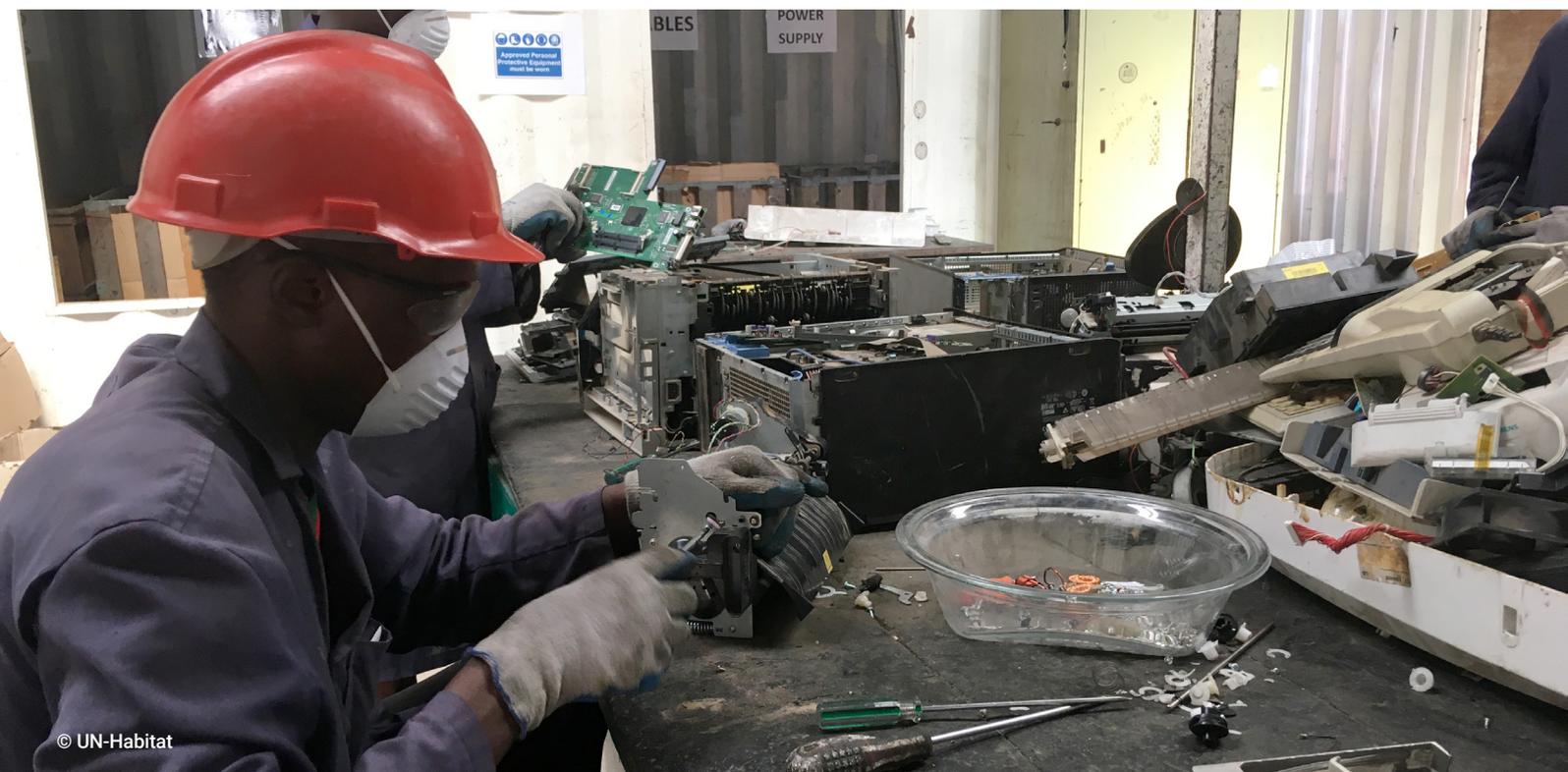


# Newsletter #11

June 2021 - E-waste



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## Intro: Waste electric and electronic equipment (WEEE), aka e-waste

Electrical or electronic equipment (EEE) that becomes waste, including all components, sub-assemblies, and consumables parts of the product at the time of discarding, is referred to as waste electrical and electronic equipment (WEEE) or e-waste. WEEE includes a large range of devices which are commonly grouped in the following categories: Small IT and Telecommunication equipment (e.g., phone, printer), small equipment (e.g. fan, mixer, kettle), large equipment (e.g. washing machine, dishwasher, oven), temperature exchange equipment (e.g. air conditioner, refrigerator), screens and monitors (e.g. TV, laptop, computer) as well as lamps. With the growing use and dependence upon EEE, the amount of WEEE is growing exponentially. For instance, in 2019 alone, 53.6 million metric tons (Mt) of WEEE was generated globally which increased by 9.2 Mt since 2014 and is expected to further grow to 74.7 Mt by 2030 – doubling in only 16 years. In 2019, only 17.4% was officially documented for collection and recycling .

WEEE is a waste stream of concern, as it is complex and may include hazardous materials including mercury, brominated flame retardants, and lead. Due to the presence of these materials, it can cause serious harm to human health and the environment when handled inadequately.

On the other side e-waste also contains precious metals and rare earth elements, e.g., gold, nickel, copper, indium.

The presence of hazardous and precious elements simultaneously makes WEEE a two-tier issue: On the one hand, WEEE containing hazardous materials requires extensive occupational and health safety measures as well as capacity to ensure safe treatment and disposal, which makes its end-of-life management expensive. On the other hand, precious elements in WEEE make it financially attractive for the informal waste sector and many companies in developing countries to engage in WEEE recycling, which has been documented to impact negatively on health and the environment if done in an uncontrolled way. This two-tier issue has led to the transboundary movement of WEEE from high-income countries to low and middle-income countries (mostly illegally). For instance, in 2015 and 2016, approx. 60,000-71,000 tonnes of used EEE were imported into Nigeria, shipped from countries like USA, Germany and UK, among others . Agbogbloshie site in Ghana, also known as largest electronic waste dump in Africa, attracts approx. 5,000 informal waste workers daily scavenging through piles on e-waste without any protective measure . We are just starting to understand the



© WEEE Centre

consequences for their health. Adequate management of WEEE demands environmentally sound management and appropriate capacities including infrastructure and technology development. Therefore, it is essential to develop in-country collection and recycling/recovery facilities as well as capacities to manage generated WEEE while taking upon the initiative to promote reuse and repair, as well as extending the life of EEE by strategic design and production changes.

For more data and further information on e-waste have a look at the [Global E-waste Monitor 2020](#).

## The UN E-waste Coalition

In July 2019, UN-Habitat signed the Letter of Intent Paving the way for Coordination and Collaboration on UN System-wide Support for E-waste Management together with ten other United Nations agencies, namely the International Labour Organization, International Telecommunication Union, International Trade Centre, Secretariats of the Basel and Stockholm Conventions, United Nations Environment Programme, United Nations Industrial Development Organization,

United Nations Institute for Training and Research, United Nations University and the World Health Organization. The aim is to enhance coordination and cooperation

among UN organizations and partners at all levels to address the challenges of e-waste.





The UN E-waste Coalition's vision is to transform e-waste for people planet and prosperity by

→ raising awareness, through for example development of communication tools, implementation of sensitization initiatives targeting policymakers, decision-makers, producers and consumers.

→ increasing knowledge, by sharing good practices, learning tools, publications, information on country and regional e-waste projects, and

→ providing integrated support, upon request by States in the sound and sustainable management of e-waste, through joint project implementation and promotion of concerted dialogue with key stakeholders

On the observance of the International E-Waste Day on 14 October 2019, UN-Habitat supported by the UN E-waste Coalition, and in collaboration with the [Wuppertal Institute for Climate, Environment, Energy](#) and the [Urban Electric Mobility Initiative](#), organised a webinar on the potential of Lithium-ion EV battery to foster electric mobility and sustainable energy. You find the recording [here](#).

## E-waste and COVID-19



This article was provided by Dr. Ruediger Kuehr, Head of the UNITAR Bonn Office and Senior Manager & Head Sustainable Cycles (SCYCLE) Programme.

The SCYCLE Programme, co-hosted by UNU and UNITAR, which leads on global e-waste research and trainings, and advances sustainable e-waste management strategies based on life-cycle thinking, took a closer look at the impact of the COVID-19 pandemic on e-waste during the first three quarters of 2020. As part of the team that worked on the [Global E-Waste Monitor 2020](#), the statistics for the previous years, as well as the future predictions, were easily available. To find out how COVID-19 impacted e-waste, the monthly trade statistics representing a representative sample of the entire spectrum of e-waste categories were analysed and extrapolated, and then compared with a "business as usual" scenario, based on monthly data of 2018 and 2019.

While experts were expecting a sizable increase in electrical and electronic equipment (EEE) consumption, due to COVID-19 lockdowns which resulted in working and schooling from home, online hang-outs and shopping, movie streaming and similar activities, as well as an increase in e-waste disposal, due to people having time for house-cleaning, the data tells us a different story:

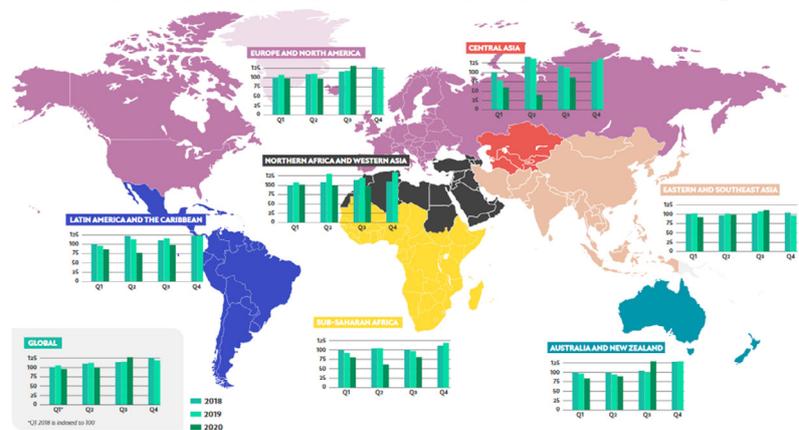
**Worldwide all major categories of EEE decreased by 6 - 8%.**

The reductions were 30% in low- and middle-income countries and only 5%

in high-income countries. This lower consumption of EEE in the first three quarters of 2020 will lead to a reduction of 4.9 million metric tonnes (Mt) in e-waste generated in the future due to the COVID-19 pandemic, especially in the first and second quarter of 2020. These numbers show that the so-called digital divide is increasing: the ability to adapt to digitisation and earn a living or simply to own and benefit from electronics is decreasing in some parts of the world.

Read the whole report, including a closer look at each world region, [here](#).

### THE GLOBAL CONSUMPTION OF ELECTRONIC AND ELECTRICAL EQUIPMENT



## Publication: Children and digital dumpsites, World Health Organization



This article was provided by Julia Gorman, WHO consultant, children's environmental health.

Children and digital dumpsites is the first comprehensive WHO report that investigates the effects of e-waste on child health. The new report finds that 18 million children and as many as 12.9 million women, including an unknown number of women of childbearing age, are at risk from exposure to e-waste recycling activities. Children and digital dumpsites is divided into four distinct chapters. It investigates why e-waste is a rapidly escalating global issue, where it is a

significant problem and why, analyses the diverse characteristics and contexts of global e-waste dumpsites and discusses the specific vulnerabilities of children and women and the pathways through which they are exposed.

Secondly, the report investigates the links between e-waste recycling and child health and reviews the evidence for adverse health outcomes that have been associated with e-waste recycling. E-waste recycling has been linked to multiple adverse health outcomes in children, most significantly, impaired neurological and behavioural development, negative birth outcomes, respiratory and immune systems effects. Many of these health effects may be latent, only appearing later in life and may affect a child for the rest of its life. Finally, the report outlines recommendations for effective policy action, discusses the urgent actions that the health sector can take, alongside other sectors to confront these new and insidious health risks

at global, national and local levels and discusses the role of WHO in reducing the health impacts of e-waste.

Children and digital dumpsites is a milestone report that is the culmination of research undertaken through the WHO Initiative on E-waste and Child Health.

Have a look at the full report [here](#) and at the summary for policy-makers [here](#).



### Children and digital dumpsites

E-waste exposure and child health



## Recap – Webinar Deep Dive # 1: Treatment of WEEE or e-waste

We started our webinar series Waste Technology Deep Dives in October 2020 with a [session on e-waste](#), in light of International E-Waste Day, which is observed on 14th of October.

Retha Monaa introduced the [WEEE Centre](#), which is operating in Kenya's capital Nairobi. After a short overview about the history of the WEEE Centre, she explained that they have over 100 collection points and receive e-waste from corporates, learning institutions, NGOs/international agencies, as well as homes. The WEEE Centre is actively working towards a circular economy, through dismantling and sorting of general e-waste, upcycling and refurbishing of batteries, reuse and refurbishing of IT equipment, and many

other activities. All fractions that cannot be processed locally are shipped for final disposition.

The second speaker Andre Silveira gave the audience an insight into processes at [SINCTRONICS](#), a green IT innovation centre based in Sao Paulo, Brazil. SINCTRONICS has recycled 11,000 tonnes of e-waste that it collected through a reverse logistics system, featuring over 560 vehicles and 450 collection points. After collection, the e-waste is screened, disassembled and separated. The raw

materials are sent back to the supply-chain and used again in manufacturing. Through SINCTRONICS' activities 2,000 tonnes of CO2 emissions have been avoided, 21,800 MWh of energy saved, and 600 jobs created.





The Deep Dives into selected waste management technologies, were organized by UN-Habitat's Waste Wise Cities, African Clean Cities Platform and the [Wuppertal Institute for Climate, Environment, Energy](#), under the [Urban Pathways Project](#). The presented technologies are supposed to give local and regional government officials, as well

as interested stakeholders, an overview of available technology options (which of course have to be assessed regarding their compatibility with the local situation before implementation). You can find the recordings of this webinar series [here](#).



## New UN-Habitat project wants to promote innovative energy access technologies and business models in African countries

UN-Habitat embarks on a new project, funded by the European Commission, titled 'Smart Energy Solutions for Africa' (SESA), which is implemented by a broad consortium of thirty organisations coordinated by the Local Governments for Sustainability (ICLEI) European Secretariat. SESA builds on the partnerships and activities of the global [SOLUTIONSplus](#) project that promotes the transition of electric mobility in 10 cities across 4 continents, as well as the global [Urban Pathways](#) project that supports cities in the development of low carbon basic services policies and plans for mobility, energy and solid waste management.

SESA aims to provide innovative energy access technologies and business models in African countries that are easily replicable and generate opportunities for local economic development and social cohesion. This will be achieved through sustainable energy solutions that address the development of renewable energy sources, including for off-grid communities, and their integration into the existing energy system, tailored to the African social, economic and environmental contexts. Examples include the use of storage/battery systems, solar energy for electric mobility, waste-to-energy, solar irrigation, as well as energy efficiency schemes.

are Kisumu (urban) & Homabay (rural) counties in western Kenya. Project validation sites will be Ghana, Morocco, South Africa and Malawi, with Namibia, Nigeria, Rwanda and Tanzania acting as replication sites.



Initial test sites for co-development

## Get to know our Affiliates

In this section we give our Waste Wise Cities Affiliates the possibility to introduce themselves.

### NO TIME TO WASTE - De Graft Management (DGM)'s Waste Management Technology



*"Waste management and recycling are set to grow exponentially over the next decade as waste generators globally become more environmentally aware and solid waste management and recycling companies explore more efficient ways to reduce, segregate and recycle waste.*

*In Nairobi, Kenya an estimated 2.5 million people do not have access to affordable waste management services. Most residents burn rubbish or illegally*

*dump it. Reasons cited include lack of infrastructure, lack of public funding and inadequate planning.*

*De Graft Management (DGM), an award winning UK technology company, is developing AI enabled Waste Technology to track waste for property managers, occupiers, waste collection and recycling companies, county and central government, to:*



- Connect stakeholders in a single platform
- Support regular and safe waste collection and disposal
- Raise awareness of the importance of waste separation at source and recycling

• Incentivise occupiers.

We work in Nairobi and Accra and as a French speaking team plan to work across Francophone Africa. Major challenges for all include managing plastic and electronic waste that continues to pollute the environment. What excites the DGM

team is the proposition of Africans developing tech for Africa, solving big problems, creating knowledge, data and technology and developing mutually beneficial long-term relationships with stakeholders and partners.”



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## Waste Wise Cities Affiliates

Do you want to:

- Support Waste Wise Cities and improve waste management in cities around the world?
- Be an official partner of Waste Wise Cities and UN-Habitat?
- Show up on the soon to be updated Waste Wise Cities website (after the update)?
- Implement the Waste Wise Cities Tool?
- Read about your activities in this newsletter?
- Do much more?

Then [contact us](#) and become a Waste Wise Cities Affiliate! Together we can become Waste Wise!

## Waste Wise Cities Tool (WaCT)

You have forgotten what the Waste Wise Cities Tool is? No worries, you can find all information on our [website](#). [Here](#) you can see which cities have already submitted data collected with the WaCT and as you can see from the articles below, more data will become available in the course of this year.

### Waste Wise Cities Tool to be applied in at least 37 cities

A lot has happened in the past months! This year we expect at least 37 cities will receive supports for WaCT surveys – which we are convinced as a start of all the changes!

As part of the activities under the [African Clean Cities Platform](#) funded by the Ministry of the Environment Japan and partnership between Waste Wise Cities and [Global Partnership on Marine Litter](#) led by the UN Environment Programme, WaCT + WFD (Waste Flow Diagram) launch and technical trainings were held for Bukavu (Democratic Republic of Congo), Cape Coast (Ghana), Dakar

(Senegal), Dar es Salaam (Tanzania), Harare (Zimbabwe), Lagos (Nigeria), Karachi (Pakistan), Khulna (Bangladesh), Lima (Peru), Santo Domingo (Dominican Republic) and Sousse (Tunisia). In Lagos, Dar es Salaam, Karachi, Khulna and Santo Domingo, the WaCT survey has also already started.

In addition to this, UN-Habitat will support the World Wildlife Fund (WWF) to conduct WaCT surveys in nine cities in Indonesia, the Philippines, Thailand and Vietnam, through providing technical training for the [Plastic Smart Cities Initiative](#). The selected cities include mega-cities like Jakarta and Manila. Another six cities in this region will be also supported through funding from the UN Environment

Programme Regional Office of Asia, under the East Asian Seas framework.

Through these initiatives, we are in the process of translating the WaCT Step-by-Step-Guide and/or training materials into more languages, including Arabic, Chinese and Spanish, as well as Bahasa Indonesia, Khumer, Malay, Thai and Vietnamese.



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## Philippine cities to develop marine litter reduction plans using Waste Wise Cities Tool results

Five Philippine cities are currently pioneering the development of their City Plan of Action on Marine Litter (CPOA-ML) based on sound local baseline information.

The cities of Cagayan de Oro, Calapan, Legazpi, Manila, and Ormoc are partners under the [Healthy Oceans and Clean Cities Initiative \(HOCCI\)](#), implemented by [UN-Habitat Philippines](#) with funding from the Government of Japan.

The upcoming national plan of action on marine litter developed under the leadership of the Philippine Department of Environment and Natural Resources, has identified 10 strategies to reduce land- and maritime-based sources of

marine litter, which are integrated in the CPOA-MLs.

Among the strategies is the establishment of science- and evidenced-based baseline information. To establish these baselines the cities have applied the Waste Wise Cities Tool (WaCT), [Cagayan de Oro](#), Calapan, Ormoc and Legazpi even in a do-it-yourself approach with remote support from Waste Wise Cities and WasteAware as implementing partner – the first ones to have done so globally. Following the WaCT’ 7 steps the cities were able to

determine the amount of municipal solid waste generated, collected and managed in controlled facilities, as well as the waste composition. The resulting data was also used as input to the Waste Flow Diagram Tool that helps identify leakage points of plastics and other municipal solid wastes from the current waste management systems.

Have a look at the WaCT application in the City of Legazpi and how it supports their local action plans [here](#).



## WaCT tool application in Mangaluru, India

Under the project, “Waste Wise Cities: Tackling Plastic Waste in the Environment” funded by the Alliance to End Plastic Waste (AEPW), UN-Habitat India office conducted a detailed ground assessment study in Mangaluru, Karnataka, India in the month of April, 2021 through the application of the Waste Wise Cities Tool ( WaCT) with support from Mangaluru City Corporation (MCC), Hasirudala and APD Foundation.

90 households (HHs) from high-, middle- and low-income groups participated in the study. The activities included: capacity building workshop for a team of 20 volunteers to implement the WaCT, distribution of collection bags (2 bags each for wet and dry waste) to HHs and commercial units (CU), collection of segregated bags from HHs and CUs for eight days for a detailed study, interviews of CU’s and resource recovery centres, disposal facility assessment, as well as mapping of the formal and informal

resource value chain in the city.

The results from the WaCT application will be used to identify gaps in consultation with relevant stakeholders and to create an action plan for improving the management of waste, reduce the city’s plastic leakages and bring all stakeholders

together to increase coordination and strengthen the network.

Have a look at the results which are attached to this newsletter in the form of a factsheet.



## A short introduction: Emine Erdoğan, First Lady of Turkey and Champion for Waste Wise Cities

UN-Habitat's Executive Director [Maimunah Mohd Sharif has honoured Turkey's First Lady, Emine Erdogan as Champion of Waste Wise Cities](#) during her recent visit to Turkey in recognition of her inspiring and global leadership on solid waste management and promoting zero waste.

Between 2017-2020, the [Turkish Zero Waste initiative](#), which was initiated under Emine Erdoğan's patronage, has saved Turkey about 397 million tons of raw materials, 315 million kilowatts per hour of energy, 345 million cubic meters of water, 50 million barrels of oil, and 2 billion tons of greenhouse gas emissions. The Zero Waste project therefore plays a crucial role in Turkey's contributions to the

fight against global climate change.

The First Lady is not only promoting sustainable waste management in Turkey, she is also advocating in international fora for better waste management in cities across the world. Waste Wise Cities is confident that with her leadership and engagement, we will inspire more political

leaders from other countries and cities to put waste management, resource efficiency and circular economy high on the political agenda.



## Launch of the Waste Wise Partnership

Contributing to the achievement of healthier ecosystems and communities by improving municipal solid waste management (MSWM) in cities, and supporting them in transitioning from the current linear to a more circular economy – that's the vision of the Waste Wise Partnership (WaP), an initiative spearheaded by UN-Habitat, under the Waste Wise Cities programme. WaP was established in 2020 together with [Avfall Norge](#), [the International Solid Waste Association \(ISWA\)](#), and [Yunus Environment Hub \(YEH\)](#) and aims to bring partners together to enhance coordination and cooperation among relevant organisations and deliver aligned products and methodologies, in relation to MSWM.

The core areas of work within the WaP are:

- Joint funds mobilisation for project implementation and partnership development;
- Aligning assessment methodology based on Waste Wise Cities Tool (WaCT);
- Waste Wise Academy, including e-learning, knowledge sharing, expert roster and networking;
- Advocacy and knowledge sharing.

The WaP will officially be launched on 30 June 2021 as part of the 11th Social Business Day 2021. During the event the WaP will be presented and the upcoming products that the partnership has developed introduced. We are looking forward to welcoming you, please register [here](#).

# WASTE WISE PARTNERSHIP

## Collaboration between UN-Habitat and UNOSSC takes next step

UN-Habitat is happy to announce the project South-South Cooperation in Sustainable Waste Management - Waste Wise Koidu, Sierra Leone, which will be implemented in collaboration with and is supported by the United Nations Office for South-South Cooperation (UNOSSC), under the “South-South and Triangular Cooperation among Maritime Continental Silk Road Cities for Sustainable Development” and Waste Wise Cities programme.

The project aims to enhance the capacities of Koidu’s city staff to sustainably manage waste and resources and move towards a circular economy, through public awareness, capacity building, and by fostering city-to-city South-South partnerships, mutual learning, and knowledge transfer.

This project is the result of a collaboration between the two UN Agencies which was formalized in a Memorandum of Understanding in 2020 and started in the area of waste management in 2019 when Waste Wise Cities was also part of a mission to Koidu for [an holistic needs assessment](#).

## Waste Wise Cities in Kaya, Burkina Faso

The 2nd “Semaine Communale d’Assainissement” (Community Sanitation Week) from 21 to 25 June 2021 is placed under the theme “Citizen mobilisation for sustainable waste management in Kaya”.

The objective is to strengthen the dialogue between the authorities and citizens for a participatory and community management of solid waste in the city of Kaya.

The UN-Habitat Burkina Faso Office is actively involved in this activity, presenting the Waste Wise Cities initiative and its 5 principles (Rethink, Refuse, Reduce, Reuse, Recycle), for a better management of waste by the community and its inhabitants.



## Call to Action

- Rethink your consumption of electric and electronic equipment: do you really need that new smartphone?
- Make an effort to give your e-waste to separate collection instead of throwing it in the normal waste!
- Become a Waste Wise Cities member or affiliate and share your good practices with us!

FACTSHEET

# Waste Wise Cities Tool in Mangaluru, India



The extensive data assessment being done by UN-Habitat will give us a clear idea of where Mangaluru city stands with respect to solid waste management at multiple stages starting from household segregation to the landfill site. The data generated after the application of WaCT will help the city in preparing a clear-cut roadmap of solid waste management which will include usage of resources, stakeholders and utilisation of technology. Starting from methods of segregation to collection intervals of segregated waste to transportation of waste involving vehicles and manpower to processing techniques to creating a circular economy, a detailed plan may be prepared to help Mangalore tackle the problem of Municipal Solid Waste in the years to come.

**Akshy Shridhar, IAS**  
Commissioner, Mangaluru City Corporation,  
Mangaluru, Karnataka (India)



City: **Mangaluru**  
Country: **India**

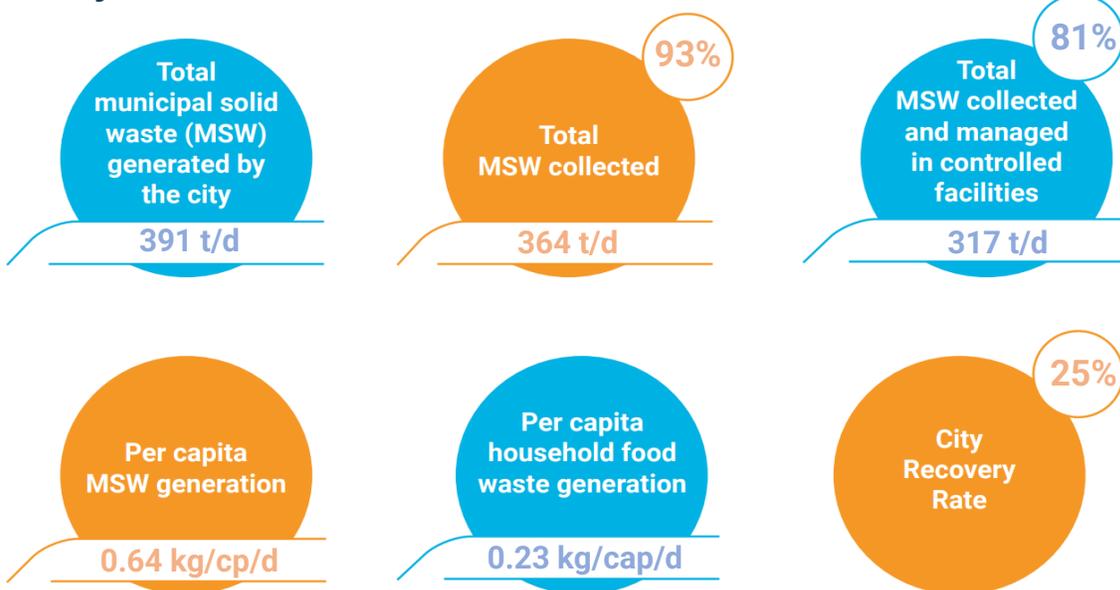


Population:  
**608,871 (2021)**



Year of WaCT Survey:  
**2021**

## Key Waste Data



## Household and non-household waste generation



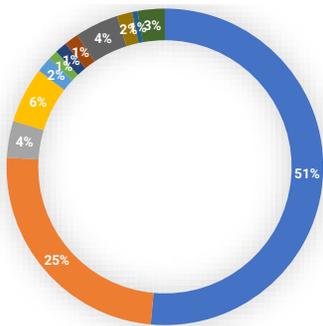
	Average household waste generation (kg/capita/day)	Total population	Total MSW generated by households (t/day)
High income	0.53	145,010	77
Middle income	0.46	337,184	155
Low income	0.33	126,677	42
<b>TOTAL</b>	<b>0.45</b>	<b>608,871</b>	<b>273</b>



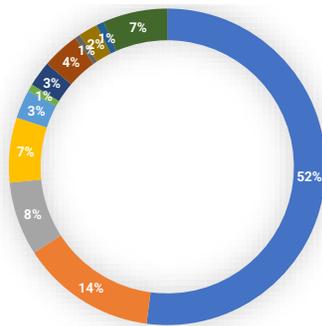
Total MSW generated from non-household sources (t/day): 117  
calculated using proxy of 30 % of total MSW

## Composition of waste at the households and at the disposal site

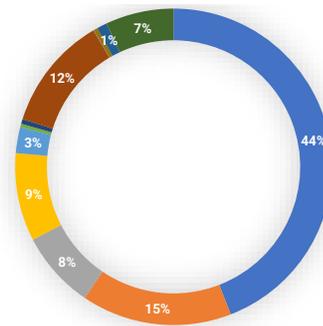
Household waste composition  
higher income areas



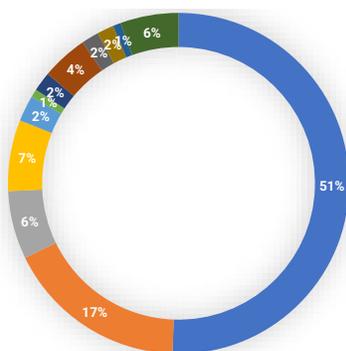
Household waste composition  
middle income areas



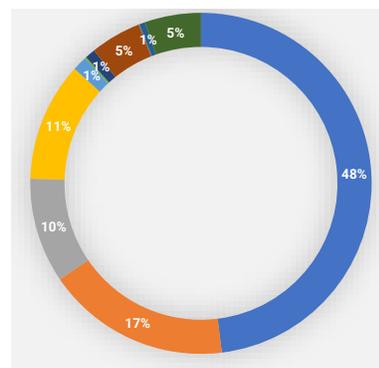
Household waste composition  
lower income areas



Average household waste  
composition



Waste composition at disposal site



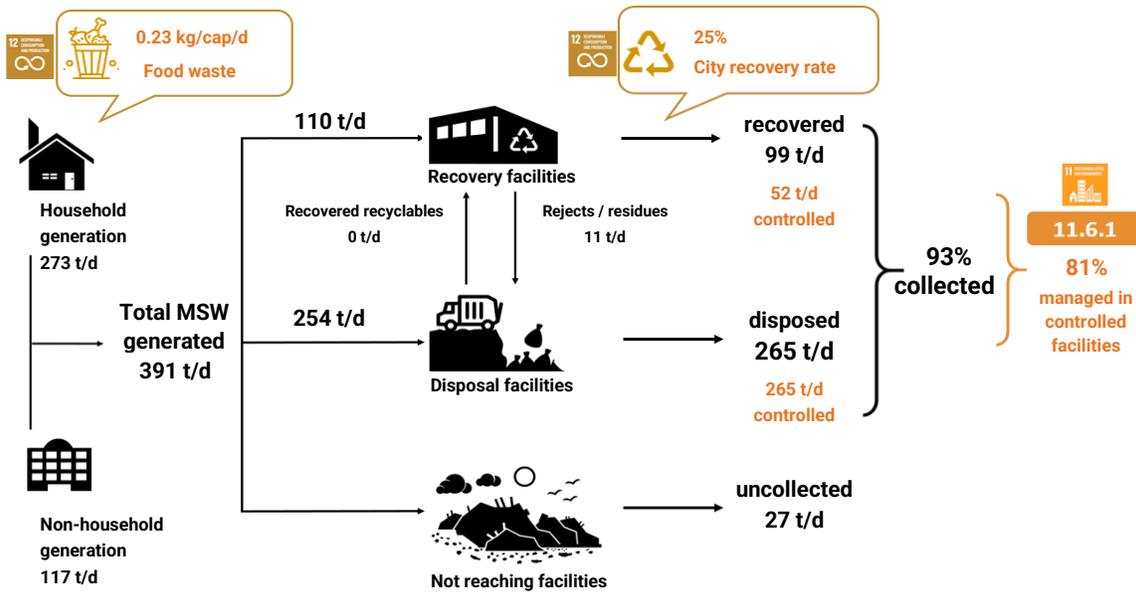
- Kitchen / canteen
- Garden / park
- Paper / cardboard
- Plastic film
- Plastics dense
- Metals
- Glass
- Textiles / shoes
- Wood (processed)
- Special wastes
- Composite products
- Other

## Potential recyclables from households



Types	Recyclable waste generation from households (t/day)
Food waste	138
Plastic film	18
Plastic dense	7
Paper and cardboard	18
Glass	5
Metal	2
<b>Total</b>	<b>200</b>

## WaCT Flow Chart



For more info and if interested in WaCT application contact the Waste Wise Cities Team at [WasteWiseCities@un.org](mailto:WasteWiseCities@un.org)

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