

May 2024

Going with the grain

Summary
document



Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata



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Introduction

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My report, *Going with the grain: Changing land uses to fit a changing landscape*,² aims to clarify the multiple environmental challenges rural New Zealand faces, and some of the difficult trade-offs that meeting them will throw up. My hope is that it will give a sense of the possible direction of travel if we are serious about responding to the triple challenge of climate change, biodiversity loss and water quality. We need to respond in a way that is sensitive to the economic, social and cultural viability of our regions.

The report brings together many threads of my work over the last six years to lay out an alternative way of thinking about environmental policy. It does not prescribe what *should* happen in responding to land use change. Rather it outlines a *process*. My hope is that it is a process that will allow us to begin to take action on the issues we face. For too long, we have been at the starting line, eyeing aspirational environmental goals set for the future. But the longer we consider how to start, the less attainable those goals become.

While there are differing views on future land use change in New Zealand, the vast majority of us want the same outcomes:

- resilient landscapes that can be passed on to future generations
- land that is rich in biodiversity and waterways that are healthy
- improvements to the environmental footprint of our land-based industries.

These outcomes are uncontroversial. The big questions are around how we can achieve this change in a way that:

- considers environmental challenges within the wider social, cultural and economic realities that people who are being asked to make changes must face
- distributes the costs fairly
- ensures transparency and accountability in decision making.

Conversations around land use change are already happening across Aotearoa as rural communities confront the significant challenges posed by climate change and issues related to the current direction of change.

So, what is standing in the way? And how do we plot a way forward? The next section summarises aspects of some of the key issues and possible responses to them.

² See <https://pce.parliament.nz/publications/going-with-the-grain-changing-land-uses-to-fit-a-changing-landscape>.

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Issues and ways forward

Issue

The way we use land needs to change

To meet our environmental goals, the way we use land must change. Some parts of the country face multiple environmental challenges that cannot be solved by mitigating the effects of current land use.

Land use is, in any case, in a constant state of change. What future landscapes of Aotearoa will look like, and the state of their environmental health, will depend on at least two things. A changing climate will force changes to what we do where on the land – and how we do it. And then there will be the changes that flow from land use decisions. These are driven by everything from environmental and planning regulations to who we trade with and evolving consumer preferences abroad.

A way forward

Talk about – and plan for – land use change

Land use change is unavoidable, however the scale of change needed will vary across the country. At one end of the spectrum, changes to management practices within the same farm system might be all that is required. At the other end is wholesale change from one specific land use to another. In between, there may be land use change required in specific vulnerable 'hotspots' within an area.

As a nation, we need to decide how we manage that change and the impacts it will have on our people, environment and economy. These decisions will not be easy, but failure to confront land use issues will not make them disappear – it will simply commit us further to degrading our environment. This may, in fact, be the direction we choose to take. But that must be a conscious decision and we need to be clear about the consequences of our choices.

A fragmented policy landscape

We currently have a fragmented environmental policy landscape with multiple policies that impact on land and water use. The environmental impacts of land use have been seen as a series of technical problems (climate mitigation, climate adaptation, freshwater quality and biodiversity) with discrete solutions.

The amount of regulation, and the pace at which it changes, causes confusion for land users and those who oversee their implementation. Public funding for land-based activities is equally complex.

This fragmented approach is particularly at odds with the holistic approach that *tangata whenua* have towards land.

An integrated, adaptive approach

An integrated approach to environmental policy would mean looking at the impacts of land uses, and changes to those land uses, all at once. In my view, the catchment or sub-catchment is the appropriate scale for an integrated approach to land use change.

Integrated approaches are most likely to produce a mosaic of diverse land uses across catchments. This diversity can create environmental benefits and improve the resilience of the local society and economy.

Additionally, natural and rural environments are complex systems (with all sorts of feedback loops) and so are the communities who live there. So any process of change should be undertaken in the full knowledge that there will be a need for constant adjustments as we learn more about the way those complex systems respond to change. Simply put, we must *continually adapt our land management and land use choices in ways that are appropriate to the landscape and local communities*.

As an input to *Going with the grain*, I carried out case studies in two catchments to understand how an integrated approach might work. The case studies are being released concurrently with the report and are outlined in Box 1.

Box 1: Understanding where we are going

To investigate both how our current environmental regulatory approach, and alternative approaches, could influence our future landscapes, I undertook a detailed exercise in two catchments at opposite ends of the country: the Mataura catchment in Murihiku Southland and the Wairoa catchment in Te Tai Tokerau Northland. The findings from this exercise are outlined in a second report: *Exploring land use change under different policy settings in two case study catchments*.³

Using a range of tools, including landscape susceptibility mapping, land use and management change modelling, economic modelling, and community and mana whenua input, my team modelled how these landscapes could look in 2030 and 2060 based on different policy scenarios, including current settings.

Under current and expected environmental and climate policy settings our modelling projected the emergence of dual monocultures of dairying and pine production forestry. The Wairoa catchment would see a wholesale switch from sheep and beef farming to pine production forestry, while in the Mataura catchment these policy settings would also drive the transition of hill country sheep and beef farming to forestry. However, in contrast to Wairoa, most dairy and lowland sheep and beef operations in Mataura remained viable, albeit much less profitable. This difference between the two catchments illustrates how national policy directions will have varied impacts across rural New Zealand.

Scenarios based on alternative policy mixes generated less extreme, but still very challenging, outcomes. They produced a greater diversity of land uses, which were shown to provide a more resilient local community, economy and environment. They also showed that by sacrificing some carbon sequestration in the short term (less pine production forestry) it was possible to generate better environmental outcomes for water quality and biodiversity.

The case studies are not a forecast of future land use change in these catchments and the findings cannot be extrapolated to other catchments. The exercise simply illustrates the scale of possible change. It is also my hope that this approach can be adapted by others to model the outcomes of various environmental policies on their own land, before making significant decisions.

³ See <https://pce.parliament.nz/publications/exploring-land-use-change-under-different-policy-settings-in-two-case-study-catchments>.

A one-size-fits-all approach

6 National-level regulations that impact on land use change do not currently account for the differences across New Zealand's landscapes. A policy can have radically different effects depending on current land uses and the geography of the area. This finding was illustrated by my two case studies in Wairoa and Mataura.

The environmental issues facing catchments are very different, as are the social and economic contexts. Even within catchments there are environmental hotspots where land use has a larger impact on the environment.

As a result of all these factors the solutions for each catchment will need to be different. National regulations that seek to make improvements across the board often end up favouring incrementalism, which is designed to move at the pace of the slowest traveller.

Rebalance decision making

Land use changes need to be appropriate to the specific landscape and local communities. To ensure this happens, central government and regional councils should agree with communities on the general direction of change (the *what*). Communities and mana whenua at the catchment or sub-catchment level should make decisions on the implementation (the *how*).

Decisions should be based on local knowledge supplemented with high-quality environmental data. Local communities must be able to provide feedback on the costs, impacts and trade-offs involved in achieving certain outcomes. This is particularly important (but by no means uniquely so) for Māori whose assertion of kaitiakitanga is rooted in hapū who whakapapa to particular places with particular valued resources.

To implement such an approach, we need to be prepared to trial things and be experimental. In my view, it makes sense to start in the most environmentally challenged catchments.

Regional councils are best placed to support the work of catchment or sub-catchment-scale groups and monitor progress.

Property-scale responsibility for environmental management

Under our current system, decisions about land use are largely in the hands of landowners, within regulatory constraints originating from the Resource Management Act 1991. Landowners have control over what happens within the boundaries of their properties but have very limited control, or even visibility, of their environmental impacts beyond those boundaries. For this reason, it is difficult for individuals to have much of an effect on improving environmental quality within a catchment.

Equally, it can be difficult to pinpoint properties responsible for environmental problems in a catchment area. In theory, polluters should pay for the impact of their activities and that money should be used to clean up the mess. But uncertainty makes it difficult to either incentivise or compel landowners to reduce their damage in an enforceable way. This challenge is likely to grow as climate change introduces increasing uncertainty into environmental impacts and management decisions.

Catchment-scale responsibility for environmental management

Where environmental impacts can be accurately measured and attributed they can be dealt with via market-based mechanisms. However, most environmental issues that relate to how we use the land – climate adaptation, water quality, water quantity, biodiversity, pests and weeds – are best managed at a catchment or sub-catchment level with the input of local land users.

Catchment groups provide a way for willing land users to learn from each other and develop a shared understanding of the catchment context. If empowered with high-quality information, these groups can be a place where mana whenua, landowners, communities and other local stakeholders can confront, face to face, the trade-offs between social, environmental and economic issues resulting from land use change. Catchment groups should be incentivised to play a larger and more proactive role in environmental management. Incentivisation could happen through increased resourcing or devolution of greater power to these groups.

Māori land presents unique issues (see Box 2), which means it is essential that public policy initiatives provide support for administering whenua Māori and target initiatives that support Māori agribusiness.

Box 2: Land use change on Māori land

Māori freehold land governed by Te Ture Whenua Māori Act 1993 is collectively owned through whakapapa and succession. To manage this, many owners have set up management structures like a trust or an incorporated society. By area, 83% of Māori land blocks are now under whānau management. Many of these trusts or organisations are working towards self-determination of their lands and trying to implement te ao Māori frameworks to manage them, but they face challenges.

The Act was set up to protect descendants from further alienation, but it reduces the options Māori have to manage the land economically and restricts options for land use change. Decisions to develop, use or change the land require collective agreement, which can be difficult to obtain even with a trust or incorporated society structure.

Land cannot be used as an asset to borrow against, further restricting Māori from easily developing their land or transitioning to more environmentally sustainable uses. The advantage, however, is that it reduces the ability to transfer ownership outside of the owners' whānau, hapū or descendants. While Māori land can legally be sold, many Māori object to sale of land they are connected to through whakapapa, even if the land generates poor returns. These administrative challenges make transitioning to alternative land use approaches difficult.

Incomplete and inaccessible environmental data

The quality of environmental information in New Zealand is often not fit for purpose. Environmental data that are monitored within the environmental reporting framework are at best fragmented – lacking geographical coverage or consistent time series – and at worst, inaccessible. Inaccessibility can mean that data and information are only available behind a prohibitive paywall, presented in a complex format that cannot be used easily, or that they simply do not exist.

Funding of New Zealand's environmental monitoring system is inexcusably low and has been static for many years. This has resulted in cuts and atrophy of the databases that do exist.

High-quality environmental data provided by central government

Central government should make high-quality, affordable environmental information accessible and underwrite it as a public good. Land users and regional councils should be able to access the same information free of charge. They should not be arguing over 'the facts' as best we can present them for the time being.

High-quality information is needed to model the impact of possible actions and to identify hotspots – areas where land use change can yield higher than average benefits. In return, landowners and catchment groups need to be prepared to share the details of their practices and resource use. Monitoring needs to generate information that can tell us, collectively, if we are making a difference at the catchment level.

High commercial barriers to land use change

Multiple commercial barriers to land use change currently exist. Land use change is a risky proposition for small farming businesses, given the need for large capital outlays and long payback times. Land users can also find it difficult to secure loans from a risk-averse banking sector.

Given these factors, it is understandable that landowners are also risk averse and biased towards the status quo when considering land use change. Additionally, as a country, we have few tools for improving the environment where the costs are too high for landowners to carry.

Implementation of environmental policies is often pushed onto regional councils, which are left to confront landowners who in some cases – but not all – lack the resources to deliver what is expected of them.

Explore alternative financial tools to mobilise resources

We need to find alternative ways to fund land use change. There are several options, including integrated grant and loan schemes, demonstration grants, market-based mechanisms, an intensity-adjusted land tax or a price on biogenic methane emissions (see Box 3).

To be affordable, most land use change needs to be economic. We cannot afford to subsidise everything. But there will still need to be public investment in research and potentially loans for new infrastructure.

In some cases, land use change will not be economically viable for landowners to undertake. In these cases, landowners should ideally be compensated for the ecosystem services that their land use provides (just as they should pay the true cost of the environmental impacts of their existing uses). There has been some talk of payments for biodiversity, but the scale of demand for these is not yet clear. Other unfunded ecosystem services will also become more important, including water regulation and erosion control in flood prone catchments.

Box 3: Mobilising financial resources for land use change

- Central government and regional councils could design an **integrated grant and loan scheme** with broad criteria customisable to local circumstances. Targeting the most at risk catchments and specifically the environmental hotspots within them, this type of scheme could fund catchment groups to help meet the costs of implementing nature-based solutions.
- **Demonstration grants** (for first movers) and **underwritten loans** can be valuable tools to encourage land use change and could be helpful where investments in infrastructure are needed to support new land uses.
- To fund these, **market-based mechanisms** can be used to raise revenue by pricing resource uses that impose environmental costs. These mechanisms effectively include the cost of environmental damage and/or the value of environmental improvement in a farmer's bottom line. They also provide incentives to change behaviour, rather than mandating specific actions so people can choose *how* they change their land management or use – or pay the price instead. Examples of market-based mechanisms include:
 - a **resource rental on the commercial use of water** – either for consumptive (e.g. irrigation) or non-consumptive (e.g. most hydroelectricity) purposes. To implement a pricing regime, rights to use freshwater, specifically Māori rights to water, would need to be clarified.
 - a **price on biogenic methane emissions** with the revenue retained within the catchment or region where it is collected. In this case there is likely to be a better match between revenue and the catchments facing the greatest environmental challenges.
 - an **intensity-adjusted land tax** based on a percentage of the value of the land, but adjusted for the degree of environmental impact that is being imposed. Roads, land covered in concrete or buildings, for example, would pay the full tax. Farmed land or buildings with green roofs, which still support biodiversity in some form, would be partially taxed. Land in a natural or restored state would receive a subsidy (in effect a recognition of the ecological services being provided).

Regulatory barriers reduce flexibility of land and water use

Some regulations set up to protect the environment have become barriers to land use change. A key example is the issue of water rights. Access to freshwater is essential for finding profitable land use options with lower environmental impacts, but water rights are usually tied to land parcels and difficult to trade. This confers first mover privileges and locks in existing, often low productivity uses.

The issue of allocation of water rights was covered in the recent National Policy Statement for Freshwater Management through the introduction of Te Mana o te Wai. The future of this concept is to be reviewed by the new Government. Decisions made during upcoming Resource Management Act reform will also need to address the environmental challenges of water allocation and consider issues stemming from historical water allocation, including: the overallocation of water rights in some catchments; difficulties in transferring water rights; and the fact that water rights have not necessarily been allocated to the highest-value use.

Resolve Māori rights and interests in freshwater

Greater regulatory flexibility is needed, with appropriate oversight, to remove regulatory barriers. One key area worthy of investigation is the development of tradable water rights to ensure that water is used more efficiently. Where water is scarce, rights to use it should be transferable.

Such a development would require a resolution of Māori interests in water. An agreement between Māori and the Crown could provide both parties with the means to invest in improving water quality (with flow-on benefits ranging from cultural values to opportunities for mahinga kai) by paying for ecosystem services. Resource rentals are a sound means of ensuring that scarce resources are used wisely. If that proved impossible, something along the lines of the intensity-adjusted land tax described in Box 3 could be considered.

Planning restrictions such as subdivision controls that make it difficult to free up capital to support land use change should also be investigated.

New Zealand Emissions Trading Scheme driving land use change

The NZ ETS is currently the main commercial driver of land use change in Aotearoa through afforestation. Afforestation is needed in parts of the country and the NZ ETS provides a source of revenue for this. However, the scale of this change and the singular focus on carbon has the potential to create negative economic, social and environmental consequences.

Additionally, the current unrestricted use of forestry as an offset is removing different land use options from future generations.

Refocus climate policy

The NZ ETS should be retained as a tool for reducing gross emissions, but the right to use forestry as an offset should be progressively phased down over time. Afforestation should continue, but in a way that is better suited to the landscape.

Progressively removing forestry from the NZ ETS should allow the Government to auction more credits at a higher price. The augmented revenue could be applied to incentivise changing land use, including paying for nature-based solutions on the land, like planting erosion-prone areas in natives and wetland restoration.

An alternative solution could include creating a separate emissions trading scheme to manage biogenic methane, with afforestation used to mitigate the warming from these emissions. This solution would more appropriately offset shorter-lived agricultural methane emissions with forestry – which, by its nature, has a limited lifespan.

We cannot avoid the hard questions

The hard questions about rural sustainability and the need to change the way we use land need to be addressed by mana whenua, farmers, rural communities, local authorities, central government agencies and those who benefit from our land and all that it provides.

Here are some of the questions that must not be avoided.

1. What are the current barriers to land use change and how do we remove them? Specifically, how do we deal with the issues around water rights?
2. Is the way the New Zealand Emissions Trading Scheme is driving land use change helpful and how could we do things differently?
3. What is the appropriate scale for managing land use change – property-level, sub-catchment, catchment, national?
4. How do we empower those with expert local knowledge (local communities and mana whenua) to be part of decision making?
5. Who makes decisions about land use change – central government, regional councils, mana whenua and/or local communities?
6. How do we ensure that we have the best research and information available to inform decisions on land use change?
7. How can we be sure that action is prioritised in those areas where we can make the greatest difference?
8. How do we fairly and transparently manage the unavoidable trade-offs needed when faced with the competing environmental, economic and social challenges of land use change?
9. How do we ensure that land use change is adaptive to changing circumstances and needs?
10. Who is going to pay for land use change where environmental pressures demand it?

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A final word

No government will have ready answers to the many questions posed here. That is not to be expected. But equally, no government should avoid asking the hard questions or grappling with the challenge of land use change.

Going with the grain tries to clarify the nature of the environmental challenges that rural New Zealand faces and ensure that those who determine public policy cannot claim they are unaware of the trade-offs we are confronting. Changing the way we use land cannot be avoided, if only because current policies (particularly those governing climate mitigation) are actively encouraging it. My hope is that the report will give a sense of the possible direction of travel.

I am optimistic that know-how on the ground, research into new techniques and land uses, and a massive improvement in our ability to manipulate land-based information could improve environmental performance. I am less optimistic about the capacity of our institutions to deliver the sort of socially and economically informed understandings we need to address our problems. But I am very happy to be proved wrong.



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