



## Overview

# Waste management:

Priority actions towards a  
nature-positive future

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## Introduction

Our current global economy is characterized by a “take-make-waste” industrial process. This creates a one-way, or linear, flow of materials - leading to the overconsumption of the planet’s resources and causing significant pressures on nature. It is estimated that the extraction and processing of natural resources contribute to an alarming 90% of biodiversity loss and water stress.<sup>1</sup>

This linear model also generates significant amounts of waste, with the World Bank projecting that global waste generation could rise from 2.01 billion metric tons in 2016 to 3.40 billion metric tons by 2050.<sup>2</sup> We are currently consuming natural resources and generating waste 1.75 times faster than the Earth can sustainably provide.<sup>3</sup> Through waste prevention, reduction, recycling and the adoption of circular economy principles, waste management businesses can support society in minimizing waste generation, maximizing resource recovery and reducing the world’s reliance on natural resources. What was once a sector primarily focused on ensuring public health and cleanliness has evolved into a pivotal player in the transition toward a circular economy.

To complement ongoing sustainability initiatives, all businesses need to **Assess, Commit, Transform and Disclose** ([ACT-D high-level business actions on nature](#)). They should acknowledge the value of nature to their business; assess and measure their impacts and dependencies on nature; set transparent, time-bound, science-based targets; take actions to address their key impacts and dependencies; and publicly disclose performance and other relevant nature-related information.

Waste management practices vary globally, influenced by cultural norms, government policies and infrastructural differences which lead to a diverse range of approaches. This overview recognizes this and provides a sector-level summary of potential key impacts and dependencies on nature.<sup>1</sup> Importantly, it also sets out the priority actions that all businesses should take now to **transform** and ensure the waste management sector plays its role in halting and reversing nature loss by 2030 - the mission at the heart of the [Kunming-Montreal Global Biodiversity Framework](#).

### Scope of this overview

Waste management ([SICS code: IF-4](#)) refers to the practice of collecting, transporting, processing, disposing, managing and monitoring various waste materials, with a strong emphasis on adhering to the waste hierarchy whenever feasible. This report focuses on municipal solid waste streams (MSW), which consists of household waste and similar waste generated by commercial establishments, offices, industry and public institutions. The recommendations may also be applicable across different waste streams. For wastewater management, please refer to Business for Nature’s [report on water utilities and services](#).

## Waste management value chain (as covered in this overview)



<sup>1</sup>The impacts and dependencies have been developed using the online [ENCORE tool](#) (Exploring Natural Capital Opportunities, Risks and Exposure) and in consultation with nature experts and key players in the waste management sector. For further details on the methodology, please refer to the [FAQs](#).

## Nature-related impacts

To harness the waste management sector's potential to promote a circular economy and contribute to a nature-positive future, efforts should be directed towards addressing the sector's most significant impacts on nature, namely:

- **Greenhouse gas (GHG) emissions** – The treatment and disposal of waste increases the concentration of potent greenhouse gases (especially methane) in the atmosphere, notably through the disposal of waste in open dumps or landfills, incineration and the transportation of waste materials.
- **Pollution** – Waste management, especially when not effectively conducted, can lead to localized air pollution, soil degradation, water pollution and eutrophication, plastic pollution, pollution of other waste materials and noise, odor and light pollution – all of which adversely affect natural habitats, biodiversity and human health.
- **Loss of species** – Improper waste management can harm wildlife through pollution, entanglement and suffocation. It can also disrupt food chains, introduce toxins, spread disease and promote the dispersal and proliferation of invasive species, leading to ecological imbalances and loss of species.
- **Depletion of natural resources** – Waste management businesses are the last resort for mitigating the impacts of waste on nature and human health and to keep valuable materials in circulation. If valuable resources are disposed of, the demand for new products may rely heavily on virgin materials, perpetuating the exploitation and depletion of precious natural resources and contributing to the degradation of nature. This is often driven by systemic barriers such as a lack of end markets for recycled materials and the cost of adequate collection and recycling systems.
- **Land use change** – The construction and expansion of sites can lead to habitat destruction and the loss of valuable land, impacting ecosystems and biodiversity.

## Nature-related dependencies

Like many sectors, waste management is dependent on a number of ecosystem assets, flows and services to function and grow. In particular, waste management businesses rely heavily on:

- **Water** – Water is used to cool and heat waste processing equipment, to operate Energy from Waste facilities (EfW) and throughout the cleaning, sorting and processing of waste materials, especially for reuse and recycling.
- **Energy** – The waste management sector relies on various energy sources, including both renewable and non-renewable sources, to power operations, for transportation of waste and to maintain efficiency.
- **Soil quality** – Healthy soil facilitates the decomposition of organic waste and provides a stable foundation for waste management sites, such as landfills and other infrastructure. Soil is also a carbon sink for compost produced from biowaste treatment, further enhancing the importance of soil quality in carbon sequestration.
- **Land availability** – Adequate land is essential for landfill sites, recycling centers and composting facilities, allowing efficient waste management and minimizing transportation distances.

These dependencies strengthen the business case for investing in the protection and restoration of nature.





## Priority actions and opportunities

The waste management sector has a key role to play in the transition to a nature-positive world – with a focus on preserving the value and properties of waste to deliver high-quality materials back to the economy. As a business in the waste management sector, you can reduce your company's negative impacts on nature, mitigate risks to your operations and unlock commercial opportunities by prioritizing five key actions:

**1. Avoid and reduce the emission of methane at landfill sites** – Reduce your methane emissions by improving waste segregation, diverting organic waste from landfill, prioritizing landfill gas recovery, detecting and reducing fugitive GHG emissions and optimizing landfill cover and compaction. This will deliver rapid benefits through avoided warming, while soil enrichment from the composting of organic waste will reduce reliance on synthetic fertilizers and promote healthier ecosystems.

**2. Avoid and reduce the use of energy and water throughout waste management processes** – Decrease your water and energy consumption and reduce the emission intensity of energy to minimize your reliance on natural resources. This can be achieved through reduced energy and water use on-site, recycling used water, renewable energy sourcing and switching to zero-emission vehicles.

**3. Restore and regenerate waste management sites and historically impacted ecosystems** – Site new waste management facilities responsibly by locating them on previously-degraded lands, in consideration of spatial planning and integrating a landscape approach.<sup>ii</sup> For current sites, you can improve ecosystem services and increase biodiversity through restorative activities and the use of Nature-based Solutions (NbS)<sup>iii</sup> – notably with the creation of habitats that

provide shelter, food and breeding grounds for various species. The increased resilience of ecosystems will also help mitigate the risk of waste leakage; for example, vegetated buffers and permeable surfaces can help manage stormwater runoff and prevent pollution in waste management areas.

**4. Transform from waste management to resource management in a circular economy** – Shift your focus from disposing of waste to maximizing waste prevention, reuse, recycling and resource recovery and utilization, for example, through collaboration with manufacturers to minimize waste generation, design products suitable for reuse and recycling and invest in enhancing the collection and processing of more materials. Viewing waste as a valuable resource and recovering energy from waste where disposal is unavoidable will maximize the sector's avoided impacts on nature.

**5. Transform the sector through policy advocacy and collaboration** – Collaborate with policymakers at a global, national, regional and municipal level to influence the regulatory and behavioral environment within which you operate, and support the development of fit-for-purpose policies, actionable implementation and importantly, the enforcement of these policies. Support progressive industry associations to facilitate policy advocacy and enable efficient engagement. Mobilize the public to change waste practices and promote circularity and sustainable behaviors.

Importantly, efforts to deliver these priority actions and transform the sector must be delivered in alignment with a just and equitable transition, including meaningful dialogue with affected groups, such as employees, local communities, Indigenous Peoples and marginalized communities.

Adopting the priority actions can help businesses contribute to societal and environmental objectives, including the Global Biodiversity Framework (GBF) and the Sustainable Development Goals (SDGs). [Read the GBF-SDG mapping to see how the priority actions can contribute to these objectives.](#)



<sup>ii</sup> According to Global Canopy's "[The Little Sustainable Landscapes Book](#)", a landscape approach aims to "ensure the realisation of local level needs and action (i.e., the interests of different stakeholders within the landscape), while also considering goals and outcomes important to stakeholders outside the landscape, such as national governments or the international community."

<sup>iii</sup> Such as constructed wetlands, vegetated buffers and permeable surfaces which can help manage stormwater runoff and prevent pollution in waste management areas.

## Resources

This overview was derived from the report "[Waste management: Priority actions towards a nature-positive future](#)".

The following **sector-specific guidance and tools** are currently available to businesses in the waste management sector:

- [Global Reporting Standard 306: Waste 2020](#) (GRI)
- [Biodiversity Best Practice Guide](#) (UK Environmental Services Association)

The following **organizations and coalitions** also provide useful information for the sector:

- [Ellen MacArthur Foundation](#)
- [Closed Loop Partners'](#) Center for the Circular Economy

For additional sector-agnostic resources, please refer to Business for Nature's [High-level Business Actions on Nature](#).

## Contributors and credits

### Written by

**Zoe Greindl**, Business Action Advisor, Business for Nature (seconded from Accenture)

**Gemma Tooze**, Business Action Advisor, Business for Nature (seconded from Accenture)

**Michael Ofosuhen-Wise**, Business Action Senior Manager, Business for Nature

**Albert Askeljung**, Communications Manager, Business for Nature

**Lucy Coast**, Communications Director, Business for Nature

**Eva Zabey**, Chief Executive Officer, Business for Nature

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## References

<sup>1</sup> [Resource Efficiency and Climate Change: Material Efficiency Strategies for a Low-Carbon Future](#) (UNEP, 2020)

<sup>2</sup> [What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050](#) (The World Bank, 2018)

<sup>3</sup> [Overuse of Resources on Earth](#) (The World Counts, 2023)

