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focus

Addressing New Zealand's Growing Water Quality Issues

Clean water is one of our most precious natural assets—but it is finite. Pressure on water resources is reaching a critical level both in New Zealand and globally. Demand for clean water is on an upward trajectory as the global population grows, more economies industrialise, and urbanisation trends continue. At the same time, our aged infrastructure and increasingly intense weather events are exacerbating the demand. We outline key global and local challenges in clean water management and look at how one US-based global company, Xylem, is leveraging technology to help solve some of these pressing issues.

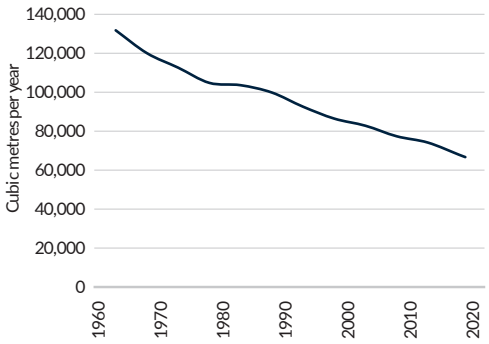
FORSYTH BARR

...a gradual decline in water quality means we now face a serious challenge...

Accessing clean water — A growing problem

Decades of underinvestment in essential water infrastructure and a gradual decline in water quality means we now face a serious challenge. Increasing demand for fresh water is becoming harder to reconcile with the varying interests of households, agriculture and industry, and of communities that value access to clean water for reasons such as conservation, recreation, and tourism.

DIMINISHING AVAILABILITY OF RENEWABLE WATER RESOURCES PER CAPITA IN NEW ZEALAND



Source: Food and Agriculture Organization, AQUASTAT data

Local impacts in New Zealand

In New Zealand, the implications of underinvestment are visible across the country. Much of the water network was built in the early 20th century under standards that differ significantly from today, leaving a large portion of the infrastructure non-compliant with modern needs. Sewer network issues in Christchurch saw multiple overflows of wastewater into the Akaroa harbour over the past year, and housing development was paused in several suburbs with sewage systems reaching capacity. Northern regions including Auckland frequently experience water restrictions during summer, and drought relief support is needed for farmers and growers in upper parts of the South Island. Contamination of water storage plants can affect water supply, as seen in recent years with Queenstown's drinking water issues. For a number of regions across New Zealand, wastewater discharge into lakes and waterways is causing a decline in water quality. All these issues are culminating in growing concerns around infrastructure management, monitoring, and the communication of issues.

Financial implications

The financial costs of delivering clean water are high and rising. In Wellington, an estimated 40% of treated water is lost due to leaks. It has been estimated that between NZ$15 billion and NZ$17 billion will be required over the next 20 years to replace its aged pipe network.[1] Auckland's water and wastewater prices rose by 9.5% in July 2023, with a further increase of 7.2% in 2024.

1. Mayor Tory Whanau Op-ed: "Fixing water is the focus of 2025." - News and information - Wellington City Council

RECENT HEADLINES AMID WATER INFRASTRUCTURE ISSUES

Water leaks cost NZ $122m a year - research

Parnell sinkhole caused by rain, weak concrete and 100 years of deterioration - report

Northland's Mangawhai Beach School faces E.coli issue, calls for water system upgrade

Queenstown outbreak highlights future challenges for clean drinking water

At least one break in Wellington's pipe network daily

Christchurch's sewer systems block further housing development

New Zealand's water assets are valued at around NZ$40 billion to NZ$50 billion, but Infrastructure New Zealand projects that between NZ$120 billion and NZ$185 billion of investment will be needed over the next 30 years to modernise key areas, including water transportation, storage facilities, drinking water systems, wastewater treatment, and stormwater drainage.

A global perspective

This challenge is not confined to New Zealand—it is a critical theme across developed economies. Many countries are seeking to manage an urgent need to allocate resources to repair failing water infrastructure and prepare for future mounting pressures. Our research partner UBS forecasts that water, sewage, and waste related construction spending in the US will grow 15% in this year alone. Longer-term projections estimate US$625 billion of funding is required for drinking water infrastructure by 2040 in the US while current federal funding accounts for only 5% of identified water infrastructure needs.[2,3]

Industries such as agriculture, food and beverage, wood processing, steel, cement, and aluminium smelting all have growing and competing demands for clean water. Manufacturing and technology, particularly semiconductors and data centres, are especially water-intensive (for cleaning and cooling respectively), with increasing scale driving the need for advanced water treatment systems.

Addressing the problem

Access to capital is crucial to ensure that long-term water projects balance affordability with needs and future demand expectations. Investing in water infrastructure is a long-term commitment, and a mix of private and public investment will likely be required. Navigating comparatively short-term government cycles makes planning for such large and expensive infrastructure projects complex. Successful execution will depend on cross-party support, effective governance, and careful consideration of regional needs to ensure solutions are both locally tailored and nationally resilient.

The future of water management

With the cost of doing nothing rising, it is clear that a shift in approach is necessary. As digital transformation accelerates, the question is how quickly New Zealand's water providers and users can adopt smarter, more sustainable practices. For councils, industries, and consumers alike, embracing technology is key to securing a clean and stable water supply.

Xylem — Advancing water technology

Xylem (NYSE: XYL) is a global leader in water technology, offering products and solutions ranging from water management software and sensors, to pumps, UV disinfection, biological aeration treatment, and aftermarket service and spare parts. The company serves water utilities, factories, and building developers around the world, helping them enhance efficiency, sustainability, and resilience amid mounting infrastructure challenges, increasing intense weather events, and increasing demand.

In New Zealand, Xylem operates primarily in the municipal market, partnering with bulk water suppliers such as city and district councils. Its technology supports various aspects of the water cycle — from monitoring raw water quality to ensuring wastewater is treated to the required standard before being released back into the environment.

Xylem also works with large industrial water users, particularly in the food, beverage, and dairy sectors, assisting with water management practices such as biological treatments and UV disinfection. Xylem's work in the forestry sector also helps foresters minimise water use through targeted irrigation networks.

Embracing digital transformation

Helping to solve some of our water challenges, a digital revolution in water management is underway. Xylem is advancing its digital water solutions through the Xylem Vue platform, which integrates artificial intelligence (AI) and Internet of Things (IoT) — a network of devices that can connect and exchange data, providing advanced data analytics for water management.

2. Water Infrastructure Investments | US EPA
3. EPA: $1.3 Trillion Needed for Nation's Water Infrastructure | Food & Water Watch

...there is an urgent need for investment in water technology and infrastructure...

For example, Xylem's smart water management solutions can adjust treatment processes in real-time and detect leaks within distribution networks, thereby reducing operational costs and improving service reliability. In another application, smart sensors placed in water networks enable AI-powered monitoring to continuously assess water quality parameters such as pH, turbidity, and contaminant levels. Machine learning algorithms detect anomalies and predict changes in water quality, ensuring compliance with regulatory standards, safeguarding public health.

Xylem's work in New Zealand demonstrates the potential for smart technology and data-driven solutions to optimise water usage, ensure compliance with environmental standards, and extend infrastructure lifespans. As trust in these solutions grows and local infrastructure becomes more technologically capable, adoption is expected to gain momentum globally.

Looking ahead

New Zealand faces significant water quality and infrastructure challenges. With increasing demand, ageing infrastructure, climate impacts, and rising financial pressures, there is an urgent need for investment in water technology and infrastructure. Innovative solutions like those provided by Xylem are bridging the gap between today's challenges and tomorrow's needs, presenting compelling opportunities for investors and stakeholders.

If at any time you want to discuss investment options and opportunities, your Forsyth Barr Investment Adviser is available to provide you advice and assistance.

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