United Nations Global Compact 20 years

In partnership with: accenture SAP 3M

BENCHMARK

NET-POSITIVE WATER IMPACT IN WATER-STRESSED BASINS

SDG IMPACT
11, 12, 13, 14, 17

TIMELINE
50% by 2030
100% by 2050

SCOPE ☑ Operations ☑ Products & Services ☑ Value Chain

Benchmark Information

Adopting this benchmark helps business assess their water use and deliver net-positive water impact, especially in high water-stressed areas, defined by WRI as an area where 40 per cent or more available supply of water is withdrawn each year. This SDG Ambition Benchmark provides business with the strategic insights and technical know-how to assess their freshwater impact across its availability, quality and accessibility. It advocates for businesses to move beyond operational to measurable improvements of watersheds in proportion to their local water use and economic impact in support of Goal 6: Clean Water and Sanitation. Companies must set targets for direct operations water use in the short term, supporting a pathway to 50 per cent fulfillment by 2030 and 100 per cent fulfillment of net-positive water by 2050.

Assessing Against the Benchmark

Performance on the benchmark — sustainable withdrawals and supply of freshwater by 2030 — can be assessed in line with the United Nations SDG 6, "Clean Water & Sanitation". The UN Global Compact CEO Mandate and the Water Resilience Coalition further advocates for business to achieve net-positive water impact and water resilient value chains by 2050.[1] As nearly two thirds of global freshwater consumption is associated with ingredient production for corporate supply chains, companies must extend responsibility for water consumption across the value chain.[2] Businesses that have not established goals in line with achieving net-positive water operations in water-stressed basins by 2050 as outlined above would fall below the SDG Ambition Benchmark.

BUSINESS IMPACT ON WATER

Business is the largest user of water as nearly all operations and supply chains rely on access to water. 45 per cent of companies report exposure to risks from water insecurity estimated at over US$ 425 billion.[3] More than 175 companies endorse the CEO Water Mandate to address global water challenges through corporate water stewardship, in partnership with the UN, governments, civil society organizations and other stakeholders. The Mandate's Water Resilience Coalition is an industry-led initiative focused on ambitious commitments and collective action.

59% of water is for industrial use in high-income countries

70% of global freshwater use is agricultural

25% of CDP respondents experienced detrimental impact of water stress in 2016

ILLUSTRATIVE INDUSTRY IMPACT

Agriculture: 70 per cent of global water use is attributed to agriculture.[4] The agricultural inputs required to produce beverages and food can add up to hundreds of gallons of water for each unit of food or beverage produced.[5] Improving agricultural efficiency in water-stressed regions is key to ensuring a continued water supply.

Oil & Gas: 19 per cent of global water use is industrial.[6] In the oil and gas industry, water is used during extraction and hydraulic fracturing. Concerningly, some of the most water-stressed regions in the world are also major producers of oil and gas. Industry leaders must actively manage their water risks to ensure continued production.

COMPANIES TAKING ACTION

NOVARTIS

set a 50 per cent water reduction goal by 2025 vs. 2016 levels, moving towards water neutrality in all operations by 2030. They have also pledged to enhance water quality in all areas where they operate.[7]

LEVI STRAUSS & CO

committed to reducing water use in manufacturing by 50 per cent by 2025 in areas of water stress against a 2018 baseline. Their "Water<Less" supplier targets will be applied to all suppliers, responsible for 80 per cent of LS&Co.'s production, via facility-level targets that address local water stress.[8]

INTEL

is moving beyond their 2025 target of 100 per cent water restoration, setting a new 2030 goal to increase their water conservation and achieve net-positive water use. This plan includes funding external water restoration projects.[9]

Business Value

Companies can reduce costs by conducting water-risk assessments and subsequently reducing water usage. One global beverage company saw savings of USD $300M over five years following a risk assessment.[10] Additionally, companies can further save costs and reduce risks by investing in wastewater treatment and re-using water in direct operations or within their ecosystem. These risks can also be mitigated by creating regional partnerships and investing in basin health initiatives. One consumer goods company implemented an intelligent water management plan in Colombia, which led to the construction of 10 water re-use systems, enabled 160 sites for reforestation and initiated 27 local community participation groups that train farmers on climate resilience across 25 river basins.[11]

PRELIMINARY ACTIONS

Adopt standardized measurements and definitions: Companies use various definitions and scoping boundaries to report water use and wastewater information, making comparison and benchmarking data difficult.

Incorporate water stewardship into materiality assessments: Assessing the risks, opportunities and impacts associated with water across your facilities and suppliers to inform strategies.

KEY RESOURCES

- **CEO Water Mandate**
- **AQUASTAT**
- **Aqueduct Alliance**
- **Pacific Institute**
- **International Institute for Sustainable Development**

INTEGRATION COMPLEXITY*

C-SUITE OWNERSHIP

Chief Operations Officer

Understanding Integration

Progress towards a net-positive water impact demands advanced monitoring and management of water as a resource for the business, partners and communities. Pursuing operational efficiencies to abstract less, but also identifying opportunities to protect access and quality wherever the business impacts water sources, relies on data-driven insights. Advancements in technologies that enable real-time data flows, such as the internet of things (IoT), artificial intelligence (AI) and geospatial mapping, can help businesses address their water impact, whilst increasing profitability. Streamlining water quality monitoring through smart water technologies can save a standard utility company up to US $600 million annually, or 70 per cent of quality monitoring costs.[12]

Illustrations of Integration

LEAKS

Pairing sensors in water pipelines with real-time management tools such as variable speed drives (to control pressure), businesses can automate pressure reduction and drive down water loss from leakages dramatically. A reduction in pressure of just 20 per cent can reduce leakage by 30 per cent.[13]

WATER-STRESS & RISK

Mapping areas of water-risk and local water challenges supports effective prioritization of water stewardship and access initiatives. Tyson Foods uses Aqueduct, an open source tool from The World Resources Institute. The company uses this tool to input data into their facility prioritization process, which determines the level of need for site water stewardship plans and targets. This data also lays the foundation for engaging outside the company's walls as they respond to shared water challenges in the watersheds where Tyson Foods operates and sources.[14]

* See more in SDG Ambition Integration Guide chapter on **Preparing for Integration**

Journey towards Integration

Companies should assess their ability to integrate digital technologies and smart solutions into water management strategies and systems. Engaging with technology partners and third-party service providers, businesses can achieve:

Automation of measurement and predictive action

Leveraging digital tools for automatic monitoring of water usage and impacts, moving towards real-time adjustments and action, such as changing pipe pressure or alerting repair teams to prevent leaks.

Optimization of water-efficiency and maintenance of quality

Keeping water in use, either in operations, or through restoring quality after use for return to local water sources.

Forecasting for targeted action

Collection of accurate operational and geographical water data to inform risk assessments and modelling regarding prioritization and capital allocation.

$14B

The World Bank estimates the cost to utilities of water lost before reaching the consumer at approximately $14 billion per annum

$25.6B

The smart water management market is expected to reach $25.6 billion by 2025

SDG AMBITION APPROACH

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

» VIEW THE INTEGRATION GUIDE

RAISING AMBITION

IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES

NEW GOAL IN LINE WITH BENCHMARK'S LEVEL OF AMBITION

	WATER QUANTITY	WATER QUALITY	WATER ACCESS
PATHWAYS	Reduce the amount of water required for business activities, increasing reuse, recycling, and efficiency.	Improve water treatment to restore water quality, reduce nutrient load and prevent pollution	Protect local water sources to improve access to clean water for drinking, sanitation and hygiene (WASH)
EXAMPLE ACTIONS	Improve water efficiencies across operations and invest in solutions that return water back to source (e.g. via optimization, recycling, reuse, optimization through IoT) Improve efficiency of products and material mix, during production and consumption Implement supplier guidelines to enable more effective water management processes	Implement targets and solutions to increase water treatment and employ advanced technologies / vendors to reach targets Phase out harmful chemicals in products and production	Implement policies and programs to ensure clean WASH in business operations Implement practices to understand and respond to company impacts on community WASH Engage with local communities, NGOS, and government to understand and promote better WASH outcomes
SUB GOALS	**Total water consumption**	**Water treatment rate**	**Clean water access**
METRICS*	**Fundamental:** Water use by source (freshwater vs. other); Water use in stressed regions / suppliers in stressed regions; Water recycling rate **Aspirational:** Water use per unit of production; Water loss by cause, Supplier water use & policies	**Fundamental:** Total water discharge; Total discharge outside legal thresholds; Level of water treatment **Aspirational:** Water quality (e.g. chemical composition) for all returned water; Treated water by destination; Suppliers taking action on water quality	**Fundamental:** Population with access to clean water; Employees with access to safe water **Aspirational:** Local rate of waterborne diseases; Suppliers taking action on WASH

BUSINESS PROCESSES

- MANUFACTURING OPERATIONS & SAFETY
- PROCUREMENT & SUPPLY CHAIN
- LOGISTICS, TRANSPORTATION & DISTRIBUTION
- WASTE MANAGEMENT
- SALES & DISTRIBUTION MANAGEMENT
- ENVIRONMENT MANAGEMENT

SYSTEM OPPORTUNITIES	INCREASING VISIBILITY OVER CONSUMPTION	ENCOURAGING SUPPLIER IMPROVEMENT	INTEGRATE WITH SERVICE PROVIDERS TO ADVANCE TREATMENT / RECYCLING	MAP LOCATIONS & FACILITIES FOR RISK AND OPPORTUNITY ANALYSIS
	Leverage smart water management systems for greater visibility e.g. cause of loss, moving to prediction and automation of action, including processes for recycling and re-use of water.	Create greater engagement & transparency with suppliers through supply chain management tools and technologies.	Improve integration of solutions from third-parties such as water treatment and recycling companies to optimize impact as well as inform decisions elsewhere such as product design.	Improve understanding of areas of operation and processes in place to support strategies for water-stressed basins and identify opportunities for harvesting and replenishment.
KEY DESIGN DECISIONS (KDD)	KDD1	KDD2	KDD3	KDD4
	How might smart management technology be best integrated into water management systems? Define most efficient water flow and the process for implementing and managing smart systems and process the resulting data.	**How might you facilitate supplier assessment and encourage improvement?** Identify tools to support integration of supplier water data as well as share water sustainability practices / incentivize improvement.	**How might you streamline data flows between service providers and core systems of water management?** Data flows can include water quality analysis, volume and cost of recycled water to identify opportunities for improving efficiency of water use and recycling.	**How might you build an aggregate picture of local water challenges and opportunities?** Use of geospatial tools to develop maps of water-stressed areas and overlay footprint of internal and supplier operations.

BUSINESS INTEGRATION

* All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.

BUSINESS SYSTEMS DESIGN

How might smart management technology be best integrated into water management systems?

KDD1

INTEGRATION COMPLEXITY

PEOPLE

PROCESS

TECHNOLOGY

Smart water management solutions can be used to monitor conditions and detect anomalies across water abstraction and consumption, such as a drop in pipeline pressure due to a leak or the detection of contaminants or bacteria in the water. Designing systems to monitor this data and react in real time can significantly help reduce water loss or prevent discharge of contaminated water into the environment.

These solutions rely on digital technologies such as sensors and IoT. For business to capitalize on them, they must design core systems for new processes of data collection and storage for the increased volumes of data. Analytics and artificial intelligence-enabled tools can then be used to maximize impact by producing actionable insights and ultimately moving towards prediction and automated action.

How might you facilitate supplier assessment and encourage improvement in supplier water practices?

KDD2

INTEGRATION COMPLEXITY

PEOPLE

PROCESS

TECHNOLOGY

New supply chain management tools enable more agile interaction with suppliers to ease the burden of assessment, as well as enabling companies to share best practices with their suppliers.

For example, Nestle worked with Institute of Water Informatics at LUMS University, Pakistan, to develop a cost-effective smart sensor for farmers in their supply chain. To complement the device, they created a free shareable software program which provides farmers with real-time irrigation updates, straight to their smart devices.

How might you streamline data flows between service providers and core systems of water management?

KDD3

INTEGRATION COMPLEXITY

PEOPLE

PROCESS

TECHNOLOGY

Companies may rely on service providers for the management of activities such as water recycling and treatment. Creating data flows between internal processes and service providers is important for both reporting and decision making.

Integrating water data with these external water management partners provides insights into the volume of water being treated, contaminants present prior to treatment, as well as water volume and quality post treatment. This information can help identify opportunities for water reuse across operations, but also highlight opportunities to change production processes or product design to reduce or eliminate contaminant byproducts.

How might you build an aggregate picture of local water challenges and opportunities?

KDD4

INTEGRATION COMPLEXITY

PEOPLE

PROCESS

TECHNOLOGY

The use of mapping technologies, paired with your own water use data, can help identify areas in which operations have an outsized impact on local water availability (e.g. in water-stressed basins) and allow you to prioritize targeted reduction and replenishment efforts.

Similarly, understanding where your suppliers operate can drive your supplier management strategy, such as having an increased audit frequency for suppliers operating in water-stressed regions.

1 Global Business Leaders Unite for Water Resilience, UN Global Compact, 2020
2 Corporate water use, The Nature Conservancy
3 CDP Global Water Report 2019
4 AQUASTAT - FAO's Global Information System on Water and Agriculture, UN Food and Agriculture Organisation
5 Water Footprint Network
6 AQUASTAT, UN FAO
7 Water, Novartis
8 2025 Water Action Strategy, Levi Strauss & Co.
9 "Intel pledges ambitious water-use goal by 2030: To go "net-positive," Fortune, 2020
10 Sustainable Investing: Revolutions in Theory and Practice, Cary Krosinsky, Sophie Purdom, 2016
11 CEO Water Mandate
12 Water 20/20: Bringing Smart Water Meter Networks Into Focus, Sensus, 2012
13 Digital technologies ready to impact water industry efficiency, Waste and Water Treatment, 2019
14 How Tyson Foods Uses Aqueduct, World Resources Institute