



Lake Coleridge near Methven.

MAINTAINING THE VITAL FLOW OF H₂O

FARMERS' ACCESS TO WATER FOR IRRIGATION HAS ACCOUNTED FOR SIGNIFICANT SURGES IN PRIMARY SECTOR PRODUCTIVITY AND GROWTH OVER THE PAST 20 YEARS. HOWEVER, THE FUTURE OF NEW ZEALAND'S WATER FOR PEOPLE, LIVESTOCK AND FOOD PRODUCTION FACES SOME TOUGH FUNDING CHALLENGES TO ENSURE GREATER RESILIENCE AS CLIMATE CHANGE EFFECTS BITE, AND TO SUPPORT GROWTH IN THE PRIMARY SECTOR.

WATER IS VITAL, NOT ONLY FOR THE production of primary produce, but also for communities, a vital resource for all, and one requiring careful management.

The area of irrigated agricultural land in New Zealand almost doubled between 2002 and 2019, now accounting for 1.3 percent of the country's land area.

One organisation at the centre of managing this incredibly important resource is Irrigation NZ (INZ), a not-for-profit organisation, representing 3,500 members nationally, irrigating a total area of about 740,000ha. INZ's underlying vision is to support water for food, fibre and community wellbeing; for this generation and the next.

However, INZ CEO Vanessa Winning says despite New Zealand's relatively good rainfall and network of rivers and lakes, the country has been behind in its need for water infrastructure for decades. This has put resilience both for human consumption and food production low in drier areas. It is likely that access to

reliable water sources will play a more important role in the future.

"The past 18 months have seen more understanding of the importance of water in terms of opportunities to decarbonise and also for climate change resilience in parts of the country on the verge of becoming drier (on average) and more extreme, such as the East Coast, Waikato, Nelson and Hawke's Bay."

She says the Water Availability and Security (WAS) initiative from the Ministry for Primary Industries (MPI) outlines how schemes that hold community-wide outcomes require joint investment from iwi, drinking water bodies, irrigation schemes and community groups.

Terry Heiler is a long-time water resources engineer who founded INZ and has overseen multiple projects locally and internationally during his career.

He laments the fact that New Zealand lacks a strategic plan for water use and management when it comes to meeting the challenges of climate change

and communities' needs for multi-objective water resource development, in particular for irrigation and the primary sector.

While the Three Waters proposal may cover drinking, wastewater, and stormwater, he says there is no reference to how this may interact with regional-scale water projects.

Irrigation projects are better suited to longer-term planning, given their inter-generational benefits, return rates that exceed commercial banking periods, and high upfront capital demands.

He says large irrigation projects with long lead times and long payback periods do not have the necessary central government horsepower behind them to get started.

Projects inevitably spin into the Environment Court, with expensive hearing processes, and paid witnesses required to either dispute or support projects.

But modern water resource development projects involving irrigation enhancement have been proven to

deliver social and economic benefits to communities, with the likes of the Opuha project in South Canterbury providing a good example.

He also sees projects as an opportunity to work with iwi as equity partners, given they also often have an interest in restoration of water-based taonga, and already have a stake in the primary sector the irrigation project will benefit.

One solution to overcome the inertia he sees in New Zealand irrigation projects today could be to have a team of recognised experts moving through the country assessing projects on a case-by-case basis.

One project that has had central government impetus behind it is Northland's Te Tai Tokerau water project, an initiative funded through the Provincial Growth Fund.

Despite Northland's high rainfall, storage of water is an issue, and the project aims to hold water in reservoirs and distribute it through the lower Northland and mid-Northland districts in two separate projects, one based near Kaikohe and the other on the northern Pouto peninsula, south of Dargaville.

Overall, the project aims to develop 7,000ha of new land specifically into horticulture, increase town water supply resilience, and provide valuable jobs for iwi.



The Pouto Peninsula project kicked off last June, and when completed will be capable of unlocking the fertile potential of 4,000ha of the district's land with two to three reservoirs.

Kaipara District Council mayor Jason Smith said breaking ground on the project will help bring transformational change to the district for decades to come.

Te Tai Tokerau Trust chair and ex-MP Murray McCully said the main idea of the project is to harvest water in the winter when it is plentiful and use in the summer months when it is not.

Further south in the upper reaches of Mid-Canterbury near Methven is the Barhill Chertsey Irrigation scheme.

Formed as a co-operative farmer-funded project in the late nineties, the project started delivering water in 2010 to 24,000ha today.

The project stands as an example of collaboration and integration of economic, social, and infrastructural needs, with its initial cornerstone founder being lines company Electricity Ashburton in 2010, and Trustpower providing water sourcing and storage in Lake Coleridge.

Expansion in 2015 has enabled a small hydro plant to use water for electricity generation, and in 2017 the scheme came to be a fully farmer-owned co-operative that supplies about 10 percent of the irrigation across the Mid-Canterbury region.

The future of irrigation projects may lie in the likes of Barhill Chertsey, with a smaller footprint, 'run of river' harvesting of water rather than less palatable on-river projects, and strong, broad community group support.