

Understanding our  
civic issues

# Sanitation system for Mumbai

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## **Sanitation System for Mumbai**

Open defecation by Mumbai's four million slum dwellers, who have no access to toilet facility, exposes us to about 1,000 tonnes of human excreta every day. Citizens of Mumbai wrinkle their noses and curse the poor people for this nuisance. The fortunate lot of the citizens harbour contempt for these less fortunate brethren and feel that providing infrastructure facilities such as water, electricity, sanitation, etc., to the slums encourages further influx of people into the already crowded city. Without getting into the debate on the causes of this influx, it has become imperative to understand the problems of sanitation for this huge population and address them to save our environment.

## **Mumbai's Sewerage System**

Until 1860, the water closets were virtually unknown in the city of Mumbai. The then British administrators introduced this system after the first piped water supply from Vihar Lake was established in 1860. At that time, the sewage was simply discharged into the harbour at ebb tide. The first marine outfall was constructed at Love Grove in 1880. As the city expanded, the system developed further and, before Second World War, Dadar sewage treatment plant was constructed. By 1979, almost 90% of the city area was covered under the marine outflow system but only 40%-50% of suburbs were covered. However, this marine outflow system was slowly phased out due to aging, and a new system implemented to replace it.

At present, the collection and disposal of waste water and sewage in Mumbai is divided into seven zones, viz., Colaba, Worli, Bandra, Versova, Malad, Bhandup and Ghatkopar. From each of these, sewage and waste water is conveyed to the respective final discharge points for disposal through marine outfalls, some three kilometres into the sea. There are 53 pumping stations for pumping the sewage/waste water from lower level to higher level and there are 54,000 manholes for maintenance of 1,400km long network of the sewerage system. The Department of Sewerage Operations of the Municipal Corporation of Greater Mumbai (MCGM) is responsible for collection, conveyance and disposal of sewage/waste water generated in the residential, commercial and industrial premises in Mumbai. MCGM collected tariff to the tune of Rs456crore in 2003-04 with an expenditure of about Rs300crore on operations, making a net operational income of Rs156crore.

The underground drainage pipes of the sewerage system in Mumbai are more than 100 years old and needs renovation. In congested parts, the sewerage lines and water pipelines run together and leakages contaminate drinking water. The unplanned and unauthorised growth of the city makes it difficult and, at times, impossible to replace old sewerage lines. The problem of sewer lines of small diameters getting choked due to solid waste and silt entering them is rampant. The result is that instead of getting drained, sewage overflows on to the surface.

Mumbai has a two-tier sewerage system. One is the underground sewerage system that discharges about 3.5 km into the sea. The other is storm water drains that carry surface and flood water during monsoon and discharges directly into the sea right at the sea

shore. However, what complicates the already overloaded sewerage system is the presence of a large percentage of the city's population that has no access to it in the first place. While toilets in the buildings and establishments are connected to the underground sewerage system, this facility is not available to the slum dwellers.

Nearly 65% of Mumbai's population of 13million, i.e., about 8million people live in slums, of which 50% live in authorised slums with some toilet facility. The other 50%, i.e., about 4million slum residents have no choice but to ease themselves in the open spaces, along roads, highways, railway tracks, parks, playgrounds, open plots and beaches. During monsoons, this excreta flows through open drains and nallas into the storm water drains and gets discharged right near the coast.

### **Sanitation Facility for Slums**

Around the mid-1990s, the Mumbai Sewerage Disposal Project (MSDP) was undertaken under the World Bank (WB) funding of Rs1,200crore to improve the sewerage system of the city. This was used to set up the Bandra and Worli marine outfall systems and improving old sewage lines. Since slums do not have facility of underground drainage, it was later decided that the population in the slums needed to be provided with underground drainage system to protect Mumbai's environment. However, the World Bank put a condition of participation of local people in the Slum Sanitation Programme (SSP); this project officially started in 1997. Slum residents were expected to form a society with a contribution of Rs100 per household. Unfortunately, this project did not take off and, during the two-year period ending 2000, although the World Bank released Rs70crore under the MSDP Project, only 17 toilet blocks could be constructed. The Scheme received some momentum with the crusading work done by Anand Jagtap, Officer on Special Duty (OSD) for this SSP project and since 2000 until now, some 193 toilet blocks have been constructed and are functional, while work is going on for 307 toilet blocks out of 356 work orders issued. Ultimately, only about Rs40crore, out of the Rs100crore provided by WB has been utilised.

The reasons cited for this debacle are many. So far people are not used to the concept of paying for the services and there was reluctance to make even a one-time payment of Rs100 per household to form a society. To this mass psyche, local politicians added fuel by promising free service and dissuading them from paying. 'Why should they pay, as it is the government's duty to provide the basic amenities?' this was the question raised by the slum dwellers and the politicians. The World Bank may have rightly insisted on the principle that the users pay for the services; but these guidelines could not be easily implemented. The World Bank Scheme came to a close in 2003; currently, the second phase of the Project is being discussed. Jagtap expects Rs500crore for this Slum Sanitation Programme (SSP). The successful implementation of the Scheme during the latter part of the project is an indication that the message has gone to the slum dwellers to participate in getting their own sanitation facility.

## **So What Is the Way Out?**

Let us see the current sanitation facilities in the slums of Mumbai. However inadequate and unworkable, the infrastructure that exists today has been funded from:

1. Funds available with Solid Waste Management Department of MCGM,
2. Councillors', MLAs' and MPs' funds,
3. Funds available under Slum Improvement Scheme,
4. MHADA for PSCs (public sanitary centres) in slums,
5. Mumbai Port Trust in their jurisdiction,
6. Funds available for Nirmal Bharat Abhiyan,
7. Mumbai Sewerage Disposal Project (MSDP).

Through this multi-agency approach, some 9,665 public toilet blocks with 77,526 toilet seats exist as per the Survey of Public Toilets in Mumbai, June 2001. But the utilisation is only 25% because of unworkable and most unhygienic conditions of these public toilets. This is because toilet construction has not been given any thought and these are getting constructed haphazardly with the same age-old models. With the result, the technology is wrong; often, proper flushing does not take place and the drainage system gets choked for various reasons. Another point is that while funding of the construction toilet blocks is estimated in the budgets, there is no provision for their maintenance. Assuming that under the conditionality of SSP, people will get involved in the maintenance, MCGM stopped recruiting halalkhors, i.e., scavengers, to clean the toilets. So neither did the SSP become effective, nor did the MCGM take care of the maintenance. Now, day-to-day cleaning, occasional repairs of broken seats, doors, windows, taps, electric bulbs, etc., almost never take place. Water and electricity charges are not paid, so even these facilities are cut off. No wonder the utilisation of this kind of sanitary facility in slums is only 25%. This means almost 7million and not 4million slum residents are forced to go for open defecation and city gets exposed to about 1,800 tonnes of human excreta instead of the 1,000 tonnes mentioned earlier.

There are some slumlords who extract money from the residents for using the public sanitation facility. Often, they are never used as toilets but for other unauthorised, illegal activities. Women, especially, are the worst sufferers, as they cannot go to such unsafe, dirty places; nor can they go in the open during the day.

## **Contribution by Sulabh International**

Some NGOs, like Sulabh International, have done commendable work in providing proper sanitation facility at a nominal cost to slum residents. By now everyone is familiar with the name "Sulabh Shouchalaya". Through the pioneering effort of Dr Bindeshwar Pathak whose movement in sanitation took off in Bihar and liberated scavengers carrying head load of night soil Sulabh brought around revolutionary concept in providing quality sanitation facilities based on 'Pay and Use' concept. The first Sulabh

Shouchalaya was constructed at Dadar TT near the Asiad Bus Stand in 1988 with financial help from HDFC. With this model, the project took off and Sulabh has constructed 309 public sanitary blocks all over Mumbai till date. Out of 309 public toilet blocks, 243 are funded by MCGM while various donors have funded the balance. Sulabh maintains these toilet blocks through charges collected from the users. Of these 309, nearly 200 are in the slum areas while 100 odd are in commercial areas. The charge in commercial areas is Rs2 per person, while slum-dwelling families are issued monthly passes for Rs10 only. This slum subsidy is met through the collection in commercial area at Rs2 per person.

Now, the difference in services is very visible. The toilet blocks have a decent exterior as also well-maintained, clean interiors. The attendant, who is given residential quarter above the toilet block, collects charges and oversees maintenance as well as security. There is a ready provision for minor repairs such as electric bulbs/tube-lights/switches, etc., or for fixing minor plumbing problems. The structure gets attention periodically in terms of painting, major repairs, etc. Now, women users of Sulabh toilet from slums admit that they feel safe to come alone to a Sulabh toilet and the incidence of stomach ailments have almost vanished. Earlier, these women had to control their bowel movements till night fall, as early morning chores made it impossible to go to dirty toilets or open spaces. With improvement in the health of the family, socio-economic changes have followed. Productivity has increased, as also medical expenses have come down, thus improving economic condition of the family.

It is, therefore, clear that a professional effort is needed for sanitation in slums. Thanks to Sudhakar Kini, Chief Architect of Sulabh International, the Sulabh toilet blocks stand out not only for their structures but are also technologically the most suitable toilets for the city's needs. The design of a Sulabh toilet block incorporates maximum use of natural sunlight and air to save on energy and toilet flushing system includes water conservation. Ideally, each toilet block of 10-20 seats should have a biogas plant with water overflow used for garden to do away with drainage system. Since Mumbai has space constraints, it may not always be possible to set up all these facilities. However, efforts should be to implement them, wherever there is scope.

### **Bureaucratic Hurdles & Lack of Will**

The difference between Sulabh's professional approach and conventional approach are clearly visible. As MR Shah puts it "constructing toilets is one thing but maintaining them is an art." This art is totally lacking in conventional system. A Sulabh toilet block of 20 seats may cost higher at Rs60,000 compared to Rs40,000 for a similar block of conventional type. But the quality of the structure and maintenance are important too. Often, funds are not the problem; bureaucratic and procedural hurdles are. Take a recent example of The Lions Club-MCGM-Sulabh Friendship Project undertaken in 2000. The Project spent Rs1.5crore on constructing 27 Sulabh Shouchalayas between Bandra and Dahanu. The organisation could have spent up to Rs5crore but the selected sites were not given timely clearance by the civic authorities leading to lapsed time and, consequently, lapsed budget.

MR Shah, who, after retirement, from MCGM opted to be a link between the agencies and civic authorities, says, "Funds are not a constraint. There are many donors but they have their own target and time frame within which clearances are not given by the authorities." He felt the need for intervention, as donors do not have time to run from pillar to post for various complex formalities. And yet he has himself encountered difficulties in getting the proposals through.

On June 25, 1997, the Maharashtra Government issued a GR for providing public toilets in urban areas for which a HUDCO loan as well as a Government of India subsidy at Rs350 per person were provided for a two-year period. Based on this, Sulabh International in collaboration with Solid Waste Department of the MCGM prepared a project for 767 toilet blocks at a total cost of approximately Rs66crore, of which the subsidy element was Rs14.68crore each from the Central and State Government and the balance Rs36.98crore was a HUDCO loan. Sulabh pursued the matter with the help of MR Shah and yet the project could not take off for three years until 2000 when the Government had provided for only two years. When this GR was brought to the notice of the then Municipal Commissioner of Thane, T Chandrashekar, he immediately acted upon the information and some 65 Sulabh Shuchalayas were constructed in Thane. This is a clear pointer towards lack of dynamism at the MCGM. Besides, there are various political factors and vested interests that are against any constructive solution to the problem. When a conventional public toilet block comes up through any of the above-mentioned funds, the civic staff asks for a "price" for giving the clearances; the contractors build inferior structures calculating the bribes to vested interests as part of their 'project costs'. It is this lobby of politicians, contractors, slumlords and civic staff that is against right solutions, as their channel of making money stops.

### **Critics of Sulabh**

There are about 450 NGOs who undertake Sulabh-like activity in sanitation. Society for Promotion of Area Resource Centre (SPARC) is another NGO which has been crusading for the rights of slum residents and has provided toilet blocks under SSP too. The Magsaysay award winner, Arputham Joaquim, steers this movement and SPARC works among communities motivating them to participate. However, this is a very difficult task and many other NGOs in this field have not been able to go beyond facilitating one or two community groups to have toilet blocks under SSP. In this model, the toilet block is constructed under SSP and is handed over to the community to operate and maintain. Under the Sulabh model, the toilet is constructed under various schemes on MCGM's land without people's participation and is operated and maintained by a person appointed by Sulabh. Since many of the toilet blocks are in commercial areas, the facility generates high income attracting business deals. Reportedly, a toilet attendant 'sells' this business for a consideration of few lakh of rupees. Therefore, the critics allege that Sulabh makes money, while it gets land free and the construction is with government's or donors' money. And it does not motivate communities for participation. Hence, there is tussle between the authorities, politicians, NGOs, contractors, local anti-social elements and the result is the shortfall in facility and, ultimately, open defecation.

## **Citizens Should Demand Right Solutions**

It is now time for the citizens of Mumbai to demand the timely implementation of right solutions. Assuming 50 users per toilet and a block of 20 toilets, there is a need for 4,000 such public toilet blocks for Mumbai's current slums. At Rs12lakh per toilet block of 20 seats, Rs480crore would be required. Even for 4million slum dwellers having some sanitation facility, there is a need to give them proper facility so that the use goes up from the present 25% to 100%. The renovation of existing toilets would cost another Rs200-300crore. If the city's slum population were to increase by 5% in a year an additional 400 sanitary blocks would be required at a cost of Rs 48 crore. And funds are not the constraint, the donors are ready only there is lack of will on the part of the authority to co-operate. According to Kini, Sulabh International have a proposal for Sulabh toilets along the eastern and western highways with multi-agency donors offering Rs1,000crore collectively. But the sites are not getting cleared for various reasons. Citizens should insist that the sites should be given on lease to overcome the problem of free land and the scheme should be thrown open to other NGOs as well.

The citizens need to take active role to push the authorities into taking decisions. They can file public interest litigation (PIL) case against the MCGM, as every citizen has the right to know plans, the right to protect him/herself from environmental degradation and take required actions to improve the situation.

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*The facts presented and opinions expressed in this booklet are those of the author alone.*

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