

AGRICULTURE AND THE COASTAL ENVIRONMENT: A COMMUNITY APPROACH TO IMPROVING WATER QUALITY

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Introduction

The Ministry of Agriculture and Forestry (MAF) operates at many points along the land-sea interface – land use, coastal biosecurity and safe food production. Our mandate is now set to expand through the merger of MAF and the Ministry of Fisheries this year. The land-sea interface is therefore fundamental to an organisation that operates from the high country to the high seas.

Over recent years, MAF's work on water has focused on the relationship between the primary industries and New Zealand's fresh water resources. Collaboration is an important tool that MAF seeks when working with the wide range of stakeholders involved in fresh water management. Collaboration can occur at a number of levels and I would like to particularly focus on a case study of a catchment community in the top of the South Island. This community took ownership of a water quality problem that spans both the land and the sea.

MAF's Changing Role in the Land-Sea Interface

MAF's role encompasses a broad range of responsibilities and this is due to expand in the very near future. MAF's responsibilities currently span: agriculture, horticulture, forestry, biosecurity and food safety issues from the high country to the coast and into the towns. It also includes our role at the border and extends along the supply chain – primary producers, food and fibre processors, food retailers, exporters, domestic and overseas markets and consumers. MAF currently touches almost all of our economy and our sectors engage with a significant portion of New Zealanders.

The merger of the Ministry of Fisheries and MAF on 1 July 2011 will expand our role even further to include the fishing and aquaculture sectors. Our responsibility will stretch across the coastal environment and out onto the high seas. The land-sea interface is therefore of major interest to us as an organisation. Politicians have stated that one of the benefits of the merger is that *"grouping together the Government activity in relation to these key primary-sectors will create an agency with greater capacity and capability."*

The "land-based" MAF has always carried out a lot of work on improving land management and growing the primary sectors. The merger will provide an opportunity to forge even stronger links between land use and water quality. As we move into a new organisational structure, our approach will be based on enabling and partnering with Māori and other primary sector interests to maximise benefits from our primary sector assets – within their environmental limits.

There is no question that the quality of our freshwater and marine environment is essential to New Zealand's economic, environmental, cultural and social well-being and is part of the natural capital of our primary industries. We also know that land use can have a significant impact on water quality. Unfortunately we are seeing some impacts of a legacy of a lack of

understanding of the connection between land and water and some poor land management practises in both rural and urban communities. These impacts can involve habitat loss, sediment loss from erosion, nutrient enrichment and/or the transmission of contaminants and microorganisms to fresh and coastal waters.

Land managers, whether they know it or not, are making decisions that can directly influence fresh water resources on a daily basis. Media attention is often focused on where these impacts have been negative. But taken too far this can polarise communities.

Battle lines are being drawn in planning forums, in the courts, through the media and at the grassroots in communities. It is human nature that when conflict arises, people can retreat to their corners – this is not conducive to effective problem solving or win-win outcomes that will endure.

The Role of Collaboration

The work of MAF's Natural Resource Group focuses on improving both the economic and environmental performance of farmers and foresters. Water is a key part of this. We are involved in encouraging and supporting appropriate irrigation infrastructure, reducing the impact of farming on fresh water and supporting the development of policies, regulations, research, collaboration and community engagement to improve how fresh water is managed, allocated and used.

MAF believes that collaboration is a more effective approach than conflict when developing enduring solutions to many of the issues we face. Over the last few years I have had the pleasure of seeing collaboration in action at a range of scales – national, regional and at the local level.

At the national level, MAF and the Ministry for the Environment co-lead the central Government's Fresh Start for Fresh Water programme. This includes working with the Land and Water Forum (LAWF) which is funded by both departments. The work of the LAWF was an exercise in collaborative governance and involves the full spectrum of interests in freshwater management at the national level – from primary industry, electricity generation, tourism, environmental and recreational interest groups, iwi and local government.

Ministers asked LAWF to recommend potential reforms of New Zealand's fresh water management approach – to identify shared outcomes and goals, and options to achieve them. LAWF itself has been a remarkable achievement in finding common ground across very different interests. The LAWF report is essential reading for those of you interested in water reform. LAWF has played a key role in shaping the Government's Fresh Start for Fresh Water policy reform thinking. Some of the early deliverables at the national level were announced on 9 May when the Prime Minister and Ministers of Agriculture and for the Environment announced a package of measures recognising the strategic value of water to New Zealand's economy and way of life.

The package comprised:

- A National Policy Statement (NPS) on freshwater management to set a consistent, nationwide regulatory framework for setting water quantity and quality limits to govern the allocation and use of freshwater;
- An Irrigation Acceleration Fund to unlock the economic growth potential of our primary sectors by developing more efficient and effective water infrastructure, that are part of regional water strategies;
- A Fresh Start for Fresh Water Clean-Up Fund to boost the restoration of waterways affected by historical pollution.

At the regional level, MAF, through the Community Irrigation Fund and through direct involvement, is supporting 10 regional and local water management strategies to achieve both economic and environmental outcomes. For example, in Canterbury MAF helped support the Canterbury Water Management Strategy and is providing additional support to the collaborative community work to implement that strategy.

Collaboration at the national and regional level not only eases the change process but creates greater understanding of the issues and solutions. In turn, this leads to more effective and durable outcomes in the long-term by building social cohesion in the parties involved.

Of course many of the necessary changes must occur on the ground in the day-to-day management decisions and practices of land managers. Most farmers do have a strong stewardship ethic and, given the right information and a supportive environment, will act. Farmers want to be part of the solution not part of the problem. But land users are like any other group – there are the leaders, their followers and there are laggards. We need to foster the first group, support the second group and move the third group. So what can be achieved on the ground? From our experience, a lot.

The Aorere Catchment Case Study

The Aorere catchment is a live example of collaboration at the local level. This case study highlights farmer leadership in improving water quality for their community. Sharing the learning from case studies such as this is important as we grapple with similar challenges in other parts of the country.

The Aorere catchment is in that wonderful part of the country – Golden Bay. The Aorere River flows into the sea at Collingwood. The catchment is characterised by very high rainfall, up to four metres annually. In the last few months it has been hit by three major floods.

Land use is predominantly native forest (Kahurangi National Park) but 16% of land area on the flats is in 33 family owned dairy farms. Beyond the river mouth in the bay are commercial shellfish operations and the bay is popular holiday destination.

The Issue

At the start of this century concerns were rising around water quality in the bay. Land use further up the catchment was believed to be affecting water quality downstream. The impacts were:

- environmental (low water quality readings in the bay);
- economic (limited shellfish harvesting rates due to water quality); and
- social (conflict was growing within the community).

Farming was affecting water quality but the specific cause of this was unclear. In 2004 the water quality issues were having a drastic impact on the ability to harvest shellfish – rates were limited to only 28% of the potential harvest time. This was putting the future of the shellfish industries at risk and was raising concerns in the wider community. The issue came to a head when the frustrated aquaculture industry went to the media. Negative publicity started to create a rift between the dairy and aquaculture industries in this small community.

The situation could have got very ugly. While media attention and community conflict can raise the profile of the issue, it can also isolate parties involved and can become a barrier to

solutions. There was a need to move on swiftly and the focus needed to be on solutions not blame.

The Approach

This is a good case study because the farmers in the catchment took ownership of the problem with the support of the NZ Landcare Trust. A farmer-led catchment group formed and, committing their own money and resources, they approached MAF's Sustainable Farming Fund (SFF) for matched support. This was a good fit as SFF is designed to support farmer-led initiatives that take a new approach to tackling a problem or developing a new opportunity. Despite being at different stages, the farmers bought in to a common objective. Some took the initial lead and others followed.

The group commissioned scientific analysis on the nature of the water quality issues and how that related to what was happening on the farms. It revealed that there was an issue around faecal bacteria (such as E. coli) not nutrient enrichment as had previously been thought. This information was shared with the aquaculture industry and the regional council.

They then commissioned individual farm environment plans. NZ Landcare Trust and rural consultants worked with individual farmers to identify practical solutions and they put these solutions in the farmers' hands. The farms plans identified \$1.4m in on-farm investment over the next few years.

Importantly, the project took a multi-disciplinary approach, reflecting the nature of the problem:

- Environmental – commissioned science to qualify and quantify the problem; putting farm plans in place and acting on them;
- Economic – farm plans identified practical options for on-farm capital and management investments that would help improve effluent management; and
- Social – use of community events and on-farm field days to share information and recognition of each others' efforts.

The project was very good at celebrating successes and not laying blame. A community mussel chowder meal was held in 2008, with the meal representing the shellfish and dairy industries. Mussel farmers invited the dairy farmers out on their mussel barges in 2009. A celebratory lunch was held at the end of the SFF project in June 2009.

Outcomes

As at 2009, the local aquaculture industry was harvesting 79% of the time – a significant increase from 28% only five years earlier. The dairy and shellfish farmers have also come together through this project, strengthening the community.

Farmers have committed their own funds into improving effluent management on-farm, including significant investments in effluent infrastructure, riparian planting and fencing, new bridges and culverts. Thirteen of the farm plans outlined \$1.4M of planned on-farm infrastructure investment over the next few years.

This year, the shellfish industry presented an award to the Aorere catchment group to acknowledge their work. Despite this initial SFF-funded project finishing in 2009, the work in the Aorere is continuing. The institution and social capital for further improvement is in place. There is now another SFF project currently underway to translate the lessons learnt to other catchments. The title of this project is "Farmers as Leaders in Water Quality Action". It recognises the huge influence that farmers have on other farmers' thinking and on-farm

decision making. Farmers listen to their peers, particularly when they are surrounded by such a range of messages from multiple sources. MAF cannot fund this approach in every catchment – this was supported as a case study that others could learn from. Therefore it is important that the lessons from this work are acknowledged and adopted by the wider community – industry groups, regional councils and environmental groups.

Conclusion

There are three key lessons that we can take from this project.

First - Most farmers have a strong stewardship ethic but there can be a range of barriers to action including a lack of understanding of the nature of their impact and the solutions to those problems. Robust information that links land use with water quality is crucial. It clarifies the issue and helps identify solutions.

Second - Collaborative approaches have significant long-term benefits for the economy, environment and society. This project illustrated collaboration within the catchment's dairy farming community, and eventually between the dairy and shellfish industry, wider community and environmental interests. Conflict situations may motivate people to react but they do not provide solutions. A collaborative approach encourages farmer ownership of the problem and gives them the confidence to seek practical and affordable solutions themselves and translate that into action on the ground.

Third - Rural communities can create change on the ground faster than national policy can and better tailored to their own situation. Farmers are making decisions that directly influence fresh water resources on a daily basis. In situations such as this one, they are also closest to the solutions. They can lead change – taking their peers with them and building traction. Do not underestimate the value of rural community and the capacity they have to create change on the ground.

MAF provided funding to support this project but we want to acknowledge the work of the farmers in the catchment, the aquaculture industry and the NZ Landcare Trust in making this project a success.