

## Policy Think Piece Case Study 1: Hinds Catchment

### Deficiencies in RMA process and transparency affecting environmental outcomes

Farms in the Hinds Plains area, south of Ashburton in Canterbury, are irrigated through the local irrigation scheme, extracting water from the Rangitata River and other sources. The consents for water takes and nitrogen discharges are administered by the Canterbury Regional Council (ECan). These consents expire in May 2019,<sup>1</sup> but operations can continue under the existing resource consents while new consents are applied for and processed (as allowed for under RMA section 124).

Compliance with consent conditions is monitored through self-reporting and an annual audit of selected farm operations in the scheme. However, this process lacks transparency. Each year, a subset of farming operations are selected by the consent holder (the scheme) to be audited. In the most recent round of audits, the farming operations audited were assessed as “A grade”, which means no further assessment is required for three years (note that this grading was according to the auditing company’s own standards – not according to any standardised evaluative criteria, though these have since been developed). While these audit reports are made available, they contain only limited information, so it is difficult to get a clear picture of an operation’s actual environmental effects. It is therefore difficult to avoid the conclusion that the consent monitoring is not sufficiently robust to meet the requirements of the consent.

It is also unclear to what degree the auditor (a third party on behalf of ECan) is able to gain a full and an appropriately in-depth understanding of actual on-farm operations, necessary to determine an accurate measure of nitrogen loss through the Overseer model. When ECan was queried about the audit data and files, the relevant files could not be found, and it became evident that the Council’s system of storing and archiving files and reports – let alone auditing third party work – is wanting.

Furthermore, an individual farming operation cannot obtain its Overseer output files, which are held by ECan’s auditing contractor. Having access to this Overseer data is critical to a farming operation’s management and continued improvement. Without this information, a farming operation cannot undertake due diligence on its own compliance with resource consent conditions. Similarly, the robustness of the audit process cannot be ascertained.

Similarly flawed processes and lack of transparency became evident when one scheme shareholder (a consent part-holder) requested the regulatory compliance assessment report for the irrigation scheme. The request for information, made under the Local Government Official Information and Meetings Act, was refused by ECan, on the basis of “commercial sensitivity” in relation to the consent holder. The shareholder then made a complaint to the Ombudsman, which upheld the complaint. The report, after some delay, was made available in mid-2018. The compliance report that was eventually provided was less than comprehensive and not what would be reasonably expected for a compliance report for such a significant scheme with considerable documented environmental impacts.

The limited access to information has serious implications for business operations. Without this information, a business cannot, for example, assess business risk or undertake due diligence in relation to compliance attainment and future investment. Many businesses are required to, or choose to, report on compliance in company annual reporting processes. Without access to the relevant information, a scheme shareholder cannot even determine their original grandparented nitrogen allocation. Without this base information, all consequent auditing, compliance and enforcement is effectively meaningless. The lack of access to

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<sup>1</sup> Consent reference CRC121664.1.

monitoring and compliance data also has profound implications for public transparency of the scheme, its governance and its environmental impacts.

A further issue, with implications for both good business management and environmental outcomes, is the quality of the information and guidance ECan is providing to farmers. ECan has established a “Farm Portal” which provides guidance on how farms can apply good management practices to reduce nitrogen loss. When one shareholder entered relevant information about one of its farming operations in the Hinds area into this portal, the programme recommended, not decreasing, but *increasing* the application of nitrogen on the farm. This anomaly remains unresolved, despite further attempts by both shareholder and ECan officials to understand the basis of this recommendation.

To replace the existing consents associated with the irrigation scheme, the irrigation scheme company has lodged another consent application with ECan for 50,750 irrigated ha, allowing for approximately 6000 tonnes nitrogen loss per year (calculated as 5682 tonnes using Overseer version 6.2.3).<sup>2</sup> But an important feature of both the existing and proposed scheme consents is that nitrogen losses are “scaled” to accommodate changes in Overseer versions. That is, there is no specific limit to the amount of nitrogen loss that can be discharged.

Improvements in Overseer accuracy in determining actual nitrogen loss and the corresponding potential for effects of the activity will not have a limiting effect on how much nitrogen can legally be discharged. The previous inaccuracies of Overseer, in determining the likely nitrogen loss, are effectively granted to the consent holder. In this way, the original effects-based decision is superseded by an allowance for more contaminants to be discharged. It is not clear how such a sliding baseline for adverse effects, as allowed for in the resource consents, is consistent with the RMA.

Non-notification of the new consent application(s) is likely, due to a rule in the recently operative plan for the zone allowing non-notification, if certain policies (criteria) are met. (The judgment as to whether these criteria have been met, or special circumstances exist, and therefore the decision whether or not to notify lies with ECan.) Yet, effects of irrigation on the underlying aquifer have been accurately identified, and public health effects are known, according to the Canterbury District Health Board<sup>3</sup> – it is therefore difficult to understand how the effects of irrigation can be determined as no more than minor, or that special circumstances for notification do not exist.

Furthermore, under existing consent conditions, there is no incentive, either financially or environmentally, to reduce on-farm nitrogen losses. If one farming operation within the scheme reduces nitrogen loss, the amount of the reduction can be re-allocated to another shareholding operation, which may be less efficient with its inputs or may intensify its farming operation. The criteria or process for re-allocation within the scheme are not currently transparent. Therefore there is neither any financial incentive nor any guarantee of environmental gains where one shareholder operation reduces its nitrogen outputs.

To remove this disincentive, a mechanism to reward leadership and penalise poor practice is required. But the current policy and consenting approach taken by ECan does not encourage operators in the scheme to measure their effects (i.e., nitrate and microbial loss effects) – whether through on-the-ground monitoring or more accurate modelling – let alone act on them. There is also minimal incentive for research investment for the term of the consent.

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<sup>2</sup> Pattle Delamore Partners, April 2018, “Assessment of Environmental Effects: Application to Discharge Nutrients for MHV Water Limited” (Report prepared for MHV Water Limited).

<sup>3</sup> <https://www.cph.co.nz/wp-content/uploads/landusechangehealthreview.pdf>

Beyond the localised implications of inadequate monitoring and management of environmental effects, inadequate monitoring also poses risks to New Zealand's national interests by increasing the probability of risks to the food chain, human health and the value chain, with potentially significant repercussions for New Zealand's economy and reputation in international markets.

### **What is the policy/ implementation gap and what is required to address it?**

Consents have or are currently being granted on the basis that a certain level of nitrogen loss still meets the RMA's objective of sustainable management. However, it is unclear how this assessment has been made, given our knowledge of effects of current farming practice in the Canterbury region. For example, we know that nitrogen levels in groundwater are increasing (Dench, 2017);<sup>4</sup> a significantly lower nitrate threshold triggering cancer risk is now recognised;<sup>5</sup> bacterial multi-antimicrobial resistant health risk in surface waters has been demonstrated;<sup>6</sup> and Canterbury District Health Board reports identify anomalously high enteric (intestinal) illness rates in Ashburton District.<sup>7</sup> Furthermore, spring-fed streams in the Canterbury region now fail ANZECC (Australian and New Zealand Guidelines for Fresh and Marine Water Quality) toxicity criteria and may also fail the objectives of the National Policy Statement for Freshwater Management (NPSFM) and National Environmental Standard for Drinking Water. Cultural impacts and community values are inadequately assessed, quantified or considered. Despite these known and inadequately considered effects, allowable "industry agreed Good Management Practice" permits 400 kg of nitrogen per hectare per year applications and are accommodated by the existing consents.

There needs to be more transparency around the decision to non-notify a consent application process, particularly where impacts on freshwater are concerned. Notification allows for more scrutiny of environmental effects, and thus a higher likelihood of accountability (such as in relation to compliance with resource consent conditions).

For such a regulatory regime to work, there also needs to be a direct line of sight by the regulator to on-farm operations. For this purpose, more accurate and transparent compliance assessment tools need to be developed. This includes real-time water use information transmitted direct to the regional council, and accurate fertiliser records automatically tracked/traced with proof of application provided to regulator. Without accurate data, modelled estimates of consent compliance are inherently weak.

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<sup>4</sup> Dench, William, 2017, "Identifying changes in groundwater quantity and quality resulting from border-dyke to spray irrigation conversion", Master's Thesis, University of Canterbury.

<sup>5</sup> Schullehner J., Hansen B., Thygesen M., Pedersen CB, Sgsgaard T. 2018 "Nitrate in drinking water and colorectal cancer risk: A nationwide population-based cohort study", *International Journal of Cancer*, July 1;143(1):73-79.

<sup>6</sup> Massey University, (May 2018) Unpublished report commissioned by Fish and Game NZ.

<sup>7</sup> Average Annual Rates (per 100,000 population) of Campylobacteriosis by Age in Ashburton District, Canterbury Region in New Zealand, 2006 to 2014.

## **OLW solutions:**

### 1. Applied research

Applied research is urgently needed to quantify externalities and their effects more accurately, so they can be better evaluated as part of RMA decision-making. Better information may preclude the override of value judgements over fact, and facilitate more robust regional decision-making. Improved environmental and human health outcomes, and reduced risk to New Zealand's export value chains should result. This research could include:

- more accurate direct detection and quantification of contaminant losses (microbial and nitrogen)
- quantitative research on the adverse effects of discharges of contaminants on human health, social and cultural wellbeing
- improved and calibrated models for estimating contaminant losses, where direct measurement cannot be undertaken
- investigation of hybrid beef/dairy systems, which have the potential to:
  - halve nitrogen loss, reduce microbial losses
  - improve water use efficiency, animal health and human health and wellbeing.Integrated research between greenhouse gas emissions and ecosystem solutions is required as greenhouse gas emissions are predicted to increase under the current model for hybrid beef/dairy systems.
- development of alternative or novel food systems, with acceptable externalities, suited to regional conditions
- investigations of groundwater nitrate recovery/re-use, in accordance with industry remediation methodologies for contaminated sites
- research evaluating potential impacts of transformational changes to land use on value chains.

### 2. RMA solutions:

- consents must meet National Policy Statement for Freshwater Management objectives
- notification (including where "special circumstances" apply) to allow for full community and stakeholder input, enabling greater transparency/ accountability in outcomes
- appropriate weighing of all matters relevant to the sustainable management decision
- reverse the consented disincentives for reduced nitrogen loss.