

Land and sea use change	Resource exploitation	Climate change	Pollution	Invasive alien species
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# Ecolab Cleans Up Billions With Water Efficiency Solutions

Part of the ['Opportunity Blossoms'](#) series on real economy investments in nature

Water scarcity is a growing global issue amplified by overconsumption, poor resource management and the escalating effects of climate change. By 2050, \$70 trillion of global GDP could face high water stress, exacerbating nature loss through reduced freshwater availability, habitat destruction and pollution. Public health (a 30% rise in population by 2050), food security (56% more food required) and climate change (47% rise in energy demand) are straining availability further.

Minnesota-headquartered Ecolab Inc. offers a range of solutions to improve resource efficiency and minimize environmental impact throughout a product’s lifecycle. Its ‘3D Trasar’ water management system monitors and optimizes water use in real time by integrating sensors, chemistry and predictive analytics in production processes. Initially developed for cooling systems, it is now used in wastewater, boiler and process water systems to control corrosion, scale and microbial fouling, and to enhance efficiency. The resource-optimization technology drives cost savings for clients by saving water, reducing energy consumption and curbing GHG emissions; Ecolab’s industrial business generated \$7.2 billion in 2023.

## The nature-friendly product

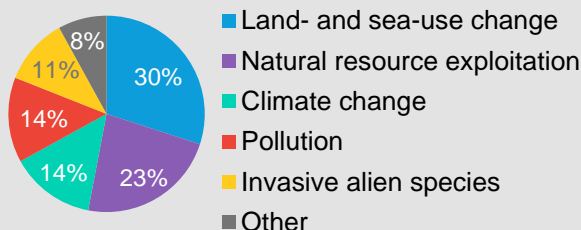
Founded in 1923, Economics Laboratory – now Ecolab (NYSE: ECL) – sold cleaning products to hotels and restaurants, later expanding to cover water, hygiene and infection-prevention solutions. Over the years, it has diversified its offerings to address critical resource challenges, serving over 40 industries in 170 countries.

Its flagship technology, 3D Trasar, uses a series of interconnected sensors and controllers to monitor water flows and chemistry, automate water management in industrial processes, and provide insights on water quality and usage. It is particularly effective in power generation, healthcare and petrochemicals. In 2023, its clients saved over 226 billion gallons of water and cut GHG emissions by 3.8 million metric tons; Ecolab is targeting annual savings of 300 billion gallons of water by 2030.

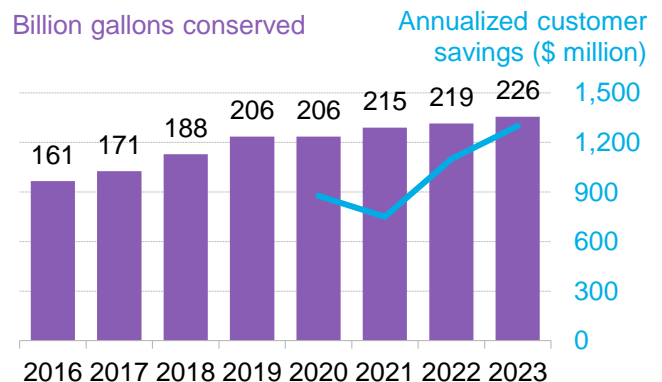
3D Trasar is also mitigating ecosystem degradation from wastewater, thereby aiding compliance with environmental regulations by enhancing wastewater treatment, lowering discharge volumes and minimizing contamination risks.

### Mitigating nature loss

Five drivers account for over 90% of global biodiversity and ecosystem decline. Ecolab addresses resource exploitation, climate change and pollution.



### 3D Trasar customer water and cost savings



Source: BloombergNEF.

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Ecolab’s development of resource-efficiency technology began in the early 2000s, in response to global concerns over water scarcity and climate change. By 2008, it had launched 3D Trasar following testing and optimization through collaborations with industrial clients. As of 2024, the technology has been adapted for commercialization across multiple sectors.

The company has expanded its portfolio through strategic partnerships with large manufacturers and industrial producers, including [Lotte Chemical](#) and [Nestlé](#).

Ecolab plans to expand its environmental sustainability offerings, announcing its intent to scale the firm’s water and energy efficiency technologies further. It publishes an annual industry study on water conservation and has formed new partnerships to drive global sustainability goals. The latter includes an extended collaboration with Microsoft, employing AI and cloud-based solutions to enhance water monitoring and improve visibility of water consumption data.

### Nature impact of resource efficiency

Industrial water consumption places immense pressure on freshwater resources, driving the depletion of water bodies, degrading ecosystems and altering the water cycle at the local, regional and global level.

The World Resources Institute [expects](#) water scarcity to become increasingly more severe, raising the water risk that companies are exposed to and requiring more stringent mitigation and adaptation. In 2020, the non-profit [projected](#) a 56% global deficit in water supply relative to demand by 2030.

Ecolab’s solutions address critical nature-related challenges, particularly water use and greenhouse gas emissions. Industry accounts for nearly [20%](#) of global water use, with water-intensive processes in manufacturing, energy and mining exacerbating shortages. These sectors are also responsible for significant carbon emissions and ecosystem degradation.

Ecolab’s products support industrial processes to operate more efficiently, alleviating water stress and the associated nature loss. The company uses a proprietary exponential return on investment (eROI) approach to measure the value of improved business performance, operational efficiency and environmental impact. For instance, in a partnership with food manufacturer [Kraft Heinz](#), Ecolab notes the deployment of 3D Trasar in 2021 resulted in 51 million gallons of water saved, 1.3 billion British thermal units (BTU) of energy reduced, and 170 metric tons of CO2 equivalent avoided, with \$1.2 million in resource efficiency gains.

Another notable client, agricultural wholesaler Archer-Daniels-Midland, [cut](#) energy consumption at its ethanol facility by 60 billion BTU and 6.1 million gallons of water through Ecolab’s clean-in-place technology, delivering \$1.6 million in combined financial and operational efficiencies over one year.

The use of several Ecolab technologies [unlocked](#) \$627,000 of eROI for Marriott Vacations Worldwide. This was through several technologies that led to 46,000 pounds of waste reduced, 23.4 million gallons of water saved, 12 billion BTU of energy lowered and 1,400 metric tons of CO2 equivalent avoided.

In comparison to industry incumbents, Ecolab stands out for its targeted technological innovations that showcase a focused approach to resource efficiency across water, waste, GHG emissions and energy.

### Financial performance

Ecolab has seen significant financial gains in recent years, driven by the growing demand for sustainable solutions. Its global industrial business, where its patented 3D Trasar technology is material, represented 43% of total sales in 2023. In 2Q 2024, Ecolab reported a 7% increase in revenue, reaching \$3.95 billion, with adjusted earnings per share (EPS) growing 35% year-over-year. Revenue growth was driven by the industrial and institutional segments, which saw significant demand for water management

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and hygiene solutions. As of September 2024, Ecolab's stock reached an all-time high of \$255.

### Ecolab Inc.'s share price, 2014-2024



Source: Bloomberg Terminal.

By expanding into sectors with lofty sustainability goals including life sciences, technology and data centers, Ecolab grew its total addressable market opportunities from \$32 billion in 2000 to \$152 billion today.

Ecolab estimates that efficient water management in data centers can help lower use by up to one-third even under a growth in usage requirements, based on modeling of 14 data centers. The company aims to showcase this value in priority markets — data centers, and food and beverage manufacturing — while accelerating future growth opportunities.

### Broader opportunities within the sector

The industrial water management and institutional hygiene sector is witnessing significant growth. Estimated to be worth \$323 billion in 2023, the global water treatment market is projected to reach \$617 billion by 2032, driven by heightened awareness of water scarcity and the need for more efficient resource management. This represents a sizable addressable market for resource-efficiency technology and service providers to capture.

Water management solutions are a fragmented market. Three large providers of resource efficiency technologies and solutions are introduced below.

### Notable resource efficiency technology providers

Company	Description	Financial gain
<b>Siemens</b>	Siemens offers a range of solutions focused on operational efficiency, including energy management, waste reduction, and resource optimization across various sectors, emphasizing carbon footprint reduction.	In 2023, Siemens generated €72 billion in revenue, with significant contributions from its digital industries and smart infrastructure segments.
<b>Schneider Electric</b>	Schneider specializes in energy management and automation solutions, enhancing efficiency and reducing energy consumption and greenhouse gas emissions.	Schneider Electric reported €34 billion in revenue for 2023, driven by strong demand for its energy efficiency tools.
<b>DuPont</b>	DuPont is a global leader in chemical and material science solutions. It provides water filtration and purification technologies, and serves sectors including electronics, industrial processes and clean energy.	In 2023, DuPont reported \$12 billion in revenue, with \$5.6 billion tied to its Water & Protection segment.

### Analyst take

Technologies such as Ecolab's 3D Trasar systems provide a way for industrial companies to reduce costs while cutting water use and emissions. In particular, Ecolab is well-positioned to address the 8% annual growth rate in data centers through 2029, with its flagship technology capable of reducing water use in these facilities by up to one-third. Its focus on efficiency aligns with tightening environmental regulations, suggesting that it will see more opportunities for revenue growth and margin expansion in priority markets, including data centers.

#### More Bloomberg Intelligence:

This case was authored by Bloomberg Intelligence. For related research from BI, see:

*Innovations Are About to Transform Waste Across Many Industries* ([terminal](#))

*Adidas, Lululemon, Nike Push to Save Water Amid Scarcity* ([terminal](#))

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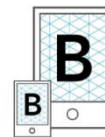
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Melanie Rua	Senior ESG Associate, Bloomberg Intelligence	<a href="mailto:mrua1@bloomberg.net">mrua1@bloomberg.net</a>
Alistair Purdie	Analyst, Nature and Biodiversity	<a href="mailto:apurdie2@bloomberg.net">apurdie2@bloomberg.net</a>
Hugh Bromley	Manager, Food, Agriculture and Nature	<a href="mailto:hbromley1@bloomberg.net">hbromley1@bloomberg.net</a>

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