

# URBAN SANITATION IN INDIA – WHY BRAZIL MATTERS

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## WHERE DOES INDIA STAND IN URBAN SANITATION?

India constitutes only 11% of the world's urban population but contributes 52% to the open defecation in the world's urban spaces (WHO-UNICEF 2014). 12.6% of its 377 million urban people have no access to toilets. The burden of such poor conditions falls heaviest on women and children. There are less than 60 million children under the age of 5 years in India and they suffer from diarrhoea 300 million times each year. More than 300,000 die annually. Women and adolescent girls bear indignities, face threats, and real physical and sexual assaults apart from falling sick and carrying the burden of care giving for the sick. The economic costs of poor sanitation cost our country 6.4% of its GDP annually (WSP 2011); these without taking into account the social and psychological costs.

## INDIA'S URBAN SANITATION POLICY STORY

Given India's majority rural population, it's legitimate that rural sanitation so far received more attention from policy makers. Starting from the first sanitation specific Central Government programme – Central Rural Sanitation Programme (CRSP) – in 1986, to the Total Sanitation Campaign (TSC) in 1999 and its subsequent avatar, the Nirmal Bharat Abhiyan (NBA) in 2012, all programmes targeted toilet construction in rural households through a top down subsidy driven approach.

One scheme that attempted to address urban sanitation as part of larger issues was the Ganga Action Plan (GAP) launched in 1986 as a project to cleanse the Ganga of its pollutants and improve its water quality. However, despite a second phase in 1993 and its extension to the river's tributaries under the National River Conservation Programme (NRCP) in 1995, it is universally acknowledged that the river is more polluted today than at the start of GAP, and the cities along its banks have benefitted little. The Jawaharlal Nehru Urban Renewal Mission (JNNURM) in 2005 was the next major step in urban sanitation in India. 2008 saw the National Urban Sanitation Policy (NUSP) being formulated. This envisioned completely sanitised and healthy cities with good public health and environmental outcomes. While JNNURM and NUSP have coexisted, and over US \$ 3.8 billion (Rs. 23792 cr) of the total funds under the former were granted for major sanitation projects (Wankhede 2015), these have not delivered the outcomes envisaged by NUSP. JNNURM has been criticised for its large city and large infrastructure project bias which favours the upper classes and the political-corporate land-grabbing nexus to the detriment of the smaller towns and the poor (Mahadevia 2011). Ten years after its launch, the scheme has been wound up with little impact on sanitation outcomes to show for it.

The Swachh Bharat Mission (SBM), launched in October 2014 by the Central Government, is the first sanitation specific scheme that lays as much emphasis on urban India as it does on the rural countryside. It envisages a total expenditure of

## WHY LOOK AT BRAZIL?

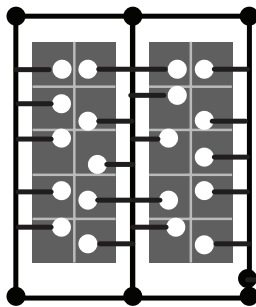
There is more than one reason for Indian policy makers and practitioners to look towards Brazil while both framing sanitation policies and implementing them on the ground.

Brazil's belief in a pluralistic state which is on the path to economic reforms since the last three decades is akin to India's situation. Its subsequent trajectory of industrial growth and rise on the international political scene are also similar. Most of all, its economic growth also resulted in rapid urbanisation with unplanned expansion of its cities; its urban population grew from 45% in 1960 to over 80% by the millennium. Today it stands at over 172 million. This growth has been accompanied by the enormous expansion of 'favelas' that duplicate India's increasing and dismal slum conditions – from makeshift dilapidated housing on empty government land with no security of tenure for the habitants, to absence of basic services and hazardous living conditions. But herein lie the greatest lessons for India – what it has managed to provide for these urban citizens over the last few decades despite severe limitations, current shortfalls notwithstanding, should serve as a prime motivator and illustration of the doable for India (Table 1).

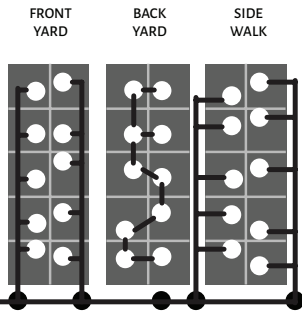
Photographs: Favelas' Transformation with Condominial Sewerage and Development Projects



CONVENTIONAL SEWERAGE



SIMPLIFIED/ CONDOMINIAL SEWERAGE



Source: Mara D, 2009.



**Table 1A: Brazil Total Sanitation Progress**

	1970	1980	1990	2000	2010	2015
<b>Sewerage</b>	20%		45%	54%	65%	<b>72%</b>
<b>OD</b>			6%	3%	1%	<b>0%</b>

Source: WHO-UNICEF JMP Report (Brazil) 2015

**Table 1B: Brazil and India – Urban Sanitation Services**

	Improved Sanitation	IHL	OD	Public Toilets	Urban Sewerage Coverage	Urban Sewage treated	Septic Tanks
<b>Brazil</b>	88%	<b>99%</b>	<b>0%</b>	1.0%	<b>72%</b>	38%	6%
<b>India</b>	60%	<b>81.4%</b>	<b>12.6%</b>	6.0%	<b>32.7%</b>	14.5%	38.2%

Source: Source: WHO-UNICEF JMP Report (Brazil) 2015, Census of India 2011

**Table 1C: Brazil and India – Sanitation related Disease Indicators (2011)**

	Total Population (2013)	Urban Population	Total Urban Population	Slum Population	Annual Diarrhoeal Cases*
<b>Brazil</b>	200 million	84.4%	<b>172 million</b>	6.0%	<b>200,000</b>
<b>India</b>	1252 million	31.0%	<b>377 million</b>	5.2%	<b>9 million</b>

Source: 2013 figures – World Bank database, \*Brazil figures include All types of Acute Diarrhoeal Diseases/ India figures include only Diarrhoea (not including Typhoid, Cholera, Dysentery, E.coli etc)

Brazil has experimented with several models of financing and service provisioning in the sanitation sector, both in terms of levels of centralisation/ decentralisation and public/ private provisioning that are a valuable exercise for Indian policy makers to look at. It also provides an example where policies and programmes have evolved to take note of the social contexts and involve communities from the initial stages of planning itself, resulting in distinctly better outcomes (WSP 1998, Gutberlet and Hunter 2008). It thus provides useful lessons in ways to increase community engagement.

### BRAZIL'S URBAN SANITATION STORY

From 1964, Brazil's centralised National Housing Bank (BNH) implemented social housing policies with the intention of increasing access to urban housing and services for the low income population by providing them low interest loans. At the same time, all sanitation related funding, construction and services were provided by decentralised authorities – the local municipal bodies. While these efforts were successful in spatially redistributing housing loans to poorer cities and city peripheries, they failed to decrease the inequities across different socio-economic groups (Klak 1990). To address this deficiency, the military government introduced PLANASA,

the National Water Supply and Sanitation Plan in 1971. Under this plan it created 27 autonomous companies, one in each state, that received funds from the central BNH and licences from the local municipalities, to implement water and sanitation (W&S) services. PLANASA was thus a much more centralised system of service provisioning than the previous one where local municipalities had this responsibility. It was also a public enterprise based on market principles. Projects financed under this scheme were expected to yield returns in line with free market philosophy. They had to generate profits and provide earnings for the shareholders in the implementing autonomous organisations. It was expected that this philosophy would increase the efficiency and productivity of PLANASA as a system and the companies under it (Lucia Britto and Alves dos Santos Jr. n.d.). As a result of the pressures to deliver these economic returns though, PLANASA concentrated more on water services than sanitation, and on richer than poorer neighbourhoods, since water and higher socio-economic areas yielded better returns on investments. Provision of public goods based on market principles thus led to an increase in inequities rather than any improvement in efficiency.

Another important scheme experimented with for the low income urban population starting in 1982 was PROSANEAR, a low cost technology scheme. Its initial implementation almost failed due to technical and financial problems. The uptake of connections in the community was low and user charges were not acceptable. In 1992 it was taken up again after greater community engagement upon conditionality of 100% households connecting to the system and paying tariffs for it. Although this led to significant improvement in sanitation conditions in some areas, there continues to be debate about its relative success. Evaluation of the scheme demonstrates that lack of tenure of poor households is a major barrier to improvement in delivery of basic services (Gutberlet and Hunter 2008).

The 1980s were a key decade in the way urban services are viewed in Brazil. This decade saw a pro-democracy stirring as well as an urban reform movement throughout Brazil. The urban reform movement strongly advocated for public services to be seen as citizens' rights. Many of the recommendations of the National Urban Reform movement were finally incorporated into Brazil's new constitution in 1988. Urban sanitation schemes that followed included Programme for Modernisation of Sanitation Sector (PMSS) in 1992, and National Plan of Basic Sanitation (PLANSAB) in 2014. In the meantime PLANASA continued actively only till 1986; it was formally terminated in 1992 after democratisation when the new constitution moved towards empowering local bodies.

The Brazil sanitation sector has thus moved from decentralised services before 1971 to a more centralised approach under PLANASA and back again to a decentralised approach post-1988. The contestation over centralised versus decentralised approach has now been joined by the private versus public provisioning debate. Results on public vs. private company costs have varied across studies. They have been found to be both higher and lower in private than in public utilities, but all agree that regional (centralised) level utilities are able to achieve economies of scale (Sabbioni 2007). Importantly however, these have not translated into lower tariffs for the users (da Motta and Moreira 2004). Instead, absent or weak regulation has resulted in monopolistic practices by both private companies and corporatized public sector entities, leading to unaffordable high tariffs (da Motta and Moreira 2004). Weak regulation has also led to limited productivity and efficiency gains which has contributed to the higher tariffs. Many amongst the poor have therefore opted out of receiving services or are unable to pay for them. This fact, combined with the weak regulation, has impacted the quality of services delivered to them (da Motta and Moreira 2004).

Table 2 below shows that in 2010 majority of the municipalities chose to publicly provide W&S services despite a Concessions Law implemented in 1995.

**Table 2: Service Provisioning (2010)**

Service Providers		Local Public	Regional Public	Local Private	Regional Private
Water	Municipalities	27 %	<b>69 %</b>	1 %	2 %
	Population	23 %	<b>73 %</b>	4 %	1 %
Sewage	Municipalities	<b>78 %</b>	19 %	1 %	2 %
	Population	<b>47 %</b>	47 %	6 %	1 %

Source: Modified from Saiani and de Azevedo 2013 (Figures have been rounded off)

## WHAT EXPLAINS BRAZIL'S PROGRESS? (AND INDIA'S LACK OF)

- A Constitutional and Legislative Framework. Recognition of the citizens' entitlement to the urban space and basic urban services in the legislative framework has formed the basis for improving sanitation conditions in Brazil.
- Keynesian ideas have underpinned Brazilian polity; the new democratic constitution in 1988 especially emphasised the social functions of urban property. This has been followed by the City Statute in 2001, premised on the idea of 'Right to City' of the citizens. The statute categorically states that the social function of land supersedes its economic function i.e. land use is prioritised over its commercial value. Although there continue to be tensions arising from alternate interpretations of the Statute and use of precious land resources by developers, the legislation does provide space for the poor communities to demand basic amenities as a right. The Basic Sanitation Law of 2007 is another strong legislation that gives a clear comprehensive definition to the term 'sanitation', mandates standards for it and provides for financial and institutional mechanisms to implement the needed services.
- Evidence Based Policies. Despite major changes in governments over the last fifty years and transformations in its W&S policies being influenced by political convictions of the day, Brazil's policies across all regimes have been modified based on evidence. In recent years there have been attempts at implementation in a more contextual and inclusive manner, with greater community engagement and passing the decision making authority to local governing bodies within a broader federal framework.
- Adequate, Regular and Public Funding. W&S has received due funding both for infrastructure development and for strengthening the systems. Funding dipped in the late 80s and 1990s due to inflationary and economic pressures but has since recovered. From 2007 to 2014 the sector received over USD 17 billion mainly via PAC, the Programme for Accelerated Growth (Glaas Report 2014). Evidence from within the country that private sector financing exaggerates iniquities along with learnings from Europe that public sector funding is necessary for sanitation infrastructure development (Lucia Britto and Alves dos Santos Jr. n.d.) have contributed to the federal government's major role in financing the sector.
- Building Robust Data Collection Systems. The National System on Sanitation Information (SNIS) was started in 1995 to institutionalise monitoring of W&S services. It collects population wide data annually that aids in further planning, resource allocation, evaluation and improvement of services, as well as regulation of the sector. It covers 100%

of the population. Monitoring of qualitative parameters is still a lacuna in the system that needs filling.

- Condominial System of Sanitation. One of the major contributors to Brazil's success in improving sanitation conditions has been the adoption of technology adapted to suit the context in which 'favelas' exist – both spatially and socially. The 'Condominial System' of sanitation, as it is called, has the following main characteristics – i) engineering aspects of the sanitation network modified to be as low cost as possible while still suiting the topography ii) intense community engagement and uniform application across rich and poor neighbourhoods to ensure both high uptake and willingness to pay for services, and iii) institutional strengthening to work with these systems. Where such actions lagged or were not applied systematically the Condominial System has not delivered as hoped for.

## CHALLENGES IN W & S IN BRAZIL

The biggest challenge today is one of regulating the sector effectively, bringing in accountability and adding to the transparency of functioning. Due to the current weak regulatory structures, inequalities in provisioning, access and affordability to W&S services are still among the major concerns. Rural areas and native populations have the least access and a wide gap still exists in the sanitation conditions between urban slums and non-slum regions despite significant narrowing over the last two decades (Nadalin and Mation 2014). However it must also be borne in mind that unlike India, only 16% of Brazil's population is rural and while slum conditions don't equal non-slum conditions, all urban schools and health centres have full sanitation facilities.

Poor co-ordination among implementing ministries is another difficult issue. Delivery of W&S services to cities with population greater than 20,000 is by the municipalities, mentored by the Ministry of Cities, while to smaller cities and rural areas is by the Ministry of Health. This has created arbitrary divisions in the responsibility and jurisdictions which have not been effectively overcome.

## LESSONS FOR INDIA

- Universal access will have to be publicly financed. Brazil's experience suggests that provision by the public sector is necessary for equitable and affordable sanitation services. Private and publicly administered utilities were equally efficient but only directly publicly administered utilities provided cross-subsidies as needed and charged the most equitable tariffs. Moreover, cross-subsidisation and user charges cannot provide for new infrastructure development. As India explores options along the Public-Private-Partnership (PPP) and complete privatisation route it will have to bear these factors in mind.

- Regulation of the sector is a must for strengthening it, for increasing access and for providing equitable services. This applies both for the public and private entities but it is essential that regulatory structures are in place before any form of privatisation is allowed. Introduction of private entities in the sector in Brazil in the face of ineffective regulation dissipated efficiencies, created monopolies and lead to non-transparency in functioning with increase in iniquities and unaffordable tariffs.
- Whether services should be provided by individual municipalities independently, by ULBs in small consortia or by state level agencies is a question that Brazil has been grappling with repeatedly. The answer may lie in a middle path – state or district level agencies that can

provide economies of scale, capacities and subsidies across municipalities of varying socio-economic characteristics, but still allow for cross-district or cross-state competition.

- Robust data collection with regular effective analysis is essential for effective and efficient infrastructure creation and service delivery.
- One size does not fit all – the ‘Condominial system’ of sanitation in the slums in Brazil have been extremely effective in some cities but have failed in others. The reasons lie both in technical and social failures of the scheme. Contextual, inclusive planning will yield more effective results with better utilization (Melo 2005).

Year	Pre 1964	1964	1971	1982	1985	1988	1995	2001	2003	2007	2011	2014
POLITICAL REGIME	Democratic	Military Rule				Democratic Govts.	Elected Govt. of Fernando H. Cardoso		Elected Govt. of Luiz Inacio Lula da Silva		Elected Govt. of Dilma Rouseff	
NATIONAL MOVEMENT			Pro Democratic Movement		New Constitution		Urban Reform Movement					
POLICIES, PROGRAMMES, SCHEMES		BNH				PLANASA		PROSANEAR				PLANASAB
			PLANASA				SNIS					
LEGISLATION							City Statute			Basic Sanitation Law		

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