

WASTE WISE CITIES TOOL

Step by Step Guide to Assess a City's Municipal Solid Waste Management Performance through SDG indicator 11.6.1 Monitoring











Foreword

In our rapidly urbanizing world, the crisis in waste management and plastic pollution is a reflection of our unsustainable lifestyles. We are consuming and producing at a rate that boggles the mind.

With 2 billion people lacking access to solid waste collection and 3 billion people without access to controlled solid waste disposal facilities, urban dwellers, especially in low to middle income countries, are exposed to severe threats to public health due to the mismanagement of solid waste. However, if our waste is managed appropriately and effectively, it will be a resource for a prosperous circular economy, creating green jobs and enhancing the livelihood and income for the urban poor. At the same time, we can reduce the use of natural resources and protecting our environment.

Knowing the risks of mismanaging solid waste and the potential of sustainable waste management, many cities are eager to find solutions for the ever-increasing mountains of waste. That is why I launched the Waste Wise Cities programme on World Habitat day 2018 together with His Excellency, President Uhuru Kenyatta of Kenya, with a call to action to address the global waste management challenges and strive towards the Sustainable Development Goals (SDGs). In the past two years more than 170 cities have taken up the call and dedicated themselves to sustainable waste management.

However, without basic data on municipal solid waste generation and management, many cities and countries are not able to make evidence-based decisions. I recall that when I was Mayor of Seberang Perai in Malaysia, about 40% of the municipal revenues were going towards waste management. This meant that we could not allocate funds for parks, road works, healthcare, or public transport. Once we were able to map and understand better where waste was generated and how it was managed, we were able to reduce the overall cost of waste management. Eventually, we managed to reduce the share of the city's budget to 20% as the rate of recycling increased from 15% to 56%. Data is key to allow cities to identify effective policy interventions and allocate limited resources to build the right kind of

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infrastructure. In Nairobi, Kenya, the host city of UN-Habitat headquarters, we have worked with Nairobi City County Government in applying the Waste Wise Cities Tool – which led to the development of the Nairobi City County Sustainable Waste Management Action Plan 2020-2022.

The 2030 Agenda and the SDGs highlight waste management with different targets and indicators measuring the waste management performance both at municipal and national level (SDGs 11.6, 12.3, 12.4, 12.5 and 14.1). Measuring SDG Indicator 11.6.1, "Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated, by the city", provides critical information and parameters to establish better waste and resource management strategies that will help cities to create business, employment and livelihood opportunities, and transition towards a circular economy.

UN-Habitat is mandated to develop the monitoring methodology for SDG indicator 11.6.1 and has worked closely with relevant UN agencies such as UN Statistics Division and UN Environment, as well as prominent waste management experts and environmental statisticians from all over the world. These common efforts have led to the development of the Waste Wise Cities Tool, a diagnostic tool that cities apply to assess their municipal solid waste management performance and use as basis for sustainable solid waste management planning.

This publication will be valuable for policy makers, municipal engineers, independent service providers, planners, consultants, researchers and other professionals engaged in designing solid waste management systems in cities lacking up-to-date data.

It is my hope that fact-based data on municipal solid waste assessed with this tool will guide evidence-based planning and lead to effective and efficient solid waste collection systems, enhanced local resource recovery and controlled waste disposal, thereby improving the quality of life for urban residents and eventually achieve the New Urban Agenda as well as the SDGs in the waste sector.

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This publication is dedicated to the memory of Manus Coffey, a thinker, designer, creator and innovator in municipal solid waste management. Manus was principal author of the UN-Habitat 2010 publication Collection of Municipal Solid Waste in Developing Countries, which remains to this day essential reading for practitioners working towards the Sustainable Development Goals.

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List of Acronyms

BRS	Basel, Rotterdam and Stockholm Convention
CBOs	Community-based organisations
DCA	Data Collection Application
DCM	Data Collection Manual
EHS	Environment, Health and Safety
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HDPE	High-Density Polyethylene
HH	Household
LDPE	Low-Density Polyethylene
MBT	Mechanical Biological Treatment
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PET	Polyethylene Terephthalate
PP	Polypropylene
PPE	Personal Protective Equipment
PVC	Polyvinyl chloride
SDGs	Sustainable Development Goals
UN DESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environment Programme
UN-Habitat	United Nations Human Settlements Programme
UNSD	United Nations Statistics Division
WACS	Waste Amounts and Composition Survey
WaCT	Waste Wise Cities Tool
WEEE	Waste Electric and Electronic Equipment
WFD	Waste Flow Diagram
WHO	World Health Organization

Summary

Waste Wise Cities Tool (WaCT) guides readers through 7 steps to collect data on municipal solid waste (MSW) generated, collected, and managed in controlled facilities. The tool provides a household survey guide for total MSW generation, a questionnaire to identify the MSW recovery chain and criteria to check the environmental control level of waste management facilities in a city.

Chapter 1 introduces the global challenge of waste management touching upon the necessity of standardized methodology to assess municipal solid waste management performance and increasing capacity development needs in data collection at the municipal level especially in the low and middleincome countries. It also introduces what can be achieved through the application of Waste Wise Cities Tool, showing the case study in Mombasa, Kenya.

Chapter 2 provides definitions of key terminologies and new concepts used for the calculation of the SDG indicator 11.6.1. It also provides the 'ladder of control level' of waste management facilities, which will be a guideline for operational improvements of different waste management facilities. The 'ladder of waste collection services' introduced here also is a new concept to measure population with 'access to waste collection services' an important indicator in relation to poverty eradication. **Chapter 3** takes readers through the parameters and formulas for MSWM assessment for SDG indicator 11.6.1. The chapter explains the conceptual model behind the methodology and it also outlines the necessary data points with formulas.

Chapter 4 takes the readers through the 7 steps of the Waste Wise Cities Tool: preparation; household MSW generation and composition; non-household MSW; MSW received by recovery facilities and control level of recovery facilities; MSW received by disposal facilities and control level of disposal facilities; waste composition at disposal facilities; calculating food waste, recycling, and plastic leakage..

Data forms and tools are available to support each step. Collected data can be entered into an automated WaCT Data Collection Application (DCA) workbook and submitted to UN-Habitat's Waste Wise Cities Programme.



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