

2020 Briefing to the Incoming Ministers

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Irrigation for a healthy and thriving Aotearoa New Zealand





EXECUTIVE SUMMARY

IrrigationNZ looks forward to working in a non-partisan manner to progress sustainable and inclusive water management as a key component of the country's recovery from the impacts of Covid-19.

If well stewarded, water can yield very positive results for New Zealand: for our beautiful environment and special rivers; to enable more equitable outcomes for those previously locked-out; to help our regional communities flourish; to support exports of sustainable and high value produce, and to help us transition to low emissions land-use to meet carbon targets.

We recognise that from our sector, there is much work to be done to build trust, fill knowledge gaps, and improve practices so that we can all align on common goals. We are willing to roll up our sleeves and do the work. And we look forward to demonstrating this to you.

We also recognise that the way water has been used and valued in the past must change to better reflect Te Mana o te Wai.

We are very much looking forward to constructive and future-focussed discussions to problem-solve and find the right way forward.

Below are some of the topics we would like to engage on:

- A national water strategy that guides the future of water management and investment across Aotearoa New Zealand.
- A plan for infrastructure development to support a growing population and changing productive use
- Changes to the RMA and the Environment Court process to support long term development and outcomes that benefit the wider community and reduce red tape
- A focus on water storage to ensure our communities are resilient to climate change.
- Policies that support irrigation and the environment, through monitoring, farm environment planning, innovation, and adaptation.
- A resolution to Māori rights and interests in freshwater.
- An allocation framework that provides certainty and reliability of supply, whilst providing for multiple uses and benefits for economic, social, cultural, and environmental well-being.

IrrigationNZ is the organisation that represents the largest number of agricultural water permits in the country. IrrigationNZ and its members respectfully request that their voice be heard by Government in relation to water capture, storage, use and management. We are the only industry body that represents water use across the primary industries and less beholden to one productive use, but the best use for the right land.

Irrigating growers and farmers represent 800,000 hectares across New Zealand (equating to seven percent of farmland) and directly contribute an estimated \$5.4bn to our GDP (or 20 percent of total agricultural contribution). This significant contribution to our economic well-being means that we must be a part of collaborative, fair processes to develop water policy and the development of a national water strategy. Water and Irrigation particularly are only going to become more meaningful as the climate changes and we move into a wider variety of food production.

In support of this, IrrigationNZ is offering to share its knowledge, expertise, and data in relation to:

- Farm environment plans and the freshwater modules within them
- Water storage solutions
- Water allocation issues
- Precision applications to reduce waste.



OUR VISION

Irrigation for a healthy and thriving Aotearoa New Zealand.

OUR MISSION

To ensure irrigation remains an integral part of New Zealand's well-being, and to support the wise use and management of water for sustainable food and fibre production.

WHO WE ARE

We are a not-for-profit national-level organisation that represents 3,500 members across the irrigation sector, including irrigation schemes, individual farmer-irrigators, growers, and the irrigation service sector. We support the critical role our members play in producing sustainable food and fibre for a healthy and thriving Aotearoa New Zealand.



OUR STRATEGIC PRIORITIES

Advocacy – championing the irrigation sector

We will advocate on behalf of our members with decision-makers and people of influence at the national level as a priority, but we will also support our members in regional advocacy. This will include advocating for new irrigation and water infrastructure development.

Setting the standards

We will develop a clear, recognised and unambiguous set of standards for irrigation, to ensure efficient and effective water use that minimises adverse environmental effects and work to ensure widespread adoption of the standards.

Thought leadership and connectivity

We will develop an engagement and communication programme for existing and potential members, stakeholders, and the wider community. This will increase our membership, our influence, and community understanding of the benefits of irrigation.





OUR BOARD

Irrigation New Zealand is governed by a Board that is a mix of those elected from our membership and appointed Board members. The Board meets monthly and sets the strategy for the organisation as well as monitoring the delivery of our business.

Keri Johnston

Ivan Knauf

Chair Environmental Consultant & Farmer **Deputy Chair** Farmer

Jared Ross

Board Member Farmer

Robyn Wells

Board Member Developing Scheme CEO

Andrew Barton

Board Member Irrigation Scheme CEO

Andrew Rodwell

Board Member Irrigation Scheme CEO

OUR TEAM

Vanessa Winning

CEO

Julie Wallace

Commercial Manager

Ella Stokes

Communications Manager

Lynn Lawrence

Business Support Manager

Elizabeth Soal

Regional Policy & Planning Manager

Vicky Bloomer

Technical Contractor



New Zealand's water resources

Where is our water?







What is irrigation used for in New Zealand?



Vegetable production

90% of New Zealand land growing commercial vegetables is irrigated



Fruit & wine production

Over **58%** of commercial production is from irrigated land

Grains & cereal crops

52% of crops are grown on irrigated land



Dairy 26% of New Zealand dairy grazing land

is irrigated



Sheep & Beef

2% of New Zealand sheep and beef grazing land is irrigated



*Note – Figures are taken from the 2017 Agricultural Production Survey. Based on industry knowledge, IrrigationNZ estimates that the use of irrigation for fruit, wine, sheep and beef production is higher than shown. Figures do not include livestock grazed on irrigated land for finishing.

New Zealand has approximately 800,000 hectares of irrigated land – 7% of its total agricultural land.

59% Dairy 17% Sheep & Beef 13% Grain Crops 4% Vegetables 3% Wine 2% Fruit 2% Other

TOWNS WHICH SOURCE THEIR DRINKING WATER FROM IRRIGATION SCHEMES:

Kerikeri, Timaru and Oamaru.

THE ECONOMIC CONTRIBUTION OF IRRIGATION TO NEW ZEALAND

Irrigation contributes over **\$5.4 billion** to New Zealand's GDP (NZIER).







Our Projects

Project update from IrrigationNZ

IrrigationNZ proactively supports irrigators, irrigation schemes, irrigator user groups and the irrigation service industry. As part of this we do advocacy work, media relations, irrigation sector information updates, training and provide technical and practical knowledge. As part of improving knowledge we currently have three projects to support good irrigation and freshwater management.





IrrigationNZ Projects:

FISH SCREENS

Adoption of Good Practice Fish Screening 2019–2022

Fish exclusion screen design and installation involves significant investment. Increasing knowledge and understanding of the issues around fish habitats and populations (particularly for indigenous fish species) have led to requirements for more complex screening requirements. Given the large capital outlay ahead for irrigators, clear expectations need to be set around how to achieve effective fish exclusion, alongside the provision of greater certainty that the designers and installers of fish screens can achieve long-term compliance for irrigators.

In late 2019 IrrigationNZ (on behalf of the New Zealand Fish Screen Working Group), received a grant from the Sustainable Farming Fund to further research fish screen design criteria. The aim of the research is to provide clear and simple guidance on fish screen requirements and provide solutions and guidance on existing fish screen deficiencies.

The project includes identifying knowledge and data gaps, consideration of biological criteria, technical, engineering and design considerations, manufacturing and installation, maintenance and operations, laboratory and field trials, and compliance and planning matters.

In addition, industry extension is included, to improve current design and installation capability to meet the impending demands of water user, or for those installing new screen arrangements, post-installation support and a general education component.

To date the following has been completed:

- Summary Status Report identifying gaps still to address and a status update of existing information including key new information now available since the original 2007 Fish Screening guidelines were published. This report incorporates relevant information from throughout New Zealand.
- Identification of three sites suitable to address compliant design. These sites cover 'typical intake locations' and represent a range of flows and challenges. They are small to medium in size and exclude large takes. Agreement with landowners of the three sites to participate in the project has been achieved and preliminary site assessments undertaken.
- Scope and design methodologies have been defined for field and laboratory trials.
- Year one laboratory trials have been conducted with some interesting results with fish behaviours present.
- Options reports for the three field trial sites have been completed.

Project next steps include engaging with the manufacturing industry and taking steps for installation of exemplar trial screens; and a review of year one lab trials to assist with the development of the year two lab trials.

Further information including reports can be found on the IrrigationNZ website www.irrigationnz.co.nz/KnowledgeResources/FishScreens

*The New Zealand Fish Screen Working Group is a subgroup of the Canterbury Water Management Strategy and consists of representatives from: Environment Canterbury, Te Rūnanga o Ngāi Tahu, IrrigationNZ, Fish and Game, the fish screening service industry, Department of Conservation, Salmon Anglers Association, NIWA, Otago Regional Council, and irrigation schemes.



IrrigationNZ Projects:

FERTIGATION

A new tool for nutrient management 2019–2021

Fertigation is the application of liquid fertiliser through an irrigation system, using a little-and-often approach, which is quite different from traditional application of solid fertiliser.

The use of fertigation for irrigated broad-acre cropping and pastoral farm systems is an emerging technology in New Zealand, which could provide both production and environmental gains – increasing nutrient efficiency and decreasing the risk of leaching and run-off. However, its efficacy, particularly for nitrogen applications, needs to be better understood. Most research and trials undertaken have occurred overseas and results are not readily applicable to New Zealand's pasture-bases systems. In 2019, IrrigationNZ entered into a two year Sustainable Farming Fund project with MPI with the aim of answering the following questions:

- What is the efficacy of fertilisers applied through fertigation techniques?
- What are the environmental benefits from the adoption of fertigation?
- What are the equipment options for fertigation and to which irrigation system types are they best suited?

What does 'good practice' fertigation management look like?

In year one, the project involved two experiments being run for an irrigation season (September 2019 – May 2020) at two Lincoln University sites using perennial ryegrass/white clover pastures. Some trial plots used "traditional" application of granular nitrogen methods, whilst comparison plots used different fertigation treatments. The different trial plots were then compared for: pasture production (yield); pasture composition (species diversity); and feed value.

Although there were some recorded variations in both pasture yield and composition during the first year of trials, both trial plot experiments normalised by the final harvest in late March. With the results taken into context of a single year's worth of data, the project can move into the second phase of continuing the initial trial plot experiments to build on the baseline knowledge but also include the addition of a nitrogen reductions trial. This will be the basis for designing the year two trial which is currently being finalised.

IrrigationNZ is grateful to also have the support of Ballance Agri Nutrients, Rainer Irrigation Ltd, Pamu Farms of New Zealand and Molloy Agriculture Ltd for the fertigation project.



Farm manager Johan Joubert, of the property in Canterbury where the fertigation trial is taking place, explaining the system at a fertigation field day late last year.





IrrigationNZ Projects: BUILDING TRUST

Telling the farming story 2018–2020

Building Trust is a project which was born in 2018 to educate the farmers and the wider community in an informative and engaging way about water quality.

The adoption of audited Farm Environment Plans and the need to have updated records of water quality parameters has resulted, in much practice change happening and it is now well documented.



The Know Your Catchment Waitaki Dashboard.

But, for many catchments, it takes time to observe the changes as a result of benefit from practice change.

There are also numerous catchments where much of the environmental monitoring data is not visible, particularly data gathered through resource consent compliance requirements.

Given the current public feeling around water, this lack of transparency, coupled with limited observable improvements in water quality, will undoubtedly create further issues for farmers and growers.

To overcome this, farmers need to openly demonstrate the practice change that is occurring - the tangible actions happening within their catchment to improve water quality. Also, all the robust environmental monitoring data needs to be gathered together to help better show the gains being made over time.

Recently IrrigationNZ and partners reached a major milestone after establishing the Know Your Catchment dashboard and interface. It is currently focused on the Waitaki area - Waitaki Irrigators collective (includes five irrigation schemes and the Independent Irrigators - totalling around 80,000 hectares). However, there is scope and plans for it to be extended into other areas, so that it develops into a long-term integrated programme.

The portal can be found here: https://catchment.waitakiirrigators.co.nz

The Building Trust project has been funded through MPI Sustainable Food and Fibre Futures Fund and managed by Irrigation New Zealand in partnership with Waitaki Irrigators Collective, Otago Regional Council, and Environment Canterbury and support from, FAR, Beef+Lamb NZ.



The interactive map - offering insight to water quality.





WHAT WE ARE SEEKING

- A national water strategy that guides the future of water management and investment across Aotearoa New Zealand.
- A plan for infrastructure development to support a growing population and changing productive use
- **Changes to the RMA** and the Environment Court process to support long term development and outcomes that benefit the wider community and reduce red tape
- A focus on **water storage** to ensure our communities are resilient to climate change.
- Policies that **support irrigation and the environment**, through monitoring, farm environment planning, innovation, and adaptation.
- A resolution to Maori rights and interests in freshwater.
- An **allocation framework** that provides certainty and reliability of supply, whilst providing for multiple uses and benefits for economic, social, cultural, and environmental well-being.









IrrigationNZ is the organisation that represents the largest number of agricultural water permits in the country. IrrigationNZ and its members firmly request that their voice be heard by Government in relation to water management and investment.

Irrigating growers and farmers represent 800,000 hectares across New Zealand (equating to seven percent of farmland) and directly contribute an estimated \$5.4bn to our GDP (or 20 percent of total agricultural contribution). This significant contribution to our economic well-being means that we must be a part of collaborative, fair processes to develop water policy and the development of a national water strategy.

In support of this, IrrigationNZ is offering to share its knowledge, expertise, and data in relation to:

- Farm environment plans and the freshwater modules within them
- Water storage solutions
- Water allocation issues

Many of the issues affecting irrigation and water management cross multiple Ministerial portfolios and government department administration, including:

- Environment
- Rural Affairs
- Agriculture
- Economic Development and Regional Economic Development

- Local Government
- Climate Change
- Energy and Resources
- Māori Development
- Infrastructure



A Water Strategy

Irrigation for a healthy and thriving Aotearoa New Zealand

Water is a critical resource in New Zealand which holds cultural, social, environmental and economic value and as such, urgently requires a long-term, depoliticised strategy to enable its fair and sensible management.

Irrigation New Zealand believes that an overarching **national freshwater strategy** to guide and lead decision-making and funding allocation at the central, regional, and local levels. The strategy could be developed and led by a bi-partisan, independent water commission.

A water strategy will be critical if New Zealand is to successfully adapt to climate change effects, particularly in relation to water availability for multiple purposes, including for drinking and domestic uses.

As experts in water management for agricultural and horticultural purposes and the body representing the holders of agricultural and horticultural water permits, IrrigationNZ and its members firmly believe that they should be at the table for the development of the water strategy.



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Irrigation and the Environment

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It is essential there is a **national framework** for collecting data on water use and quality which then allows for consistent monitoring and can be used to inform regulations, assist in their enforcement, whilst driving improvements in outcomes. IrrigationNZ would like to work with others to ensure this occurs.

With access to multiple data sources across its membership of irrigation schemes (representing thousands of farmers and growers) and hundreds of independent irrigators, IrrigationNZ is perfectly positioned to lead this process in collaboration with national and regional government agencies, with adequate funding support.

Farm Environmental Plans (FEPs) are the best way for farmers and growers to farm within environmental thresholds that achieve catchment-specific outcomes. Irrigation schemes are the leaders in the development and implementation of FEPs. Our members are able to assist with a national roll-out, lead the changes in the agricultural sector, and share our lessons learnt.

IrrigationNZ supports the establishment of a **sector-led solution for nutrient management and allocation** guided by the following core principles:

- 1. Equity must underpin the allocation approach. Any allocation method must be fair and reasonable for all land uses, taking into account investment already made, potential capability, and environmental and cultural needs.
- 2. What can be allocated should not exceed the catchment load. The catchment load must take into account community and iwi values. It must also take into account water quantity. In-stream loads are a function of flow; therefore, this must also be considered at the same time.

- 3. All farms must be operating at good management practice as a minimum standard.
- 4. Nutrients allocations are not a property right.



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Water Storage and Climate Change

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New Zealand requires more water storage so it can meet growing freshwater challenges and multi-purpose needs, which will be exacerbated in the future due to climate change (more frequent and prolonged droughts, punctuated by more intense flood events).

Water storage should be multi-benefit, providing for cultural, social, community, environmental and economic needs (including energy generation). Sensible and sustainable water storage can capture water in times of high precipitation and inflows, thereby supporting river flows and aquifers during dry periods.

A high-level water storage strategy (including location, purpose and cost) for New Zealand could be guided by an independent water commission. However, this should not prevent the ongoing development of storage projects already proposed or being investigated in the interim.

There are multiple ways of undertaking water storage including reservoirs, aquifer storage, and on-farm or in-stream dams.

Well managed water distribution infrastructure and ensuring access to water will be critical in ensuring New Zealand can adapt to, and mitigate the negative effects of, climate change.

Many existing and developing irrigation schemes utilise water storage. Our members are wellpositioned to share knowledge and expertise on water storage development.





Māori Rights and Interests

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IrrigationNZ broadly agrees with the points of agreement between the various parties to the Freshwater and Geothermal Resources Claim to the Waitangi Tribunal (WAI2358), as set out in the Tribunal's Stage Two Report:

- The issue of Maori rights and interests in freshwater bodies needs to be addressed;
- Māori values are generally not being reflected in freshwater decision-making, and that the decision-making framework should better reflect those values;
- The role of Maori in freshwater management and decision-making should be enhanced;
- Under-resourcing is preventing Māori from participating effectively (or at all) in many RMA processes;
- National direction to councils is required;
- Māori interests in water entails economic benefits (noting that there was not agreement between the parties to the proceeding as to what form or to what extent this is or would be).

IrrigationNZ considers that it may be appropriate for these matters to be resolved through an independent, bipartisan or apolitical water commission.

IrrigationNZ also wishes to work with iwi, hapū, and whānau groups to support Māori economic and social development through access to water and efficient, effective, environmentally sensitive irrigation development, where appropriate and beneficial.







Irrigation for a healthy and thriving Aotearoa New Zealand



Any changes to our system of allocation need to considered fully, in terms of policy planning, implementation and transition.

As any changes will have implications for sunk investment, future investment, reliability of supply, economic and productive certainty, changes must take account of all of these issues.

Changes to allocation should not just be driven by a philosophy of always moving water to its "highest value" use in terms of economic value. Other types of value (such as social, cultural, and environmental value) needs to be considered under an allocation framework, in order to prevent water or land use monocultures.

Allocation frameworks should allow for transfer of water between users and uses, both in the short and longer terms. However, it should be noted that water markets will not be effective in reducing or solving over-allocation in all catchments.

The allocation framework must take account of, and allow for, differences between regions and catchments.

The allocation framework must provide for Maori rights and interests in freshwater.

IrrigationNZ has expertise in managing complex changes to allocation frameworks in specific catchments with multiple stakeholders and water uses. Therefore, IrrigationNZ is well positioned to assist agencies with this policy work.