

Water and the Circular Economy: 4 Barriers to Innovation and How to Overcome Them

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Water: A Growing Challenge

Water is our most valuable resource. Globally we consume around 4 trillion cubic meters of fresh water each year, for domestic use and for business and industry, where water is consumed across a range of industries and is integrally important at every stage of the supply chain. The numbers are staggering: [167 gallons \(632 liters\) of water go into a six-pack of beer; 700 gallons \(2,649 liters\) are needed to produce a cotton shirt and 39,000 gallons \(177,298 liters\) of water to manufacture a new car.](#)

With the global population growing and prosperity expanding, increased demands for goods and services will exacerbate pressure and stress on water supply. According to Aqueduct, a water risk mapping tool, by 2030 water stress will be 'High' in 40 percent of the world's largest countries by GDP, up from just 15 percent in 2016. Demand is expected to outstrip supply [by almost 40%](#), while the cost of water could increase by up to 192 percent from today's price in the USA alone based on forecasts of [historical data](#).

The water crisis has been identified by the World Economic Forum as one of the most likely and most impactful risks the planet is facing. Yet, despite more companies setting sustainability goals and increased adoption of circular economy principles, it appears that action on water at a corporate level is not moving fast enough.

Why is water not getting the attention and focus it should demand? What is holding us back from making more progress? What are the solutions and how can we drive change? Ecolab, one of the world's leaders in advancing sustainable water use, provides insights as well as potential solutions for picking up the pace.

Key Barriers to Innovation on Water

Ecolab and GreenBiz, a sustainability consulting firm, surveyed corporate leaders on their water strategies and performance. The research identified four main barriers to optimal water management:

- 1. Return on Investment (ROI) is hard to establish**

Given that the actual cost of water is currently very low in many geographies, especially in relation to its availability, it is often hard to justify return on investment in water reduction technologies and programs. Second, the challenge in establishing ROI is accentuated as most companies do not use advanced measurement tools and data to manage water: 82% of respondents strongly agree that these tools are not in place at their companies.

- 2. Organization-level, global sustainability goals ignore high-need areas**

Sustainability policies for multinationals tend to be set at an organizational level and yet, in global supply chains, water resource scarcity and challenges are often acute and localized. Organization-level goals on sustainability at a global level can fail to account for the local needs and actions to embed sustainable water strategies and may misdirect activity and investments. Businesses that use context-based goal-setting can make investments with greater confidence and reduce risk to strategies for business growth.

3. **Energy over Water**

The circular economy and sustainability are made up of a number of different environmental challenges and prioritization is key. Climate change has received considerable focus in the media and is prominent in the public discourse, and to some extent this has taken attention away from the world's water challenges. The truth is that energy and water are not competing priorities. It takes considerable energy to move, treat, heat and cool water. More efficient use of water produces considerable reductions in energy use and helps organizations lower their climate change impact. We need to think of water and energy management as one and the same.

4. **Lack of Collaboration**

Collaboration is key if we are to succeed in mitigating the impending environmental challenges we face. Still, despite the truly shared nature of water, collaboration and connectedness on water are limited as organizations continue to act autonomously to deliver progress. To make a real difference, all users of a watershed need to plan and act in coordination with each other. There are great examples of this happening in high water stress areas. A notable example is The California Water Action Collaborative, a platform for businesses and NGOs to pursue collective action projects that will improve water security in California for people, business, agriculture and nature.

Technology is the Solution

These limitations to innovation dominate the current water sustainability landscape. But progress is being made to mitigate and overcome them.

When economic and environmental benefits come together, change accelerates. Using less water, or using water more efficiently, means reducing energy use because less energy is consumed when less water is treated moved, heated or cooled. So a company's water strategy can also support its carbon strategy.

Technology, by providing data-driven insights and analysis, can demonstrate positive business impact resulting from better water management. One example is Ecolab's 3D TRASAR™, which combines chemistry, remote services and sophisticated monitoring and control to improve efficiency as well as real-time problem identification and resolution of a range of industrial operations, including water use. Another example is the [Water Risk Monetizer](#), created by Ecolab in collaboration with Microsoft and Trucost. This tool provides a risk-adjusted price for water, giving business the opportunity to understand water-related risks at the facility level and providing the basis for developing a clear ROI for investments in water-saving solutions.

This understanding also supports the setting of context-based goals and enables focused action where it matters most – at the facilities located in water-scarce areas where demand is growing fastest.

A Platform for Success

Water scarcity is one of the most defining issues of the twenty-first century and its management is an increasing priority on a global level. To date, most companies do not have sufficient strategies or programs in place to address the impending risks. Technology and data-driven insights, with increased collaboration at both the [global](#) and [local](#) scale, can drive focused action. Smart organizations will get ahead of these risks by leveraging the technology solutions available to support a circular approach to water before scarcity threatens their business growth, and the health of their communities.