

INSIGHTS FROM HINDSIGHT – LIVING AND LEARNING THROUGH THE CANTERBURY LAND AND WATER REGIONAL PLAN DEVELOPMENT

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Background and introduction

We live in changing times, and environmental - particularly nutrient related - constraints now play a major role in farm management and agribusiness in general.

Over the past five years my career direction has been strongly influenced by nutrient constraints now impacting agriculture. I first became involved when I was working with DairyNZ as a business developer in the productivity team when Environment Canterbury initiated their case study project to develop a “preferred approach’ to deal with land use and water quality issues. The first case study was located in the Hurunui catchment looking at land use and water quality. Since that first case study, a lot has happened. In Canterbury we now have a myriad of rules governing our land use in different geographical districts and sub regions. These rules impact the value of our land, the very core of every farm business. A crucial facet of the farm business now includes an understanding of how nutrient constraints might impact on the current and future use of any land parcel (or part of a land parcel).

A year ago I set up my own specialist consultancy business, Agri Magic Ltd, that exists solely to support farmers and Agri businesses in negotiating the rules and required outcomes associated with nutrient constraints now in place. My background is in practical farming, I love the outdoors, I have worked across all sectors (doing the work and understanding the principles) including dairy, intensive and extensive sheep and beef, arable, bull beef and pig farming (both indoor and outdoor). Because I know and understand these farm systems I am aware that there are many ways for us to manage nutrient losses and that most farm businesses involve a mix of land uses.

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Having grown up in a thriving rural community surrounded by a wide but close extended family I am motivated to work with local farmers to help them understand their impact on the environment and to help ensure the changes they make to their farming operation are sensible in terms of achieving the objectives of the Land and Water Regional Plan as well as their own farm business. I know my own background and values influence my views on the approaches taken and the framework now in place, so want to acknowledge these early on. My views are those of a practitioner supporting farmers through emerging regulation. I understand farming. I love rural communities. I am not a planner. I am not an environmental lawyer, although I do call on the services of these specialists frequently in my work.

This workshop will look back at the process used to develop the rules currently operative in Canterbury and aims to provide insights about the method that may be useful in the future. Through acknowledging the difficult areas of the process and identifying some unintended consequences of the approaches taken in Canterbury hopefully this can benefit other regions undertaking similar challenges.

The preferred approach

The following is an excerpt from the document, “The preferred approach for managing the cumulative effects of land use on water quality in the Canterbury region. A working paper” January 2012. This was the case study to test the collaborative approach to setting nutrient constraints in Canterbury. I draw your particular attention to the 4th point regarding “adaptive management”.

The development of the *Preferred Approach* has been guided by ten key principles. While these principles were useful in developing the approach they will also have on-going applicability in implementation of limits on a catchment-by-catchment basis. In that sense the principles themselves should be regarded as part of the *Preferred Approach*.

- 1. Focus on outcomes:** Clearly defined and expressed community outcomes are an essential start and end point for any discussion on the impacts of land use on water quality. The use of the term *outcomes* is important as it, right from the start, opens the opportunity for use of multiple mechanisms to achieve success.
- 2. Collaborative management:** Multiple parties have an interest in, or influence over, nutrient management. A style of working that involves these parties working collaboratively on solutions, sharing information, building trust and confidence in each other, will yield the most durable response.
- 3. Quadruple-bottom line:** The promotion of opportunities for and setting of expectations of land managers (collectively and individually) needs to be done having considered the environmental, economic, social and cultural costs and benefits of those opportunities and expectations.
- 4. Adaptive management:** In the absence of complete information, nutrient management needs to take an adaptive management approach. Such an approach is one where improved information can feedback into decision-making processes allowing adjustment of both desired outcomes and responses over time. Contributing information will include environmental, social, cultural or economic conditions and the efficacy of mitigation responses.
- 5. Catchment approach:** Management efforts need to address land use (current and future) and water quality issues at a catchment and sub catchment scale to ensure effectiveness and maximise opportunities for least cost responses.

6. **Flexibility:** A detailed prescriptive approach is not recommended. Flexibility provides the space for innovation and allows land users the opportunity to develop solutions which fit their particular land and farming type and management style.
7. **Manage both nitrogen and phosphorus:** Sources of both nutrients need to be managed although the extent to which each is managed may vary depending on the situation. Restricting just one nutrient is risky, as nutrient limitation may vary within different reaches of a river and over time. Also in addition a failure to manage the limiting nutrient adequately could lead to algal blooms.
8. **Certainty:** Certainty is a desirable prerequisite for investment, yet with the issue of land use and water quality there is a high level of uncertainty. Many aspects are associated with defining the capacity of the resource for use. Science can reduce but not eliminate this uncertainty. Some uncertainty is inevitable and this requires acceptance and a fit-for-purpose management response.
9. **Equity:** Existing users have existing user rights. In the development of the *Preferred Approach* these rights must be respected at the same time as recognising the rights of new and intergenerational users. Notwithstanding these rights, user rights do not include the right to have unacceptable environmental impacts.
10. **Avoidance of irreversible and/or perverse outcomes:** In attempting to achieve a set of environmental outcomes it is essential to understand how the actions impact on other outcomes. The delivery of outcomes needs to optimise the balance between the environmental, economic, social and cultural values. Irreversible economic, social, cultural and environmental outcomes are unacceptable.

The 10 key guiding principles of the “preferred approach” to setting limits are fair and sound to me. The debate and trade off discussions that ensued through this case study were both challenging and insightful and definitely moved my perspective and depth of understanding of the issues. The most unsettling realisation I had during this process was associated with the fact that during my life I had been taught to make decisions relating to investment in farming based on confidence that one action would have a particular outcome (e.g. I would get at least a 10kgDM:1kgN response to fertiliser applied at appropriate soil moisture and temperature). When it comes to managing the impact of land use on environmental aspects however, we are frequently dealing with uncertain outcomes. We never have perfect information but an Agricultural Scientist is programmed to demonstrate that a particular action provides a result that is “significantly different”. We depend on science to help us determine where we will get the best return on our investments. That is the paradigm shift when dealing with setting of

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nutrient limits. The community is asked to set a limit based on uncertain outcomes because it is too big a risk to do nothing and wait and see... tricky!

It also took me a while to get used to the fact that people who sometimes visit a river to kayak have as much involvement in setting a limit for a catchment as those that live, farm or run a business locally 365 days of the year (maybe for several generations). I can understand that that recreational visitors should have a say, I just think that those who have family, business **and** recreational interests in an area 365 days of the year should be entitled to have a greater weighting on their vote. I am still struggling to come to terms with the changing my perspective on that score.

In order to achieve the best outcome for a catchment in collaborative approaches it requires big brains and an ability to understand the perspectives of others with an open mind. Farmer representatives on zone committees need to have the capability to understand complex issues, skills in articulating their opinions and concerns **and** they need to know what they don't know and where to go for additional knowledge. The best people are likely to already have commitments. Resourcing of this approach is required to get the **BEST** representatives on these committees not just those who can give up their time.

Because the collaborative "preferred approach" used by Environment Canterbury is designed to allow perceptions of one group to be moderated by opposing values /views and middle ground to be defined, it is important that industry representatives report back regularly and continue to be influenced by the groups they represent, it is effectively a negotiation. There is a danger that zone committee members alter their own views but are unable to articulate the logic for their movement to those they represent. They need to be supported by reporting processes that will ensure this communication and enable handover to be possible as committee members join and leave.

The preferred approach also recognises **the importance of on-farm analysis in order for nutrient limits to be set**. This is the difficult part. Because the analysis is generally funded via industry good groups it tends to focus on the dominant aspect of each farm system. For example, the dairy sector focussed most of their analysis on dairy platforms at this stage, even though a dairy platform tends to have many more mitigation options available than some of the farms used for dairy support. Given that the levy that funds the sector is based on milk production then it should include the whole of the farm business, not just one element. In the field, our experience in Canterbury is that there are many mixed cropping systems. Where in the past these farms included a woolshed, they now include a dairy shed. The dairy farm system in Canterbury intersects with other farms in the community. Instead of analysing the impact of nutrient constraints as dictated by funding streams it would be more insightful to analyse using case studies that reflect real farm businesses – the whole business, not just part of it.

Whilst the zone committee members provide their view on where the constraints need to be set they do not write the plan itself. This means that the recommendations made by the community groups are then open to interpretation by planners. Planners do not tend to understand farming well and do not always hear the zone recommendations. For example, one previous zone committee member once explained to me that they recommended not to have grand parenting in their plan for their sub region, yet that is what they ended up with.

From collaboration to rule setting

This is the point at which the adaptive management concept becomes difficult to achieve because once the plan is written, the Resource Management Act process takes over and rigidity sets in, even though there is still much we need to learn and so much we are uncertain about. No matter what people tell you, the rules that are included in the LWRP are rigid and the consents team at Environment Canterbury are employed to stick to the letter of those rules. It is not their fault they do this, it is what they are paid to do, it is the law. One of the unintended consequences that has never been rectified in the LWRP is the way Overseer has been used to calculate a number above which resource consent is required to farm. The number (e.g. 20kgN/ha/yr) was set at the beginning of the planning process. It related to early versions of Overseer and was originally intended to catch the higher end of average nitrogen loss on farms. No consideration to the changing Overseer version was included in the plan and once the drainage model was updated in the model much higher nitrogen losses were being calculated through Overseer for the same inputs. No change was made to the trigger level in the plan. Consequently, most farms will now require resource consents to farm. There are many other examples where the rules set in the plan result in slightly ridiculous outcomes. It is complex and as a result I have a team of smart people working with me full time to support farmers in this new world. We charge for our time, the farmer pays. It is a full time very complex job to remain up to date with all of the rules and the implications of these in practice. If the process hadn't been so very rushed and if the rules were allowed time to go through another round of case study and analysis in practice, prior to the submission stage, then perhaps we could have found

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a middle ground that was not quite as complex in the short to medium run (I still have hope that the complexity will reduce over time!!).

Honesty about magnitude of effect

When farmers are asked to make change in response to nutrient constraints, it is so important to be honest about what we know and what we are uncertain about in terms of science, cause and effect and lag times. Kiwi farmers understand what it means to take risks, you respond to market signals rapidly and change behaviour in response to logic and well-presented science. We shouldn't expect you to be able to run a great and effective farm business with new nutrient constraints, without you demanding to see the logic. You need to know where there is a "leap of faith" and where we have confidence. You are the ones who have to adapt and change your system and often invest in technology.

Some management changes result in a much larger impact on nutrient loss than others, for example, it is a good idea to grow a green chop silage crop in spring between winter feed crops, it helps reduce the impact of densely stocked wintering. Management of irrigation has a much bigger impact on nitrogen losses however. Farmers need to see these management practices in context so they know which ones are essential and those that are "nice to do if you can".

It is my view that we are extremely fortunate to have an approach based on effects. I am proud that we acknowledge that there is as much variation within a land use as there is between when it comes to nutrient loss and risk. I also like the fact that it forces us to identify the principles that drive losses and allows farmers the opportunity to innovate over time, we need to be able to respond to market signals. I like using Overseer to help us manage these risks for nitrogen loss. When used well it is an incredibly powerful tool. There is so much misinformation about the Overseer model. It has its programming bugs but once you are aware of those you can work round them. As users of this model we didn't show Environment Canterbury how Overseer could be used in their process with great effect. We didn't know until we had the chance to apply it to the rules in practice, but by then it was too late! Beware the use of input constraints encroaching into plans to make life simple...they are often referred to as "good management practices", we need to keep farmers focussed on the principles of good management not just examples of it.

Other things I have had to get used to...

Another big moment of "learning" for me was the realisation that although planners write the plan they expect those who submit against it to also come up with a better solution to bits they disagree with. In the 8 years I was a business developer at DairyNZ I regularly undertook case studies of approaches with farmers requesting their feedback about what worked and what

didn't. If I was lucky they would offer options to improve but mostly it was up to me to identify how to improve the bits that were broken. It is a different story when it comes to the LWRP and I struggle with it. Planners write the plan and if you can see parts of that plan that might not work you submit against it. It is up to those who submit against the rule or plan to identify a means of fixing it, a better option. I don't know why they can absolve themselves of the responsibility for fixing ideas that don't work in practice but that is how the process works. Regularly I am told that if I don't think a rule is practical or will achieve the desired outcome that I should have submitted on the plan. I run a small and very new business. I don't have the luxury of providing hours of time to the submission process to set better rules unless I am contracted by a third party to do so. The key point here is that the process of setting limits in a collaborative way and integrating these into a plan that makes sense, meets legal requirements and will also lead to improved water quality objectives is **very** time hungry. For most of us time is money and money and income keep us in business. These processes are extremely expensive.

Our wee country can't afford too much wasted time churning through bureaucratic processes. I would like to slow it all down, not reduce the priority but just reduce the politics and try to make it more sensible. This isn't possible though because the public of New Zealand don't trust farmers to be good stewards of the land. They no longer understand how farms work and some of us shirk our stewardship responsibility. We burned that trust. Now we have to go through these processes to earn the trust back and we can only blame ourselves for that. I think we should welcome the opportunity to demonstrate to others that we make good decisions in relation to stewardship and the environment. We have been trading off the image long enough, why not be proud to demonstrate it when we are asked to?

There may be a collaborative and adaptive approach in the setting of these nutrient constraints, but my experience is that once the plan is written and has effect there is little room for feedback and iteration once unintended consequences are identified. It is expensive to be involved in the planning process unless industry good funds submissions and responses. In order to effectively submit on plans industry advocates must work in with people dealing with the issues in practice because from a distance they will not see the real issues at play if they focus on bits of the puzzle only. The collaborative and adaptive management approach is a good

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idea, but once it meets the rigidity of the RMA and is structured into plans and rules it is difficult to incorporate the iterative learning that is so important when managing issues where science and understanding is limited.

Through acknowledging the difficult areas of the LWRP process and identifying some unintended consequences of the approaches taken in Canterbury hopefully this can benefit other regions undertaking similar challenges.

Insights

1. Where problems exist but solutions are not obvious, a collaborative approach has merit.
2. Resourcing (\$) is required to get the BEST representatives on these committees not just those who can give up their time.
3. Representatives on collaborative committees need to be supported by reporting structures that will ensure communication back to those they represent and allow for handover as committee members join and leave.
4. Don't rush, collaboration takes time. Politics make this difficult.
5. Honesty about what we know and what we are uncertain about in terms of science, cause and effect and lag times is fundamental.
6. Planners do **not** have farm systems knowledge (even if they are employed by farmers). Plan rules should be tested in real farms across all sectors and have been through at least one level of review before going into plans. Current submission processes don't allow for this level of case study.
7. Catchments and communities cut across funding streams and several farming systems tend to be integrated within a business. Industry funding streams don't necessarily fit with the land uses of farm businesses and this means that advocacy groups frequently only have insight into one farm system or even one part of the farm system. Funding models should not dictate the testing and feedback to a plan, but at the moment they do.
8. Great farmers are also proud stewards of the land. Farmers are particularly understated when it comes to their values around stewardship, but it doesn't mean that most farmers are absolutely passionate about their stewardship role. We should be proud to demonstrate to others that we farm sustainably in order to regain their trust and have them believe that we, farmers make the best decisions for managing our land resources responsibly.