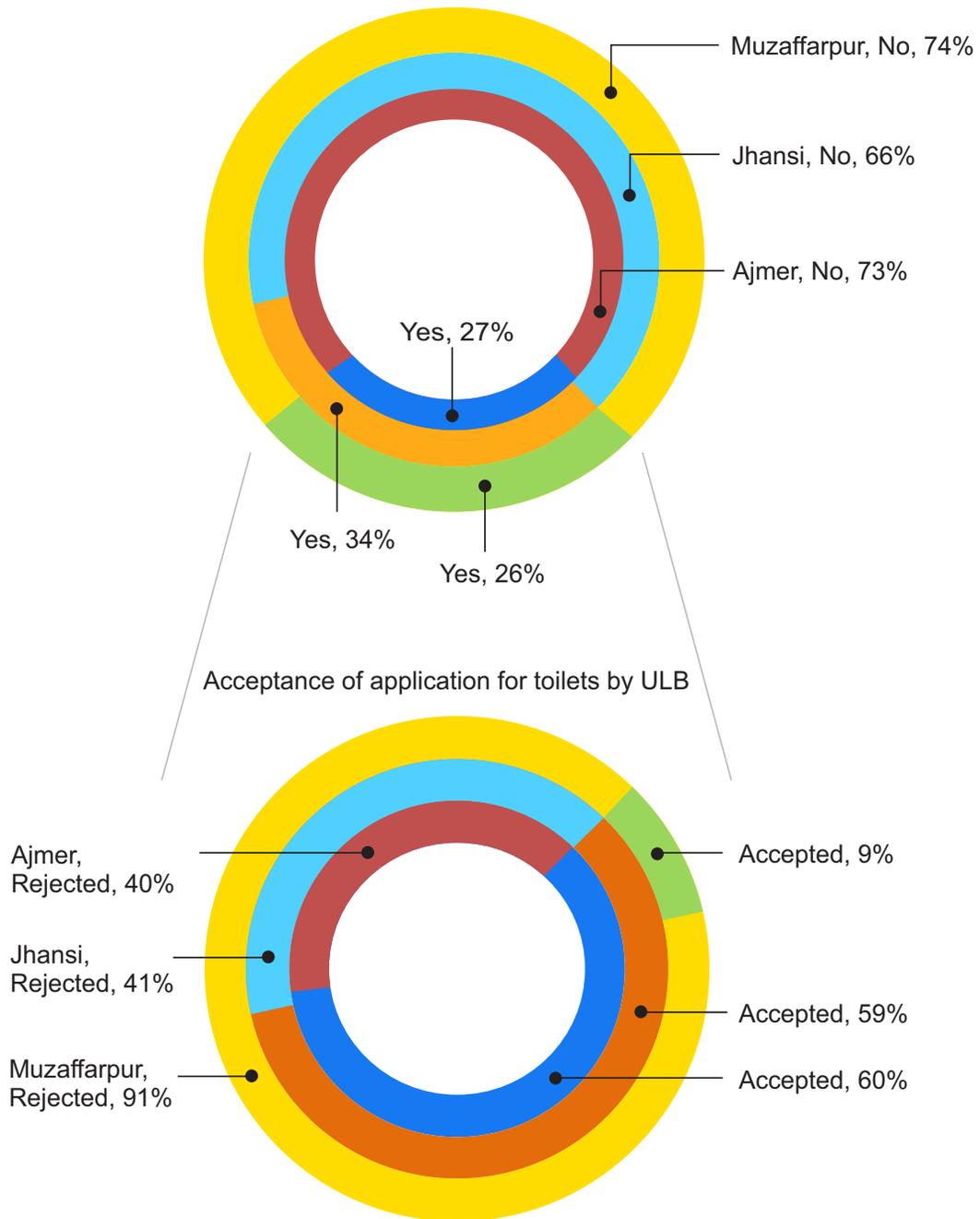
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

Out of households not having toilets, the highest percentage of households, who applied to ULB for incentives, was found in Jhansi but it was limited to 34%. In Ajmer and Muzaffarpur only 26-27% households applied for incentive grant. Further, it emerged that out of the households, which applied for incentive grants, 40- 91% applications got rejected. The rejection rate was lowest in Ajmer and highest at Muzaffarpur. The upcoming section which analyses the process adopted for provisioning of IHHL attempts to find out reasons behind such a situation in these cities.

4.2.3 Planning and implementation mechanism for provisioning of IHHL

Below is a comparative analysis of the process adopted for delivering incentives for construction of individual household toilets in the three cities:

Table 4: Process adopted for delivering incentives for individual household toilets in 3 cities

	Ajmer	Jhansi	Muzaffarpur
Identification of beneficiaries	Broadly based on councillors/ sanitation staff inputs	Broadly based on councillors/ sanitation staff inputs	A survey of all households conducted under '*Sat Nischay*' programme conducted in 2016. The same data base was used to identify beneficiaries
Advertisement for inviting applications and awareness generation	Through councillors/ sanitation staff and other informal ways		
Hand holding in filing applications	No formal system from ULB side		
Communication on approval or rejection	In the form of letters from ULB		
Maintaining a digital and geo-data base on beneficiaries	No geo tagging of beneficiaries		
Handling grievances	Through visit of ULB office or through councillor		

Source: Compiled from feedback of PRIA's city teams

It may be interpreted from the above table that authorities in the three cities under survey faced numerous challenges in augmenting individual household toilets in absence of robust implementation mechanisms. Below is the description on how PRIA's intervention through ECRC programme contributed in addressing some of the challenges in implementation of individual household toilet component in the three cities:

Table 5: Role of PRIA's intervention through ECRC programme in implementing IHHL under SBM (Urban)

Aspect of implementation	How PRIA's intervention through ECRC programme helped implementing IHHL under SBM (Urban)
Identification of beneficiaries	The PSE surveys conducted in all settlements of the city generated authentic and updated data on individual household toilets. Such a handy data, collected by citizens themselves and facilitated by PRIA, helped ULBs in 3 cities to identify the beneficiaries
Advertisement for inviting applications and awareness generation	The citizen groups called SICs (formed by PRIA under ECRC programme) in each settlement, communicated about the programme to each household in locality
Handholding in filing applications	SICs capacitated by PRIA's field teams, hand held households in applying for IHHL
Communication on approval or rejection	Households who applied for IHHL, were encouraged to approach the ward councillors or relevant municipal officials
Handling grievances	PRIA team and SICs motivated citizens of informal settlements to interact with ULB officials specially through ward Councillors

Source: Compiled from feedback of PRIA's city teams

4.2.4 Status of maintenance of containment systems of toilets

Figure 14: Percentage of households whose septic tank was never cleaned
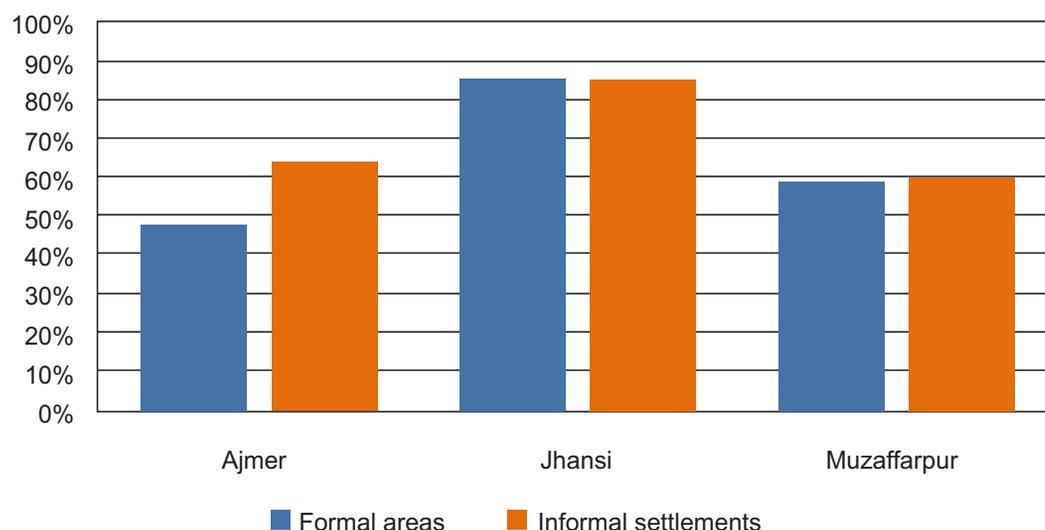
Source: Primary surveys in 3 cities by PRIA (Ref. [6], [7], [8])

The regular maintenance of toilets through emptying seems not to be in a good shape in any of the three cities. It was revealed from the data that majority of the septic tanks have never been emptied in these cities. In Jhansi, the percentage of households with never-cleaned septic tanks was found to be more than 80%. The difference between formal and informal settlements on this aspect was found higher in Ajmer.

Figure 15:Percentage of households whose septic tank was cleaned using manual methods
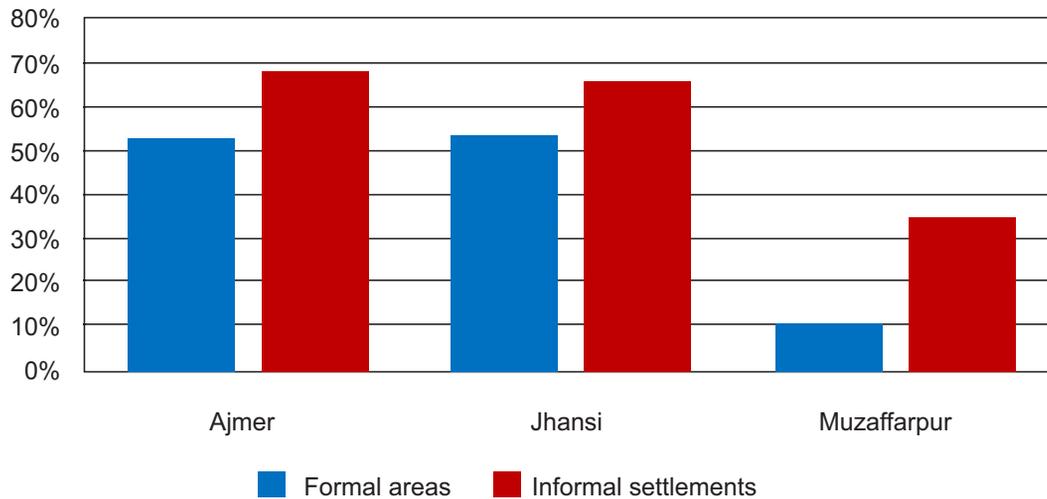
Another aspect associated with emptying of septic tank, use of manual methods, was analysed for these cities. It was worth noting that manual methods in some or the other forms were used in Ajmer and Jhansi by more than half households. The instances of using manual methods were significantly higher in informal settlements than formal settlements. The finding indicates towards a multidimensional nature of the issue like affordability, non- availability of infrastructure and lack of awareness.

4.3 Good Practices and Stories of Change from Cities

Box 1: Pooling funds for individual toilets from well-off individuals in Ajmer

Some residents of Rajendrapura Colony, a notified settlement located in ward number 51, were facing problems in construction of individual toilets due to lack of funds. They were not able to construct their own toilets, even with incentives received through SBM (Urban). When the issue of these households came into notice of ward councillor Mr. Anil Moyle, he initiated the process of pooling funds from affluent individuals of the city for this cause. Some of these individuals with interest in philanthropy included traders, hotelier. As a result, the funds required to construct 25 individual household toilets of the needy households were arranged and made available to them.
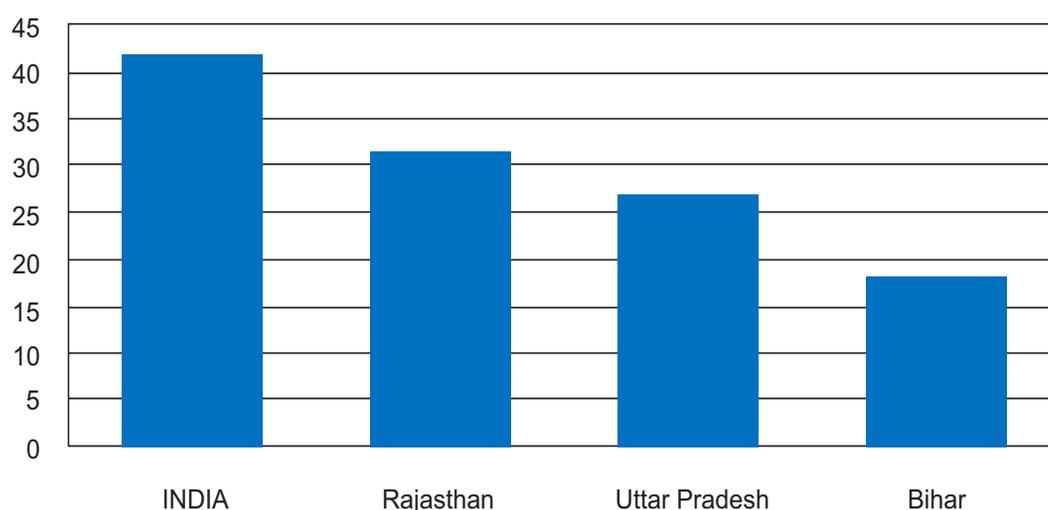
Source: Field team of PRIA, Ajmer

5. Status of Public and Community Toilets

5.1 Status of Availability of Public and Community Toilets in 3 states

Some of the facts on public and community toilets, from the NSSO's sample survey in 2015 are presented below:

Figure 16: Percentage of wards having community/public toilets

Source: National Sample Survey Office NSSO (2016), 'Swachhta Status Report 2016'

Table 6: Percentage of persons using community/ public toilets for the households not having sanitary toilet

	Old (>60 years)	Adult (15-60 years)		Children (<15 years)	Total
		Male	Female		
INDIA	44.3	48.6	47.9	42	46
Rajasthan	14.2	5	8.2	5.4	6.7
Uttar Pradesh	69.2	76.5	75.5	71.8	74
Bihar	7.7	2.6	2.7	3	3.2

Source: National Sample Survey Office NSSO (2016), 'Swachhta Status Report 2016'

The above data from NSSO shows a clear gap in the availability of public and community toilets and some demographic perspective on its usage. The wards covered through community/ public toilets in Bihar are much lower than the other two states and the national figure. The same fact is being supported by drastically low percentage of persons from households not having household toilets using community/ public toilets, which is just 3.2% against the national average of 46%. Uttar Pradesh scored significantly higher with 74% of the persons using community/ public toilets. The use of community/ public toilets by female (adults) is lesser than the men in Uttar Pradesh and India, but it is higher in Rajasthan and Bihar.

5.2 Status of Public and Community Toilets in 3 cities

5.2.1 Coverage

Figure 17: Percentage of wards with public or community toilet facility
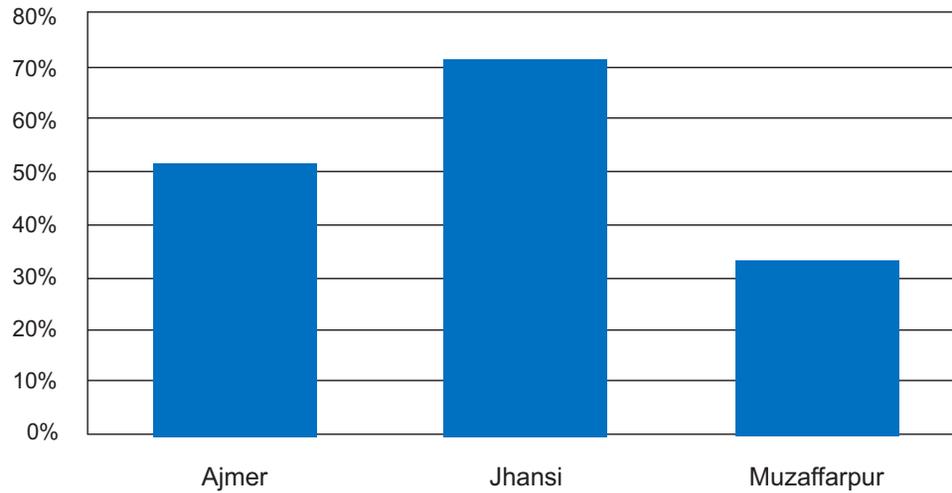
Source: Primary surveys in 3 cities by PRIA in 2017-18 and Municipal Corporations of respective cities

In terms of coverage of municipal wards, Jhansi is the leading city among the three study cities. Close to half of the wards in Ajmer are having at least one public or community toilet. A significant increase in coverage was observed in 2017-18, above the state-level coverage, as reflected by NSSO's survey of 2015. The same may be attributed to the rapid construction of public and community toilets under SBM (Urban) after 2015.

Another analysis compares the coverage in terms of operational public and community toilets per lakh population.

Figure 18: Number of operational Public & Community Toilets per Lakh population
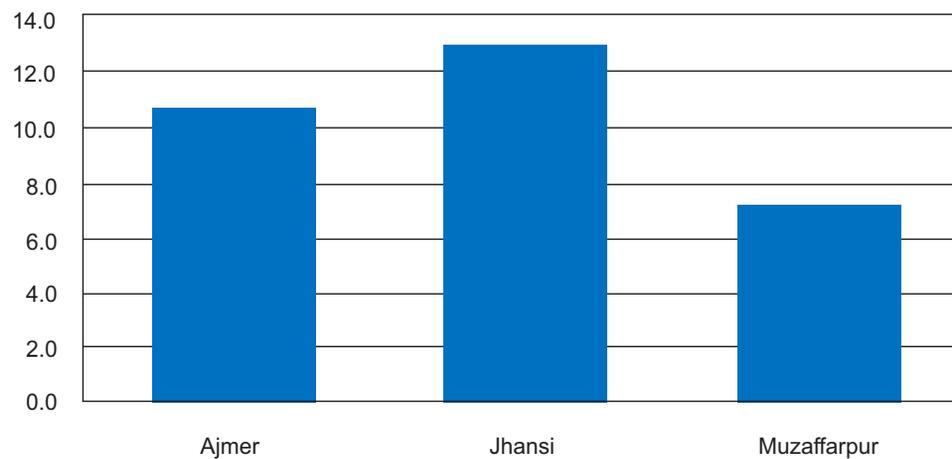
Source: Primary surveys in 3 cities by PRIA in 2017-18 and Municipal Corporations of respective cities

Among the three cities under study, Jhansi has the highest number of operational public and community toilets per lakh city population, while Muzaffarpur has the least. The higher numbers (density) of public and community toilets may be seen aligned with their ODF status.

5.2.2 Accessibility dimensions

Accessibility to Women: The data on public and community toilets from these three cities shows an acute shortage of facilities for women. As per the survey conducted by PRIA, 42% of public/ community toilets in Muzaffarpur are not having separate facilities for women. Only 18% of the standalone urinals in Ajmer and 21% in Jhansi have facilities for women. Other urinals in these cities serve only men. However, construction of pink toilets (women only) in Jhansi and Ajmer are steps in the right direction, but cities have to go a long way in augmenting facilities for women at many public toilets are urinals.

Accessibility to differently-abled persons: The percentage of public and community toilets having enabling facilities for differently-abled persons is very low in these three cities. In Ajmer, Jhansi and Muzaffarpur, 3%, 6% and 4% public and community toilets are having features enabling differently-abled persons, respectively.

5.2.3 Planning and implementation mechanism

The method followed for identifying the need and proposing new toilets is varying across the three cities. For community toilets, Muzaffarpur is following the guidelines set by the Government of Bihar. In Rajasthan and Uttar Pradesh, no specific guidelines were found. The guidelines of Bihar mandates to construct two-story toilets block catering to 12 families. Each of the seats will be allotted to one family of the community. The maintenance of the toilet blocks are proposed to be looked after by the community. However, an alternate view on such an arrangement suggests that it may esult into the exclusion of the many other users, who are not allottees of the toilet seats and forfeit the idea of universal access to a public facility.

For public toilets, the implementation in these cities seems to be on the basis of a feedback on the need of a facility by sanitation staff of the municipal body or the councillors. The land parcels identified by ULB were sent to district revenue authorities and the tendering process commenced after receiving no-objection.

5.3. Good Practices and Stories of Change from 3 Cities

Box 2: Community initiative for improved community toilet at Muzaffarpur

Considering the poor situation of maintenance of community toilet in Muzaffarpur, the residents of an informal settlement Mestar Tola located in ward 20, under the leadership of Basti Vikas Samiti took an initiative to renovate and maintain the community toilet on their own. The amount of approximately Rs. 11,000 required for renovation was contributed by the around 67 households of the community. Some financial assistance also came from the councillors of ward 20 and the neighbouring ward. Around eight members of the community also contributed through their own labour in construction work. The community evolved a system of pay and use through a system managed by community. The renovated toilet became operational in November 2018.

Source: Field team of PRIA, Muzaffarpur

Box 3: Pink Toilets at Jhansi

Jhansi Smart City is in process of constructing women only toilets at seven locations like BKD Chuaraha, Sipri, Sadar Bazar etc. Four of these toilet blocks are already under construction. These toilets are equipped with sanitary pad vending machine, child care facilities, diaper vending machine and drinking water. These toilets are having bio-digesters as collection and treatment tank for faecal matter. These are expected to run on solar energy and have panels for advertisement. Fist Pink Toilet in Jhansi is expected to be inaugurated in April this year. Pink toilets are expected to bring the much required sanitation facilities for women that is already lacking in the city.

Source: Field team of PRIA, Jhansi

6. Innovations in Toilet Design, Planning and Implementation

With emerging need to address the issues of toilets, many new ideas have emerged from various corners of the country.

6.1 Case Studies on Toilets: Planning and Technical Perspective

Some of the major innovations in the recent years are discussed below:

- The containment system of the toilet is critical as it governs the impact of untreated human waste on environment and health. 'Bio-digester' is one of the major innovations with capacity to transform the complete chain of management of faecal matter. Bio-digester is a technology developed by DRDO that coverts faecal matter into bio-gas and water.

- Tiger Toilet has been developed with BMGF funding is based on principle of 'vermifilteration'. It uses special composting worms and drainage layer to decompose faecal matter rapidly [9].

- Namma Toilet is a model developed for public toilets by using non-conventional building materials that are easier to install and maintain [10].

- Delhi Urban Art Commission (DUAC) has developed another prototype of 'Smart Toilets' [11].

6.2 Case Studies on Toilets: Management and Governance Perspective

6.2.1 Cases on operation and maintenance by community

- In 2000, an NGO called Gramalaya with support from Water Aid mobilised women self-help groups to maintain the existing community toilets at Tiruchirappalli (Tamil Nadu). The initiative aimed at improving maintenance of toilet block and spreading awareness on sanitation among community. A token system was adopted for the pay-and-use process. The Tiruchirapalli City Corporation entrusted the responsibility of maintenance of half of the community toilets to women self-help groups.[12]

- NGO Aarambh under took an initiative in 2005, in informal settlements of Bhopal (Madhya Pradesh, India) in collaboration with the Municipal Corporation Bhopal, Water Aid and UN Habitat. The initiative targeted women and children through campaigning. The initiative facilitated building 2,600 individual latrines and two community toilet blocks leading to declaration of 11 slums ODF in 2008. [13]

6.2.2 Other models

- Ti - Toilet Integration is a mobile toilet for women evolved through refurbishing old buses. Under the pilot, five Ti buses are deployed in Pune's high footfall areas. [14]

7. Conclusion and the Way Ahead

The findings of the study may be summarised under below mentioned heads:

Role of SBM (Urban) in augmenting toilets

Launched in 2014, SBM (Urban) was first of its kind Centrally-sponsored scheme with specific focus on toilets. Toilet facilities at a massive scale across country have been created with recent 1-2 years witnessing spurt in activity. However, moving forward, the emphasis on sustaining the infrastructure created and achieving the complete coverage with integrated septage management approach is required.

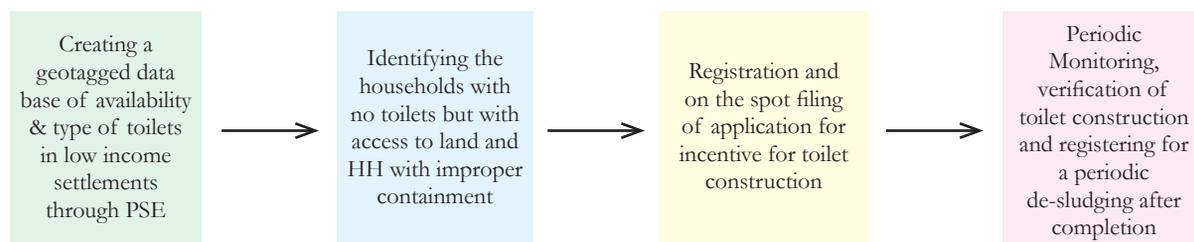## Targeting principles and eligibility for IHHL

Defining the target under SBM (Urban) as '80% of the open defecating households and all households with insanitary/ pit latrines' [1] may lead to exclusion of some eligible beneficiaries not having toilet for whom toilet construction is feasible. The mechanism to address issue of households that are still lacking individual household latrines in the ODF declared towns should be developed through programmatic amendments at state and central level.

Benefit size for IHHL

The study in the three cities revealed that lack of finances is the biggest reasons of not having individual household toilets (Ref. Section 4.2.2 of this paper). As per a report of CEPT University, the incentive provided (Rs 12,000) in Maharashtra is only about 30% of the total cost of constructing a toilet in urban areas [15]. Most of the other states are having a similar situation. The incentives being provided in Rajasthan, Uttar Pradesh and Bihar should be either increased or appropriate mechanisms to augment the funding gap should be provisioned in the programme design. Some of the options to fulfill gaps could be a policy provision to enable voluntarily pooling of resources, access to credit, increasing state's / ULB's contribution.

Implementation mechanism for individual toilets component under SBM (Urban)

Individual toilets are the most critical types of toilet facilities, as they have a direct role in eliminating open defecation. Key reflections from the data from these cities on implementation of IHHL under SBM (Urban) indicating towards a low proportion of households applying for incentives and very high instances of application rejections, call for a complete overhaul of implementation mechanism. In order to make the individual household toilet component successful, a robust citizen centric mechanism is required. Foundation of such a system should be a database of households of low-income areas prepared through participatory enumerations consisting geo-tagging of households. Geo-tagging of households will help in avoiding duplications and maintaining data base in a comprehensive geo-spatial environment. Below is a broad framework that may be adopted moving forward to ensure a complete coverage with individual toilets with participatory and pro-active approach:

Creating a geotagged data base of availability & type of toilets in low income settlements through PSE	→	Identifying the households with no toilets but with access to land and HH with improper containment	→	Registration and on the spot filing of application for incentive for toilet construction	→	Periodic Monitoring, verification of toilet construction and registering for a periodic de-sludging after completion

Accessibility aspects

In case of community toilets, it was observed that with the approach of providing one dedicated toilet seat to each household, some of the facilities may be left under utilised and would lead to inaccessibility to many other users. In case of public toilets, there is a considerable lack of facilities especially for women in the cities under study. Majority of the public toilet facilities are not accessible to differently-abled persons.

Disparities in sanitation facilities at informal and formal settlements

Sanitation surveys in these three cities revealed a significant gap in the status of sanitation facilities in informal settlements, except a few exceptions. The comparison of the status of availability of flush toilets, prevalence of pit latrines, availability of sewer connections, use of manual methods of cleaning of septic tanks across formal and informal settlements, shows significant disparities in status of sanitation facilities and practices. Informal settlements require sanitation planning to address their specific issues and integration into cities' network.

Organising urban poor communities for improving access to toilets

It has been often seen that one of the causes of poor sanitation situation in informal settlements is the unorganised urban poor. Being organised helps citizens of informal settlements connecting them to the formal service delivery channels of ULB and initiating their own actions for improved sanitation facilities. PRIA's intervention under ECRC programme has organised over 3,210 individuals to form groups called SICs mainly with the leadership of women and youth in three cities. Over the years, significant improvements in informal settlements in these three cities, where SICs are active, have been observed. SICs have played a very important role in availing of IHHLs and improving public and community in these cities.

Planning for public and community toilets

In the three cities under survey, public toilets and urinals were found to be grossly inadequate in numbers. There are considerable gaps in provisioning of facilities for women, children and differently-abled persons. This indicates towards an urgent need to build new public toilets and augment the existing toilets to make those accessible to all user groups. The approach for augmenting community toilets has been primarily based on locating one community toilet for each informal settlement. There is a lack of geographical analysis based planning for public and community toilets. A city-wide planning exercise with participatory approach should be adopted. To achieve full geographical coverage through public and community toilets, GIS should be used as a decision support system.

Maintenance of public and community toilets

The study in these three cities suggest that continuous encouragement and hand-holding may lead to communities taking initiatives to undertake operation and maintenance responsibility of community toilets they use regularly. A systematic initiative at the ULB level will help in upscaling such practices.

Awareness generation to target specific age groups

NSSO's survey found that among all age groups, the highest percentage of persons going for open defecation is of children below 15 years. This indicates towards a need of specially-designed engagement with schools and children focusing on behavioural change.

Capacity building of mason and other stakeholders

It emerged from citizen forums in cities that the treatment function of toilet containment is generally not understood by the common citizen. The decision on size and structure of toilets' containment is usually left to the advice of mason or the contractor. Therefore, to achieve a city or settlement with appropriate toilets, the persons or entities engaged in construction of toilets has a great role to play. The capacity building of such stakeholders is required to equip them with the understanding of right and wrong containment systems and adverse impacts of improper containment systems. Warangal is one of the cities which are taking steps in this direction [16].

Availability of water

Water is one essential prerequisite for operation of toilets. Close to 1%, 2% and 6% household toilets were not having access to water for use in toilets in Uttar Pradesh, Rajasthan and Bihar, respectively. While at the city level, it was found that 13%, 12% and 25% households are not willing to have toilets due to non-availability of sufficient water in Ajmer, Jhansi and Muzaffarpur, respectively. Non-availability of sufficient piped-water supply may be one of the causes of very high prevalence (over 90%) of pour flush toilets in Jhansi and Muzaffarpur. There is a need to ensure availability of piped-water supply to match the pace of toilet construction in cities for a sustainable and hygienic use of household and public/ community toilets.

Irregular emptying of toilet's containment causing inefficiency and threat to public health

Along with the construction of new toilets, it is equally important to empty the toilet tank regularly to maintain its treatment efficiency and quality of effluent. In all the three cities, it emerged that around 50-85% households never emptied their toilet tanks, while the percentage of households using some kind of manual intervention for empting is varying from 10% to 68%. The significant prevalence of manual intervention may be linked to the less frequent emptying. The inefficiency caused by irregular emptying is resulting into the flow of faecal matter in open drains that become a threat to public health in the city. Flow of faecal matter in drains also causes pollution of water bodies and rivers of cities.

Recognising a greater role of citizen engagement in having appropriate containment systems and safe disposal of septage

It is very important that all citizens understand the criticality of using toilets and safe disposal of septage generated by use of toilet. Actual 'buy-in' of all toilet focused programmes lies in realisation of the role of proper septage disposal in achieving good health, among citizens. A fundamental understanding of importance of environment and its relationship to health is a prerequisite to such a realisation. Therefore, a greater thrust is needed through policy and practice interventions on effective citizen engagement for having an appropriate containment systems and safe disposal of septage.

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