

4.5 Waste Management

Waste management indicators have been revised to align with Swachh Survekshan 2020. This revision is based on the experience of CSCAF assessment cycle I and intend to avoid repetition of data collected across various frameworks initiated by MoHUA. The 6 indicators under CSCAF have been mapped with the relevant 12 service level indicators of Swachh Survekshan. Cities will be assessed based on their Swachh Survekshan score

for the identified service level indicators. While the total Swachh Survekshan score of the identified 12 service level indicators is 715 for one quarter, the average scores of each of these 12 mapped indicators in the quarters assessed under the Swachh Survekshan 2020 will be normalized to a score of 600 for the waste management theme under CSCAF.

Mapping of indicators with score between CSCAF 2.0 and Swachh Survekshan

CSCAF 2.0 Waste Management	Swachh Survekshan 2020 Service Level Indicators	Swachh Survekshan Total marks of Mapped indicators	CSCAF 2.0 Score
Indicator 1	5 Service Level Indicators	215	140
Indicator 2	2 Service Level Indicators	135	100
Indicator 3	1 Service Level Indicator	100	100
Indicator 4	1 Service Level Indicator	100	100
Indicator 5	2 Service Level Indicators	105	100
Indicator 6	1 Service Level Indicator	60	60
Total score		715	600



Indicator 1: Waste minimization initiatives undertaken by the City

Rationale: The relationship between solid waste and Greenhouse Gases (GHG) emission is well established. GHGs can be avoided through scientific management of waste. The first principle of the Integrated waste management hierarchy is reduction of waste at source. On the contrary, "increase in waste generation with urbanisation" is an accepted phenomenon and in case of urbanizing cities with increasing economic-ability and liveability aspects, this increase is expected to be more as compared to the other urban centres of the country. Therefore, it is important for cities to prioritise certain actions for waste reduction and accordingly plan their future waste management operations and infrastructure requirements. The intent of this indicator is to encourage cities to take actions in order to manage problems associated with increased waste generation. As generation and consumption patterns of waste vary across cities, all cities are encouraged to assess their generation/consumption patterns and characteristics

and evolve city specific actions to reduce increasing loads to the existing SWM infrastructure.

Description: This indicator highlights the interventions made to minimize waste generation per-capita through various methods and incentives to reduce the waste generation at source. Aligning to the Swachh Survekshan the indicator focuses on capturing the measures adopted in implementing Plastic Waste Management Rules 2016, initiatives taken to reduce dry/wet waste, treatment of domestic hazard waste, on-site wet waste processing by non-bulk waste generators, and measured taken by bulk waste generators to treat dry and process wet waste. This will include the efforts made by the citizens on one hand in reducing generation of waste at source and efforts by the Municipal Authorities in promoting decentralized & centralized processing of waste and setting up MRF facilities for salvaging recyclable & combustible waste. All these efforts will ultimately result in less quantity of waste going to landfill.

Performance evaluation

Table 4.23: Waste minimization initiatives undertaken by the City

Swachh Survekshan Indicator	Title	Swachh Survekshan Marks
1.6	Ban on the use, sale and storage of non-bio degradable plastic bags/ plastic products less than 50 microns, in compliance with Plastic Waste Management Rules 2016	30
1.7	3R Principles: Whether initiatives taken in 2019 still working or new initiative taken to reduce generation of Dry/Wet Waste? If yes, share details	50
2.5	Percentage of total domestic hazardous waste (mensural waste and baby/adult diapers and others*) collected (either collected separately at source or received from MRF Centre) is treated, either by ULB or through third party managing bio medical waste. Hazardous waste from Hospitals, Nursing homes/clinics/Labs etc. not considered	60
2.10	On-site wet waste processing by non-bulk waste generators	30
2.11	Bulk Waste Generators (i) doing onsite processing of wet waste generated, including kitchen and garden waste or organic waste or getting wet waste collected and processed by private parties authorized by ULB. (ii) Handing over segregated dry waste to authorized waste pickers or waste collectors.	45
Overall Swachh Survekshan Marks		215
CSCAF score		140



Indicator 2: Extent of dry waste recovered & recycled

Rationale: Reuse and recycle are the next levels of waste management hierarchy after reduce, cumulatively known as 3R's. This addresses the GHGs mitigation aspects due to resource efficiency. Waste recovery and recycling systems are yet to be 100% formalized by Cities and mostly informal sector takes care of the resource recovery for SWM value chain and its recycling operations. The intend of the indicator is to encourage cities to set up Material Recovery Facility (MRF) with provision for sorting recyclables and facility

for producing SCF/ RDF are available and operational in cities as per SWM Rules, 2016.

Description: The indicator assesses the efficiency of city's waste management systems based on the extent of recyclables recovered from the city's total dry waste and further processed by the authorized recycling units. Aligning to the Swach Survekshan, the focus is on assessing the capacity of dry waste processing facilities and the quantity of dry waste processed MRF, RDF or Waste To Energy plants etc.

Performance evaluation

Table 4.24: Extent of dry waste recovered and recycled

Swach Survekshan Indicator	Title	Swach Survekshan Marks
2.3	Whether capacity of dry waste processing facility /facilities in the city is matching with the total dry waste collected in the city ?	60
2.4	Dry waste being processed out of total dry waste collected (excluding domestic hazardous waste) through MRF, RDF or Waste To Energy plants etc.	75
Overall Swach Survekshan Marks		135
CSCAF score		100



Indicator 3: Construction & Demolition (C&D) waste management

Rationale: The Construction and Demolition (C&D) waste is a major component of city waste and to reduce the pressure on the exploitation

of natural resources, cities need to focus on finding greener ways to produce concrete, encouraging the reuse of recycled materials to replace virgin materials. The Greenhouse Gases (GHG) mitigation increases with an improved Construction and Demolition (C&D) Waste recycling and utilization is also captured here. The

indicator intends that C&D Waste Management facilities are available and operational in cities as per C&D Waste Management Rules 2016.

Description: This indicator assesses the extent of decentralized management of C&D waste generated and the extent of its utilization. Aligning to the Swachh Survekshan the focus is on capturing the mechanism in place to collect and process/ reuse C&D waste.

Performance evaluation

Table 4.25: Construction & Demolition (C&D) waste management

Swachh Survekshan Indicator	Title	Swachh Survekshan Marks
2.6	Any mechanism in place to collect and process/reuse Construction & Demolition (C&D) waste as per C&D Waste Management Rule, 2016?	100
Overall Swachh Survekshan Marks		100
CSCAF Score		100



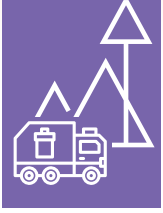
Indicator 4: Extent of Wet Waste Processed

Rationale: The contribution of wet waste toward increasing GHG emissions is well established. Cities need to manage wet waste through adequate processing facilities and by following scientifically operated systems in order to avoid GHG emissions resulting from waste processing in the city as per Solid Waste Management Rules, 2016

Description: Aligning to the Swachh Survekshan, this indicator input on wet waste processing can be further used to calculate avoided GHG emissions based on the wet waste processed in a scientific manner.

Performance evaluation
Table 4.26: Extent of Wet Waste Processed

Swachh Survekshan Indicator	Title	Swachh Survekshan Marks
2.2	Percentage of wet waste being processed (out of total wet waste collected)	100
Overall Swachh Survekshan Marks		100
CSCAF Score		100



Indicator 5: Scientific Landfill availability & operations

Rationale: In order to avoid GHG emissions from a waste disposal facility, cities need to scientifically operate and manage their landfills as per Solid Waste Management Rules, 2016 . This indicator assesses cities on conformity scientific landfill as per the SWM Rules, 2016 and guidance given in the Municipal Solid Waste Management (MSWM) Manual, 2016 (CPHEEO, 2016) and

any other updated criteria published by CPCB/ State PCB for Solid Waste Disposal Facilities.

Description: Aligning to the Swachh Survekshan, this indicator focuses on capturing the amount of collectable waste going to the landfill and the details of the landfill if it follows the set guidelines for operations and management.

Performance evaluation
Table 4.27: Scientific Landfill availability & operations

Swachh Survekshan Indicator	Title	Swachh Survekshan Marks
2.7	Percentage of collectable waste (process rejects/ unprocessed) going to the landfill	75
2.8	Is the landfill in the city a sanitary landfill ? Or landfill not required/ Zero landfill city	30
Overall Swachh Survekshan Marks		105
CSCAF Score		100



Indicator 6: Landfill/ dumpsite Scientific Remediation

Rationale: Landfill gas (LFG) is a natural by-product of the decomposition of organic material in landfills. LFG is composed of roughly 50 percent methane (the primary component of natural gas), 50 percent carbon dioxide (CO₂) and a small amount of non-methane organic compounds. Methane is a greenhouse gas which has 21 times more potential than CO₂ for trapping heat in the atmosphere over a 100-year period, hence it is important to mitigate Landfill gases

through scientific remediation. The indicator encourages cities to adopt the scientific remediation/closure of engineered landfills and dumpsites to avoid significant GHG emissions.

Description: Aligning to the Swach Survekshan, this indicator assesses the city's readiness/efforts to scientifically manage/close landfills and identified dump sites as a step towards reducing GHG emission.

Performance evaluation

Table 4.28: Landfill/ dumpsite Scientific Remediation

Swach Survekshan Indicator	Title	Swach Survekshan Marks
2.9	Remediation of all identified dumpsites, no legacy waste (dumpsite)/Zero landfill city	60
Overall Swach Survekshan Marks		60
CSCAF Score		60