# THE BIG PICTURE: FRESHWATER

## A clear challenge

June 2020





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## A critical challenge

reshwater is fundamental to life. More than ever we need integrated solutions to the economic and environmental challenges New Zealand is facing, including in the context of freshwater. The lack of integration is evident when you consider we have spent hundreds of millions on policy and plans for freshwater management, but very little on supporting the behaviour change required to deliver meaningful outcomes on the ground.

If we are going to improve the state of freshwater in New Zealand and overcome the economic challenges of COVID-19, then it is imperative we have economic pathways for iwi, farmers, and others to make a living in ways that are compatible with the restoration of our environment. Fortunately there are examples and proposed initiatives we can turn to for ideas and insights to inform a coherent vision and strategy. This includes intergenerational thinking from iwi who innately integrate environmental and economic considerations.

In recent years there has been a lot of talk about moving from "volume to value" for New Zealand's agricultural sector. This provides an opportunity to achieve economic and environmental integration, provided we can obtain a premium from global consumers for our products. The key will be to ensure the "value" is passed on to those who are improving our freshwater — our farmers. If the value is not shared with farmers then we'll have failed to provide a means to pay for necessary environmental actions, and failed to incentivise behaviour change. We need collaborative value chains and systems in place to create and share new value to overcome this.

Our legal framework will also need to be aligned with the vision and strategy. It will need to support new economic models, not undermine or hamper their realisation. Currently there is often a disconnect between the environmental credentials farmers are adopting at the request of processors and retailers, and the outcomes local communities want for their water bodies as reflected in local policy instruments. If farmers' efforts do not result in meaningful improvements to water quality this is likely to lead to distrust, disillusionment, and ultimately conflict.



## Integrating farming and freshwater

#### **Consumer-facing solutions**

uthentic examples of consumerfacing solutions involve independent verification of brand claims. This provides consumers with trust and confidence that the products claiming environmental benefits are worthy of a premium, and not merely 'greenwashing'. Consumer-facing solutions also provide an opportunity to tell stories about products' provenance and build greater connections between producers and consumers.

### CASE STUDY: Taupō Beef & Lamb

aupō Beef & Lamb farmers are independently audited to ensure they are operating under the nitrogen limit for the Taupō catchment to protect Lake Taupō's water quality for future generations. There is a cap in perpetuity on livestock numbers. Mike and Sharon Barton, founders of Taupo Beef, realised if they could not grow the volume of their stock then they needed to grow the value. The brand was started to test whether consumers would pay a premium and contribute to the cost of protecting Lake Taupō. Importantly, the premium is shared with participating farmers.

Taupo Beef has resonated with consumers throughout New Zealand, and in 2015 was awarded the Sustainable Business Network's Supreme Award for "The Business Making the Greatest Contribution to a Sustainable New Zealand". Taupō Beef & Lamb is also now sold in a Japanese supermarket chain to demonstrate the model can work in global markets. Around 85% of New Zealand's red meat is exported, so to be scalable the model needed to target export markets.

In discussions with Bell Gully, the Bartons point to the real risk that without a concerted national approach to auditing and verifying of onfarm behaviour and performance we have no real credibility: "We need to manage and drive this issue otherwise obtaining environmental credentials will become a market access issue for farmers in New Zealand. We have a small window of opportunity to drive value in tandem with environmental stewardship. Without leadership in this space the traditional food value chain behaviours will dominate and the major retailers will control the dialogue and the outcome." If so, the Bartons consider we'll have missed the opportunity to bring global consumers on the journey in understanding and starting to pay for the true cost of food production.



## Integrating farming and freshwater

### CASE STUDY: Origin Green

onsumer facing solutions are not just applicable to local catchments. **Origin Green** is an example of a nation-wide food and drink sustainability programme, which operates in Ireland. It offers evidence of the importance of integration on a larger scale — with involvement from government, private sector, farmers, food producers, food service and retail sectors.

The programme claims to be: "the World's only national food and drink sustainability programme," which "...enables the industry to set and achieve measurable sustainability targets that respect the environment and serve local communities more effectively." Verified Origin Green members account for 90% of Ireland's food and drink exports. Some 53,000 farms are involved, along with 320 leading Irish food and drink companies.

It is paying dividends for the environment. In a report released in April, the programme highlighted that, on average, farms that joined related sustainable assurance schemes in 2014 achieved a 9% average reduction in CO2 per unit of milk and 5% average reduction per CO2 unit of beef by the end of 2018. Food manufacturers associated with the programme achieved 11% energy reduction and 17% water reduction per unit of output between 2012 and 2017<sup>1</sup>.



## Integrating farming and freshwater

#### **Regenerative agriculture**

FOCUS

ON TOPSOIL

REGENERATION

**ECOSYSTEM** 

SERVICES

Regenerative agriculture (or regen ag) is a term often heard in the conversations occurring in this sector right now. There is some debate as to what constitutes regenerative agriculture and perhaps risk that the concept will be watered down to support types of farming inconsistent with the original intent.

Regenerative agriculture seeks to approach food and farming systems with the aim of both conservation and rehabilitation. This means a focus on topsoil regeneration,

**NCREASE** 

BIODIVERSITY

<u>:</u>

SUPPORT BIO SEQUESTRATION

increasing biodiversity, improving the water cycle and soil quality, enhancing ecosystem services, supporting bio sequestration, and increasing resilience to climate change.

There are a number of farmers in New Zealand already embracing the regenerative agricultural way. Related programmes and services are also springing up, such as a new accelerator and investment programme called Calm The Farm which seeks to assist farmers to transition toward regenerative and biological practices in a safe and affordable way.

**MPROVE** 

WATER & SOIL

OLIAL ITY

RESILIENCE

TO CLIMATE

CHANGE

#### Will technology be the silver bullet?

Some people suggest that technological innovations will resolve issues with water quality, and over-allocation of water. Others are more sceptical. They consider that changing farm systems (as discussed above) will be the critical way to achieve New Zealand's water quality aspirations. Ultimately, both may play a part.



### CASE STUDY: Halter

alter technology involves cows wearing smart collars to provide sensory cues to guide cows around farms automatically, and provide behavioural data. The technology also involves use of an app to set virtual break fences and waterway fencing. These techniques are proposed to maximise milk production, and better look after the environment including by preventing cows from entering waterways.



## Bringing "take" and "use" together

critical element of bringing the vision to life in New Zealand is the right legal framework.

Many regional councils have prepared plan changes focussing on "water quantity" issues, then many years later prepared plan changes in relation to "water quality" issues. This separation of quantity and quality is arguably inconsistent with directions under the Resource Management Act to achieve integrated management. Decreasing the volume of water available for use often reduces a water body's assimilative capacity and increases the concentrations of contaminants. It is clear that best practice would be to consider both quantity and quality issues within a catchment at the same time.

### Considering the "end use of water" under the RMA

To date, there has been limited testing of these issues in the courts. In the case of *Te Rūnanga o Ngāti Awa v Bay of Plenty* 

*Regional Council*<sup>2</sup> the majority decision of the Environment Court held that the end-uses of taking water (that is, putting the water in plastic bottles, exporting the bottled water, and consumption of it by people outside New Zealand) are ancillary activities which are not controlled under the regional plan. These activities do not come within the ambit of the functions of the regional council under the relevant section of the RMA, and cannot be considered when considering an application for resource consent to take water from an aguifer. The majority of the Court noted that such controls would require direct legislative intervention at a national level. This decision has been appealed to the High Court.

#### **Overseas Investment Act**

The issue may be more directly addressed soon. The Overseas Investment Amendment Bill<sup>3</sup> proposes to enable ministers to consider the impacts of overseas investments involving water bottling or bulk water extraction for human consumption on water quality and sustainability.

### The current national direction

he current national direction for freshwater management under the RMA is set by the National Policy Statement for Freshwater Management 2017 (NPSFM 2017), which regional councils have to give effect to in their decision-making.

In 2019 the government issued a new draft NPSFM, along with a draft *National Environmental Standard for Freshwater* (NES) for consultation. The proposals within these documents were highly contentious, particularly among the farming community and have since been modified by Cabinet. The new NPSFM and NES are to be published later this year.

#### Te Mana o Te Wai

The NPSFM 2017 requires decision makers to consider and recognise Te Mana o Te Wai when making decisions in relation to freshwater. This obligation is heightened in the new NPSFM 2020 to come into force later this year which requires freshwater to be managed in a way that gives effect to Te Mana o Te Wai, along with a number of related implementation clauses.

The implementation of Te Mana o Te Wai may herald a radical shift in the way freshwater is managed in New Zealand. But that shift is unlikely to be enduring if it is not supported by economic pathways to achieve the outcomes sought.



### The current national direction



### CASE STUDY: Southland interim decision



ow is it playing out in practice? Late last year the Environment Court released an interim decision<sup>4</sup> on Topic A of the Southland Water and Land Plan, which considered the interpretation and application of Te Mana o Te Wai in plan making.

The decision reinforces that the health and wellbeing of water must be placed at the forefront of discussion and decision-making. The Court noted that the NPSFM 2017 imposes a requirement on those who exercise functions and powers under the Act to ensure that when using water, people must also provide for the health of the environment. This direction is at odds with the usual line of inquiry in decision making, which focuses on how a waterway will be impacted by a change in water quality (that is, through the effects of the activity on the environment).

Te Mana o Te Wai needs to be defined by reference to tangata whenua values and reflecting matauranga Māori (a base of Māori knowledge or wisdom), which is context specific. The Court noted that when the Court speaks about Te Mana o Te Wai it is referring to the integrated and holistic wellbeing of a freshwater body. Upholding Te Mana o Te Wai acknowledges and protects the mauri of water. While mauri is not defined under the NPSFM 2017, the mauri of water sustains hauora (health): the health of the environment, the health of the waterbody and the health of the people. As a matter of national significance the NPSFM 2017 requires users of water to provide for hauora and in so doing, acknowledge and protect the mauri of water.

The scheme or architecture of a plan is important. In the Court's view, a more appropriate way to ensure that the integrated and holistic wellbeing of a freshwater body will be directly connected with the use of water and land, and to give effect to the NPSFM 2017, is to ensure that all provisions of the plan be interpreted and applied in a manner that gives effect to Te Mana o Te Wai and implemented in accordance with ki uta ki tai (often translated as "from the mountains to the sea" this has a broader meaning requiring water to be managed holistically). The structure of the plan should progressively elaborate on these outcomes, with each successive objective building on those that have gone before. This interim decision means that plans prepared in such a manner will need to be read as a whole.

#### 7 THE CURRENT NATIONAL DIRECTION

## How do we allocate freshwater and discharge rights?

here are a range of approaches to allocating rights to take water, and rights to discharge contaminants. These approaches, summarised below, are not always mutually exclusive.



#### First in, first served

Many councils prioritise applications to take water on a 'first-in-first-served' basis (otherwise referred to as the *Fleetwing* principle). In the face of two competing applications for the same resource, the Court has favoured the first to file a complete application.

This approach has been criticised for being arbitrary, and for not allowing water to be put to its best use. It is particularly problematic where there is a 'waiting list' of applications to take water from fully allocated resources.



#### Value-based allocations

An alternative to the 'first-in-first-served' model is to make allocations based on the highest value of the use of water. One potential issue with this approach is that it may inadvertently lock in certain land uses due to sunk investment costs, and doesn't allow for fluctuations in the 'highest value', or recognise wider societal values of certain uses of water.



#### Grandfathering

This approach involves allowing existing uses and discharges to continue. It recognises that people have made investment decisions in reliance upon the status quo, and ensures those currently operating can do so within their current envelope of rights.

Grandfathering has been criticised as locking in poor performers and failing to provide a framework to incentivise more efficient use, and failing to allow new entrants who are more environmentally sustainable.



#### Land use capability/natural capital use approaches

These allocation methods are based on the lands' characteristics and underlying productive capacity, without reference to any existing use of that land, and without restricting land such as forestry and bush and scrub that is currently less productive.



#### Cap and trade methods

This method involves placing a cap (limit) on the amount of contaminants that can be discharged in a catchment, and setting up a trading framework to allow rights to discharge those contaminants to be traded between landowners within the catchment. In theory, this method provides flexibility and the mechanism for land use changes by

allowing increases in discharges, where there are corresponding decreases elsewhere in the catchment.



#### Sector benchmarking approaches

The sector range approach allocates contaminants based on land use activity sectors (for example, dry stock, dairy, bush as scrub, plantation forestry, and house lots) and sets sector limits and/or ranges that discharges from each sector must meet, or be within.<sup>5</sup>

This approach is often coupled with a requirement for resource consent for any change in land use. The consequence is this benefits existing intensive uses, and potentially limits low intensive uses from obtaining the best use of their land. This has been a contentious approach in some parts of New Zealand.

## How do we allocate freshwater and discharge rights?



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#### **Use of Overseer Model**

Most farmers prefer an effects-based approach to managing water quality issues, rather than imposing input controls such as limiting the number of stock units or fertiliser used. It is not currently economic to directly measure nitrogen and phosphorous leaching for every farm. This necessitates the use of

models to estimate the likely effects of certain land uses.

Overseer is software jointly owned by the Ministry for Primary Industries, AgResearch Limited, and the New Zealand Phosphate Company. It was originally developed by fertiliser companies to help farmers make more efficient use of nutrients to improve both productivity and profitability. However, it has subsequently been used in a regulatory context to predict annual nitrogen and phosphorous losses through leaching.

Concerns about the use of Overseer have been raised by the Parliamentary Commissioner for the Environment (PCE). In January 2020 the PCE called for a comprehensive evaluation of Overseer to determine if the model and its analytical results are of acceptable quality to serve as the basis for regulatory decisions.<sup>6</sup> The PCE also emphasised that if Overseer is to be used in a regulatory setting then the government should make Overseer an open-source model to provide transparency and legitimacy.<sup>7</sup> In the latest freshwater reforms announced in May 2020 the government has signalled it will review and make improvements to Overseer.

There have been mixed views from the Environment Court on the use of Overseer. One division of the Court recently referred to the Overseer model as being "inaccurate" in estimating nitrogen levels, but relatively reliable in indicating changes in rates from year to year.<sup>8</sup> Another division of the Court highlighted the limitations of Overseer, including that different versions of Overseer may give materially different predicted nitrogen losses.<sup>9</sup> However, despite these concerns the Court had no evidence that there is any realistic alternative method available to manage nitrogen loads.

The Court's view was that a number of requirements need to be met when using Overseer in a regulatory context.<sup>10</sup> These are:

A consistent approach to model input data and maximising the accuracy of that data

The use of best management practices appropriate for the local environmental conditions such as soil types and weather patterns

Using the model to predict trends and relative changes in farm management systems, rather than absolute values

Calibrating the model outputs with field measurements for environments where conditions differ significantly from those where an acceptable level of calibration has been achieved

Using only appropriately qualified and experienced experts to run the model for compliance purposes

Establishing a clear, efficient and reliable process to review and update model outputs and management practices at appropriate intervals

#### Appropriate on-site verification

that modelled inputs and outputs are being complied with, in addition to independent peer review of performance

A compliance mechanism

that is certain, reasonable, practical and legally enforceable

## What might future freshwater rights involve?

āori have been pursuing recognition of their interests in, and governance of, freshwater for many years. In 2019 the Waitangi Tribunal recommended that the Crown recognise Māori proprietary rights and economic interests in freshwater. In February, Rukumoana Schaafhausen, Chair of the Freshwater Iwi Leaders Group, stated that the Group was "prepared to take action to assert those rights but prefer to work with the government to resolve this issue."

Rukumoana is also chair of Te Arataura ,

the executive branch of Te Whakakitenga o Waikato. In that capacity, she has highlighted that iwi have invested considerable time and resources working with the Crown, however "the Crown has constantly stopped short of taking the fundamental steps needed to address the economic rights and interests of Iwi and hapuu...the Crown must act now and engage with Iwi and hapuu and other parties to co-develop meaningful reforms that will both address Māori rights and interests and improve the health and wellbeing of our waterways".

#### Co-governance and comanagement models

There are now a number of co-governance and co-management models for freshwater bodies. The Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 and arrangements with other iwi with rights and interests in the Waikato River created such a regime for the governance and management of the Waikato River. Similar arrangements have been established for other water bodies.

#### Māori cultural monitoring

There is increasing national direction to involve iwi/hapū in monitoring catchments, and monitoring the effects of individual projects (through consent conditions). A number of cultural monitoring approaches have been developed to collect, analyse, and report against matauranga Māori-based knowledge. This information can then be used to monitor spatial and temporal changes, measure progress against outcomes, inform plans and policy, and inform actions to be undertaken.



### How will climate change impact on freshwater?

limate change is likely to exacerbate both water quantity and quality issues. Droughts such as those currently experienced in the Hawke's Bay and Auckland highlight the need to invest further in the uptake of water-saving technology, water sensitive design, and water storage to mitigate the impacts. However, it has proven difficult to obtain the necessary approvals for large scale water storage infrastructure such as the Ruataniwha Dam. Instead local government and industry may favour multiple smaller scale projects to provide reliable supplies of water.

Climate change is also likely to increase the competing interests and need for water as we adapt and transition to a low-carbon economy. To decarbonise and meet our net 2050 targets there is going to be an increasing amount of electrification. From a purely electricity system perspective, further hydro development would likely resolve the seasonal issues arising from the electricity generation shortfall associated with the increasing use of new technology like battery storage and solar to meet future estimate electricity demand. New large scale hydro may be difficult to consent under the current policy and regulatory settings.





## End notes

<sup>1</sup> https://www.origingreen.ie/globalassets/origin-green/og-publications/origin-green-progress-report-update.pdf

- <sup>2</sup> Te Rūnanga o Ngāti Awa v Bay of Plenty Regional Council [2019] NZEnvC 196
- <sup>3</sup> Overseas Investment Amendment Bill (No 3)
- <sup>4</sup> Aratiatia Livestock Limited and others v Southland Regional Council [2019] NZEnvC 208
- <sup>5</sup> Federated Farmers of New Zealand v Bay of Plenty Regional Council [2019] NZEnvC 136 at [11].
- <sup>6</sup> Letter from PCE to Ministers for the Environment, Agriculture, Climate Change, and Research, Science, and Innovation dated 22 January 2020
- <sup>7</sup> Letter from PCE to Ministers for the Environment, Agriculture, Climate Change, and Research, Science, and Innovation dated 22 January 2020
- <sup>8</sup> Lindis Catchment Group Inc v Otago Regional Council [2019] NZEnvC 166 at [457]
- <sup>9</sup> Federated Farmers of New Zealand Inc v Bay of Plenty Regional Council [2019] NZEnvC 136 at [117]
- <sup>10</sup> Federated Farmers of New Zealand Inc v Bay of Plenty Regional Council [2019] NZEnvC 136 at [117]

### Bell Gully's resource management practice

s freshwater management continues to undergo reform in New Zealand, strategic thinking on future opportunities and mechanisms is critical. We offer advice on all aspects of freshwater management including water allocation, rights to discharge, water and nutrient trading, managing within limits, and consenting projects.

Our resource management team has worked on a wide variety of water and wastewater matters, from regulatory issues to infrastructure projects. We act for the Crown, regional and district councils, as well as high-use water clients including; water and wastewater companies, water bottling companies, hydro-generation companies, large scale manufacturing processors, wine industry clients and extractive industries. We also act for Māori groups (iwi and hapū) and NGOs with interests in protecting their local waterways.

We have significant experience advising on irrigation projects and wastewater systems, including project development, delivery, and managing environmental and resource management factors. We also advise on resource consents and policy matters relating to the commercial, industrial, urban development, mining, and public infrastructure sectors, as well as associated trade waste matters.

Our team have a proven track record of gaining consents for major projects and are able to call on a wide range of expertise from across the firm for the complex issues surrounding water and waste infrastructure delivery, and to resource the day-to-day commercial operations of water and waste management companies and organisations. Our multidisciplinary approach includes advising on resource management, construction, land access issues, infrastructure project financing, tax, and regulatory issues.



## Bell Gully's freshwater team

For further information about this report, please get in touch with one of the contacts listed below or your usual Bell Gully adviser.



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