

# Capacity Development on SDGs Indicators' Monitoring and Reporting

Indicator 11.6.1: Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated by cities

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FOR A BETTER URBAN FUTURE

# Background: Waste management in the SDG framework

## Target 11.6:

SDG Target 11.6 By 2030, **reduce** the adverse per capita **environmental impact of cities**, including by paying special attention to air quality and **municipal and other waste management**

## Target 6.3:

By 2030, **improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials**, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

## Target 12.4:

By 2020, achieve the environmentally sound **management of chemicals and all wastes** throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

## Target 12.5:

By 2030, substantially **reduce waste generation through prevention, reduction, recycling and reuse.**

Related indicators – e.g 6.2 Access to Improved Sanitation



# 6 CLEAN WATER AND SANITATION



## Goal 6

Clean water and sanitation

## Target 6.3

By 2030, **reduce the adverse per capita environmental impact of cities**, including by paying special attention to air quality and municipal and other waste management.

## Indicator 6.3.1

Proportion of urban solid waste **regularly collected** and **with adequate final discharge** out of total urban solid waste generated, by cities

# Key Definitions



Municipal Waste includes

Waste originating from **households, commerce and trade, small businesses, office buildings and institutions.**

Bulky waste (e.g., old furniture, mattresses) and wastes from selected municipal services, e.g. from park and garden maintenance, from street cleaning services (street sweepings, the content of litter containers, market cleansing waste),

**Excludes hazardous waste, waste from municipal sewage network and treatment – these fall under other categories (e.g 6.3.1)**



Municipal Waste Recovery:

Any **reprocessing** of waste material in a production process that **diverts it from the waste stream**, except reuse as fuel. Both reprocessing as the same type of product, and for different purposes should be included.



# Methodology

$$\text{Indicator 11.6.1} = \frac{\text{Total MSW collected and managed in controlled facilities (t/day)}}{\text{Total MSW generated (t/day)}} \times 100 (\%)$$

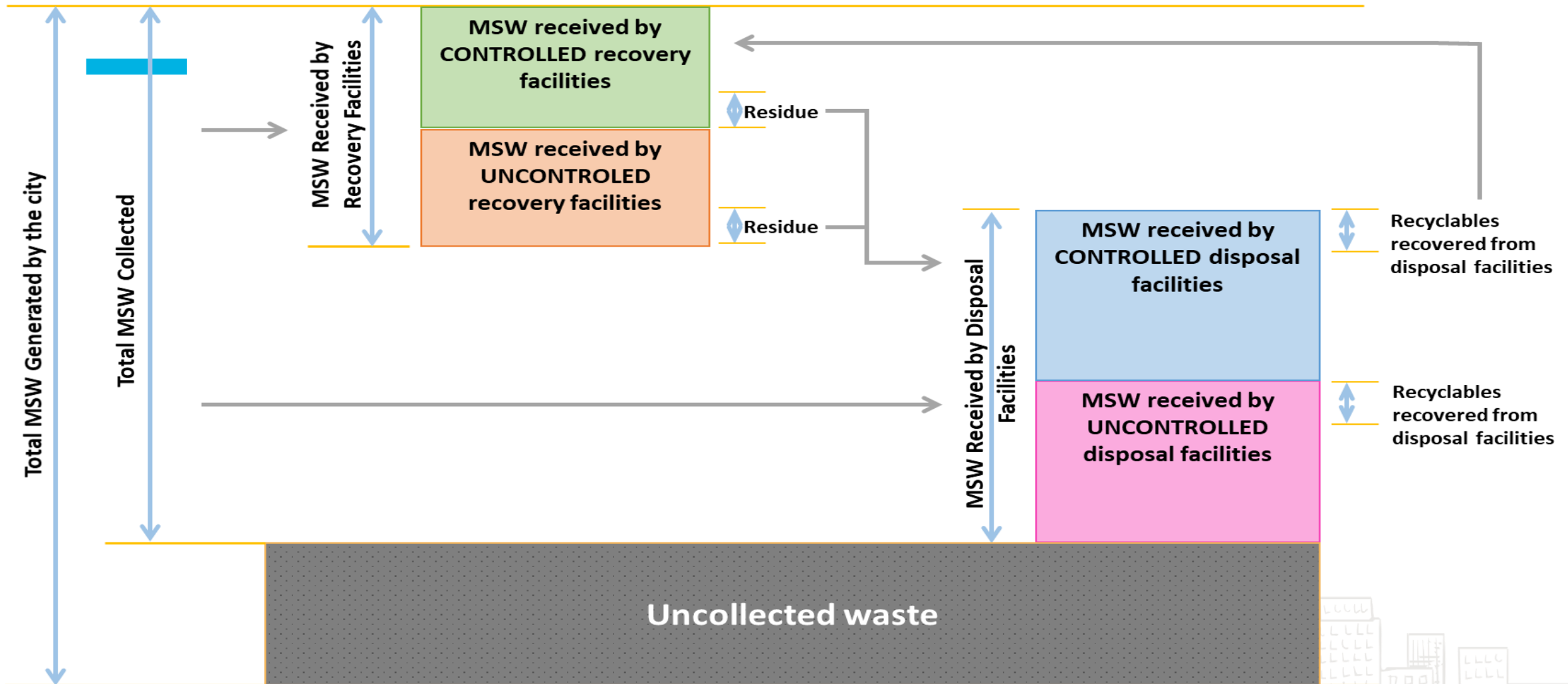
The calculation of SDG indicator 11.6.1. provides two important sub-categories with varying policy implications:

$$\text{SDG 11.6.1. category a} = \frac{\text{Total MSW collected (t/day)}}{\text{Total MSW generated (t/day)}} \times 100 (\%)$$

$$\text{SDG 11.6.1. category b} = \frac{\text{Total MSW managed in controlled facilities (t/day)}}{\text{Total MSW generated (t/day)}} \times 100 (\%)$$



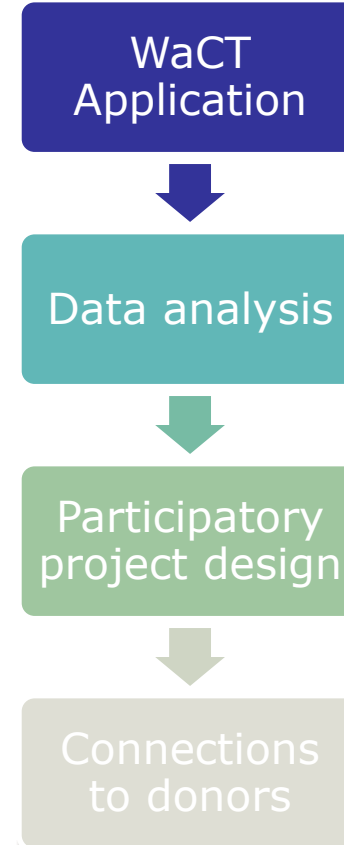
# Solid Waste Collection and Management – The Framework





# How Does WaCT Help Your City?

- Assess MSW generated, collected and treated in controlled facilities
- Identify the MSW recovery chain and its actors while engaging them in an inclusive and participatory way
- Check the environmental control level of waste management facilities
- Establish better waste and resource management strategies that create business and livelihood opportunities
- Provide data for large waste management infrastructure investment cases to municipal corporation, waste stakeholders and investors
- Project development and funds mobilization





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# Using WaCT To Compute Municipal Waste Collection

# Step 1: Preparation



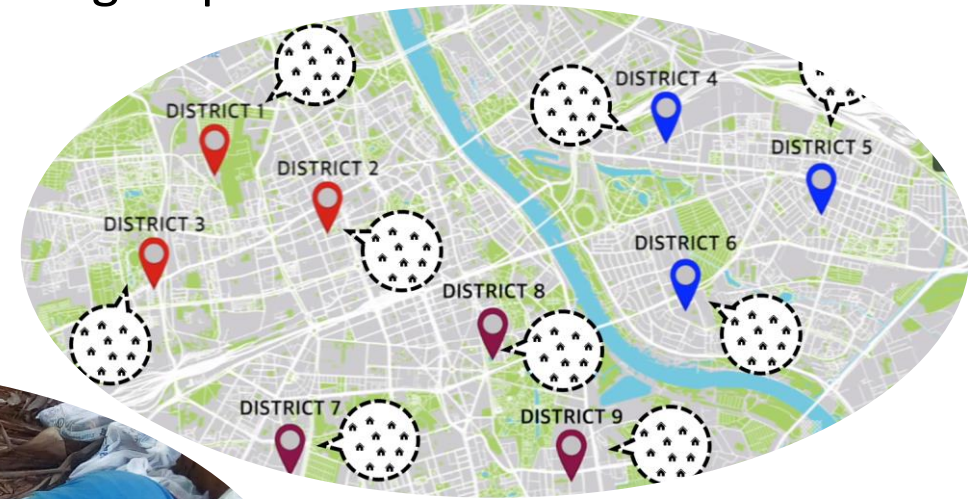
1. Identify city stakeholders – e.g. city management, civil society etc.
2. Establish a working team
3. Prepare tools and equipment
4. Acquire key stakeholders support and partnerships
5. Prepare workflow and budget
6. Obtain necessary data from statistics office



# Step 2: Household MSW Generation and Composition

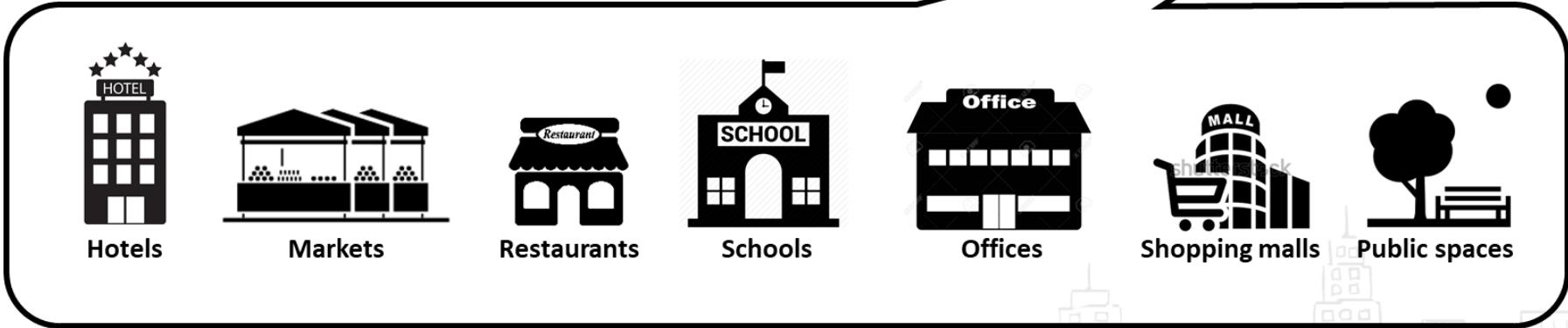
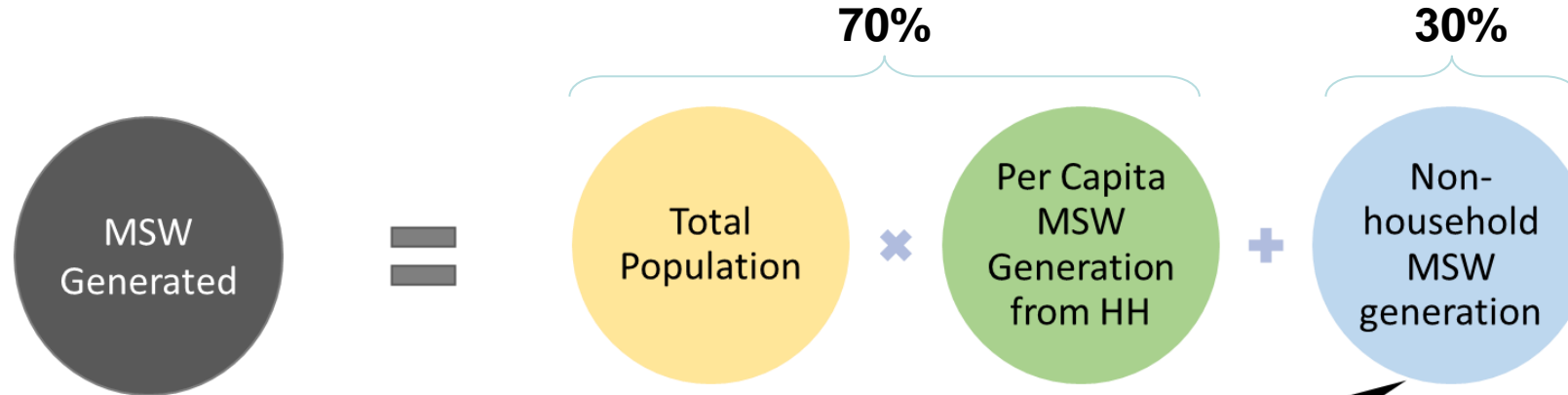


1. Sample waste from 90 household from different income groups
2. For 8 days
3. Weigh to obtain average waste generation per capita
4. Analyze waste composition





# Step 3: Non-Household MSW Generation



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# Using WaCT To Compute Municipal Waste Management

# Step 4: MSW Received by Recovery Facilities & Level of Control



1. Identify recovery facilities during STEP 1
2. Arrange visits and interviews
3. Evaluate the level of control of recovery facilities
4. (use checklist)



## Step 4: MSW Received by Recovery Facilities & Level of Control



**MSW Managed in Controlled Facilities** refers to MSW collected and transported to recovery and disposal facilities with **basic, improved or full control** according to the Ladder of waste management facilities' control level

CONTROL LEVEL	Other Recovery Facilities
Full Control	<ul style="list-style-type: none"> <li>Built to and operating in compliance with current national laws and standards</li> <li>Pollution control compliant to environmental standards</li> <li>Protection of workers' health and safety</li> <li>The nutrient value of biologically treated materials utilized for separate organic waste (e.g. in agriculture/horticulture)</li> <li>Materials are extracted, processed according to market specifications, and sold to recycling markets</li> <li>Weighing and recording of incoming loads conducted</li> <li>All outgoing loads registered by weight and type of destination</li> </ul>
Improved Control	<ul style="list-style-type: none"> <li>Engineered facilities with effective process control</li> <li>Pollution control compliant to environmental standards</li> <li>Protection of workers' health and safety</li> <li>Evidence of materials extracted being delivered into recycling or recovery markets.</li> <li>Weighing and recording of incoming and outgoing loads conducted</li> </ul>
Basic Control	<ul style="list-style-type: none"> <li>Registered facilities with marked boundaries</li> <li>Some environmental pollution control</li> <li>Provisions made for workers' health and safety</li> <li>Weighing and recording of incoming and outgoing loads conducted</li> </ul>
Limited Control	<ul style="list-style-type: none"> <li>Unregistered facilities with distinguishable boundaries</li> <li>No environmental pollution control</li> <li>No provisions made for workers' health and safety</li> <li>Weighing and recording conducted</li> </ul>
No Control	<ul style="list-style-type: none"> <li>Unregistered locations with no distinguishable boundaries</li> <li>No provisions made for workers' health and safety</li> <li>No environmental pollution control</li> </ul>

# Step 5: MSW Received by Disposal Facilities & Level of Control



1. Identify disposal facilities during STEP 1
2. Arrange visits and interviews
3. Obtain records of waste received
4. Interview waste pickers
5. Evaluate the level of control of disposal facilities





# Step 5: MSW Received by Disposal Facilities & Level of Control



CONTROL LEVEL	Landfill Site
Full Control	<ul style="list-style-type: none"> <li>Waste daily covered</li> <li>Waste compacted</li> <li>Site fenced and full 24-hour control of access</li> <li>Properly sited, designed and functional sanitary landfill</li> <li>Leachate containment and treatment (naturally consolidated clay on the site or constructed liner)</li> <li>Landfill gas collection and flaring and/or utilization</li> <li>Site staffed;</li> <li>Post closure plan</li> <li>Weighing and recording conducted</li> <li>Protection of workers' health and safety</li> </ul>
Improved Control	<ul style="list-style-type: none"> <li>Waste periodically covered</li> <li>Waste compacted</li> <li>Site fenced and control of access</li> <li>Leachate containment and treatment</li> <li>Landfill gas collection (depending on landfill technology)</li> <li>Site staffed</li> <li>Weighing and recording conducted</li> <li>Protection of workers' health and safety</li> </ul>
Basic Control	<ul style="list-style-type: none"> <li>Some use of cover</li> <li>Waste compacted</li> <li>Sufficient equipment for compaction</li> <li>Site fenced and control of access</li> <li>No fire/smoke existence</li> <li>Site staffed</li> <li>Weighing and recording conducted</li> <li>The slope of the landfill is stable, landslides not possible</li> <li>Protection of workers' health and safety</li> </ul>
Limited Control	<ul style="list-style-type: none"> <li>No cover</li> <li>Some compaction</li> <li>Some equipment for compaction</li> <li>Some level of access control/fencing</li> <li>No leachate control</li> <li>Some fire/smoke existence</li> <li>Site staffed</li> <li>Weighing and recording conducted</li> <li>The slope of the landfill is unstable with high possibility of a landslide</li> </ul>
No Control	<ul style="list-style-type: none"> <li>No cover</li> <li>No compaction</li> <li>No/ limited equipment</li> <li>No fencing</li> <li>No leachate control</li> <li>Fire/smoke existence</li> <li>No staff</li> <li>The slope of the landfill is unstable with high possibility of a landslide</li> </ul>



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## The proportion of the population with Access to Basic MSW Collection Services

# Access to Basic MSW Collection Services

- I. Proportion of the population who receive waste collection services that are either basic, improved or full, defined by the service ladder of MSW collection
- II. Considers aspects of frequency, regularity and proximity of the collection points



# Access to Basic MSW Collection Services

SERVICE LEVEL	DEFINITION
Full	<ul style="list-style-type: none"> <li><input type="checkbox"/> Receiving door-to-door MSW collection service with basic frequency and regularity and MSW is collected in three or more separate fractions; or</li> <li><input type="checkbox"/> Having a designated collection point within 200m distance served with basic frequency and regularity and without major littering and MSW is collected in three or more separate fractions</li> </ul>
Improved	<ul style="list-style-type: none"> <li><input type="checkbox"/> Receiving door-to-door MSW collection service with basic frequency and regularity and MSW is collected in a minimum of two, separate fractions (<u>e.g.</u> wet and dry fractions)</li> <li><input type="checkbox"/> Having a designated collection point within 200m distance served with basic frequency and regularity and without major littering and MSW is collected in a minimum of two, separate fractions (<u>e.g.</u> wet and dry fractions)</li> </ul>
Basic	<ul style="list-style-type: none"> <li><input type="checkbox"/> Receiving door-to-door MSW collection service with basic frequency and regularity or</li> <li><input type="checkbox"/> Having designated collection point within 200m distance served with basic frequency and regularity</li> </ul>
Limited	<ul style="list-style-type: none"> <li><input type="checkbox"/> Receiving door-to-door MSW collection service without basic frequency and regularity.</li> <li><input type="checkbox"/> Having a designated collection point within 200m distance but not served with basic frequency and regularity; or</li> <li><input type="checkbox"/> Having designated collection point in further than 200 m distance.</li> </ul>
No	<ul style="list-style-type: none"> <li><input type="checkbox"/> Receiving no waste collection service</li> </ul>
<p>Note: Basic frequency and regularity: served at least once a week for one year</p>	

# Disaggregation



Data for this indicator can be disaggregated at various levels in accordance with the country's policy information needs. For instance:

- Disaggregation by location (intra-urban)
- Disaggregation by source of waste generation e.g. residential, industrial, office, or MSW material received by recovery facilities
- Disaggregation by type of final treatment and disposal
- MSW generation rate of different income level (high, middle, low)
- MSW generation rate in different cities





Thank You

