Research Paper

A DREAM OF OPEN DEFECATION FREE INDIA?

Decolonize and innovate urban sanitation to reach those left behind

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Abstract

India, a country now known as one of the world's fastest-growing economy, continues to be inhabited by 40 per cent of the global population of open defecators. Nearly 536 million people in India defecate in the open every day. To rectify this multifaceted issue, Government of India launched the Clean India Mission, famously known as the Swachh Bharat Abhiyaan, in 2014. Sanitation became a national political priority for the first time in India. The Mission renewed a hope to address a myriad of issues associated with open defecation. But this hope has only been fulfilled partially in the past five years.

The paper highlights the issue of open defecation with a case of the National Capital Territory of Delhi (NCTD), finding answers to one question: what is the role of an urban planner in liberating Indian cities, especially Delhi, from sanitation deprivation and open defecation. National Capital Territory (NCT) of Delhi is identified as the case area for the project for two prime reasons: one, the extent of sanitation deprivation in the city; and second, the administrative capital of India often forms a precedent for the rest of the nation.

The paper is structured into three broad sections: first, the extent of sanitation deprivation in urban India and analysis of policies- planning and non-planning, formulated in response to the issue, is highlighted. Second, the extent of the issue is investigated for the case of Delhi in context of policy frameworks; third, urban narratives of sanitation deprivation captured across select six clusters of jhuggi jhompri[1] in the National Capital Territory are highlighted to exhibit differences in access and use of sanitation facilities, in context of the pan-India Clean India Mission. The paper concludes at a note of hope- envisioning a city and a country where no one is deprived of their basic human right to improved sanitation, or has to defecate in the open, and also details out implementable strategies and policies for Delhi and urban India.

Keywords

Water and Sanitation, Urban planning, Urban narratives, Open defecation, Justice

1 Introduction

India's Prime Minister Narendra Modi in his speech marking the birth anniversary of Mahatma Gandhi on October 2, 2014 launched the Swachh Bharat Abhiyaan (also known as Clean India Mission). The Mission was launched as a national movement, bringing urban sanitation to the stature of a political priority pan-India, envisaging a clean India, free of open defecation by October 2, 2019, a date marking 150th birth anniversary of the father of the nation- Mahatma Gandhi, who believed 'Cleanliness is next to Godliness'. The Mission brought with it, a herculean task of cent per cent eradication of open defecation across the

[1] settlements of urban poor identified by the Delhi Urban Shelter Improvement Board (DUSIB), Government of National Capital Territory of Delhi (GNCTD) as "an encroachment on public or private lands. They are therefore seen as illegal" (DUSIB, 2014)

country in a span of five years, overlooking the fact that open defecation is an ageless reality culminating from over hundred years of inequities- roots of which may be traced to ancient history and societal laws of India, as well as colonial legacy of British India.

Several studies, including the documented works of Burra et al (2003), Prashad (2001), Chaplin (1999, 2011), Mushtaq (2009), Doron and Raja (2015), deliberate on the issue and history of urban sanitation and open defecation in India, whilst a few investigate deprivation in urban India, and just a few explore sanitation deprivation for the National Capital Territory of Delhi. While Mushtaq and Prashad trace the evolution of urban sanitation practices in colonial India, Chaplin argues that sanitation in India is primarily guided by colonial legacy of unfair and inequitable distribution of sanitation facilities, and perpetuated by restrictive policies of Government of India post-independence. Deviating from colonial politics of sanitation, Burra et al (2003) focus on the inadequacies of public toilets in Mumbai, highlighting failure of public toilets in India to provide good quality sanitation services for a variety of reasons, cardinal being the incapability of service providers to account for regular supply of water to use, and maintenance of these facilities.

Therefore, the paper does not reiterate research, project findings that have been documented already. It builds on the existing literature and focuses on city planning policies, whilst simultaneously examining multifaceted relationship of sanitation deprivation and open defecation with urban development and planning, public health, economy, environment, education, safety and security.

The project investigates the scope of interventions and role of an urban planner in liberating Indian cities from sanitation deprivation and open defecation, particularly the national capital. In search of answers to this central question, the paper is structured into three sections: first, highlights the extent of sanitation deprivation in urban India and the findings from analysis of policies- planning and non-planning, formulated in response to the issue. It argues that inequitable distribution of sanitation facilities to the urban poor, favouring the middle classes and elite groups of the Indian society by the British, is systematically perpetuated by the establishment of urban planning and development institutions.

In the second section, the extent of sanitation deprivation and open defecation is investigated for NCT of Delhi in context of policy frameworks. It begins with a critical review of the three master plans of Delhi to date, and also underscores the issue of multiplicity of agencies and departments working on the subject of sanitation in the city, and therefore, a lack of coordination amongst these is identified as one of the biggest roadblocks to the vision of ‘open defecation free (ODF)’ Delhi.

In the third section, urban narratives of sanitation deprivation captured across select six jhuggi jhompri clusters in NCT of Delhi, exhibit the implications of the restrictive view of urban sanitation policies. The paper concludes on a note of hope, envisioning a city and a country where no one is deprived of their basic human right to improved sanitation, whilst elaborating implementable strategies and policies for Delhi and urban India.

2 Sanitation Deprivation in urban India

Nearly 200 years of direct rule by the British Government, over the people of India profoundly affected all aspects of life, culture and society, including city sanitation. While modern city planning emerged in India in the early 20th century, the period from late 18th

century to early 20th century was characterized by the British led Sanitary Revolution- a critical period in the evolution of urban planning and sanitation in India. Cities were physically segregated into distinct areas for European and indigenous population. Modern sewerage network was laid for areas inhabited by the Europeans and middle class, elite indigenous cohort, whilst several slums and squatters were cleared and relocated to city periphery- all in the name of sanitary revolution aimed at improving aesthetics and public health of the cities.

Roots of urban sanitation in India can be traced to the late 1800s, whereby to improve the sanitary conditions of urban centres, British India adopted its home-grown model of urban planning- implemented in 'home' cities including London, where planning emerged post-industrialization with a need to address problems of public health and unsanitary living conditions. While in India, sanitation became a matter of concern post mutiny of 1857 (Chaplin, 2011, 1999). It is thus imperative to investigate urban sanitation and planning thereof in India at three time frames- one, the pre-colonial period, wherein sanitation and much of the household norms were guided by the laws of Manu; second, the British India period which laid the foundation of city planning and urban sanitation of modern India; third, the post-independence period which continues to perpetuate the British India legacy of city planning and inequitable distribution of sanitation services.

2.1. Urban Sanitation in pre-colonial India

Much before the Britons came to India, the country and its people functioned upon the ideologies of Manu, a Hindu saint who wrote the Manu Shastra. Considered as a bible of the time by Hindu sect of the country, the Shastra conceived toilets and people associated with toilets, that is the manual scavengers, as ‘dirty’ (Hopkins & Burnell, 2009). Earliest form of social segregation, on the principles of sanitation, was not uncommon. People of higher caste were privileged to either have toilets or defecate in open, but not responsible to dispose it. The undignified burden of picking up the night soil was thus endowed upon the lower caste or Dalits. Hence, the societal practice of untouchability was born. Cities and villages had separate areas which could be inhabited by these untouchables. Often, they were located in the periphery of habitation area. In other words, the social-sanitation divide had a physical manifestation.

It is interesting to note, that India also boasts of having one of the earliest sanitation systems intertwined with town planning- as excavated from the Indus valley civilization in 2600 BC.

2.2. Urban Sanitation in British India

With the increasing power of British India and social unrest amongst the natives, several revolts and demonstrations were organized by the public. The mutiny of 1857 was one with the largest impact- on colonists as well as natives. Cities emerged as focal points of this nationwide mutiny. Once the wave of rebel subsided, what was left was destruction and depravity, sanitation deprivation being one of the leading outcomes.

To improve the state of sanitation deprivation in towns and cities, the British India set up a Royal Commission to look into the sanitary state of affairs of India, particularly for the areas inhabited by the Army (Mushtaq. 2009). The Commission soon published a statement called as the White Paper of the Royal Commission, which called for an immediate and necessary revolution in the state- the Sanitary Revolution.

This Revolution was based on three principles. The first principle accentuated the social sanitation divide initiated by Manu Shastra, and propagated by the physical segregation of towns by British India. Towns and cities were divided into separate areas for indigenous and European population. The latter settled in well planned residential areas of model towns, cantonments and civil lines (Mushtaq, 2009), while the indigenous were left to rot in their own waste. The second principle builds upon the first, augmenting the British India belief that natives are dirty. Even if you provide them with facilities, they will continue to remain dirty. Thus, the principle deprived natives from enjoying the benefits associated with a modern sewerage network while extending the same for areas inhabited by the Europeans and upcoming housing areas for the middle class and elite. The third principle conceived slums and squatters as hotspots for diseases and everything insanitary. Slums were cleared from the city's core and relocated to the periphery, similar to the principles of Manu Shastra.

Multitude of public health problems however, continued to persist. Sanitation deprivation and open defecation was a huge issue that the British was unable to handle from the recommendations of the Commission. It was realized that until the problem is solved at local level, a city's public health will situation continue to derogate. To address deplorable conditions and public health in India, urban planning was thus born.

British India believed that use of land and planning principles across a city would alleviate sanitation and public health status of cities. Following this, municipalities were established in select urban centres of the time, including Madras, Bombay, and Delhi, to provide civic basic urban infrastructure and amenities at the local level. Improvement trusts were established to re-organize and plan chaotic habitations. Numerous development authorities came up as a beacon of hope for the British India. These authorities were discharged with the functions of preparing a development plan that would guide the use of land for various purposes, including the storage, treatment, and disposal of human waste. System of calculation-based land budgeting was borne, which emphasized and continues to focus on extension of modern sewerage network and establishment of ancillary infrastructure for collection, storage, transportation, treatment, and final disposal of human waste into a water body.

Summing up, sanitation deprivation in colonial India was accentuated by planning and administrative policies, which were instrumental in propagating for unequal treatment of native and European population, and areas inhabited by them- through inequitable distribution of sanitation infrastructure. Sewerage networks were laid down for the middle class and elite (Chaplin, 1999, 2011) while urban poor drowned in their own waste or were relocated to fringes, in the name of sanitizing the city.

2.3. Urban Sanitation in post-independent India

Seven decades post-independence, yet the sanitary state of urban India has not changed much. Planning policies continue to emphasize on extension of sewerage network through its calculation-based augmentation plan, ignoring the fact that urbanization in Indian cities differs from that of the West. In India, around 60 to 70 per cent of urbanization is unplanned. Extension of planned sewerage network in such areas is a complex task. To fill this gap in urban sanitation chain, sectoral policies step in. These sectoral policies, formulated by technical wings of central ministries, do not solve the problem either. Often guided by political agendas of ruling parties, the policies restrict their focus on provision of basic 'minimum' facilities to the poor.

Post-Independence several sectoral policies and planning guidelines have been formulated and implemented for tackling the issue of sanitation deprivation and open defecation either with a head-on approach or sinuously. Examination of these policy frameworks leads to two key findings: first, the scope of sanitation expanded to include not just mere provision of facilities but also talks of gender-inclusivity and environmental sustainability on paper; second, the urban sanitation system continues to perpetuate colonial legacy of restrictive policy and planning, focussing on provision of toilets and augmentation of sewerage network, without linking the two.

For instance, in 1956, the Slum Areas (Improvement and Clearance) Act was notified with a need to clear cities of increasing number of slums whilst improving the sanitary state of cities (Government of India, 1956). Propagating the colonial principles, the Act perceived slums as 'public nuisance'. But amidst implementation of the Act, the Central government realized that cities were still knee deep in their own waste, and the problem of open defecation and sanitation deprivation could not be solved by mere relocation of slums. Thus, a new approach was formulated- focus shifted from clearance and relocation to provision of basic minimum infrastructure on-site to urban poor, as per the provisions of Environmental Improvement of Urban Slums (EIUS) scheme of 1974. Around same time, liberation movements were being organized by social workers to abolish the practice of manual scavenging and restore the dignity of manual scavengers (Government of India, 1993). Consequently, the Integrated Low-Cost Sanitation Scheme was enacted in 1980, and revised in 2008. Envisaging abolishment of the inhumane practice of scavenging, the scheme provided for conversion of dry latrines into low cost twin-pit latrine (Government of India, 2008).

Soon after, another scheme known as Urban Basic Services Program was implemented in 1985. The program focused on imparting education to urban poor, to enable and encourage them to use facilities provided under the Environmental Improvement Scheme. However, like several other sectoral policies implemented post-independence till the economic reforms of 1990s, sanitation continued to be a small component of a larger scheme on affordable housing or poverty alleviation. Also, India being a country that continues to reside in its villages, major portion of central and state funds for sanitation sector were diverted to rural India. To sum it up, urban sanitation was enervated via these policy frameworks.

Post 1991, however, the scenario transformed. With liberalized economy, increased flow of international aid for large infrastructure projects and growth of public-private partnerships, large urban renewal projects were initiated. In 2006, the Central government's flagship programme- Jawaharlal Nehru National Urban Renewal Mission (JNUURM), was launched. The programme made huge outlays particularly for urban infrastructure projects, including urban sanitation. Basic Services to Urban Poor (BSUP) programme was launched as a sub-mission of the JNNURM, with an aim to improve the quality of life and infrastructure for urban poor. However, even till this point, urban sanitation remained a component of a larger programme.

With the economic reforms of 1990s, another significant change to sanitation happened. Public health and sanitation, an item of the State List of the Constitution of India, became a responsibility of urban local bodies with the devolution of powers in 74th Constitutional Amendment Act. Yet, delivery of the human right remains a critical issue.

It was only in 2008, with the notification of National Urban Sanitation Policy, that an exclusive and comprehensive policy was penned for urban sanitation at the Centre. Novelty of this policy is that it identified open defecation as a challenge to urban development- a fact and reality of urban India no other document had earlier given due diligence to. The policy envisaged '100 per cent free from open defecation' as the goal (Government of India, 2008).

The biggest boost to urban sanitation and open defecation came to India six years later, whereby urban sanitation became a subject of multidisciplinary discussions and debates, and a political priority under the Swachh Bharat Abhiyaan or the Clean India Mission. Launched by Prime Minister Narendra Modi, as a national drive for making India clean and free of open defecation, the urban component of the Mission continues to follow the path of its predecessors while emphasising on the provision of toilets. Moreover, the scope of Mission's urban component is inclusive of statutory towns (less than 40 per cent of total urban centres of India) only. Despite this limited area of interest of the Mission, one noteworthy provision of the Mission is its inclusivity of distressed population, which is inclusive of not only the urban poor, but also manual scavengers, rag-pickers, construction labours, migrants, homeless and other vulnerable sections of urban society.

Yet, the Mission has become a lost opportunity (PTI, 2016). It continues to perpetuate the age-old mantra of constructing more and more toilets. For example, in his visit to Australia in 2014, Prime Minister Modi preached Indian diaspora to participate in the Mission by constructing one toilet in the village of their origin (Doron & Raja, 2015). With the approaching deadline of 2019 and no significant changes in the usability of toilets or the status of open defecation, the Centre directed state governments to levy fines ranging from Rs 200 to Rs 5,000 for littering, urinating or defecating in public spaces, an amount that could account anything from a day's wage to monthly wage of a person (HT Correspondent, 2016). What could not be achieved through provision of toilets is now being attempted by way of levies.

Up until now, the paper elaborated on the tunnel vision of sectoral policies of urban sanitation. But when it comes to planning policies and guidelines, the situation is not much different, just the focus differs. For example, the norms of Central Public Health and Environmental Engineering Organization (CPHEEO), suggest one public toilet at every one kilometre of road length in urban areas and equal number of toilets for men and women. But the norms are rarely adhered to.

Finding a toilet is difficult in a city, while finding a toilet for women is rarer. The latest Urban and Regional Development Plans Formulation and Implementation Guidelines, 2014 borrow the standards from CPHEEO manual and recommend public toilets' provision in all vending zones and markets; in areas of high volume of people (like railway stations, bus terminals, public open spaces, et cetera). Taking a step further, the guidelines specify the design of toilets shall have adequate water closets for women, children and differently abled (Government of India, 2014). In simple words, the planning norms are evolving around toilets, but becoming more inclusive in approach and design.

These manuals and guidelines act as bible for planners working in city and state level planning and development authorities, whilst the practitioners continue to follow colonial legacy of controlling the use of land through master plans. In these statutory plan documents, a planner forecasts population, water demand, and thereby estimated wastewater generation. Comparing the estimate with existing treatment capacity, a planner

prepares a land budget for augmentation of wastewater treatment capacity, and earmarks land for infrastructure expansion.

Summing up, planning policies focus on augmentation of sewerage treatment capacity while the sectoral policies focus on increasing number of toilets- both missing the critical components of usability, adequacy, and accessibility. The sanitation chain therefore, remains broken, with severe implications for socio-economically distressed.

Sanitation deprivation in urban India can also be identified as a form of colonialism, where interests of a few are attended to, at the expense of the majority. Introduced by Britons, urban planning and policy frameworks to address the issue of open defecation and sanitation deprivation still reek inequity and injustice.

2.4. Sanitation deprivation as a challenge to urban India

Perpetual dependence on restrictive policies of urban sanitation, both planning and sectoral, has aggravated sanitation deprivation to an extent that India ranks 1st across globe in terms of population of open defecators (World Bank, 2017). The report accounted for over 40 per cent of world's total open defecators as residents of India. This equates to more than 536 million persons across rural and urban India that can be found defecating in open spaces, along railway lines, roads, drains and other such public spaces, scarring their life and soil.

Sanitation deprivation rots the nation with severe long-term impacts as well, accounting for annual loss of 2.4 trillion or 6.4 per cent of national Gross Domestic Product (DASRA, 2014), equivalent to 60 per cent of environmental health burden of the country. The economic and environmental burden of sanitation deprivation is also related to inefficient treatment of wastewater in cities. The Central Pollution Control Board (CPCB) report of 2010 points out this inefficiency in class I and class II cities whereby 70 per cent and 92 per cent of untreated sewage, respectively, contaminate surface and groundwater resources on a daily basis (Central Pollution Control Board, 2010).

But the implications of sanitation deprivation are not limited to public health, environment and economy alone. It also affects education and safety, particularly of women- one in every four girls drop out of school because of lack of sanitation facilities in school (DASRA, 2012). In search of open spaces that are closed off to surroundings, women often travel long distances from home, making them vulnerable to sexual harassments. For example, in a 2012 study of Delhi slums, 70 per cent girls and women were found to be victims of verbal harassment on a daily basis, with 50 per cent of them falling prey to grave physical and sexual assaults (DASRA, 2012). For India therefore, sanitation deprivation is a pan-India issue with long term impacts on multiple dimensions of development, particularly the health of public, economy of nation, environmental quality, education status of girl child and safety and security of females.

Being associated with multitude impacts on multiple dimensions, sanitation deprivation is a perpetual challenge for urban development of urban India. The 597 million persons defecating in open account for 53 per cent of country's total population (Census of India, 2011), but only 4 per cent of it resides in urban India. Despite the small percentage, the issue of sanitation deprivation and open defecation is a challenge to urban development for three main reasons: first, 81 per cent of India's urban households have access to latrine facilities but only 33 per cent of them are connected to modern sewerage network; second, 19 per cent of urban households do not have a latrine facility within premises – a figure which can

be broken down into 6 per cent using shared toilets and 13 per cent defecating in open (Census of India, 2011); third, and the most important reason for the accentuation of sanitation deprivation in Independent India relates to rural-to-urban migration (Table 1). Every decade, urban areas are expanding in number and population, but so are the slums within them, primarily due to increasing migration and limited access to affordable housing. Simultaneously, percentage of households having access to latrine is improving by each decade but in absolute figures the number of households that do not have latrine facilities is still significantly large.

Census year	Number of towns	Households (in millions)		Annual migration to urban areas (in millions)	% of households availing latrine	
		Urban	Slum		Access to latrine (within and outside premise)	No latrine
1981	3949	29.3	5.6 **(19%)**	5.8	57.4	42.6
1991	4615	40.7	9.3 **(23%)**	6.6	63.8	36.2
2001	5161	53.6	10.2 **(19%)**	10.2	73.7	26.3
2011	7935	78.8	13.9 **(18%)**	15	81.4	18.6

Table 1: Access to Latrine facilities in urban India, 1981-2011
Data Source: Census of India (1981, 1991, 2001, 2011)

Limited capacity of civic authorities and urban local bodies to keep up with the demand for adequate sanitation, several organizations are coming up across states and cities to help address issues and challenges associated with sanitation deprivation particularly for urban poor. Mahila Milan is one such organization which works with and for pavement dwelling women in Mumbai. The organisation gave up waiting on government's promise to provide toilets and pooled resources from the community to construct community toilets in 1990s. In 2013, the 'Right to Pee campaign' was launched in the city (Patel, 2013) by sanitation deprived women with the demand to make existing male-biased public toilets sensitive and inclusive of the women as well (HT correspondent, 2016).

The same organization, in collaboration with the NGO- Society for the Promotion of Area Resource Centres (SPARC) and the National Slum Dwellers Federation forged a partnership called the Alliance in 1987, to address poverty and related challenges in the city, including the challenge of open defecation. Three major strategies adopted by the Alliance whilst working with local communities include- self-surveys and enumeration, housing exhibitions, and toilet festivals. The Alliance works at grassroots level to gather information on communities and design appropriate toilets for slum dwellers. These toilets differ from state provided infrastructure as they are sensitive to local demand and are better quality toilets (Sriram, 2016). Through works of the Alliance in tackling issues of open defecation it is clear that to resolve issues on ground, local knowledge and urban narratives are imperative and capable of guiding public policies and programs (Kumar, 2016).

3 Sanitation Deprivation in NCT of Delhi

Urban sanitation systems for the NCT of Delhi, and its planning, development, operation and maintenance involve multiple agencies at all scales of governance- Centre, state, city, district and local; for it is a union territory and the national capital. At the Centre, Delhi Development Authority outlines the vision and provisions within the statutory plan documents, also known as a Master Plan. Since 1957, the Authority has formulated three Master Plans for Delhi- the Master Plan of Delhi, 1962- 1982, succeeded by the Plan for

1982-2001, which is superseded by the current Plan of 2001-21. With each plan the scope of sanitation has expanded but the emphasis remains on augmentation of treatment capacity through population-based wastewater calculations, land budgeting, and extension of modern sewerage network (DDA, 1982, 1990, 2007).

At city level, the urban sanitation systems' administration is led by two main agencies- first, the Delhi Jal Board (DJB), and second, the Delhi Urban Shelter Improvement Board (DUSIB). The former agency is the sole provider of water for the city and is also discharged with the responsibility of laying down sewerage network and augmenting its capacity periodically. However, it is not mandated to provide the human right to all. It thus, conveniently limits its service delivery to planned developments with minor interventions for unplanned developments of slums and unauthorized colonies. Delhi Urban Shelter Improvement Board however, focuses on the provision of community toilets in identified unplanned settlements within the city, identified as jhuggi jhompri cluster[2] (JJ cluster).

At the local level, the city's urban sanitation system is governed by the five urban local bodies – North, South and East Delhi Municipal Corporation, the New Delhi Municipal Council and Cantonment Board. Each of these local bodies manage sanitary state within its jurisdiction area- by daily sweeping of streets, solid waste management, and constructing urinals in public spaces- often ignoring the needs of women in design, planning or management.

The urban sanitation is a complex responsibility of multiple agencies at three levels of administration for the National Capital Territory of Delhi. For reasons of restrictive policy emphasis and incoherence in coordination and functioning of these systems, the extent of sanitation deprivation and consequently open defecation is perpetually on the rise.

3.1. Extent of sanitation deprivation in NCT of Delhi

The National Capital Territory of Delhi, inaugurated in 1931 by the British has witnessed tremendous growth of population, spatial extent, as well as demands for basic amenities, including adequate sanitation. Even though the city's growth rate is declining, population of the capital in 2011 was enumerated at 16.75 million- an increase of 2.94 million from 2001 census. With this exponential growth, supply in response to the rising demands for adequate sanitation, by competent authorities has not been able to cope up. As a result, only 89.5 per cent of city's households have access to latrine facility within their premise, of which around 45 per cent are connected by sewerage, while remainder 10.5 per cent of households either have shared public toilets outside their premise or defecate in open. Presently, over one lakh households defecate in the open (Census of India, 2011) in Delhi.

Data however, often hides more than it tells- what this Census data on latrine facilities fails to reveal are the ground realities or the true extent of depravity and open defecation across the city. If we compare the district wise percentage of households having no access to latrine facilities in 2001 (Figure 1A) and 2011 (Figure 1B), it is clear that the situation has improved significantly for Delhi, particularly the peripheral districts of North West, West, South West, and South Delhi. But examining percentage of households defecating in the open (Figure 1C), it is evident that the peripheral districts alone account for over 87 per cent of households defecating in open in the city (Census of India, 2001, 2011).

[2] "an encroachment on public or private lands. They are therefore seen as illegal" (DUSIB, 2014)

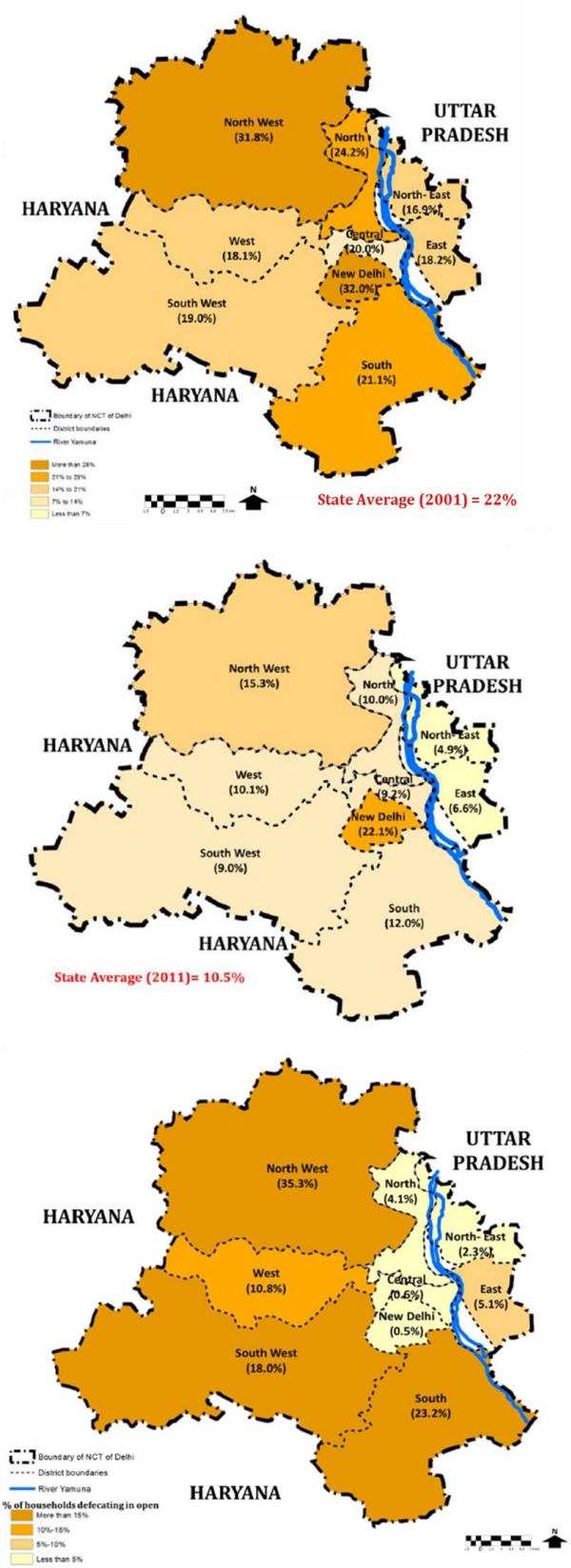

Figure 1: District wise distribution of percentage of households (from top to bottom) A. having no access to latrine facility within premise, 2001; B. having no access to latrine facility within premise, 2011; C. defecating in the open, 2011
Extracted from: ORGI 2001, 2011

This anomaly has a two-fold explanation- one finds its basis in planning practice, and second in sectoral strategies, administration and management. The second explanation refers to the 2003-05 partnership between the Sulabh International[i] and the Municipal Corporation of Delhi; formed for construction of community toilet complexes in slums of the city. Majority of these toilet complexes were constructed in the peripheral districts or New Delhi district, as land availability was higher in these districts than in densely populated districts of central Delhi or east Delhi. But, for users, these complexes did not solve their true purpose- of eradicating open defecation or urination. Open defecation was still a mundane routine for many.

Some of the key reasons for the failure of this partnership were: one, many clusters converted the complexes either to storage units; second, women could not avail it for its male biased design; third, preferred to defecate in open lands which offered much cleaner environment to relieve than these ill-maintained toilet complexes.

The period between last two census enumerations (2001-11) therefore, witnessed a numeric improvement in access to latrine facility, yet people preferred to defecate in open.

The second explanation for this data anomaly emerges from restrictive view of planning profession, in practice. Planners prepare land budgets for augmenting sewage treatment capacity for each revision of master plan, wherein capacity calculations are made by

forecasting population for horizon year, estimating water demand, and equating 80 per cent of this demand as total wastewater generation (DDA, 1982, 1990, 2010). But, these calculations for determining the use of land for urban sanitation ignores one simple fact- not all households with access to water supply (Figure 2A) are connected by piped sewers (Figure 2B). As a result, land and capital are being allocated for augmenting sewage treatment capacities which would never be utilized to the designed capacity.

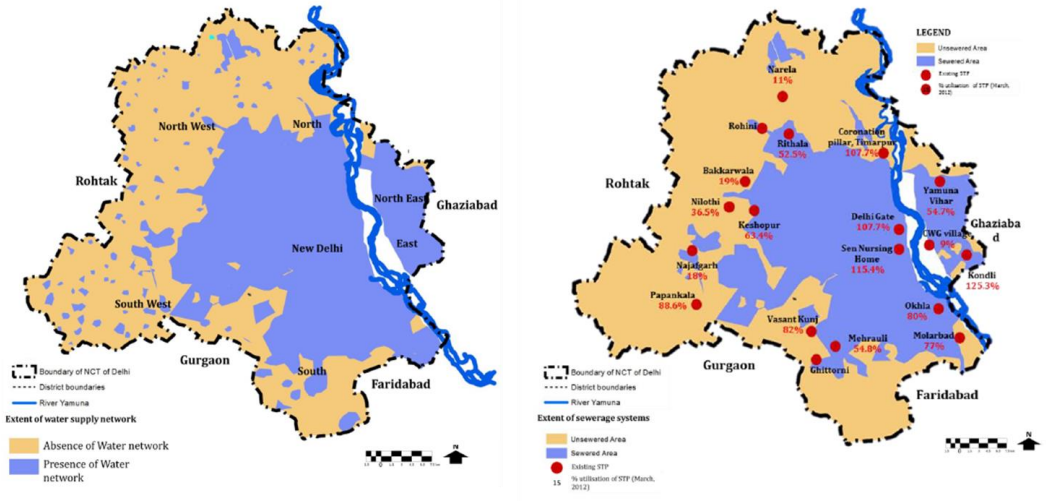

Figure 2 (from left to right): B. Extent of sewerage network in NCT of Delhi and
Extracted from: ORGI 2001, 2011

The cumulative effect of this misguided focus is that over one lakh households are defecating in open every day in the capital with 48 per cent of them being urban poor. Benefits of policies and programs at various levels of administration have been unable to trickle down- as envisaged, the basic human right to adequate sanitation for those at the lower rung of socio-economic ladder.

In the next section of the paper, a few of the hotspots of depravity- six jhuggi jhopri clusters, have been studied in detail and documented for their official and unofficial stories.

4 Narratives of Sanitation Deprivation in NCT of Delhi

With 48 per cent of households defecating in open being those of urban poor, sanitation deprivation and open defecation continues to be intermixed with poverty. Several initiatives have been undertaken by welfare state to provide basic minimum facilities of sanitation and water supply to these deprived pockets, but envisaged benefits are yet to trickle down. The section captures ground realities of six jhuggi jhompri clusters of Delhi. Official and unofficial stories are discussed in brief to highlight sanitation deprivation as an indicator of poverty which manifests spatially.

The six clusters have not been selected at random and do not come with any bias to the author or the project. A technical methodology supports selection of the clusters. Wards 68, 63 and 154 were first identified as the wards with highest, lowest and average slum households, respectively (Figure 3). After selection of wards, information system of the Delhi Urban Shelter Improvement Board was referred to identify specific jhuggi jhompri clusters in each of these three wards, which would have highest, lowest and average slum households. That is, stratification was done at two level- first, city level to identify a ward; and second,

ward level to identify specific cluster. Eventually, only one cluster could be identified in ward 63, three in ward 68 and two in ward 154.

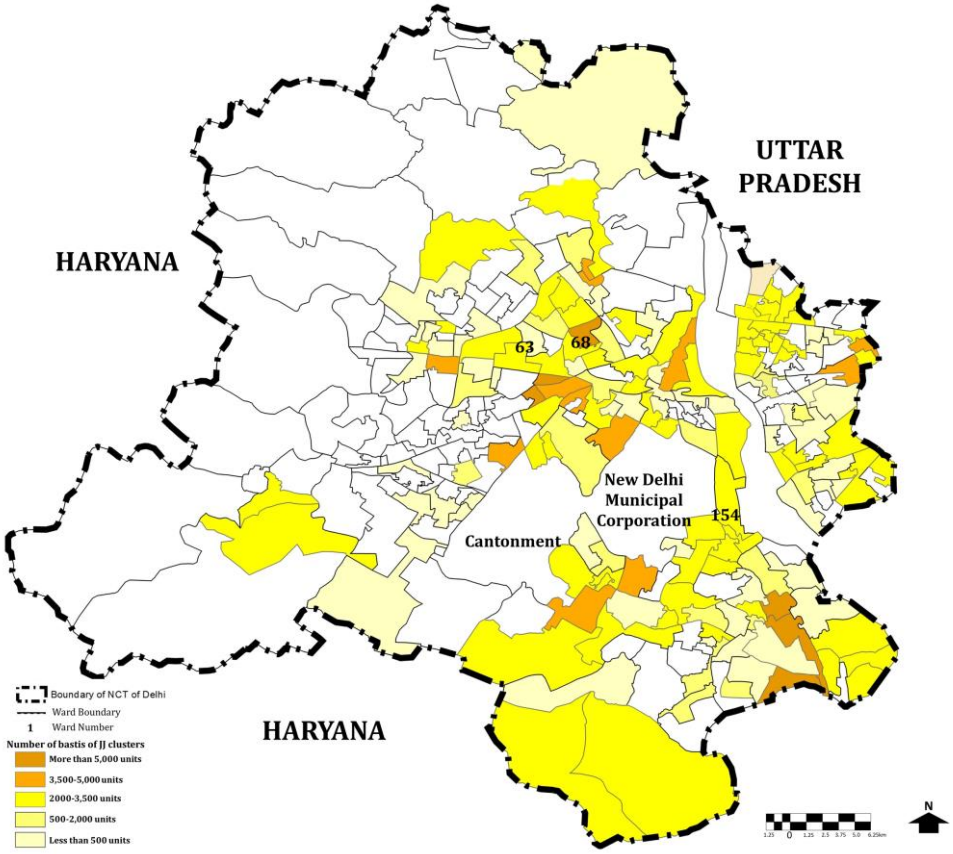

Figure 3: Ward wise distribution of JJ clusters across NCT of Delhi, 2018
Extracted from DUSIB data (2019)

4.1. JJ Cluster, near Kohat Enclave, Pitampura

Jhuggi jhompri cluster in Ward-63 near Kohat Enclave, Pitampura, is a 40-year-old settlement of 50 households squatting on 668 square meters of DDA-owned land which was originally planned as a green space for the elite of Kohat enclave. An island of informal housing, surrounded by luxurious bungalows (Figure 4A) and flats, it is inhabited by migrants from villages in and around Bandhikui town of Rajasthan state in northwest India, which came to the city in search of employment and soon became daily wage construction workers for the upcoming Rohini and Pitampura neighbourhoods in the 1970-80s. Less than 500 meters from the nearest metro station and outer ring road, the cluster enjoys benefits of public mode of transport for travelling beyond the neighbourhood, as construction work in the area has reached a plateau.

One look at the settlement and anyone would presume that it is one of those clean and sanitary clusters which has been blessed by its local political representative (councillor) with

all the basic amenities any human requires for a healthy living except affordable housing (Figure 4B). But a walk through the cluster and conversations with its dwellers reveals a different picture.

Figure 4 (from left to right): A. JJ cluster- an island of deprived surrounded by the elite; B. informal housing units on either sides of drain
Picture credits: Author

The cluster is devoid of any form of latrine facility, or drainage but has one stand post to supply water an hour or two every day. Accepting perpetual denial by civic authorities, the community has adapted itself, constructing a drain which bisects the cluster into two halves (Figure 4B). But for relieving themselves, there is not much the community has been able to do, despite political attempts in the past to construct pucca toilet for the cluster. The Pradhan/community leader of the community recounts promises of a ward councillor prior to 2009 to construct toilet which were quashed by the elite, and instead surface of cluster was covered with concrete and a stand post was erected to silence the demand for human right. A year or two later, the Public Works Department started with construction of a small toilet, but the effort was stalled and ultimately demolished by the kothiwalas[3]. As a result, people go behind their houses to defecate (Figure 5).

[3] A term given for people who live in bungalows (or 'kothi' in Hindi language)

Figure 5: Site for open defecation within the JJ cluster
Picture credits: Author

Dismantling common misconception amongst non-deprived, urban narrative of the cluster revealed that it is not true the community is unaware of the implications of open defecation. They do. They are well aware of the issue it brings to them during monsoons, particularly on their health and productivity. Yet, they have no option, but to pee and defecate in their backyard. In an interview with the executive engineer of the DUSIB for the north-west zone, the unofficial story of past efforts to provide toilet to the community was reiterated. He also highlighted the conflict between the rich and poor as the main reason for uncertainty of proposals by the authority, with the recent one being a bio-digester toilet.

Sanitation being a human right is denied to the community by power and influence of the rich. The latter fails to comprehend that open defecation may be a lived experience for the poor, but its implications are not confined to the cluster. Efforts are being made by respective public agencies, but uncertainty of their implementation hovers.

4.2. Madrasi Camp, Jal Vihar

Madrasi Camp is a jhuggi jhompri cluster located in Ward-154, on a piece of land owned by the Indian railways, for over 30 years now. Surrounded by Barapullah drain in the north and railway line in the east, the community of 411 households uses the two open spaces- drain and railway line, for defecation (Figure 6).

Figure 6: Women travelling back to the cluster, having traversed railway line to find an open yet hidden from the surroundings, a site to relieve
Picture credits: Author

The cluster derives its name from the Madras regional language spoken by its community which has migrated from different parts of Tamil Nadu to settle in the area in 1982, as per the Railways' records. With close-knit work-home relationships with the surrounding

neighbourhood, the cluster continues to expand, despite eviction notices issued in 2007 and 2010. Falling under the jurisdiction of South Delhi Municipal Corporation, it is provided hand pumps as well as open drainage channels on either side of the approach road to the settlement. But it is deprived of a toilet facility.

The camp being situated on central land requires DUSIB, an agency of state government, to negotiate and sign a memorandum of agreement with the Indian Railways before constructing any facility. The Centre however, continues to negate such efforts, in the name of discouraging further growth of the cluster. The unofficial story elaborated by Magesh, the community leader highlights similar efforts by the Municipal Corporation of Delhi in early 2000s, whereby a tender was passed for construction of community toilet and given to a private contractor, but the construction never took place. As a result, the entire community relieves itself in the open, either along railway tracks or along the drain. When it gets crowded during peak hours, men travel down to the drain to defecate while women and children relieve in closer proximities of home.

The dangers of defecating along the two available open spaces is well known amongst the community. Magesh and his wife mourn the loss of few children of the community on the tracks while several have lost a limb. The community unanimously demands for a safe and adequate site for relieving themselves. But it seems the demand will persist as a dream for the community amidst land conflicts.

4.3. JJ Cluster near DPS Mathura road

Another cluster located within ward-154, is a squatter of 212 households' on DDA owned land. This Muslim dominated settlement is built along the famous Sunder Nursery, and its inhabitants earning livelihood from scrap dealing.

Dialogue with the community reveals that the local name of the cluster is Amir Khusro Basti and it fell under the constituency of the former Vice President of India. They praise the dignitary for providing them with clean and separate toilets and bathing units for men and women, much before the Swachh Bharat Abhiyaan came into being. The installation work in 2013-14 provides the community with well-maintained and adequate number of toilets, as per the DUSIB norm of 1 water closet for every 10 households- which is an effort initiated by political influence and implemented by South Delhi Municipal Corporation in partnership with a private contractor.

This cluster and recent initiatives to provide quality infrastructure sets an example for others to follow. It demonstrates that political impetus and power when associated with a cause, be it as dirty as that of shit, it does get responded to.

4.4. JJ Cluster, Prem Bari Bridge along railway line, Wazirpur Industrial Area

Jhuggi Jhopri at Prem Bari Bridge is one of the largest clusters of Delhi. Located linearly along the railway line near Prem Bari Bridge, the cluster comprises of 3,799 households, and lies next to the proposed master plan green across the railway line, and Wazirpur Industrial area on the other side. Majority of community is working as wage labour in various industries within the area, while a few works as domestic workers, drivers, sanitation workers in the surrounding residential neighbourhood.

In 1990s the cluster was issued an eviction notice under the large-scale clearance drive of slums on public land, particularly the Indian Railways' land. The cluster became a focal point

for hunger strike by the then President of India, Mr. VP Singh, following which evictions were deferred and the slum was notified. With legal notification, it got included in the list of slums that were provided community toilet complexes, despite conflicts between land owning agency and providing agency.

At present, the 3,799 households are provided with one community toilet complex consisting of 30 water closets for both men and women, which equates to one water closet for every 126 households (~567 persons). Moreover, the facility is located at a tail end of the linear cluster and is ill-maintained. The doors to toilets are unstable, many do not have any door. As a result, 18 out of 20 persons using the facility are still defecating in the open- at least once a day, either along the railway track or in the proposed master plan green. For many, relieving within the facility is no different than defecating in open (Figure 7).

Figure 7: (Open) defecation in closed premise
Picture credits: Author

Due to its location at a tail end of the cluster, accessibility for women is a serious issue. One out of every five women does not feel safe to travel over 700 meters from their home to the facility. For select users, facility's design ensures a biased access to males and discouraged use for children and females. In a recent initiative by the DUSIB, a double storied toilet complex has been proposed near the existing facility, but the proposal is yet to receive a nod from the Indian Railways. Though the proposed facility promises reduced stress on existing facility, but issues of open defecation and biased access will continue for its location near already existing facility.

4.5. JJ Cluster on DDA Park, Chander Shekhar Azad Colony, Wazirpur Industrial Area

JJ cluster on DDA Park- Chander Shekhar Azad colony is situated amidst warehousing units of Wazirpur industrial area (Figure 8). This 35-year-old settlement of 775 households is situated on 0.8 hectares of DDA-owned land, but is devoid of a sanitation facility.

The cluster has come up on a proposed park locked on all sides by warehouses, leaving no space for construction of a toilet complex that could fulfill need of the community. But 300 meters away from the settlement, an ill-maintained (Figure 8) and overused community toilet complex was constructed as part of MCD-Sulabh collaboration in 2003-05.

Figure 8: Ill maintained facilities with sewage deposited outside the facility
Picture credits: Author

The complex consists of 30 closets for both men and women, which equates to 1 water closet for 26 households. During daytime, community uses the facility, while at night they prefer safety over hygiene and relieve themselves in proximity to home.

4.6. JJ Cluster at B-46, Wazirpur Industrial Area

The cluster at B-46 Wazirpur Industrial Area is a small pocket of 21 households squatting on 443 square meters of DDA-owned land. The community hails from a small village of Rajasthan, and is engaged as either sanitary workers or daily wage workers within the industrial area. The basti located amidst warehousing and storage units is devoid of space to construct a permanent structure and does not have access to any complex within 500 meters distance. Therefore, it has been provided with a mobile toilet unit consisting of 7 water closets for both men and women (Figure 9).

Figure 9: Ill maintained facility with sewage deposited flowing the facility in a space which is not distinct from recreational space for the children of the cluster
Picture credits: Author

The facility is not maintained and whatever waste is generated it is directly dumped into the open drain channel flowing behind the unit. This open space where toilet unit is located and drains flow carrying human waste, coincides with play area for children (Figure 9). The slum is practically living, working and playing in waste.

5 Conclusion and a way forward

The paper concludes with identification of the root cause of sanitation deprivation, which finds basis in the limited scope of urban sanitation policies. These policies- planning and sectoral, perpetuate sanitation deprivation which has a physical manifestation, and unjust

implications on urban poor. For the national capital too, open defecation is a mundane routine for the poor. The extent varies, but the deprivation is common.

It is also evident that Indian planners takes an elitist and modernist view of sanitation, excluding any discussion on open defecation in master plans – the primary policy instrument for tackling city sanitation. Addressing multitude of challenges that emerge or are linked to sanitation deprivation and open defecation in India, the task at hand is uphill, and a radical change in the current approach is thus required for realising the dream of open defecation free cities.

First and foremost, a **new framework** of examination, developing solutions and interventions, and monitoring, needs adoption. This framework is composed of eight parameters of adequacy, accessibility, affordability, finance, coverage, efficiency, quality of service and environmental sustainability (indicated in Figure 10). This framework of parameters has been based on the established fact that: one, sanitation deprivation is more than just provision of toilets; or calculation-based augmentation of sewerage; and third, data often hides more than it tells. Thus, to capture the real extent of sanitation deprivation, the framework comprises of 8 parameters based on service level benchmarks conceptualized by the Ministry of Urban Development and the Performance Measurement Framework for Urban Water and Sanitation (CEPT University, 2010) as well as the shortcomings identified from examination of policies for the project.

Parameter	Sub-Parameter	Indicator/ Benchmark	Explanation
ADEQUACY	Coverage of toilets	100%	• Sanitation is associated with universal service obligation (USO). It is a human right which needs to be provided to all socio-economic groups of society
	Water supply to facility	30-45 lpcd	• Adequate amount of water is needed for flushing out night soil, to ensure its use
	Adequacy of sewage treatment capacity	100%	• Treatment capacity available shall match with the amount of wastewater generated
ACCESSIBILITY	Location of facility	Walking distance to suit all users	• In case toilets are not available within premises, they shall be located within suitable walking distance from household. Locating toilets in secluded and distant sites, increases people's preference to defecate in nearby open area
	Bias in access	• Gender sensitive • Differently abled sensitive • Child friendly	• All members of community, irrespective of their gender, age or disability shall be able to access the provided facility
	Legality	• Notified slums • Non-notified slums	• Being associated with USO, (il)legality cannot be a criterion for depriving people of their right. DUSIB is mandated to submit an undertaking, in which it is to be highlighted that the structure will exist only till the date of existence of JJ cluster
AFFORDABILITY	Percentage of income spent on sanitation facility	• Free, else not imposing financial burden on household	• Being a human rights, one should not be charged to be able to access it • If facilities cannot be free of cost, then household expenditure to avail the facility should not impose an economic burden
FINANCE	Cost of Construction Cost of Maintenance	100% borne by public agency	• The amount of money spent on construction and maintenance of city level sanitation infrastructure is to be borne by concerned public agency as provision of sanitation infrastructure is their mandate • The amount of money spent on construction and maintenance of toilets and wastewater collection network will be borne by state government
COVERAGE	Coverage of sewerage network services	100%	Denotes the extent to which the underground sewage (or sewerage collection) network has reached out to individual properties across the service area
EFFICIENCY	Efficiency of sewage collection	100%	Amount of wastewater collected shall be equal to amount of generation
	Efficiency of sewage treatment	100%	Amount of wastewater collected shall be equal to amount of wastewater treated
	Efficiency in redressal of complaints from users	100%	Percentage of sewage-related complaints redressed within 24 hours of receipt of complaints in the given time period
QUALITY OF SERVICE	Maintenance of existing facility	Periodical Repairs and maintenance	Once a facility is provided, it requires timely repairs and maintenance works to ensure continuing usage of facility
ENVIRONMENTAL SUSTAINABILITY	Extent of reuse and recycling of sewage water	20%	The percentage of wastewater received at the treatment plant that is recycled or reused after appropriate treatment for various purposes

Applicability of sub-parameters
At city level
At community level
At city and community level

Figure 10: Framework for assessment of sanitation deprivation
Developed by Author (2016)

Within this framework the parameter of adequacy looks beyond the provision of toilets, and includes adequacy in terms of water supply to flush out the waste and adequacy of treatment capacity, to dispose-off the waste safely. Second, accessibility of sanitation facilities examines not only the physical accessibility but also social and legal accessibility. Affordability and financial parameters insinuate sanitation as a human right to be provided

to all by the state. The parameter of coverage looks into the spatial extent of sewerage network while efficiency is assessed in terms of collection of sewage, its treatment and disposal as well as efficiency of redressal system towards user complaints. To ensure that the structure provided by public, private or a partnership of the two is actually put to use, maintaining the quality of service is crucial. This maintenance has to be conducted at periodic intervals with accountability to its users. Lastly, environmental sustainability examines extent and emphasis on reuse and recycling of sewage water.

Testing the framework for the identified clusters, it is evident that one theme that binds all these episodes- sanitation deprivation is a routine for Delhi's poor, with variable extent. Four of the six clusters have access to some form of sanitation facilities, but still inadequate numbers and inadequate supply of water to flush out the waste renders the infrastructure useless after a period of time. Moreover, open defecation is a common practice even amongst those who are using the facilities, either due to inadequate number of closets or ill-maintained units. Also, the access to these facilities is biased. Due to space constraint or conflicts between land owning agency and Delhi Urban Shelter Improvement Board, facilities get located at such sites that not all segments of communities are able to access it. Mostly, women travel in groups to use them. Also, affordability, along with quality of service and efficiency of collection and treatment, is often not addressed in these clusters.

Sanitation deprivation is a public health concern as well as violation of human right that has long term implications on productivity of nation. In light of political impetus being given to sanitation deprivation and open defecation under the Swachh Bharat Mission, the way forward requires **realignment of existing urban sanitation policies**, **revision of planning norms** to make them more inclusive and responsive to issues of spatial inequities, supported by strong **implementation and regulatory mechanisms**.

As planners we need to rework our modus operandi and deviate from mere augmentation of sewerage network. Despite implementation of the three master plans, issues of inequitable spatial distribution of sanitation infrastructure, biased access and inadequate maintenance, still plague the general public. As a step forward, we need to **identify open defecation as a challenge to urban development** in our statutory plans and highlight the extent of depravity. Third, we need to **discard the blueprint approach** emphasizing on modern sewerage. That is, planning like the administration needs to get decentralized. Low cost area-based solutions need to be adopted for sanitation deprived pockets of the city. These efforts can either be taken by the authority itself or in collaboration with land owning agencies or NGOs or other such parties motivated by societal good.

Lastly, as planners we need to **re-look at our calculation-based augmentation plans** and work towards a judicious use of land. The current calculations need to be modified. Instead of augmenting the treatment capacity based on existing demand supply gap, a planner needs to look into the fraction of households having access to water supply and those having access to piped sewers. After all, only the wastewater collected through sewers will be treated, so why waste money and land on creation and maintenance of infrastructure that would never be utilized to its built capacity. Ultimately, planning is practiced for the people. The idea is to account for official as well as unofficial stories through urban narratives and cater to one and all.

In the end, to eradicate open defecation from a society whose foundation is still influenced by Manu Smriti, and decades of social, physical segregation and accompanied psychological

differentiation brought upon with the Sanitary Revolution in mid-19th century, sanitary foundations need to be dug deep and a radical change in the current approach is required- ensuring no one and no place is left behind, through more equitable and environmentally sustainable interventions and innovations.

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[i] Sulabh International is an India-based social service organization that works to promote human rights, environmental sanitation, non-conventional sources of energy, waste management and social reforms through education.