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## On the way to a “clean India”: 2 years of Swacch Bharat Mission (Urban)

### Thematic Discussion Series Synthesis Document (4<sup>th</sup> September-5<sup>th</sup> October 2016)

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## SBM Urban

The urban discussion ‘**Makers and Shakers of Urban Sanitation: Unthinking the Debate**’ was hosted by Renu Khosla, Executive Director of the Centre for Urban and Regional Excellence that works on urban issues.

Swachh Bharat Mission (Urban) repositioned the urban sanitation debate, bringing it away from the edges of development into its very core. There is uncritical celebration among city community and sanitation practitioners of this move for two important reasons; one, it offers the poor a better, dignified, healthier and safer future – a window out of poverty and a chance to make all people equal; and two, investments in sanitation bring back huge economic returns, urban poor’s contribution to India’s GDP can leap by an estimated 7.5% if sanitation is good (World Bank 2013).

Sanitation has three interconnected slices are toilets, drains and solid waste, each embedded in its own value chain. The urban toilet deficit according to MOUD is an estimated 6.64 million units. This simple arithmetic is based on the following Census 2011/NSSO 2016 data: about 9% households have neither private nor community toilet access, the bulk of this deficit is among the 1.38 million slum households (16% of urban population) of which 260,000 defecate in the open and 200,000 use community facilities. The coverage for drainage and liquid waste management for urban India as a whole is lower, at 64.2% and 36.8%, respectively (NSSO, Swachata Status Report 2016).

SBM is an opportunity. It is urgent to get its narrative right. Provisioning of sanitation can only be fixed by disruptive innovation. If cities are to clean up they need to deal with many issues. Six key ones are discussed below - definitions, data, engineering, land, communities and city capacity.

First and foremost, everyone is not on the same page. Definitions are unclear and ambiguous. Spatial boundaries such as settlements, wards, neighbourhoods, open defecation areas,

etc., are misrepresented.

Second is about data. So far it is mining just the missing toilets, waste bins (*dhallaos*) or drains, ignorant of their geographies, infrastructure quality, design, access or affordability. Interpreting the data is important too. That will help pick the investment priorities—reach the elusive vision.

Third, is about getting the engineering right. Historic legacies and conventional responses to sanitation are like repeating the same mistakes, because results will not change. To respond to a community's need and context, solutions must be de-engineered and reimagined – shift from large to small decentralized options, common and shared to household services, uncoordinated and un-continuous systems to plug ins, and from one solution to many.

### **The definition**

This is informed by what sanitation in the urban context involves: collection, conveyance, treatment and recycling/reuse or disposal. It must close the sanitation loop given the high volumes and population densities involved else remains incomplete. Flexible approaches with both closed and open systems are preferred to a single, sewer solution that has been the norm so far. Therefore, urban sanitation includes a system that safely collects and converts sewage and soil waste into reusable material using the most appropriate technology at an affordable cost.

Conveyance can happen through either covered drains, as is the case with most slums or informal settlements, or sewers as in 'planned' areas. Municipalities must arrange for garbage collection from centralised dumps as door-to-door collection is already done by residents through their welfare associations. To be successful, waste profiles can be created for each urban ward.

For poor areas not served by municipal waste collection services, people need to organise their own paid systems to take garbage to the nearest municipal collection point. In both poor and affluent areas garbage segregation needs to be practiced though there is a large informal economy of rag-pickers that segregate reusable or recyclable items from other waste. The other waste comprises compostible material that can be turned into manure and generate biogas rather than going into landfills, both of which are potential revenue streams.

### **Data needed**

Ward-level data is necessary for city-wide planning, as these are building blocks of any city. This data should include the whole supply chain of services, spatial plans and land availability for centralized or decentralised solutions. This information can be mapped using GIS systems and the involvement of local people for community buy-in and long-term sustainability. Participatory data collection should be mandatory.

Along with this, it is necessary to assess the ability and willingness to pay for sewage and

## Recommendations

**Definition:** Urban sanitation includes a system that safely collects and converts sewage and soil waste into reusable material using the most appropriate technology at an affordable cost

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For poor areas not served by municipal waste collection services, people need to organise their own paid systems to take garbage to the nearest municipal collection point

Ward-level data is necessary for city-wide planning, as these are building blocks of any city. Data collection processes should be participatory to ensure community buy-in

A mix of technology is needed based on appropriateness, affordability, land availability and power

Community engagement is essential through local committees. The municipalities need to interact through formal and informal channels. Community organisations can plan and monitor while municipalities implement.

A cadre of municipal sanitation engineers should be created with skills to deal with the public

garbage management services by the local community. This is critical for sustainability of the option(s) chosen and may dictate the final process.

**Technologies:** Conventional urban technologies include sewerage solutions, sewage treatment plants starting from basic oxidation ponds through secondary treatment systems (ASPs, SBRs, MBRs, etc) up to tertiary treatment plants (ultra-filtration based systems). These centralised options can be used together or separately depending on factors such as costs, electricity and land availability.

Some of the technologies that have been tried and can be used elsewhere, especially in unreached areas or small, dense slum communities include septic tanks, bio-toilets, constructed wetlands, bacterial remediation, soil biotechnology for the decentralised options. Bio-toilets can be provided either for individual households or clusters of households to lower unit costs.

The choice of technology depends on the type and volume of waste, ability to pay and technical competence of the managing agency. All these factors need to be part of the data collection mechanism and be reviewed periodically.

Three key factors in building sanitation infrastructure should be; timely financial flows for proper construction, ensuring last mile connections to households and operationalizing the system and supporting households to make the connection, that is build household toilets.

For garbage, segregation followed by processing is the only solution. Only material that cannot be reused should be consigned to landfills after compaction.

### **Engaging with communities**

Many cities have local ward level organizations that need to be drawn into management of sewage and garbage, particularly the decentralized, de-scaled solutions. The responsibility for implementation should rest with the municipality. Ward organizations should be tasked with planning and monitoring after proper training and technical support. Communities can pay for the services on a full cost-recovery basis to ensure they take responsibility for monitoring the service. User fees can help regulate waste if it is volumetric both for sewage and garbage. They also hold the service providers to account.

Municipal service providers must be answerable to communities; this can be ensured by having local and city-level committees with people and elected representatives and platforms that bring them together.

The process can be incentivised by rewarding well-performing wards with additional development grants.

### **Institutions and capacity**

Municipalities currently handle both liquid and solid waste, but do a very poor job. They lack the information on volumes of waste generated and points of generation. They do not have trained people for the job but instead employ engineers who have other portfolios as well. They do not have the finances and are forever dependent on state or Central government grants. To change this, training or a cadre of municipal engineers and bureaucrats can be undertaken across the country. This will make them experts in garbage and sewage management. Along with this, they need to be trained in dealing with public demands for better service. Developing **service level benchmarks** that cover their duties, turnaround times, standards of treatment and disposal, etc., can point to specific requirements.

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*The document was prepared by Nitya Jacob on behalf of the India Sanitation Coalition and SuSanA.*