



# Report on The Status of Civic Issues in Mumbai

With a Focus on



Solid Waste  
Management



Air Quality



Sewerage



Urban Green  
Cover



Centralised Complaint  
Registration System



May 2023

Representational Images: Canva and BMC website



Citizens complaints registered on the Centralised Complaints Registration System (CCRS) show an **increasing trend in the number of complaints related to solid waste management, drainage, and pollution from 2013 to 2022.**



To understand the rising concerns, **this report highlights the current status of solid waste management (SWM), sewerage treatment processes, air and water quality in Mumbai.**



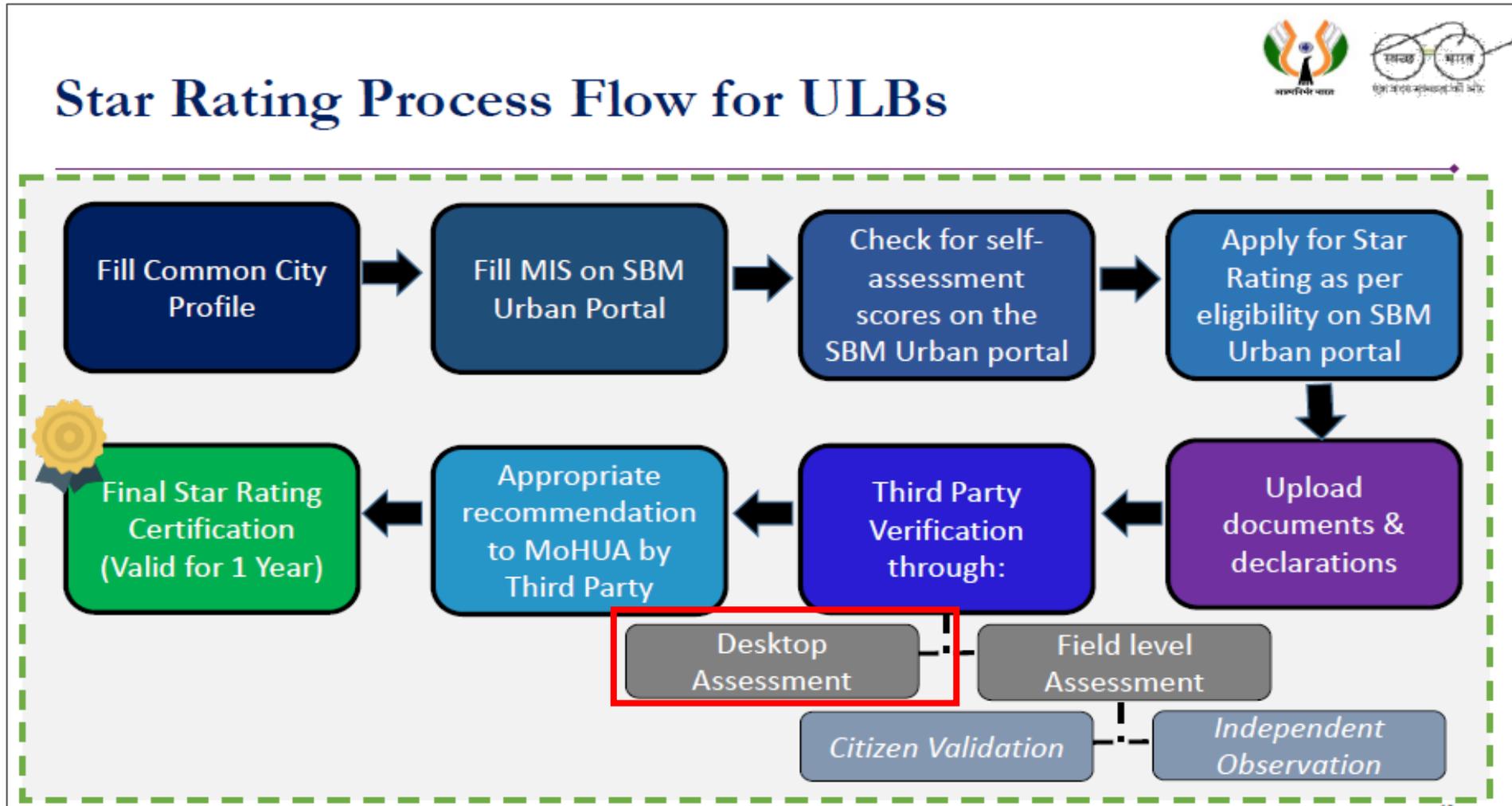
The report takes reference from the guidelines mentioned in the SWM Rules 2016 by the central government, Mumbai's Climate Action Plan (MCAP) 2022, Brihanmumbai Municipal Corporation's (BMC) Vision 2030, etc. and correlates with the information collected via the **RTI (Right to Information Act, 2005), BMC's Environment Status Report (ESR), BMC's website, etc.**

# Air Pollution and SWM complaints increased by 237% and 124% from 2013 to 2022 respectively

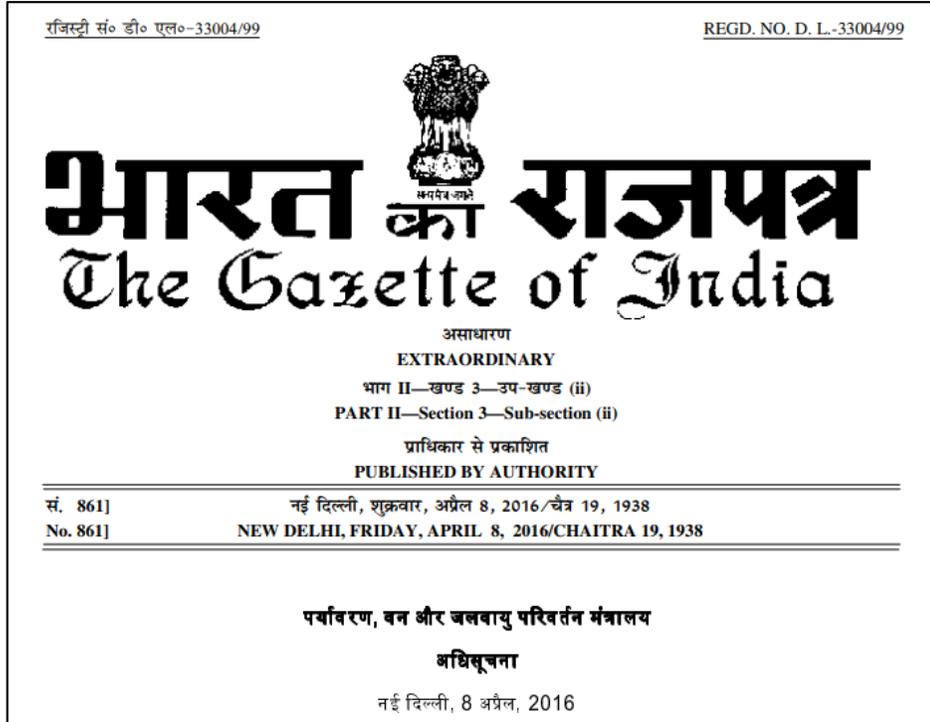
- Citizen complaints registered on **drainage increased by 35% from 12,708 in 2013 to 17,121 in 2022** and total pollution complaints increased by 150% from 117 in 2013 to 292 in 2022.
- Moreover, **air pollution complaints increased by 237% from 65 complaints in 2013 to 219 complaints in 2022.**
- The **average time taken to resolve** these complaints i.e. SWM, drainage and pollution was as high as **31 days in 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	-
<b>Grand Total</b>	<b>1,01,570</b>	<b>1,04,068</b>	<b>2%</b>

(\* ) **Note:** Pollution complaints includes the categories of air pollution, pollution due to chemical effluents, Nuisance due to Masala Mills/ Flour Mills



In March 2022, BMC applied for the 5-star Garbage Free City rating but failed at the desktop assessment level, which prevented it from proceeding to the field-level assessment, resulting in its failure to achieve the 5-star rating.



**Section 15 of the SWM Rules' (2016)** published by the central government, mentions **duties of the local authority and waste generators** which include;

- ☛ **Frame Bye-laws** within one year from the date of notification of the rule.
- ☛ **Promote setting up of decentralised compost or bio-methanation plant** at suitable markets, etc.
- ☛ **Bulk Waste Generators (BWG)\*** are responsible for managing their own **waste.**
- ☛ **Efforts shall be made to recycle/reuse rejects** to achieve the desired objective of **zero waste going to landfill.**

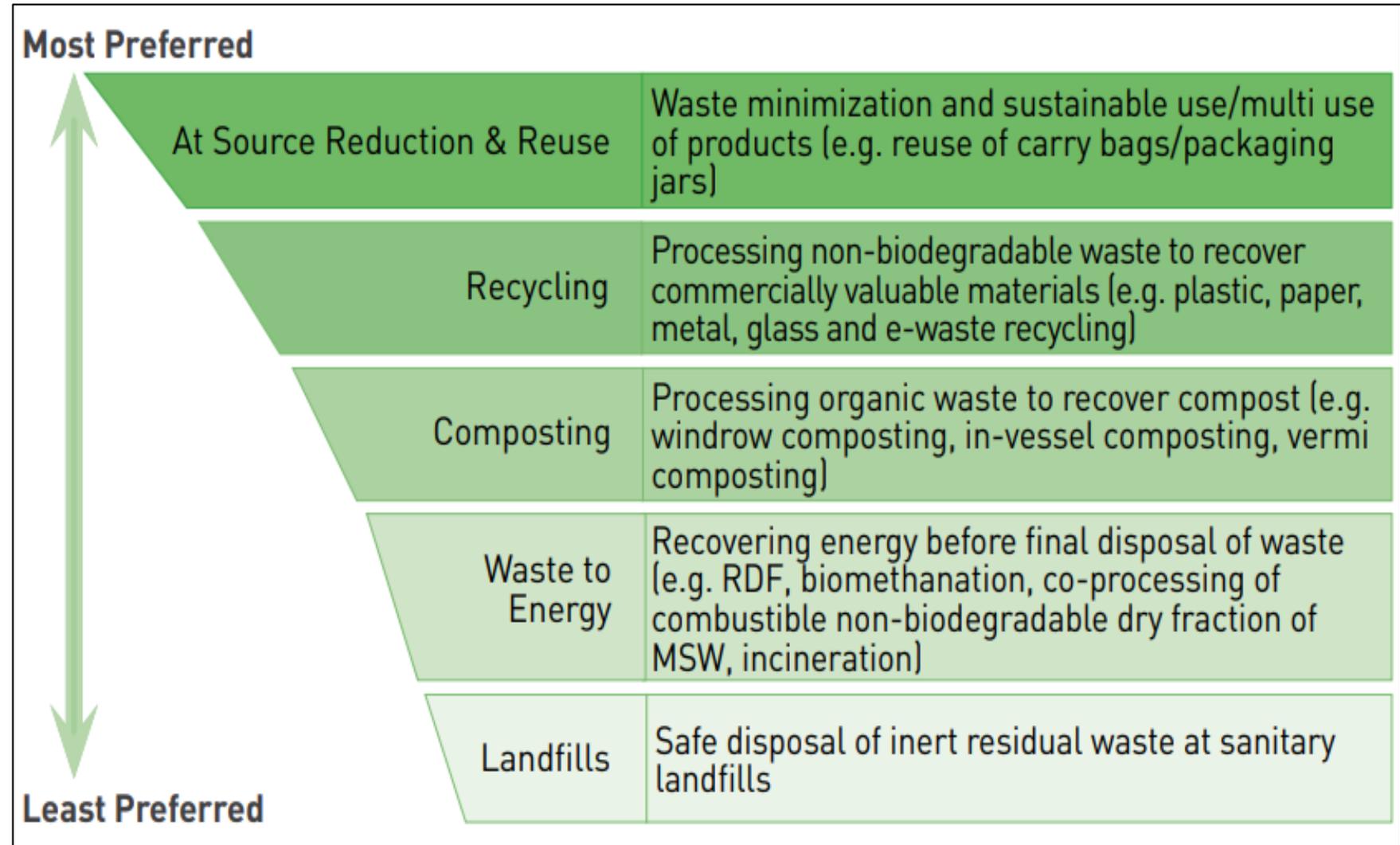
**Note:** BWG – As per BMC Environment status report bulk waste generators include residential, commercial, market premises etc. generating more than 100kg per day of waste.

[Image Source: Solid Waste Management Rules, 2016](#)

**Cities like Pune (2017), Indore (2017) and Mangaluru (2019) revised their SWM Bye-laws to incorporate the duties of the local government, however, BMC still follows the bye-laws published in 2006.**

# Reduction in waste generation at source and recycling are the most preferred waste prevention strategies suggested by NIUA\*

As per NIUA\* and CPHEEO\*\*, **Integrated solid waste management (ISWM) is a strategic approach to sustainable management of solid waste.** An effective ISWM system considers how to **prevent, recycle and manage solid waste in ways that most effectively** protect human health and the environment.



[Image Source: NIUA SWM Manual](#)

(\*) NIUA: National Institute of Urban Affairs

(\*\*) CPHEEO: Central Public Health and Environmental Engineering Organisation

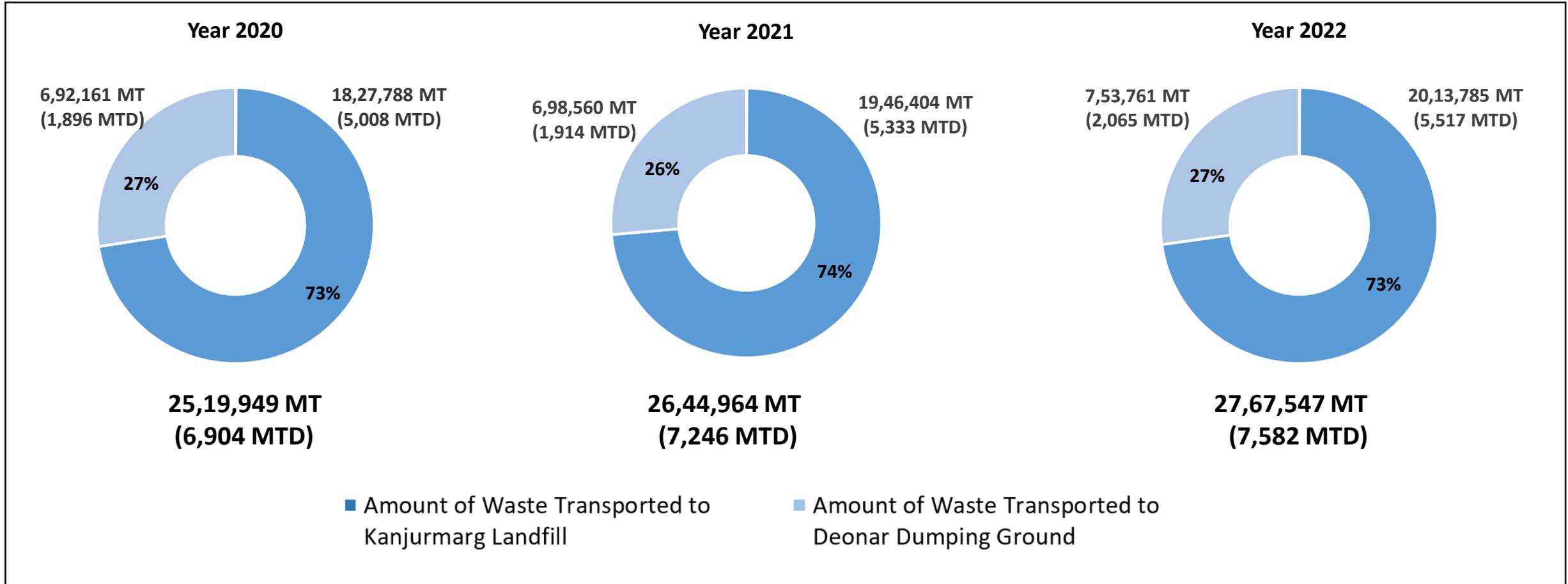
# BMC's Environment Status Report (ESR) shows the composition of waste collected in Mumbai has been constant from 2017-18 to 2021-22

Year	2017-18	2018-19	2019-20	2020-21	2021-22
<b>Solid Waste Collected</b>					
Waste Collected (MTD)	7,350	7,450	6,650	5,500	6,300
% change year on year	-22%	1%	-11%	-17%	15%
<b>Composition of Waste collected</b>					
Food Waste	72.6%	72.6%	72.6%	72.6%	72.6%
Wood, Cloth	3.51%	3.51%	3.51%	3.51%	3.51%
Sand, Stone, and Fine Earth	17.37%	17.37%	17.37%	17.37%	17.37%
Plastic	3.24%	3.24%	3.24%	3.24%	3.24%
Paper and other Recyclable Metals	3.28%	3.28%	3.28%	3.28%	3.28%

- As per BMC's Environment Status Report, municipal solid waste (MSW) collected reduced from 7,350 Metric Tonnes per Day (MTD) from 2017-18 to 6,300 MTD in 2021-22.
- In 2021-22, 73% of 6,300 MTD consists of wet (food) waste, which has remained constant since 2017-18.
- ESR 2021-22 states, Deonar dumping ground receives approximately 12% (700 MTD) and Kanjurmarg landfill receives 88% (5,500 MTD) of waste on a daily basis.

Source: [BMC Environment Status Report](#); MTD: Metric Tonnes per Day

# Overall waste transported to landfill/dumping ground increased by 10% from 6,904 MTD in 2020 to 7,582 in 2022\*



MT: Metric Tonnes, MTD: Metric Tonnes per Day

- In 2022, out of 2,065 MTD waste transported to Deonar, **58% includes Construction and Demolition waste (C&D - Debris)**, hence the data on total waste collected per day as per ESR 2021-22 is less than the overall waste sent to dumping grounds and landfills.

(\* Information received through RTI)

# Approximately, BMC can 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*
<b>Approximate cost of transport of waste sent to landfills</b>	
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
<b>Approx. cost of transport to landfill in a year ( x365 days)</b>	<b>Rs. 883 Crores per year</b>

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
<b>Total Kanjurmarg landfill O&amp;M cost</b>	<b>Rs. 602 crores per year</b>

MT: Metric Tonne

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

# In 2022, maximum per capita per day waste collected was from wards A, B and H/W – 0.90 kg, 0.84 kg and 0.76 kg respectively.

- The SWM Rules 2016 states the need to **minimise the overall generation of waste, maximum reuse of waste and practice waste processing at source** to reduce waste sent to landfills
- However, the highest per capita waste per day collected was from wards A, B and H/W.
- While it is the least in wards N, S and R/N - 0.28 kg, 0.34 kg, 0.36 kg respectively.

## ➤ Top three wards with lowest per capita waste collected per day in 2022

Ward	Population 2022	% Slum Population 2011	Total Weight (MTD)	Per Capita waste collected (in Kg)
N	6,49,165	62%	182	0.28
S	7,75,204	72%	263	0.34
R/N	4,49,591	51%	163	0.36

## ➤ Top three wards with highest per capita waste collected per day in 2022

Ward	Population 2022	% Slum Population 2011	Total Weight (MTD)	Per Capita waste collected (in Kg)
A	1,92,830	34%	174	0.90
B	1,32,667	11%	112	0.84
H/W	3,20,575	39%	243	0.76

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

- The BWG Rules 2016, states **bulk waste generators (BWG)** should process their waste, especially wet waste at source.
- **Wards P/N, R/N, and K/W had the least proportion of BWG societies processing their waste at source.**
- While, **wards M/E, followed by N Ward and F/N, had the highest proportion of BWG societies processing their wet waste at source.**

## ➤ Top three wards with highest BWG societies processing waste in 2022

Ward	Population 2022	% Slum Population 2011	Total No. of BWG Societies	Number of Societies Processing Waste	Waste Generated (MTD)	% BWG Societies Processing Waste
M/E	8,41,842	30%	32	32	20.4	100%
N	6,49,165	62%	158	153	30.5	97%
F/N	5,51,383	58%	28	26	5.8	93%

## ➤ Top three wards with lowest BWG societies processing waste in 2022

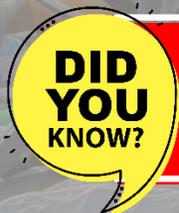
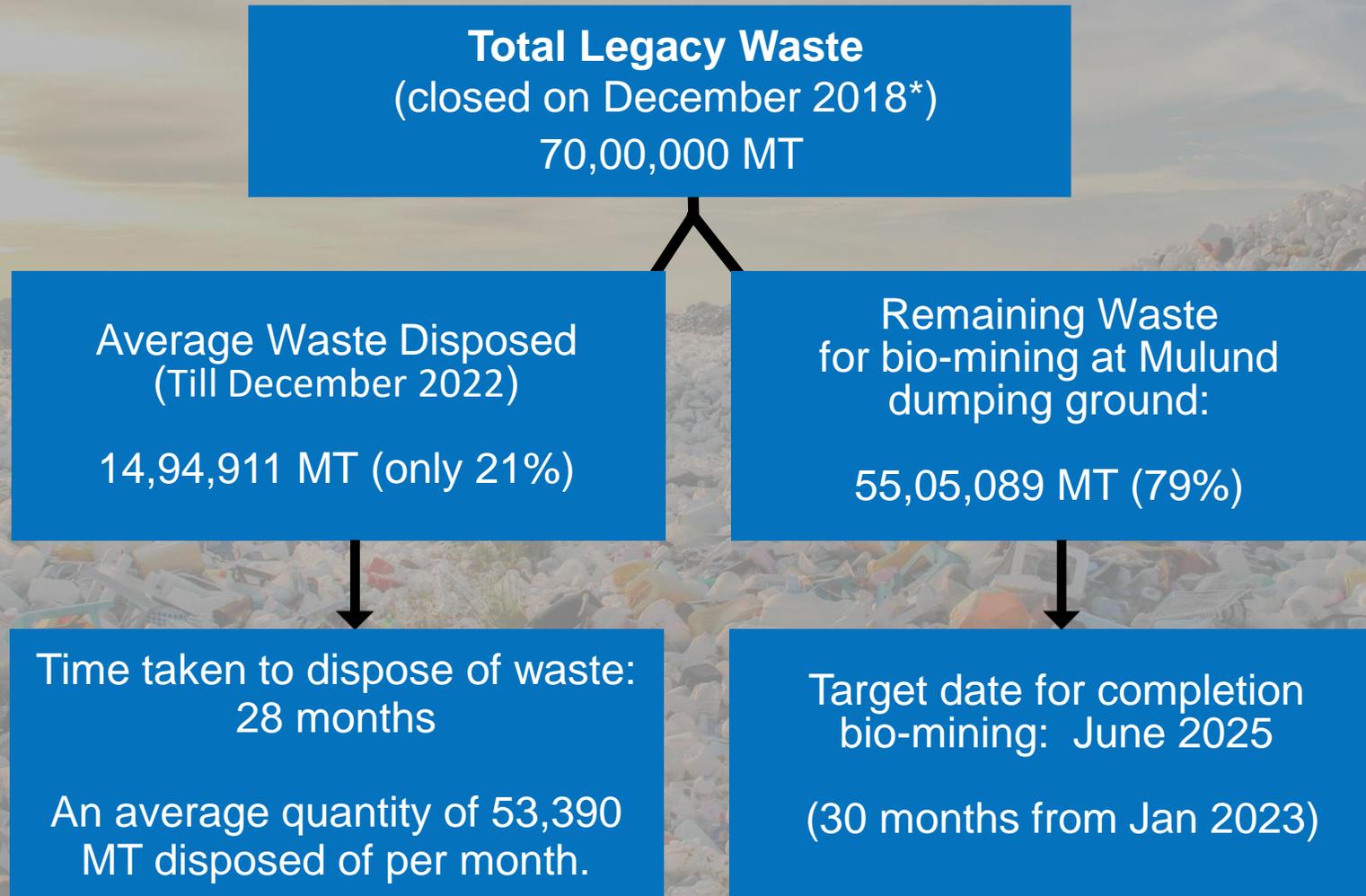
Ward	Population 2022	% Slum Population 2011	Total No. of BWG Societies	Number of Societies Processing Waste	Waste Generated (MTD)	% BWG Societies Processing Waste
P/N	9,81,134	54%	304	50	43.7	16%
R/N	4,49,591	51%	67	12	8.5	18%
K/W	7,80,316	15%	365	95	37	26%

MTD: Metric Tonnes per Day

BWG: As per BMC Environment status report bulk waste generators include residential, commercial, market premises etc. generating more than 100kg per day of waste.

# 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.

Representational Image from Canva



To achieve the target date for dumpsite Reclamation at Mulund Dumping Ground, BMC needs to increase bio mining processing in Mulund by 3.4 times the current quantity.

(\*) Note: As per Environment Status Report 2021-22

# In 2022, Mumbai experienced the worst average AQI\* in the last 5 years from 2018 to 2022

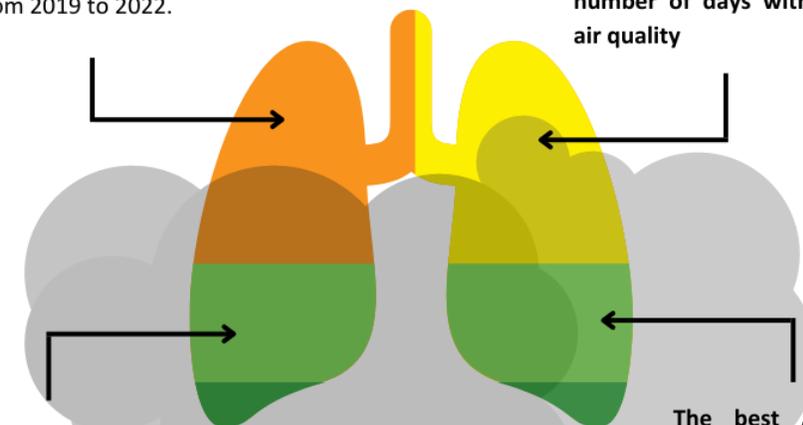
## Mumbai's average month-wise AQI from January 2018 to March 2023



2018			2019			2020		
Jan	Feb	Mar	Jan	Feb	Mar	Jan	Feb	Mar
176	147	127	171	150	119	163	156	100
Apr	May	Jun	Apr	May	Jun	Apr	May	Jun
88	80	72	90	85	68	69	55	40
Jul	Aug	Sept	Jul	Aug	Sept	Jul	Aug	Sept
65	69	81	53	56	45	40	37	59
Oct	Nov	Dec	Oct	Nov	Dec	Oct	Nov	Dec
115	137	151	85	132	179	95	144	164
2021			2022			2023		
Jan	Feb	Mar	Jan	Feb	Mar	Jan	Feb	Mar
214	160	149	175	155	163	205	194	146
Apr	May	Jun	Apr	May	Jun			
100	74	61	106	120	62			
Jul	Aug	Sept	Jul	Aug	Sept			
59	56	56	63	61	61			
Oct	Nov	Dec	Oct	Nov	Dec			
98	148	176	101	183	210			

The number of complaints related to air pollution in CCRS increased by 30% from 2019 to 2022.

The K/E, L, M/E, P/N, and S wards have the highest number of complaints related to air pollution. Additionally, the Chakala, Deonar, Kurla, Mazgaon, and Vile Parle AQI stations have recorded the highest number of days with poor air quality



The number of AQI monitoring stations has increased by 122% from 2019 to 2022, with the number of stations increasing from 9 in 2019 to 20 in 2022

Mumbai

The best Average Monthly AQI (Air Quality Index) was 61 in August and September 2022. This suggests that air quality during those months was relatively good.

\*AQI: Air Quality Index

- The Mumbai Climate Action Plan (MCAP) 2022 is a comprehensive plan **published by BMC and Environment and Climate Change Ministry of Maharashtra State Government.**
- Apart from the city and state government **various stakeholders, including experts, civil society organisations, and citizens contributed to the MCAP.**
- The objectives and goals featured in the **MCAP align with the Sustainable Development Goals (SDG's) and the Paris Climate Accords**, which aim to limit global warming.

Indicators*	Target Timeline	Status as of 2022
<p><b>Promote decentralised composting</b> through citizen participation, biogas plants, etc.</p>	<p>2024</p>	<ul style="list-style-type: none"> <li>• <b>Only 50% BWG societies processed wet waste</b> on site.</li> <li>• <b>Only D ward has a biogas plant.</b></li> <li>• Lack of updated information on waste processed by community agencies on BMC website.</li> </ul>
<p><b>Levy on non-compliance of waste segregation</b> at households</p>	<p>2023</p>	<ul style="list-style-type: none"> <li>• For effective enforcement, <b>BMC Bye-laws 2006 need to be revised as per SWM and BWG Rules 2016.</b></li> </ul>
<p>Establish new centralised waste processing units to <b>reduce dependence on landfills and waste-to-energy plants</b></p>	<p>2030/2032</p>	<ul style="list-style-type: none"> <li>• Currently, BMC has <b>47 dry waste segregation centers</b>, while no available information on other waste processing units.</li> <li>• Waste-to-energy plant established at Kanjurmarg and D ward.</li> </ul>
<p><b>Divert daily waste dumped at the Deonar</b> dumpsite to the Kanjurmarg</p>	<p>2025</p>	<ul style="list-style-type: none"> <li>• <b>Waste transported to Deonar increased by 9%</b> from 2020 to 2022.</li> </ul>

(\*) Prescribed in MCAP (Mumbai Climate Action Plan)

Indicators*	Target Timeline	Status as of 2022
<b>Restoration of rivers and water bodies to reduce pollution.</b>  <i>*Biochemical Oxygen Demand (BOD) norm: less than 3mg/lit</i>  <i>Faecal Coliform norm** : less than 2500 MPN/100ml</i>	2022-2030	<b>Mithi river is heavily polluted with faecal coliform due to untreated sewerage and waste disposal beyond the prescribed limit. (17,000MPN/100ml.)**</b>
		<b>BOD levels recorded in all the major beach outlets are much higher than the prescribed CPCB norm for beaches of less than 3mg/lit.</b>
Introduce nature-based sewage treatment solutions  <i>(Prescribed limit is 20mg/lit. by CPCB and 10 mg/lit. by MPCB).</i>	2022-2030	In 2022, the <b>BOD outlet quality of Versova (44.3mg/lit.), Ghatkopar (37.4mg/lit.) and Bhandup (34.4mg/lit.) STP's did not meet the prescribed limit as per the CPCB and MPCB norm.</b> There is no available information of nature-based sewerage treatment methods used.

(\*) Prescribed in MCAP (Mumbai Climate Action Plan)

(\*\*) Faecal Coliform is bacteria found in the faeces of warm-blooded animals and humans



[The National Green Tribunal \(NGT\) has imposed a fine of Rs 29.75 crore on the BMC for releasing untreated effluents into water bodies.](#)

The city has seven sewage treatment plants (STPs), but they are all around 17 years old and can treat 1,500 Million Litres per day (MLD) of the 2,200-2,400 MLD of sewage produced daily.

[Note: Mumbai: BMC fined Rs 34 cr for letting untreated sewage into the sea \(indiatimes.com\)](#)

**Note:**

STP : Sewerage Treatment Plant

CPCB : Central Pollution Control Board

MPCB: Maharashtra Pollution Control Board

Air Quality		
Indicators*	Target Timeline	Status as of 2022
Strengthen <b>timely monitoring</b> and functioning of <b>Air Quality</b> Stations.	2022 and continue annually	In the year 2022, on <b>average, 24% of the daily data was not available</b> or could not be mapped by AQI stations.
<b>Identify the local causes of air pollution</b> and their spatial concentration within a ward.	2022 and continue annually	<b>Local issues can be identified by the AQI stations that map pollution</b> in specific areas. Similarly air pollution complaints can also be mapped ward wise.
<b>Increase the number of the AQI (Air Quality Index) monitoring stations</b>	2022- 2027	Number of <b>AQI monitoring stations has increased by 122%</b> from 2019 to 2022.

Urban Green Cover		
Indicators*	Target Timeline	Status as of 2022**
<b>Increase green cover by 30-40%</b> of the city surface area	2023	Number of <b>gardens increased by 26%</b> and <b>tree plantations increased by 220%</b> in Mumbai from 2017-18 to 2021-22.
<b>Update tree census</b> and its parameters	2022	<b>Need to update tree census</b> as the number of trees in Mumbai was constant from 2017-18 to 2021-22.

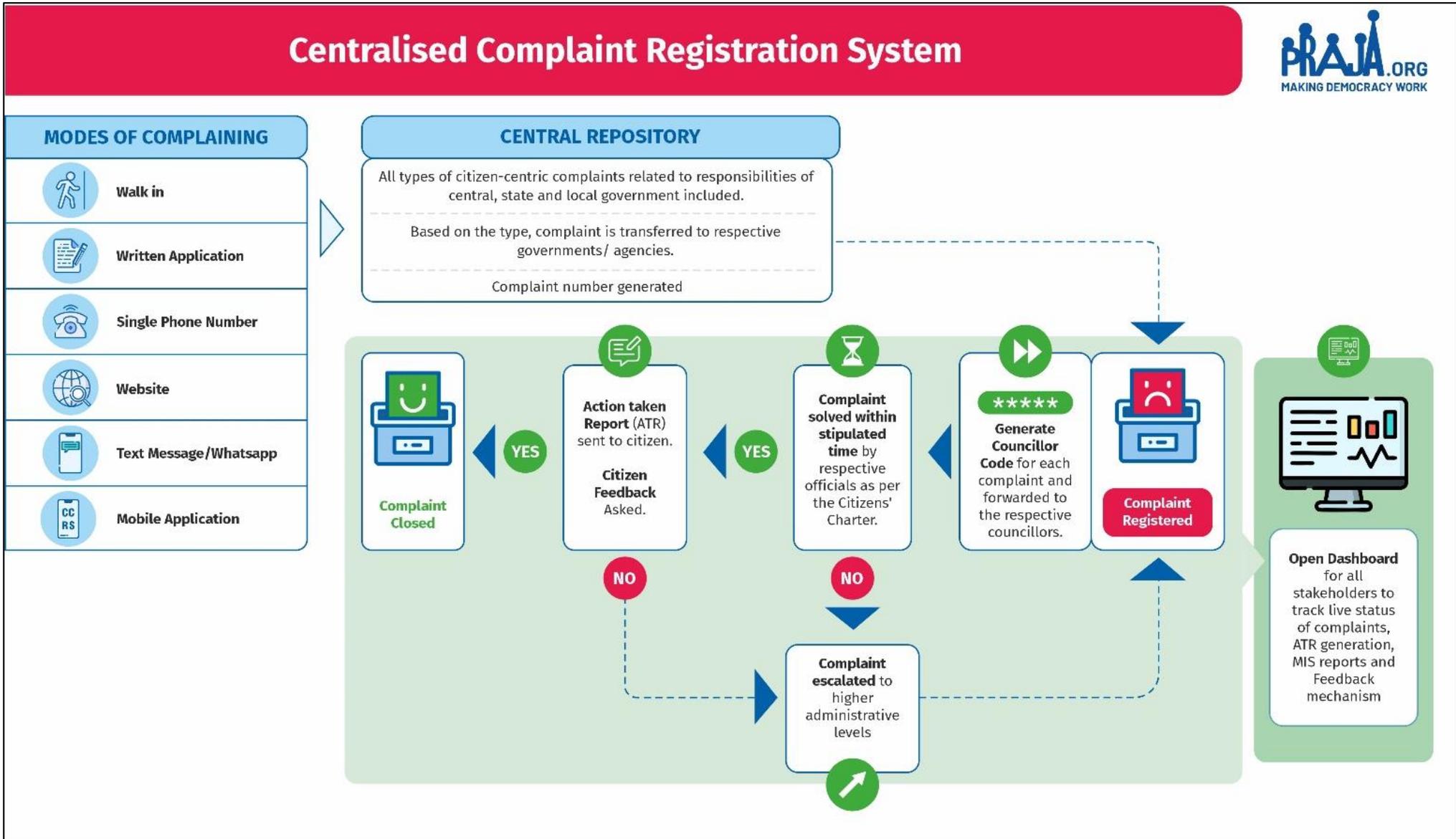
(\*) Prescribed in MCAP (Climate Action Plan for Mumbai)

(\*\*) As per Environment Status Report 2021-22



- ✓ **Need to revise BMC SWM Bye-laws of 2006** in accordance with 2016 SWM Rules for effective waste management systems for which BMC needs an elected council to prioritise, deliberate, and pass new SWM Bye-Laws.
- ✓ **Open data dashboard and a robust monitoring system** for effective and targeted interventions as mentioned in the MCAP and National guidelines.
- ✓ **Need for an efficient decentralised waste management system** to ensure Zero Waste is sent to Landfills.
- ✓ **Efficiency in Sewerage Treatment** as well as **restoration of Mumbai's water bodies.**
- ✓ **Efficiency in AQI Monitoring stations** to identify the local causes of air pollution and provide timely solutions for Mumbai's citizens.

## ✓ Strengthen Mumbai's citizen grievance system



# Thank You



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