WASTE WISE CITIES

UN⊕HABITAT
FOR A BETTER URBAN FUTURE

Waste Wise Cities
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SUSTAINABLE DEVELOPMENT GOALS

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The Sustainable Development Goals and Waste Management

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) were adopted by the United Nations in September 2015. Several targets were set out to address waste management, material efficiency and the impact of waste on the environment.

Directly related to waste management, and also addressed to different extents with Waste Wise Cities, are access to basic services (Target 1.4), eliminate dumping to improve water quality (Target 6.3.), municipal solid waste management (Target 11.6), food waste (Target 12.3), chemicals and hazardous waste including e-waste (Target 12.4), recycling (Target 12.5), and marine litter (14.1). In addition, two closely related targets look at domestic material consumption and material footprint (8.4 and 12.2). In addition, indirect links between waste management and several SDGs exist. Consequently, a sustainable waste management can contribute to the achievement of a number of SDGs. Read more about SDG interactions.

The story of an SDG indicator

For each SDG target a variety of indicators exist, to monitor progress towards achieving the SDG. Each indicator was assigned a so-called custodian agency, as well as partner agencies. Custodian agencies are United Nations bodies (and in some cases, other international organizations) responsible for compiling and verifying country data and metadata, and for submitting the data, along with regional and global aggregates, to the United Nations Statistics Division (UNSD). UN-Habitat is for example the custodian agency of SDG Indicator 11.6.1 *"Proportion of municipal solid waste collected and managed in controlled facilities*

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out of total municipal solid waste generated, by the city". Therefore, we have worked on the development of the monitoring methodology for this indicator coherent with other waste statistics systems in the world. UN-Habitat, together with UN Environment, who is the

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custodian agency for other waste SDG indicators (SDG 12.3.1, 12.4.2 and 12.5.1), co-organized Expert Group Meetings in 2018 and 2019 for consultation with experts around the world. The draft methodology was field tested in Nairobi (Kenya), Mombasa (Kenya), Mahe (Seychelles) and crystalized as Waste Wise Cities Tool through a partnership with Eawag, University of Leeds and Wasteaware. Harmonized with this, GIZ provided funds and jointly with the University of Leeds, Eawag and Wasteaware developed the Waste Flow Diagram, a rapid and observation-based assessment for mapping waste flows and quantifying plastic leakage from MSW management systems.

What is the SDG indicator 11.6.1.?

There is a need for SDG 11.6.1 monitoring as it provides critical information for cities and countries to establish better waste and resource management strategies. So far, basic data on municipal solid waste (MSW) generation and management is lacking globally, especially in low- and middle-income settings. This lack of data hinders the development of management strategies and investments in infrastructure, leading in many countries to insufficient or absent MSW management services. Poor MSW collection and management trigger severe threats to public health and pollute air and water. Furthermore, mismanaged waste is the main contributor to marine litter.

SDG indicator 11.6.1 brings the parameters that will help cities and countries to create the business, employment and livelihood opportunities, and transit towards the circular economy. The methodology to monitor SDG indicator 11.6.1 provides guidelines and ladders for MSW collection services and aims to bring standardization around MSW data points.

Despite an increasing demand for waste statistics, there are important conceptual and methodological problems. The lack of internationally harmonized concepts, definitions and methodologies leads to incomparability of data and overlapping of concepts. The main guiding documents on environmental statistics, such as the Framework for

Development of Environmental Statistics (FDES) and the System of Environmental Accounts (SEEA) give only general guidance and leave a lot open to different approaches and interpretations. SDG 11.6.1 aims to fill this gap and bring standardization of definitions in order to make data points comparable.

Waste Assessment tools for Cities

Waste data assessments have been conducted for a long time. Depending on the resources of the city, the data collection might be done regularly and in detail, increasing the confidence. The tools for collecting the data are the methodologies defining how the surveys should be carried out, how sample sizes need to be selected, what information should be considered, how the collected data must be processed and more. There is a lot of literature available on how waste assessment studies are conducted and here we want to share a few:

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- **Waste Wise Cities Tool (WWCT):**
  This tool, developed by UN-Habitat, is based on SDG indicator 11.6.1 parameters. It consists of 7 steps that guide cities to collect data on 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 the city. The last step consists of observation-based measurements for plastic leakage of the city. The collected data is consolidated in a Waste Flow Diagram (WFD). Read more in the Examples section.

- **Wasteaware Benchmark set of indicators (WABI):** WABI consists of an indicator set that assesses MSWM systems' performance of cities, allowing benchmarking cities and monitoring developments over time. It is based on the Integrated Sustainable Waste Management framework, which conceptualizes city's MSWM into three physical components, i.e. collection, recycling, and disposal, and three governance aspects, i.e. inclusivity; financial sustainability; and sound institutions and proactive policies. The WABI complements data assessments since it provides a structured way of how to look at and assess "soft aspects" of a MSWM system. Read more

- **City MSW Rapid Assessment Data Collection Tool:**
  The tool was developed by the Climate & Clean Air Coalition (CCAC) and is a rapid assessment of the main aspects of the management of solid waste in any city. It consists of an Excel Sheet, where the relevant data can be filled in. The tool focuses on how to analyze the existing data. The resulting report also indicates the emissions of black carbon and methane. Read more

- **Making Waste Work:**
  This tool from WasteAid UK focuses on measuring the amount and type of community waste generated in low and middle-income economies. It focuses on waste generation and characterization. The tool consists of a step by step guide for a simple waste audit. Read more

Waste Assessment Examples

City plastic Leakage:
3.7 kg/person/year
is leaking to water systems

Waste Wise Cities Tool and the WFD were tested in Nairobi (Kenya), Mombasa (Kenya) and Fnideq (Morocco) respectively. Experts from UN-Habitat, Wasteaware, Eawag and University of Leeds jointly with the respective Local Governments identified the flow of waste in the cities through:

- household waste studies,
- surveys of non-household premises, such as markets, schools, offices, etc.,
- interviews with waste collection and recycling companies, as well as waste pickers
- waste study at designated disposal sides.

These assessments were followed by local stakeholders' workshops, helping the cities to identify key areas of interventions and infrastructure investment gaps. Attendees were actors from the waste management chain as well as society: local government officials, private recycling and collection companies, informal waste pickers, representatives of manufacturers and residents, and many more.

The first figure is depicting the results from the SDG 11.6.1 assessment in Mombasa, a Kenyan coastal city of 1.2 million inhabitants. Results show that about 750 t/day of MSW is generated, of which 56% is collected and 5% is managed in controlled facilities. Around 330 t/day remain uncollected. The second figure depicts the Mombasa's Plastic Waste Flow. According to the assessment, plastic leakage is 3.7 kg per person/year; this is equivalent to 18 large trucks full of plastic waste being disposed into the Indian Ocean every day.

All %'s are in reference to the total Plastic Waste generated
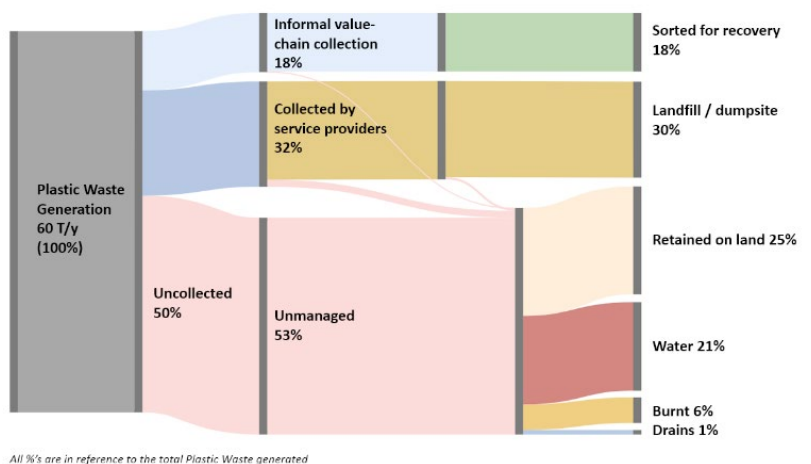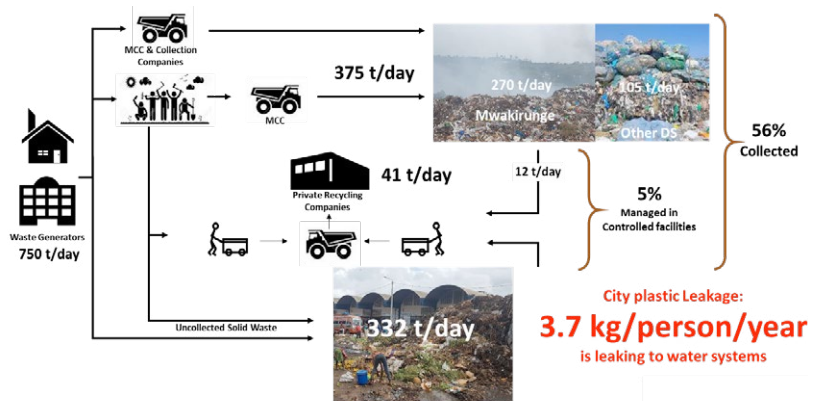
bonnorange AöR, the public waste management company of the city of Bonn, Germany, draws up an annual waste balance sheet on the recovery of waste, in particular the preparation for reuse, the recycling and disposal of the waste generated in Bonn and handed over to them. In accordance with the Waste Management Act for the state of North Rhine-Westphalia, the reports contain a balance sheet for the past year on the type, quantity and whereabouts of the waste disposed of, including its recycling. This data is recorded by the company during their daily operations by recording amounts collected and the amount of waste traded with recovery and disposal facilities. However, only waste collected by bonnorange or the Packaging EPR system is included, which covers all waste from private households as well as waste from small businesses (if they don't hire a private company). The quantities therefore do not reflect the total amount of waste in the urban area. Nevertheless, based on this data, bonnorange can develop its waste management concept for future-oriented and sustainable waste management in the city of Bonn, which takes into account legal requirements, waste management challenges and economic efficiency.

Vanke Foundation supports Waste Wise Cities

VANKE FOUNDATION

Waste Wise Cities is happy to announce a collaboration between UN-Habitat and the Vanke Public Welfare Foundation to support the establishment of the "Waste Wise Cities Academy", to build knowledge on and advocate for sustainable urban waste management.

Vanke Foundation, initiated by China Vanke CO., LTD. and founded in 2008, is a national private foundation approved and supervised by the Ministry of Civil Affairs of China. It has been certificated as a charitable organisation since

2017. Being future-oriented pioneers, Vanke Foundation addresses issues with a profound impact on the future, aims for sustainable communities, and promotes environmental protection and community development. Currently, the foundation focuses on community waste management.

Vanke Foundation will contribute to the design and development of online training courses as well as improvements of the Waste Wise Cities website.

Waste Wise Education

UN-Habitat's waste initiatives, African Clean Cities Platform and Waste Wise Cities, are looking at the educational dimension of waste management, wishing to mainstream acquisition of waste literacy at pre-primary and primary schools as well as higher education institutions. A call for

innovative waste educational activities and best practices to be replicated in schools around the world was launched. 10 innovative educational programmes for each primary and higher education respectively will be selected and published on the WWC website.

Crowdfunding Platforms

UN-Habitat called for Expressions of Interest from Crowdfunding Platforms that mobilize funds to support local and national governments and other waste actors in MSW services delivery and sustainable resources management, also during the current COVID-19 pandemic. We want to present today the following two crowdfunding platforms:

PLANET HEROES
Planet Heroes is dedicated to ecological activities and was founded to create a habit of regular clean-up activities, as well as encourage people to take responsibility for public spaces. Also, the platform supports initiatives that are tackling waste related COVID-19 challenges.

EARTH RESTORE NETWORK
The Earth Restore Network was established by Let's Do It World and Fundwise. The targeted activities are related to plastic pollution prevention, circular economy, awareness and education, renewable energy, tackling climate change, resource management and zero-waste, cleantech, restoration of ecosystems and biodiversity, carbon capture technologies and other similar fields

Updates

Waste Wise Cities Challenge

Last year we called for applications for our Waste Wise Cities Challenge: Changemaker Cities and Supporter Cities work together on improving waste management in the Changemaker City.

Waste Wise Cities Challenge

Many cities applied as Changemaker City, unfortunately we were not (yet) able to match all of them with a Supporter City. The Call for Applications (especially as Supporter City) remains open, so don't hesitate to write us if you are interested in supporting another city to master the Waste Wise Cities Challenge. In the meanwhile, we are happy to announce the following matches:

Supporter City	Changemaker City
Vienna (Austria)	Addis Ababa (Ethiopia)
Kushtia (Bangladesh)	Sunkoshi (Nepal)
Ratnapura (Sri Lanka)	Jambi (Indonesia)
Bonn (Germany)	Cape Coast (Ghana)
Indore (India)	Bahir Dar (Ethiopia)
Al-Manara (Lebanon)	Hazmieh (Lebanon)
Ghalboun (Lebanon)	Byblos (Lebanon)
Beit Mery (Lebanon)	Rmeish (Lebanon)
Osaka (Japan)	Yangon (Myanmar)
Ashdod (Israel)	Mezitli (Turkey)

As a first step, the cities will assess the Changemaker City's waste management system by applying the Waste Wise Cities Tool and identify intervention areas.

UN-Habitat joins UNESCO's Plastic Initiative and Green Academies

The Plastic Initiative wants to beat plastic pollution with a comprehensive regional approach throughout Asia/Pacific, minimizing plastic pollution via the mobilization of the youth in UNESCO Biosphere Reserves (BRs). It also wants to involve Government authorities to adjust policies and practices, and the private sector to support professional actions to clean up. The BRs will function as incubators of change, the activities will be replicable and inspire multiplication activities beyond the borders of the testing sites.

UNESCO Green Academies are based on four pillars of sustainable development – Water Security, Recycling, Clean Energy and Biomass Production. The Academy is built upon the foundation of youth engagement, to encourage active participation in achieving a sustainable way of life and promoting this more widely in their communities.

Waste Wise Cities is looking forward to collaborating with UNESCO.

Blog About Circular Economy in Africa

Would you like to learn more about how Africa can close the loop and develop circular food systems, green and circular economy? Circular Africa informs you about the latest developments about potentials of a circular economy in Africa. Circular Africa has the purpose to inspire and find solutions to unlock the potentials for a circular Africa. Read more
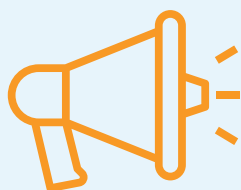
Call to Action

- Continue waste management services during the COVID-19 pandemic!

- Take measures to protect waste workers' health – formal and informal!

- Build partnerships and include all stakeholders!

- Share your COVID-19 story and measures taken with us!

- Contact us if you want to start monitoring the waste flow in your city!

- Join Waste Wise Cities to enhance SWM and contribute to a sustainable future!

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