E-Newsletter

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Need to establish an effective Decentralised Waste Management System to ensure Zero waste sent to Landfills in Mumbai

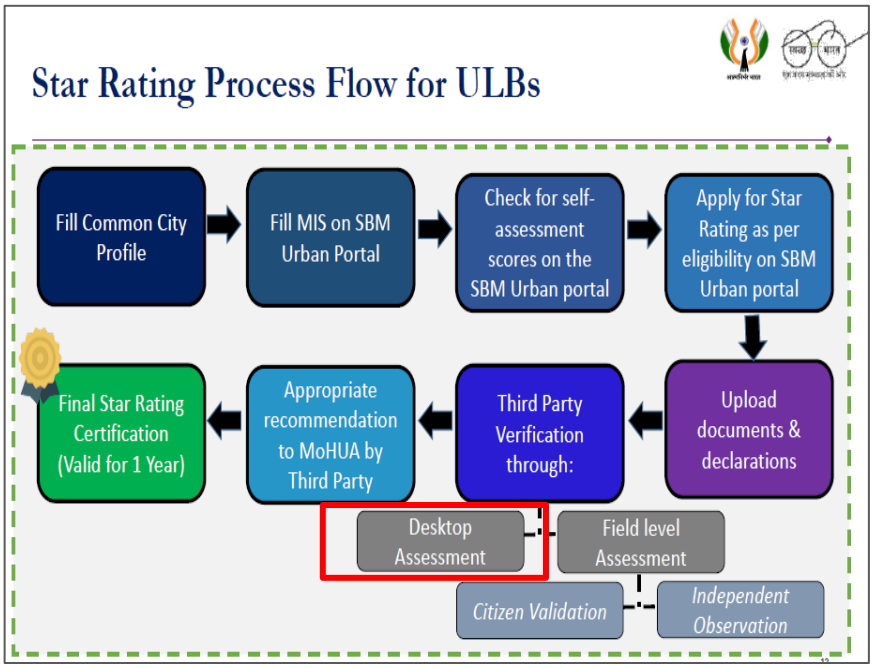
Did you know Solid Waste Management complaints in Mumbai increased by 124% from 2013 to 2022?

Complaints	2013	2022	% Change from 2013 to 2022
School	22	70	218%
Toilet	177	531	200%
Medical Officer Health (MOH)	521	1,384	166%
Estate	249	661	165%
Pollution	117	292	150%
Garden	1,468	3,529	140%
License	5,660	13,439	137%
Pest control	3,495	8,037	130%
Solid Waste Management (SWM)	5,519	12,351	124%
Water Supply	6,075	13,097	116%
Shop and Establishment	347	647	86%
Storm Water Drainage	895	1,550	73%
MCGM Related	431	735	71%
Drainage	12,708	17,121	35%
Buildings	21,125	16,883	-20%
Colony Officer	1,292	981	-24%
Roads	41,469	11,161	-73%
Nuisance due to vagrants	-	1,599	-
Grand Total	**1,01,570**	**1,04,068**	**2%**

Mumbai faces major issues due to rapid climate change such as air pollution, heat waves, and contaminated water bodies due to inefficient sanitation and waste management processes. As citizens' concerns on these issues have risen over the years, understand the rising problems related to services such as Solid Waste Management (SWM) in Mumbai.

A. In 2022, BMC failed the Swachh Bharat Mission (SBM) protocol for 5 Star Rating of Garbage Free Cities

This can be seen as citizens' complaints on SWM increased by 124% from 5,519 in 2013 to 12,351 in 2022. However, the average time taken to resolve these complaints was as high as 28 days in 2022.

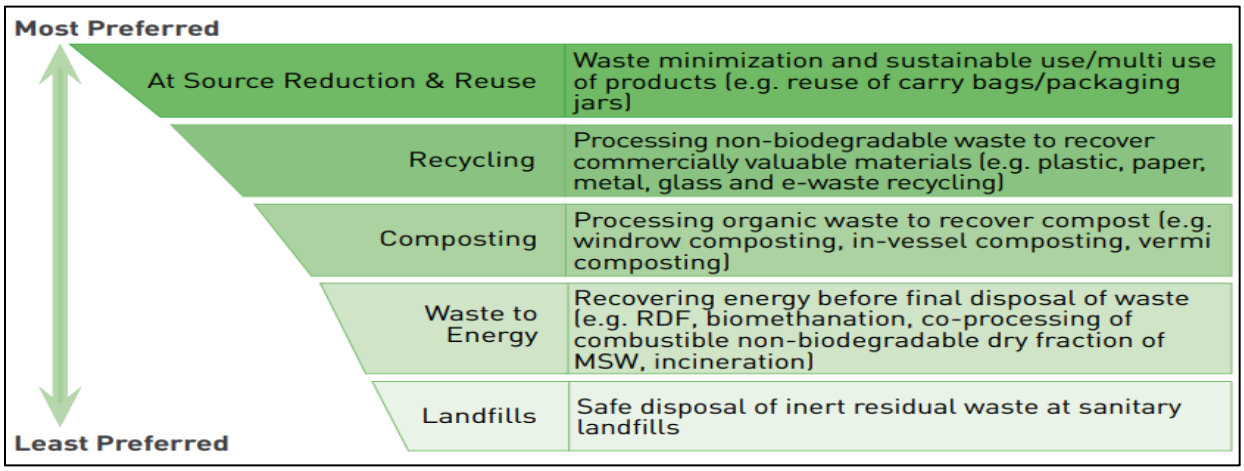


Moreover, BMC has not been able to effectively manage and address these issues. **In March 2022, BMC failed to achieve the SBM's 5 Star Rating for "Garbage Free Cities" at the desktop assessment level.**

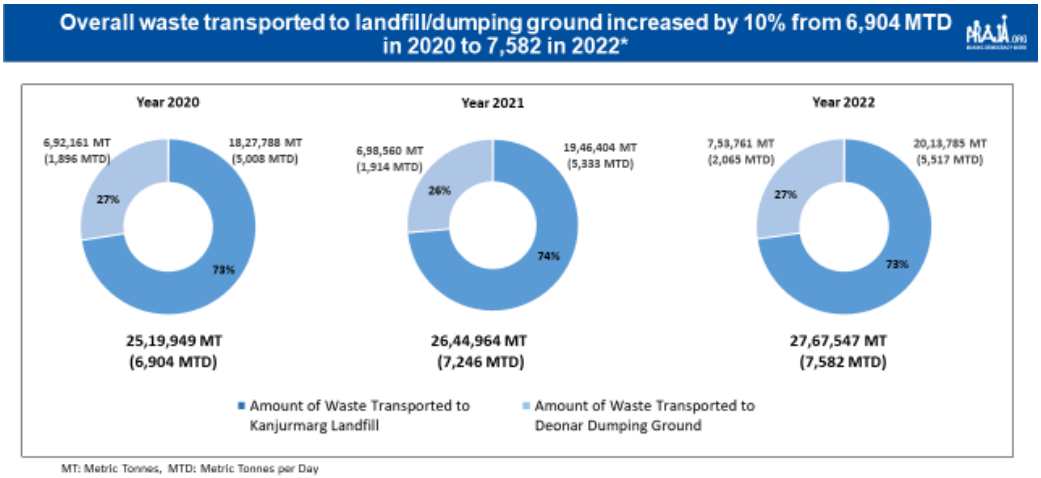
Solid waste management is one of the most important components of the *Swachh Bharat mission*. While the central government issued its **Solid Waste Management Rules (SWM) in 2016** that entrust local authorities with tasks such as making regulations, promoting decentralised composting and bio methanation plants as well as ensuring bulk waste generators manage their waste at source, **the Brihanmumbai Municipal Corporation still follows the Greater Mumbai Cleanliness and Sanitation Bye-Laws of 2006.** These 2016 SWM Rules also provide for fines for violations and set out the other facilities required for effective waste management. In addition, the **local government** is responsible for implementing these actions and ensuring that waste management is effective.

B. Reduction in waste generation at source and recycling are the most preferred waste prevention strategies

The National Institute of Urban Affairs (NIUA) recommends the Integrated Solid Waste Management (ISWM) system to reduce waste generation, process waste at source and reduce waste sent to landfill.



However, BMC's Environment Status Report (ESR) 2021-22 reveals that **73% of 6,300 metric tonnes per day (MTD) of waste collected is wet waste** and 12% (700 MTD) is sent to Deonar dumping ground while 88% (5,500 MTD) to Kanjurmarg landfill as it has a waste-to-energy plant.



Data received through RTI (Right to Information Act) **shows that, in 2022, out of 2,065 MTD waste transported to Deonar**, **58%** (1,191) included **Construction and Demolition waste** (C&D), hence it is possible data on waste collected per day (6,300 MTD) as per ESR 2021-22 is less than the overall waste sent to dumping ground/landfills.

BMC can approximately save Rs. 1,485 crores annually with decentralised SWM process by reducing cost on waste transport and landfill management.

Avg. Kilometer (Km) travelled in one ward to collect and transport waste to landfill	20 km
Cost to transport One Metric Tonne per Km	Rs. 8
Total waste collected per day (in MTD)	6,300 MTD*
Approximate cost of transport of waste sent to landfills	
Total waste collected per day (in MTD)	6,300 MTD
Total Km travelled per day to collect waste from 24 wards to landfill (20 Km x 24 wards)	480
Total cost to collect and transport One MTD waste from 24 wards to landfill (1 MTD x 480 Km x Rs.8)	Rs. 3,840
Total cost to collect and transport 6,300 MTD waste from 24 wards to landfill (6,300 MTD x 480 Km x Rs.8)	Rs. 2,41,92,000
Approx. cost of transport to landfill in a year (x365 days)	Rs. 883 Crores per year

MTD: Metric Tonne per Day

(*) As per Environment Status Report 2021-22

Approximate cost of collection and transportation of waste to dumping ground/landfill

- **Approximate cost for operations and maintenance (O&M) to dispose waste at Kanjurmarg Landfill**

Approximate cost of O&M at Kanjurmarg Landfill	
Cost for O&M of One MTD at Kanjurmarg landfill	Rs. 3,000
Amount of waste received at Kanjurmarg landfill per day	5,500 MTD*
Total amount of waste received in a year (x365)	20,07,500 MT
Total Kanjurmarg landfill O&M cost	Rs. 602 crores per year

MT: Metric Tonne

Disclaimer: This numbers are indicative and does not represent any actual figures.

Decentralised waste management has been a success in BMC's Councillor Ward No. 203 in the F/S Ward. Through the SMPA (Swachh Mumbai Prabodhan Abhiyan) model, total 12 MTD (approx.) of waste generated was processed at community level.

With decentralised waste management processes, BMC can reduce the cost to transport waste to landfills. For emphasis, an approximate calculation of the cost to collect and transport One MTD of waste to the landfill from all 24 wards is Rs. 3,840/day. Hence, **to transport 6,300 MTD of waste, it costs BMC Rs. 2.42 crores/day and annually, this cost is as high as Rs. 883 crores.** Furthermore, the approximate cost of operations and maintenance (O&M) of waste at Kanjurmarg landfill is Rs. 3,000/MTD. Thus, the O&M of 5,500 MTD of waste annually costs Rs. 602 crores. **To reduce these costs, BMC should adopt decentralised SWM, which has been successfully done in Councillor Ward No. 203 of F/S Ward through the SMPA model at the community level.**

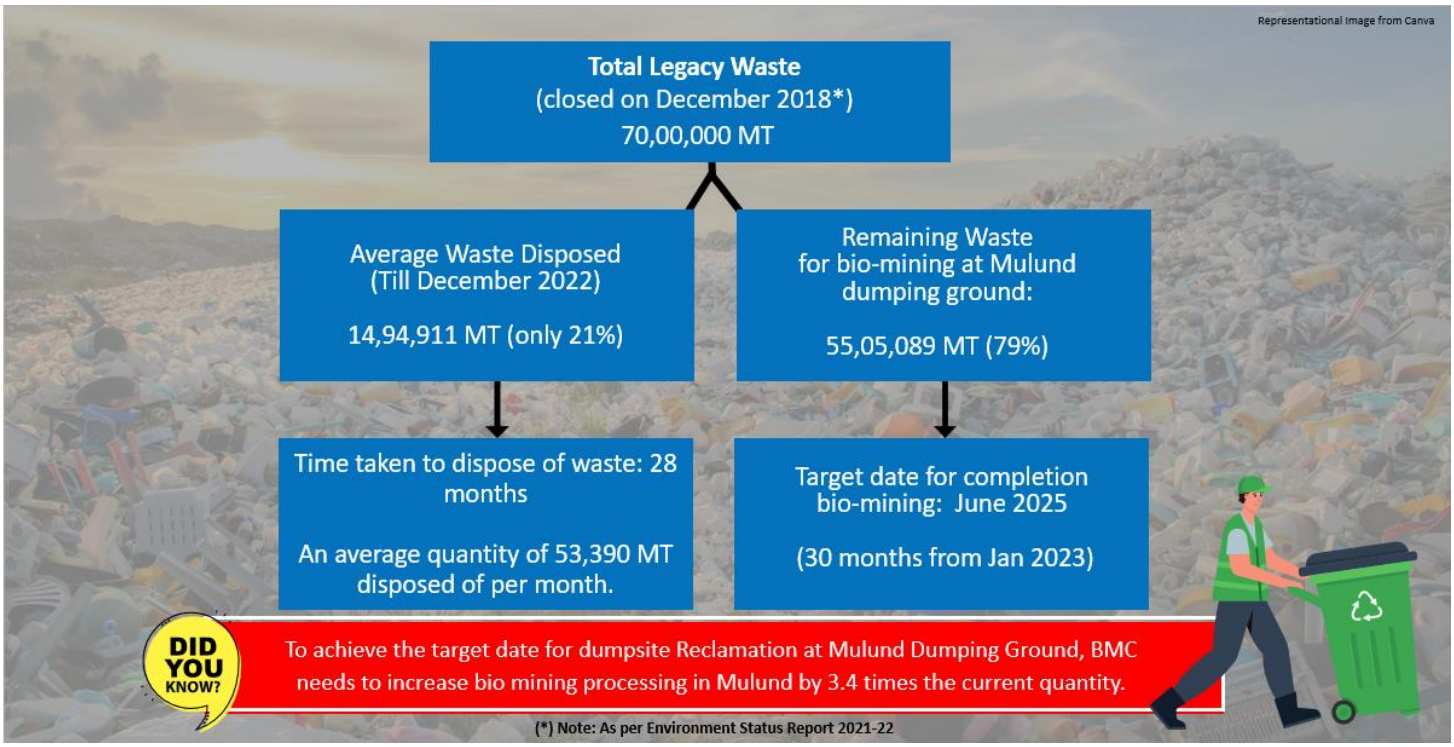
C. In 2022, 50% (1,401) out of 2,825 BWG societies in Mumbai were not processing their wet waste at the source

Effective decentralisation of SWM is the need of the hour to manage and process waste at the source, which is also the focus of SBM. In 2022, an average of 6,385 MTD waste (data received via RTI) was collected by BMC from all 24 wards and the maximum waste collected per day was from wards L (491 MTD), G/N (459 MTD) and K/E (441 MTD). However, the ward-wise per capita waste collection shows that the maximum per capita/day waste collected was from wards A, B and H/W – 0.90 kg, 0.84 kg and 0.76 kg respectively.

Similarly, **bulk waste generator (BWG) societies (societies generating more than 100kg waste per day) are required to process their waste, especially wet waste at source in accordance with the SWM Rules 2016**. However, 50% (1,401) of the **2,825 BWG societies in Mumbai are not processing their wet waste at the source.**

In 2022, an average of 23,31,541 Metric tonnes (MT) of waste was collected from the 24 wards of BMC. Of the 51,505 MT dry waste segregated in BMC's dry waste segregation centers in 2022, **90% was recycled**, while the remaining 10% was rejected and sent to landfill.

D. At the current rate of bio-mining of legacy waste, BMC is too far from achieving the target date to reclaim the Mulund dumping ground land.



E. Best Practices of effective waste management

To reduce the cost of waste transportation and landfill management, BMC should adopt decentralised solid waste management (SWM) practices, taking inspiration from successful implementations in various municipal corporations across India. Here are some notable examples to learn from:

1. **Councillor Ward No. 203 in F/S Ward through the SMPA model:**
- BMC should adopt the decentralised SWM approach implemented in Councillor Ward No. 203 through the SMPA model at the community level.
- Encourage community participation and engagement in waste management practices.

2. **Indore Municipal Corporation:**
- Follow the Indore Municipal Corporation's practice of using separate vehicles for waste collection.
- Implement a GPS tracking system to monitor the movement of waste collection vehicles efficiently.

3. **Vijayawada Municipal Corporation:**
- Learn from the successful implementation of a Radio Frequency Identification (RFID) system with QR codes and smart bins in Vijayawada.
- Install similar systems that can send alerts when the bins reach their full capacity.

4. **Mysuru Municipal Corporation:**
- Take inspiration from the establishment of nine decentralised zero-waste management units in Mysuru.
- Explore the possibility of selling compost to farmers and utilising a portion for horticultural purposes.

5. **Panaji City Municipal Corporation:**
- Consider adopting the 16-lane segregation model implemented by the Panaji City Municipal Corporation.
- Promote efficient waste segregation practises to improve recycling and reduce contamination.

6. **Bhopal Municipal Corporation:**
- Learn from the Bhopal Municipal Corporation's implementation of centralised windrow composting facilities, biogas plants, and bulk waste management practices.
- Explore the feasibility of implementing similar facilities to manage organic waste effectively.

By incorporating these proven best practices, BMC can enhance waste management strategies, optimise efficiency, and minimise overall waste generation.

F. Recommendations:

1. Revision of SWM Bye-laws: BMC should revise its SWM Bye-laws of 2006 in accordance with the 2016 SWM Rules, incorporating sustainable approaches and technological advancements. Hence there is a need for an elected council within BMC, dedicated to SWM, ensuring community representation and better decision-making.

2. Decentralised Waste Management: Expand the successful SWM project in the F/S ward to all councillor wards, aiming for zero waste sent to landfills. Formulate better schemes for decentralised waste management in every ward, establishing local waste processing facilities and promoting waste-to-resource concepts.

3. Incentivising Household Waste Reduction: Implement incentives and awareness programmes to encourage households to reduce waste generation and manage waste at the source.

4. Strengthening Institutional Capacity: Focus on strengthening the SWM department with adequate staffing and regular training programmes for staff members.

5. Robust Monitoring System including MCAP Indicators: Establish a robust monitoring system to track performance indicators, waste management metrics, and compliance with regulations. This monitoring system should also include tracking the progress of BMC's Mumbai Climate Action Plan (MCAP) 2022, which includes targeted interventions for improving efficiency in SWM. By monitoring the implementation of MCAP and its associated indicators, BMC can ensure sustainable service deliveries and drive improvements in the city's climate conditions.

To read more about the status of Civic Issues in Mumbai
Scan the QR Code or Click on the link below
Link: The Report on Status of Civic Issues in Mumbai 2023

We would like to know your views and feedbacks based on the above information shared. Feel free to reach us at info@praja.org

Kind Regards,

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