

SUSTAINING POLICY MOMENTUM

Urban Water Supply and Sanitation In India



Introduction

India has 31 per cent of her population (377 million, Census 2011) living in areas classified as urban that is likely to grow to 600 million by 2031 (HPEC). Drinking water for this growing population poses considerable demands (81,000 MLD) on India's dwindling water resources, whereas collection and safe disposal of wastewater (65,000 MLD) poses serious challenges in urban areas.

Swachh Bharat Abhiyan (SBA) is a significant start to ensuring that India becomes clean and healthy, and extending access to sanitation and waste management for all. It needs to be complemented with infrastructure and services improvements leading to sustainable cities that grow while ensuring public health and environmental benefits to citizens.

I. Why do Urban Water and Sanitation matter?

Water is the basis for life and there are severe public health consequences of inadequate urban water and sanitation, including diarrhoeal diseases. Globally, diarrhoeal diseases, is the second leading cause for children under 5 (UNICEF, 2010): 25 per cent of global diarrhoeal deaths occur in India. Sanitation is a cause of malnourishment, leading to stunting and long term cognitive diseases (Spears, 2013).

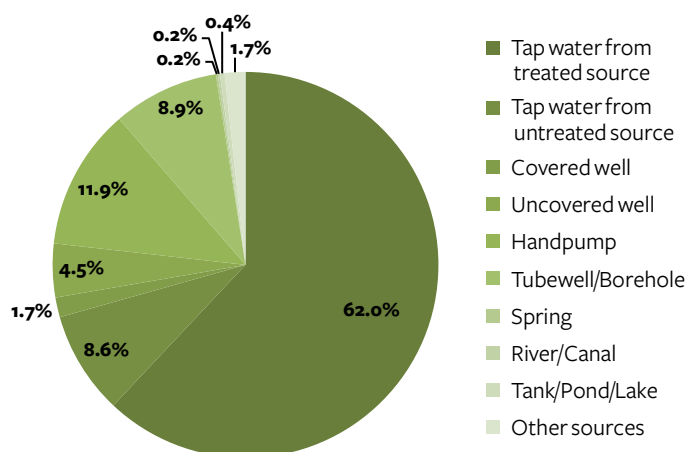
Fecal contamination is the prime reason for water pollution (both surface and groundwater) in India. The other critical concern faced by urban areas is its growing water demand, within the context of decreasing water availability. Climate change might further reduce the availability of water for urban areas.

II. Water and Sanitation in Indian Cities

Nearly 40 percent of urban households have no access to public supply, and have to depend on other sources of water.

Nearly two-thirds of the households do not have access to water within the house, and 70 per cent of households depend on some form of shared facilities.

Distribution of households according to source of water



Access to piped water supply is no indicator of service levels. The biggest concern is that most cities do not provide the requisite quantum of water: cities on an average receive only 69 litres per capita day (lpcd), as opposed to the norm of 135 lpcd. Water supply in almost all cities is intermittent and often of questionable quality.

As a consequence of poor service standards, households need to invest in a range of coping mechanisms, with associated water quality risks, increased time, and financial costs. The most prominent coping mechanism is dependence on multiple sources of water.

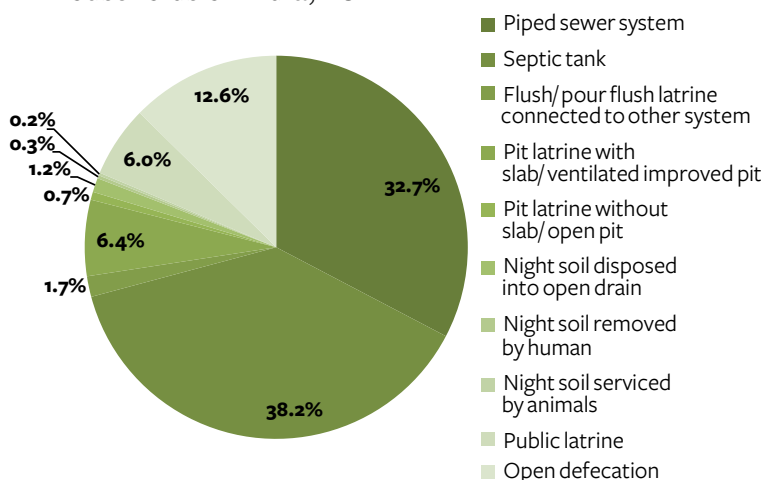
One of the biggest concerns at the household level remains that of water contamination, and consequent impacts on health. While there is limited monitoring and data available on the quality of water supply at the household level, it is a serious concern (whether the source is public supply, private supply or self-supply).

At the city-level, expansion and scaling up of public water supply remains a critical issue, especially for smaller cities. Comparatively, for larger cities, high water losses remain as much of a challenge as infrastructure deficits. The water supply systems in urban India suffer from inadequate operations and maintenance. There are several informal supply chains in Indian cities.

India's cities depend most commonly on a mix of ground and surface water. Increasingly, urban areas draw water from great distances.

Cities are excessively dependent on groundwater: 58% of total urban water use in a sample of 71 cities was found to be dependent on some means of groundwater.

Distribution of Toilet Facilities in Urban Households of India, 2011



There are around 60 million people (17 million households) that do not have access to adequate sanitation: 12 per cent (of households) defecate in the open, two per cent have 'unimproved' sanitation, and 7 per cent use public toilets.

There are huge deficits on safe wastewater collection, conveyance and treatment. Only one-third of households are connected to sewerage networks, and collection efficiencies remain low. On-site systems, viz., septic tanks and pit latrines, suffer from inappropriate design, poor workmanship, and improper maintenance, exposing communities to the risk of fecal contamination. There are very few facilities available for treatment of fecal sludge. **Nearly 78 per cent of total wastewater is untreated, and let out into the environment.**

Access to the Urban Poor: The urban poor are more likely to not have water facilities in their houses, and depend on shared facilities (NSSO, 2009). Nearly one-third of urban households in the lowest fifth defecate in the open, compared to less than 1 per cent of households in the higher fifths (NSSO, 2009). Further, the urban poor often stay in high density settlements, with access to on-site sanitation systems which may not be suitable for such dense settlements.

¹ According to JMP (Joint Monitoring Programme, UNICEF and WHO), Improved sanitation includes Flush toilet, Piped sewer system, Septic tank, Flush/pour flush to pit latrine, Ventilated improved pit latrine (VIP), Pit latrine with slab, Composting toilet.

III. Institutional Arrangements & Current Policy Framework

Even though water and sanitation are state and local government subjects constitutionally, the Government of India exerts considerable influence on the sector. At the state and city levels, the institutional arrangements differ though there are some common features. There is severe lack of capacity across different levels, organisations and domains. Further, there is a lack of clear mandate for the respective organisations resulting in gaps and overlaps. Lastly, the sector is poorly regulated; environmental regulation remains weak.

There is a general consensus that more investments are urgently required in the sector, even while there are disagreements around the quantum of deficit. An estimated capital investment of Rs 3.2 lakh crores for water supply and Rs 2.2 lakh crores for sewerage is required (HPEC). On the revenue side, the cost recovery levels remain low both due to low collection and tariffs.

Key national initiatives in water and sanitation in the previous decade included the JNNURM investments (2005-2014), the National Urban Sanitation Policy (2008) and most recently the Swachh Bharat Mission-Urban (2014). There is an emerging consensus on several priorities including universalising services, provisioning to the poor, reduction of non-revenue water, 100 per cent treatment/re-use of wastewater, protection of groundwater aquifers and adequate resources for operations and maintenance. This policy momentum needs to be sustained, and taken forward.

IV. Key Actions

The Government of India needs to partner with state governments and urban local bodies to transform the water and sanitation sector.

1. Encourage results and outcomes, move away from inputs

Urban water and sanitation have far-reaching consequences on health and the environment, beyond specific city boundaries. It is imperative that outcomes are set out by the Government of India, and support provided to states and cities to help achieve these goals in their own contexts. Given the wide difference between different states and cities (in topography, resources, and level of provisioning), specific strategies and plans to achieve these outcomes are best decided by states and cities.

The experience of NUSP, shows that mere outlining of broad outcomes in a policy document might not be enough. The Government of India needs to support financing and capacities to help achieve the outcomes by:

- Specifying broad policy outcomes in the investment programmes (as has been done in the Swachh Bharat Mission Urban recently).
- De-linking funding from inputs and encouraging states (and cities) to develop their own plans and strategies to achieve policy goals, with fiscal transfers from GoI, backed by strong monitoring.
- Link scheme funding to performance as demonstrated by achievements of Service Level Benchmarks and other measures, viz., National Sanitation Rating of Cities.
- Mandating outcomes by revisions in the Municipal Acts and Rules.
- Strengthening environmental regulations (by State Pollution Control Boards).
- Building flexibility in funding to provide greater responsiveness to local contexts, by provision of grant funds, etc., for this purpose.

The key outcomes that need to be specified:

A. Extend Services to All/Universal Access, especially Access to Safe Drinking Water

To achieve universal access and improved service levels, the focus increasingly needs to shift to service delivery, instead of mere infrastructure creation. Special attention needs to be given to specific challenges of service provisioning to the poor: tenure security, affordability and space constraints in small dwelling. Small and medium towns and weaker regions and states should be examined to ascertain if they require special attention.

B. Ensure 100 % Safe Collection, Conveyance and Treatment of Wastewater-by appropriate means

The Swachh Bharat Mission addresses the need to eliminate open defecation, and close the deficit at the household level. It needs to be complemented by safe conveyance and treatment/re-use for ensuring public health and environmental benefits. Complete treatment of waste requires not only treatment of sewerage, but also taking care of septage/ sullage from on-site systems. This may require the city to promote and/or license, regulate sludge collection vehicles, along with basic sewage/septage treatment facilities in identified locations.

C. Set out Phase-wise Incremental Improvements and Monitor closely

Both universalising access and 100 per cent treatment of waste may require immediate, intermediate and phased solutions. It might need cities to consider on-site systems, for example. Likewise, 24 X 7 water supply is often cited as the ideal model. However to achieve universal coverage, cities might have to make gradual improvements. State strategies and city plans need to clearly lay out a long-term plan, highlighting how all the necessary outcomes will be met.

D. Invest Finances and People in Management of Assets

Indian cities need to move out of the current vicious cycle of Build-Neglect-Rebuild by focusing on three critical aspects of O&M: funding, systems and procedures, and capacity. It might be necessary for states to provide these functions in the interim. Further, ULBs need to provide for differing O&M costs associated with different technologies, right at the planning stage.

E. Bring People and Citizens at the Centre of Water Sector Governance and Service Delivery Improvements

It is necessary to increase accountability of service providers directly to the citizens, particularly poor and vulnerable communities. The sector needs to be regulated in a manner that balances the interests of consumers and service providers.

2. Scale Up Capacity Building Initiatives

Capacity has to be built at all levels, especially for smaller ULBs, and across different domains. Current capacity-building initiatives should be scaled up, and appropriate needs assessment carried out to identify priority areas. Requisite mechanisms for monitoring and evaluation are needed.

3. Rethink Financing Approach

While more funds need to flow into the sector, there is also a need to rationalise investments to remove the huge deficits. Financing requirements can be downsized by encouraging a wide range of technologies and other incremental changes. The government must redirect at least some of the funding from 'hardware' to 'softer' components, and into creating an enabling environment. Financing needs to be more flexible to regional contexts, and incentivise desired outcomes.

Role of State and City Governments

The GoI needs to support state governments with financing, capacity support and programmatic flexibility to craft their strategies for their cities. State governments need to develop and help cities implement strategies, supplement financing, and put monitoring and regulatory mechanisms in place. In the long run, city governments need to take full ownership of city-wide planning and prioritisation, project implementation, provisioning of services, and operations. Urban local bodies, especially smaller ones, will need considerable long-term support on many of these fronts. The Swachh Bharat Abhiyan and the successor Urban Development Mission promise to transform Indian cities to become Swachh, sustainable and vibrant.

Suggested Readings

- IIHS, 2014, Sustaining Policy Momentum: Urban Water and Sanitation in India, IIHS RF Paper on Water and Sanitation
- McKenzie, D., & Ray, I. (2009). Urban water supply in India: Status, reform options and possible lessons. *Water policy*, 11(4), 442-460.
- Narain, S. (2012a). *Excreta Matters* (Vol. 7 (Vol.1)). New Delhi: Center for Science and Environment.
- WSP(2008). *Review of Sewerage and Sanitation Interventions in Urban India*. New Delhi: Water and Sanitation Program-South Asia.



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