



Overview

Water utilities and services:

Priority actions towards a
nature-positive future

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Introduction

The water utilities and services sector is critical to securing the availability and sustainability of water and sanitation for all - a basic human right¹ and core to United Nations Sustainable Development Goal (SDG) 6. However, the sector's impacts and dependencies on nature in providing this public service are increasing, driven by growing demand and accelerating changes in our climate.

This places water utilities and services at the heart of the world's response to the interconnected nature and climate crises. If not transformed urgently and conscientiously, the sector will continue to have significant impacts on nature, with unsustainable freshwater use and competition for water resources resulting in a global water crisis. The natural ecosystems and biodiversity that the sector interacts with are already in peril, particularly freshwater species which have seen an 83% decline globally since 1970.² Water quality is also deteriorating, and 2 billion people do not currently have access to safe drinking water.³

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.

Water utilities and services businesses vary globally, influenced by their geography, policies and regulation, and different operational models and infrastructure. This overview recognizes this and provides a sector-level summary of potential key impacts and dependencies on nature. Importantly, it also sets out the priority actions that all businesses should take to **transform** and ensure the water utilities and services 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

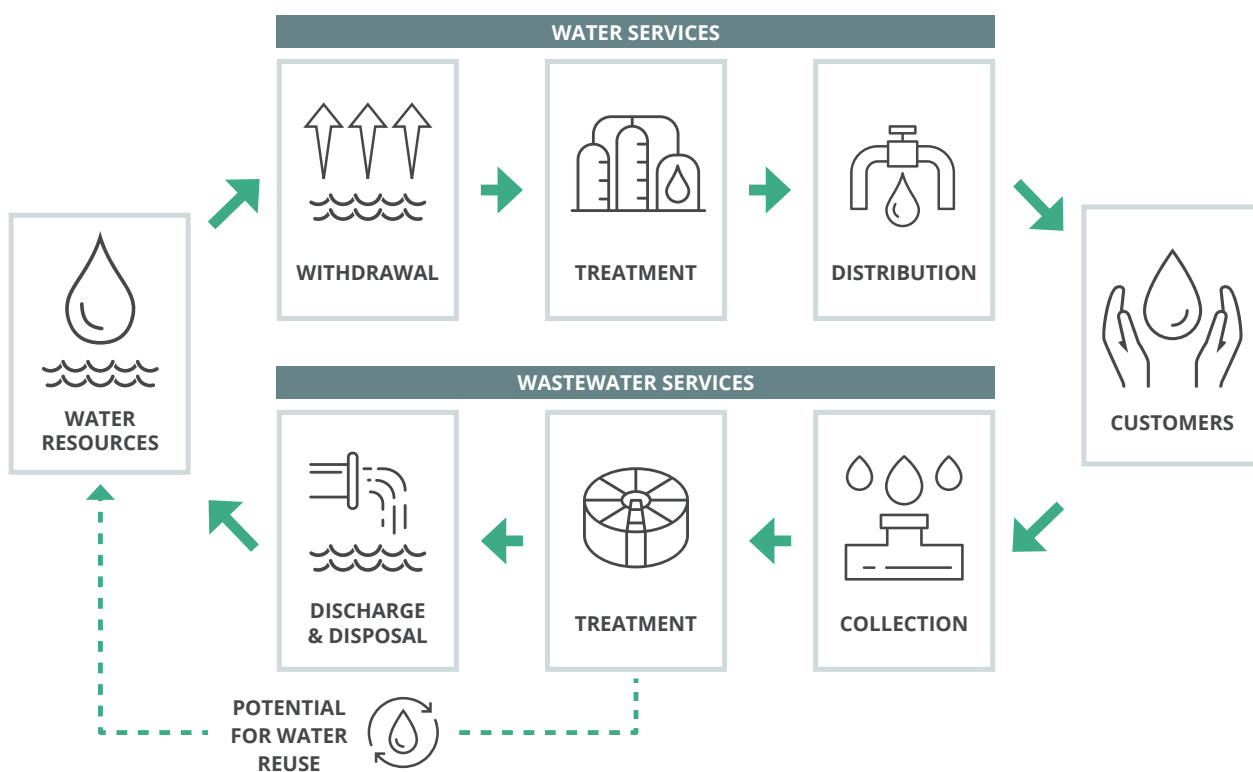
For this overview, water utilities and services ([SICS code: IF-WU](#)) include:

- Businesses that own or operate water supply and wastewater treatment systems and are generally structured as regulated utility businesses.

- Water services businesses that provide operational and other specialized water services to system owners and are generally market-based operations.

- Out of scope are businesses in the food sector, including manufacturers and suppliers of bottled water.

Water utilities and services value chain



Nature-related impacts

To protect and enhance the ecosystems on which they depend, water services and utilities businesses should direct their efforts towards addressing the most significant impacts on nature in their operations and value chains, namely:

- **Freshwater use** – While playing a crucial role in providing drinking water, the sector contributes to the global water crisis through unsustainable freshwater withdrawal (or abstraction) and water loss. This is exacerbated by high consumption rates, population growth and climate change impacts.
- **Pollution** – Water utilities and services businesses contribute in varying degrees to the pollution of rivers, lakes and coastal waters through undertreated and/or untreated wastewater discharges as well as ageing, leaky infrastructure.
- **Land and water use change and degradation** – The sector can damage terrestrial and freshwater ecosystems (and in some cases, coastal ecosystems) from activities across the whole value chain. The most notable impacts tend to arise in direct operations through water withdrawal (or abstraction) and flow alteration, and wastewater treatment and disposal.
- **Greenhouse gas (GHG) emissions** – The sector emits GHGs across the entire value chain, raising the concentration in the atmosphere and amplifying global warming. The main sources of GHGs are energy consumption from fossil fuels, process emissions from sewers or biological wastewater treatment and untreated wastewater discharge, and emissions from wastewater disposal and sludge management.

Nature-related dependencies

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

- **Water flow maintenance** – The provision of clean water to meet human needs relies on the hydrologic cycle to recharge ground water sources and maintain surface water flows.
- **Freshwater quality (surface and ground water)** – Water filtration and purification is essential to meet human needs while underpinning ecosystems on which the whole environment relies. The quality of water determines the extent of treatment required.
- **Freshwater quantity (surface and ground water)** – As a direct physical input to the value chain, the sector is dependent on sufficient freshwater from both surface waters (natural or artificial waterways containing freshwater, including lakes, rivers, streams and canals) and ground water (freshwater located in the subsurface pore space of soil and highly permeable rocks called aquifers).
- **Soil quality** – Healthy soils form a key component of the hydrologic cycle and are critical to sustaining the sector as they store, accept, transmit and purify water.

These dependencies strengthen the business case to invest in the protection and restoration of nature.



Priority actions and opportunities

As a business in the water utilities and services sector, you can reduce your company's negative impacts on nature, mitigate risks to your operations and unlock commercial by prioritizing five key actions:

- 1. Avoid sourcing freshwater in water-stressed and areas important to biodiversity; and reduce unsustainable freshwater use** – Take a watershed approach to water management to ensure sustainable freshwater withdrawal. Locate suitable long-term water resources with full consideration of societal, climate and nature impacts, particularly in water-stressed regions and areas important to biodiversity (see [Net Positive Water Impact \(NPWI\) journey](#) for example). Utilize water reuse as a reliable alternative source of potable water. Develop data-driven smart water management systems to improve water allocation, support efficient water usage and increase water security. Educate and incentivize customers to reduce water use (see [50L Home](#) global platform to encourage water efficiency and boost awareness).
- 2. Avoid and reduce water pollution** – Implement a range of solutions to help minimize your impacts on water pollution, including to modernize and/or rehabilitate facilities; utilize wastewater and sludge as a circular resource for energy, nutrients and other recoverable materials; leverage technologies for a smart wastewater network; and educate customers to reduce pollution from blockages.
- 3. Avoid and reduce greenhouse gas GHG emissions** – Take action across the whole value chain, focusing not only on energy-intensive treatment and distribution processes in direct operations, but also accounting for and managing embodied carbon. Undertake full life cycle carbon accounting, harness technologies to reduce nitrous oxide (N₂O) and methane (CH₄), and source and generate renewable or low-carbon energy to achieve an energy-neutral water cycle. Utilize tools such as [IWA Climate Smart Water Utilities](#), WBCSD [Wastewater Impact Assessment Tool \(WIAT\)](#) and [Energy Performance and Carbon Emissions Assessment and Monitoring \(ECAM\) Tool](#).
- 4. Restore and regenerate habitats and ecosystems** – Work in partnership across catchments to conserve intact habitats and restore and regenerate degraded or converted ecosystems, for example, by investing in natural infrastructure and implementing Nature-based Solutions (see IWA Nature-Based Solutions for Wastewater Treatment, the [TNC Resilient Watersheds initiative](#), and [IWA Nature for Water: A Series of Utility Spotlights](#) for case studies). Where possible, locate interventions near your activities or the activities of your suppliers. Utilize the [UN Decade on Ecosystem Restoration principles](#) to identify best practices for restoring degraded land, freshwater and marine ecosystems.
- 5. Transform the sector through circularity, partnerships and policy** – Work with policymakers to ensure the local, national and even international regulatory landscape supports effective implementation and scaling of actions for nature. Refer to the [International Water Stewardship Standard 2.0](#) to develop collaborative approaches across business, sector, government, community and civil society organizations, and utilize [IWA Water Utility Pathways in a Circular Economy](#), the World Bank's [Water in Circular Economy and Resilience \(WICER\) framework](#) and WBCSD's [Circular Transition Indicators](#) to adopt and support circularity.

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.](#)



Resources

This overview was derived from the report "[Water utilities and services: Priority actions towards a nature-positive future](#)".

In addition to the tools mentioned above, the following **sector-specific guidance and tools** are currently available to companies in the water utilities and services sector:

- [Aqueduct risk evaluation tools](#) (WRI)
- [Net Zero The Race we all win: Mapping the route to water utility decarbonization](#) (Xylem, 2022)
- [Resilient Watersheds Tools and Technical Assistance](#) (TNC)
- [Setting Site Water Targets Informed by Catchment Context](#) and [Setting Enterprise Water Targets](#) (CEO Water Mandate)

- [Utility of the Future program](#) (World Bank and Global Water Security & Sanitation Partnership, 2021)

- [Water and Biodiversity Risk Filters](#) (WWF)

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

- [CEO Water Mandate - Water Resilience Coalition](#) and [WASH4Work](#).

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

Contributors and credits

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References

¹ [UN World Water Development Report 2019](#) (United Nations, 2019)

² [A deep dive into freshwater: Living Planet Report 2020](#) (WWF, 2020)

³ [Imminent risk of a global water crisis, warns the UN World Water Development Report](#) (UNESCO, 2023)

