



# AFRICA

## Waste Management OUTLOOK

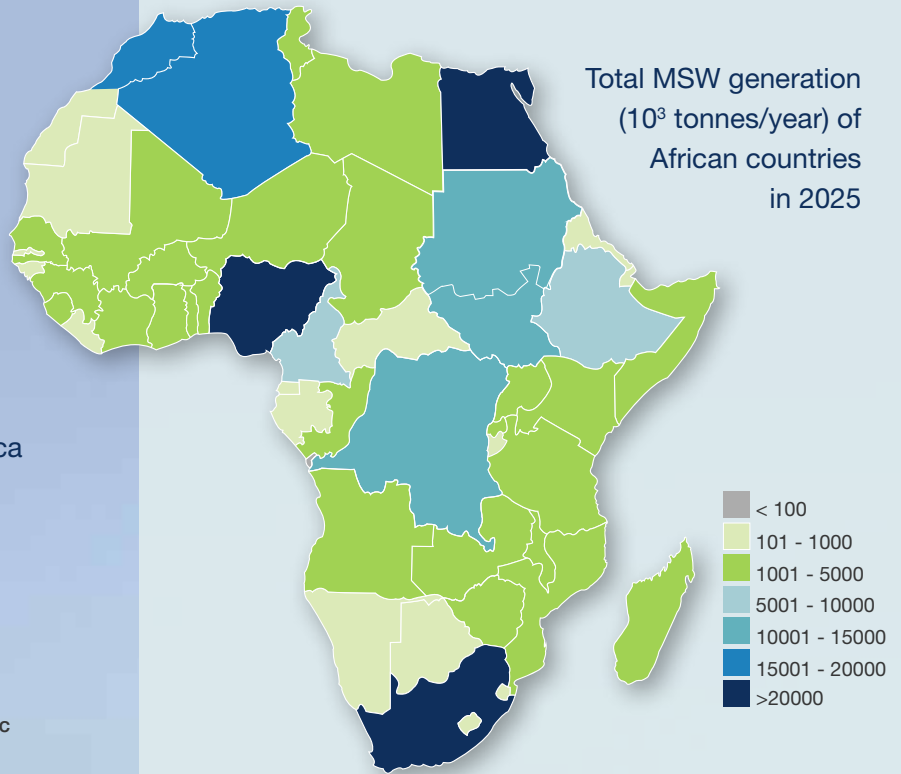
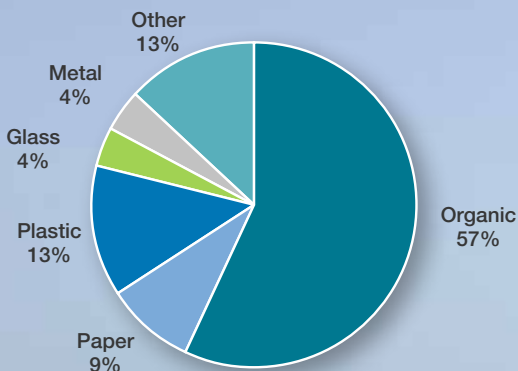
SUMMARY FOR DECISION-MAKERS



# The state of waste in Africa

## MSW composition in sub-Saharan Africa

Source: Hoornweg and Bhada-Tata (2012)



**GENERATION** 125 million tonnes of municipal solid waste (MSW) was generated in Africa in 2012, which is expected to double by 2025. The growth in waste generation in Africa is expected to be so significant, that any decrease in waste generation in other regions globally will be overshadowed by Africa.



**WASTE COLLECTION** services in most African countries are inadequate. The average MSW **collection rate** is **only 55%**.



**DISPOSAL** More than **90%** of waste generated in Africa is disposed of at **uncontrolled dumpsites and landfills**, often with associated open burning. **19** of the world's **50 biggest dumpsites** are located **in Africa**, all in Sub-Saharan Africa.



**COMPOSITION** On average, **13%** of MSW generated in Africa is **plastic** and **57%** is **organic waste**, the bulk of which is currently dumped but which could provide significant socio-economic opportunities for countries.



**RECYCLING** has emerged across Africa, driven more by poverty, unemployment and **socio-economic need** than by public and private sector design. An estimated **70-80%** of the MSW generated in Africa is **recyclable**, yet **only 4%** of MSW is **currently recycled**.



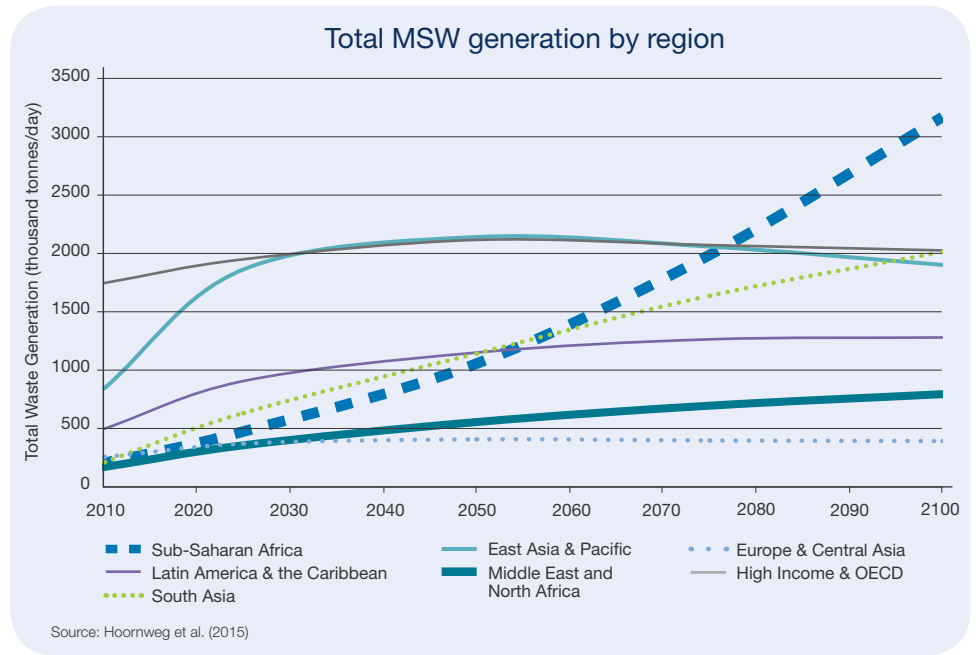
**Informal waste pickers** are active in recovering valuable resources from the waste at **little to no cost** to municipalities and private companies.



# The drivers of growth and transformation

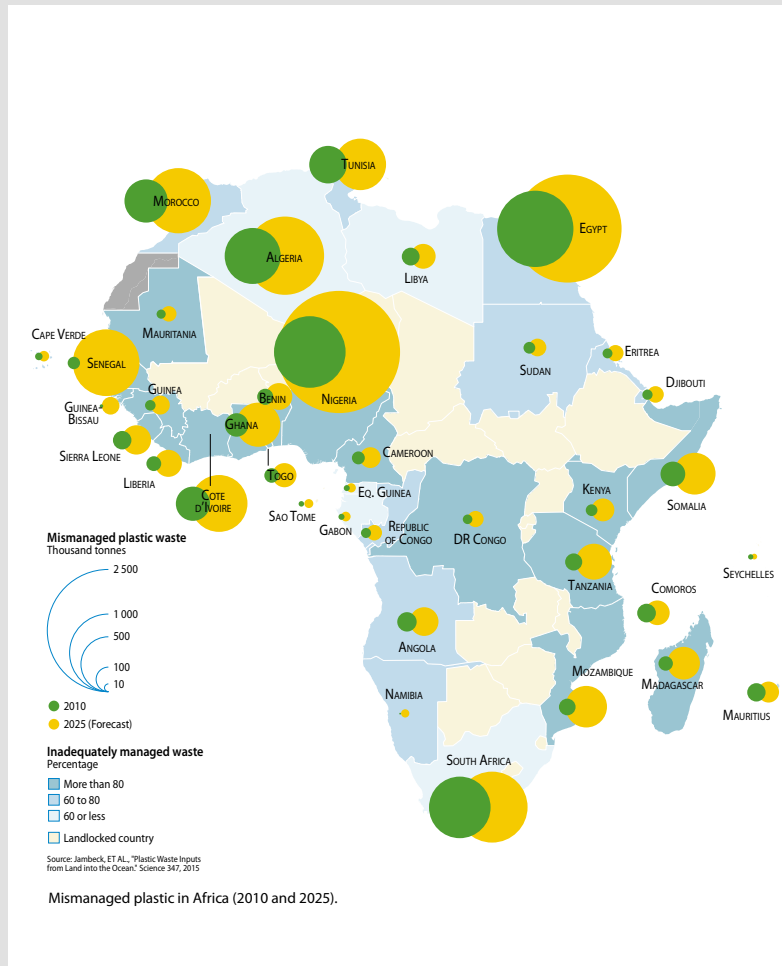
Africa is set to undergo a major **social** and **economic transformation** over the next century as its population explodes, cities urbanize and consumer purchasing habits change.

This is expected to lead to significant growth in waste generation, which will put considerable strain on already constrained public and private sector waste services and infrastructure.



## The impacts of mismanaged waste in Africa

Current waste management practices in Africa are causing economic, social and environmental impacts. **The cost of inaction is significant.**



- Changing consumer behaviour has resulted in increasing plastic consumption in Africa, which combined with weak MSW collection systems, places Africa at risk of increasing **marine plastic litter**. If Africa does not put measures in place to mitigate the flow of plastic (and other waste) into the ocean, increasing pollution is likely to negatively **impact coastal economies**.
- Indiscriminate dumping of waste in urban areas is common, creating increased **risk of disease, flooding and environmental pollution**.
- Disposal of organic waste results in the generation of **greenhouse gases** which contribute to climate change, and **leachate** which can pollute ground and surface water.
- Open burning of waste causes significant air pollution which **impacts on human health**.
- More than two thirds of the 130 plus people killed in recent landfill collapses in Africa were women. Waste management in Africa has largely ignored **gender disparities**.
- Africa has become a dumping ground for end-of-life goods, such electronic waste, often originating from developed countries. Recycling and treatment infrastructure is typically inadequate to safely deal with these waste streams resulting in direct **impacts to human health and the environment**.

# Responding to a changing paradigm of waste

## Preparing for the upcoming transition

There is an urgent need for African countries to address current waste management challenges and to prepare for the expected growth in waste generation in the coming century. This will require social and technological innovation, and investment in services and infrastructure in the waste and secondary resources sector, never before seen in Africa.

## A vision for Africa

“Extending regular and reliable waste collection services to all. Safe disposal of residual waste to sanitary engineered landfills, while maximizing the recovery of secondary resources from these waste streams through social and technological innovations appropriate for Africa.”

The vision of the Africa Waste Management Outlook does not ask countries to do anything that has not been asked of them before, however, the reason for achieving this vision is clearer now than it has ever been, and the authors hope that the Outlook provides a strong case for why this needs to be achieved now.

### • The opportunity in waste:

Africa needs to realize the opportunity that secondary resources represent for the continent. Diverting waste away from dumpsites and landfills towards reuse, recycling and recovery, could inject an additional **US\$8 billion** every year into the African economy, and create significant socio-economic opportunities for the continent. Achieving the vision means that secondary resources could be released back into the African economy, growing and strengthening local manufacturing, creating jobs, addressing unemployment, and building local and regional economies. And if done responsibly and sustainably, at the same time minimizing the environmental and human health impacts associated with the current poor solid waste management practices seen across the African continent.

### • Gearing up to the technology needs:

Given the weaknesses in formal waste management systems, many social and technological innovations in waste reuse, recycling and recovery have emerged in Africa.

Rolling out large-scale recycling and recovery technology in Africa, typically used in developed countries, could cost the continent between **US\$6 billion and US\$42 billion** in the short-term, increasing to between **US\$17 billion and US\$125 billion** in 2040 depending on the alternative waste treatment technologies adopted.

While there is currently limited understanding or agreement on the appropriate waste technology roadmap to achieve this vision, a combination of small-scale, low-cost, decentralized, community-driven initiatives and larger-scale, higher-cost, centralized public-private initiatives may be required to address current and expected future solid waste management.

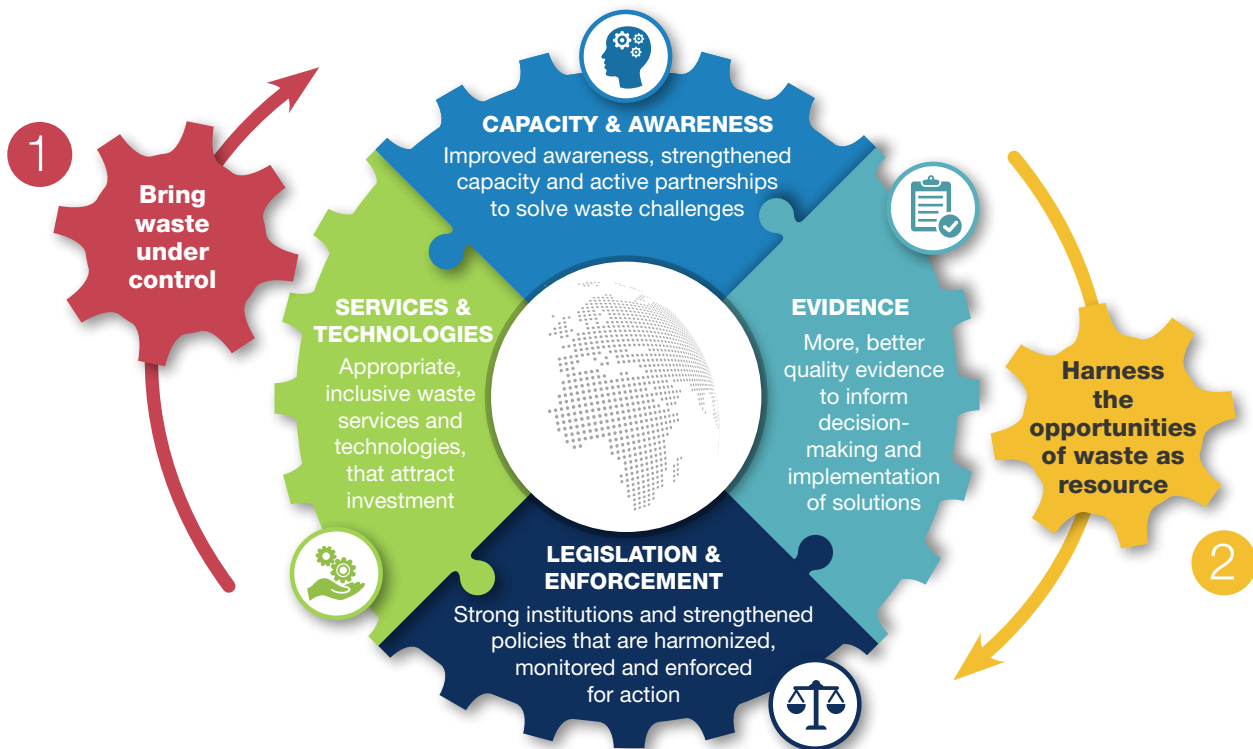
The resource value currently locked up in Africa's waste is significant, which should be attractive to public and private sector investors, assuming the technologies are appropriate for Africa.

## THE SOLUTIONS

# What needs to happen

Two areas of intervention are proposed to address the current and expected future waste management challenges in Africa.





## 1 Bring waste under control

The first priority for Africa is to address the public health imperative, by ensuring that all citizens have access to proper waste management services. Comprehensive, reliable and regular city cleansing and controlled disposal of waste is the foundation of every integrated waste management system.

**PROPOSED GOAL:** All citizens have access to adequate waste collection services and environmentally sound management of all waste by 2030. Uncontrolled dumping and open burning of waste has been eliminated.

### Action imperatives include –

- Extend city cleansing services (street cleaning) across all cities and towns.
- Eliminate uncontrolled dumping & open burning of waste.
- Extend affordable and appropriate waste collection and removal services to all residents, starting with densely populated areas.
- Ensure the controlled disposal of all waste as a first step towards sanitary engineered landfilling for residual waste.
- Eliminate illegal trafficking of hazardous waste.
- Separate hazardous waste from other waste at source, in particular health care risk waste and household hazardous waste.
- Promote waste prevention and cleaner production, particularly within business and industry.

## 2 Harness the opportunities of 'waste as resource'

The second priority for Africa, to be addressed in parallel, is to unlock the socio-economic opportunities of waste as resource, by moving waste up the waste management hierarchy away from disposal towards waste prevention, reuse, recycling and recovery.

**PROPOSED GOAL:** African countries are diverting at least 50% of the waste they generate towards waste reuse, recycling and recovery by 2030, and measures are in place to encourage waste prevention.

### Action imperatives include –

- Maximize reuse, repair and refurbishment of end-of-life products.
- Integrate existing small-scale informal and formal entrepreneurial activities within mainstream waste management and ensure social inclusion in the opportunities created.
- Incentivize the establishment of local and regional recycling and recovery (end-use) markets to ensure maximum benefit for the African continent.
- Implement appropriate, sustainable alternative waste treatment technologies for residual waste that cannot be designed out or sustainably recycled.

## THE SOLUTIONS

# How this needs to happen



### Capacity-building and awareness-raising

**AWARENESS:** There is an urgent need to raise awareness and change public attitude towards waste generation, waste management, uncontrolled dumping and open burning of waste, along with the associated health and environmental impacts.

**TRAINING AND EDUCATION:** Is needed at two levels (i) A “bottom-up” approach that involves customized training programmes for waste management staff in municipalities and private companies, to provide them with the technical knowledge to implement and manage sustainable waste management programmes and effectively enforce legislation, and (ii) A “top-down” approach to build understanding of the importance of sound waste management at the political and government levels.

**PARTNERSHIPS AND COLLABORATION:** Public-private partnerships can provide a solution to building robust waste services and infrastructure for tackling Africa’s waste problems. Collaboration with developed countries can accelerate the implementation of appropriate technology, guided by the needs of Africa, not technology vendors.

**INFORMAL SECTOR INTEGRATION:** The informal sector, as major actors in MSW collection, sorting and recycling, need to be recognized, supported and integrated into existing and planned formal waste management systems.



### Improved evidence for informed decision-making and implementation of solutions

**DATA COLLECTION AND ANALYSIS:** Measures, such as standard use of weighbridges, must be put in place to facilitate regular collection, verification and analysis of data on the amount, sources, types and composition of solid waste (both general and hazardous) generated, recycled and landfilled.

Reliable waste data is essential to enable structured and innovative financing in African countries and communities, but also to assess the socio-economic cost of inaction.

**RESEARCH, DEVELOPMENT AND INNOVATION CAPABILITY:** Greater investment in research, development and innovation (RDI) needs to be made at the regional and national levels so as to support evidence-based decision-making and policy-development.

Achieving the objectives of the Outlook may place increased strain on institutions in Africa, both financially and technically. The following, are therefore key to bringing about change:



### Strengthened policies, monitoring and enforcement capacities

**LEGISLATION AND ENFORCEMENT:** Strong institutions and an enabling governance environment that facilitates partnerships between government, the private sector, civil society, consumers and the informal sector need to be put in place. Waste policies and legislation must be introduced where absent, strengthened where weak, and where they do exist, they need to be harmonized across the region to ensure that weaknesses in legislation in one country are not exploited. Governments should put in place favourable policies and appropriate incentives to promote waste reuse, recycling and recovery, including the adoption of advanced policy instruments such as economic instruments, including Extended Producer Responsibility, where appropriate.

**TRANSBOUNDARY MOVEMENT:** The transboundary movement of waste into Africa needs to be controlled through the domestication of international and regional conventions and treaties, to prevent Africa from being an easy target for illegal dumping of hazardous waste from outside the continent.



### Appropriate services and technologies

**APPROPRIATE SERVICES AND TECHNOLOGIES:** The shift from uncontrolled dumping to sanitary engineered landfilling of residual waste must be a priority for African countries. Waste services and infrastructure must be carefully chosen in terms of their sustainability and appropriateness for local conditions, and should be implemented progressively. Cities and towns should start with low-technology, low-capital, labour-intensive and culturally acceptable technologies. Culturally, there is a high tendency for waste reuse in Africa, which should be encouraged and maintained; single-use products should be discouraged where appropriate and where end-use markets do not exist. Certain municipal waste streams such as organic waste, construction and demolition waste, and paper and packaging waste, provide immediate opportunities for diversion from landfill towards value recovery. Facilities for the safe treatment and disposal of hazardous waste, including health care risk waste, are urgently needed in Africa.

**PROMOTING INVESTMENT:** Countries need to create an enabling environment that attracts private investors into the waste sector. This includes reducing the risks associated with investment in Africa and raising investor confidence. Favourable regulations and policies must be explored, and institutions and governance strengthened. Mechanisms should be created to improve regional markets, so as to achieve economies of scale for investment.

# Finally...

... the African Union has set an ambitious aspiration that “African cities will be recycling at least 50% of the waste they generate by 2023”.

The authors fully support this goal and believe that even higher rates can be achieved by focusing on (i) the diversion of organic waste away from landfill towards composting, bioenergy recovery and higher value product recovery, followed by (ii) refurbishment, repair, reuse and recycling of mainline recyclables such as plastic, paper, metal, glass, tyres and e-waste.

It is recommended that an “African Regional Strategy for Secondary Materials Management” be developed, implemented and resourced, with clear actions and goals for countries and cities. A strategy that creates opportunities for both small-scale, bottom-up, community based approaches as well as larger-scale, advanced treatment technologies. A serious debate regarding the appropriateness of large-scale thermal treatment technologies, such as incineration, must be had as part of the development of this strategy, given the high organic waste content and high resource value within Africa’s waste streams.

The success of such a strategy will require an enabling governance environment combined with supporting data, infrastructure, institutional capacity, financial provisions and monitoring and control mechanisms. Measures to reduce the risks associated with investment in Africa must be addressed at the continental and national levels and an enabling environment created for public-private partnerships. The establishment of regional secondary resource economies will be important to such an African strategy, and countries will need to find ways to support and enable such regionality while at the same time ensuring that they do not further facilitate waste trafficking and illegal dumping of hazardous waste in Africa.



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