Implementing Freshwater Farm Plans - A drystock case study

Gina M. LUCCI[1*], Frances H. WILLIAMSON[1], Toni WHITE[2] and Tracy A. NELSON[1]

[1]*Waikato Regional Council, Private Bag 3038, Waikato Mail Centre, Hamilton 3240, New Zealand*
[2]*ImpactAhead, Hamilton, New Zealand*
*Corresponding author: gina.lucci@waikatoregion.govt.nz

Highlights

New Zealand has recently initiated a national system of legislated Freshwater Farm Plans (FW-FPs) as a tool for managing freshwater risks and improving water quality. Waikato Regional Council worked with stakeholders to commission a FW-FP following the original regulations. Through this process we identified practical actions that can be undertaken by regional councils and those that support farmers. Implementation efforts must also address farmers concerns about cost, complexity and the uncertainty generated by changing regulations. Allowing time to test policies in the real world is an often-overlooked step in the policy development cycle, yet vital for successful implementation.

Keywords: farm planning, freshwater policy, farm system, resource management, water quality

Background

New Zealand has recently initiated a national system of legislated, mandatory Freshwater Farm Plans (FW-FP) as a tool for managing freshwater risks and improving water quality (RMA 2023). However, changes in government direction have resulted in a pause to these regulations (RMA 2024) and ongoing uncertainty makes engagement and implementation a challenge for regional councils and industry. This is of particular concern for the sheep and beef sector as many farmers do not have a farm plan.

The objective of this perspective piece is not to critique the FW-FP system, but rather to share our experience developing and certifying a FW-FP according to the regulations for a sheep and beef farm in the Waikato. Regional councils were tasked with the implementation of FW-FPs, and as one of the first regions where FW-FPs came into force under the old regulation, we want to share some of our perspectives on the lessons learned for future implementation. We have complemented these insights with relevant research findings from New Zealand and overseas from similar contexts. These insights can be applied to other regulated farm planning systems that may be initiated in Aotearoa.

Freshwater Farm Plans

The purpose of FW-FPs is to better control the adverse effects of farming on freshwater and freshwater ecosystems. An amendment to the Resource Management Act 1991 (RMA) in August of 2020 included the insertion of Part 9A, enabling the eventual development of the Freshwater Farm Plan Regulations (RMA 1991, NPSFW 2014, 2020). Freshwater Farm plans are intended to " …become a key tool for farmers and growers to manage their freshwater requirements*"* (MfE 2023). In the latest Survey of Rural Decision Makers (Stahlmann-Brown 2023), "Environment including freshwater" regulations contributed most stress to 55% of commercial operators in the rural community. Freshwater regulations are important to the rural sector and to improving the state of our waterways. The implementation of such regulations could help or hinder farmers getting on board with environmental change.

At the time of writing, the FW-FP regulations have been paused whilst the Government undertakes a review of the system with the intent of making FW-FPs more cost-effective and practical for farmers (McClay and Hoggard 2024).

Environmental farm planning

Environmental Farm Plans (EFPs) are a set of environmental management objectives and timebound actions, for a particular farm that documents the work a farmer or grower is already doing, and what they plan to do to mitigate the negative effects of farming on the environment (Manderson et al. 2007). It is a tool to identify on-farm risks and enhance resource efficiency, and may also emphasise regulated, or voluntary, good practices required by industry or government (McDowell and Kaye-Blake 2023). Farm planning covers the process of developing the plan through situation analysis, risk assessment, objective setting, along with the implementation, monitoring and evaluation of the plan. In New Zealand, farm plans are accepted as an effective implementation tool for achieving good environmental outcomes and behaviour change (Blaschke an Ngapo 2003; Macintosh et al. 2021; Stokes et al. 2021) However, this has been in the context of voluntary implementation by the landowner.

Twenty years ago, EFPs were commonly prepared by regional authorities, often targeting specific land use types, or locations, and could take up to three weeks to prepare (Manderson et al. 2007). However, due to changes in council funding priorities, landowners have

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needed to take on more responsibility for their FEPs, often supported by rural consultants and packages such as Beef + Lamb's Land Environment Plan (Synge et al. 2013) Waikato Regional Council's Variation 5 -Lake Taupō Catchment (made operative in 2011), followed by Canterbury Regional Council's Land and Water Plan (made operative in 2015) were the first to include nutrient management as part of their resource consent requirements, linking farm nutrient management plans and regulations (Stokes et al. 2021). Since then, the content and quality standards required for EFPs to demonstrate good practice has increased. For example, a qualified expert is recommended for OVERSEER nutrient modelling (https://overseer.org.nz/) when relied on for determining limits (PCE 2018), and that level of expertise is beyond the capability of many NZ farmers.

A case study approach

To understand what implementation of FW-FPs might look like in practice for a sheep and beef farmer, the Waikato Regional Council worked with stakeholders to commission a FW-FP, following the original regulations (RMA 2023). The process of developing a FW-FP through to the certification stage was monitored through interviews and questionnaires with the farmer, plan developer, and certifier roles to extract learnings throughout the process as the farm plan was initiated, developed and finalised. Interacting with these key roles enabled insights on the practical aspects of plan development as well as the reflections on the experience, process and outcome. These insights are compared with the literature on farm planning and implementation research to develop practical directions applicable to regulated farm planning.

Focus on sheep and beef

In the 2021 Survey of Rural Decision Makers (Stahlmann-Brown 2021), it was estimated that nationally 65% of sheep and beef farmers in New Zealand did not have a farm plan. Sheep and beef farmers are generally supportive of FW-FPs, but are concerned about the lack of advisors to help develop the plans (French et al. 2023). While there has been support for the sheep and beef sector to develop farm plans, the "landscape remains fragmented with inconsistent levels of commitment across the sector" (Joblin 2024, p16). Therefore, one of the purposes of this case study was to understand how much of the process the farmer might do on their own, and what help was needed to create a farm plan for a sheep and beef farm.

Farm Planning Insights

Drystock case study

The case farm is in the Waipā river catchment and is mixed sheep and beef finishing and breeding on 820 ha, with 62 ha of pines. The land is predominantly of Land Use Capability (LUC) subclass 4e and 6e land and includes river flats, rolling hills and steeper country. The family have been farming this property for two generations and their goal is to grow the farm in a sustainable way. The farmer likes being active on farm and avoids using computers where possible.

The advisor that helped create the plan (known as "the developer") is a consultant specialising in nutrient budgets and farm plans. QCONZ's FW-FP digital tool (https://freshwaterfarmplan.co.nz/) was chosen as a platform for the FW-FP. The developer had experience using this tool for other drystock FW-FPs. It should be noted that the QCONZ FWFP digital tool has undergone several revisions since this case study to improve the ease of use. The time reported here for plan development may therefore be greater than is needed with the latest version.

The certification process is set out in the Freshwater Farm Plan regulations (RMA 2023), including the criteria for becoming a plan certifier. The role of the certifier is to ensure the on-farm risks to freshwater have been identified and that plans to implement actions, appropriate to the risks, are part of the FW-FP. The certifier in our case study is experienced with sheep and beef systems and specialises in mapping land resources, including land resource inventory mapping.

The farmer, developer, and certifier were interviewed at key stages of the process to gauge their expectations and experiences in developing the FW-FP. They were also interviewed at the end to capture how they found the process, their views on the output and their reflections on what was surprising or unexpected in the process.

In this case study, there were three visits to the farm in total. The first visit by the developer was to capture farm information, discuss key areas of risk, and agree on the actions that would go into the FW-FP. The second visit by the developer was to present the FW-FP that was developed and finalise the plan and action points before sharing it with the certifier. The third and final visit was the on-farm assessment with the farmer, developer and certifier to look around the farm, ask questions, and certify the FW-FP.

Preparation

First farm visit

In our example, we found that one of the greatest opportunities for saving time and costs was in preparation of farm information before the first farm visit. Ahead of the visit, the farmer completed a 2-page summary of the farm details including the farm activities, history, goals, stock policies, cropping, stocking numbers and previous work to protect the

waterways. The developer had printed maps of the property and brought along resources and guidance for FW-FP and local regulations. In hindsight, the farmer and developer agreed that more could have been prepared ahead of the visit, such as identifying land units and how paddocks were being used. A template to support the preparation of such preliminary information about the farm system and targeted questions has the potential to save time for both the farmer and developer.

Certifier visit

Good preparation is also important before the visit by the certifier to certify the FW-FP. Preparation by the developer and the certifier is to ensure that all the details were clearly presented made it an easy process. The farm visit for certification may have taken longer than the 3 hours in our case (Table 1) if the developer was not present, and if the farmer was not across all the details to explain why things were done the way they were. A certifier may also develop the plan and certify it. However, in our case, the developer and certifier were different people. This division of roles, and time taken, would also apply to situations when the farmer or other consultant develops the plan.

Technology

One of the barriers to engaging with modern farm environmental planning is technology. Although FW-FPs are not required to be digital, much of the information needed to develop a farm plan is managed digitally. The farmer in our case study did not hold his information digitally or have interest in farm planning software. The farmer had used services in the past for fertiliser application that could be utilised. This lack of interest in digital technology is not unusual for many sheep and beef farmers. According to a recent rural survey, only 43% of sheep and beef farmers reported they liked using digital technology for their businesses (AgriTechNZ 2022).

Mapping

Mapping is an important component of farm planning. Digitising farm features, such as waterways and crossings, took over 80% of the time used by the developer to create the first draft of the plan using the digital tool (32.5 hours; Table 1). This was considerably longer than was originally estimated and was the most time consuming 'element' of the total time to develop the FW-FP. There were 69 mapped points including culverts, bridges and the waterways for this large farm. Aside from the farm size, the complex landscape of river flats, rolling hills and steeper country contributed to the large number of features that needed mapping. A lack of compatibility between mapping systems was another reason for the time taken in this case.

Going digital

Gathering farm information and entering it into the digital tool following the first farm visit was a time-consuming step. However, once waterways and actions are entered, they can be updated as required, saving time in the future. The expectation is that more requirements and reporting will be done digitally, and therefore investing in a digital platform should be worthwhile. However, interoperability and data sharing between the various digital platforms available within the sector will inevitably cause headaches and frustration.

Farmer and developer relationship

Rapport and trust

A trusted relationship between the farmer and farm plan developer is important to the process of creating a good FW-FP. Farmers value the role of the developer as a 'sounding board' for a personalised decision-making process. For the developer, the way the farmer shares and talks about their farm provides assurance and transparency about their farming practices. The developer must have confidence that the farmer is providing a genuine account of their farming practices. If not, they will continue asking questions about the farm system until they are satisfied the plan accurately reflects the farm.

Discussions

There are few examples of FW-FPs that have been through this process for sheep and beef farms. Common questions and discussions between the farmer and developer included "What should be included in the FW-PF?", and "What is a realistic amount of work to expect and plan for over the next five years?". There were questions not only about the FW-FP requirements, but also the regional rules about the definition of a river and is the difference between a "dump" and an "offal hole" when dealing with dead stock. Translating the rules into plain English, tailored to the farming system, was identified as an area that would improve implementation.

Overall time to complete the plan

Our study captured the time spent by the developer, farmer and certifier, rather than the cash cost of the plan. We found the whole process took 12 hours for the farmer; 45 hours for the developer, including over 30 hours to develop the plan (Table 1).

Our example probably represents the minimum amount of time taken for certifying a FW-FP for a farm of this scale and complexity (4 hours of preparation and 3 hours on farm). A less experienced, or unprepared, FW-FP developer may take longer to get their plan certified if the required information is not presented

Table 1 Estimated time (hours) for the farmer, developer and certifier spent developing and certifying this Freshwater Farm Plan. Travel time to and from the farm is not included.

	Preparation	Visit 1	Develop	Visit 2	Certification	Total
Farmer	1	4.5	0.5	3	3	12
Developer	2	4.5	32.5	3	3	45
Certifier	-	-	-	-	4+3	7

clearly and efficiently. In our case, our developer was also training to be a certifier and knew what the certifier was looking for. Farmers may choose to develop their own FW-FP to save on costs, but it is important to consider that saving money on a professional developer may add cost to the certification process.

Implementation challenges and opportunities

According to a recent survey (Stahlmann-Brown 2023), the aspects of the regulatory environment that commercial operators struggled most with included:

I. Regulations that don't make sense (57%)
II. Cost of implementing changes (47%)
III. Regulations change too frequently (39%)
IV. Paperwork – time and complexity (38%)

These concerns are used to frame the challenges with implementation of FW-FP in the discussion below. Strategies to address these challenges should be part of any implementation plan if widespread adoption of FW-FPs is expected.

I. Making sense of regulations

In our case, a barrier for understanding and engaging with the system was that the regulations were not written in language easily accessible to farmers (e.g. "Inherent vulnerabilities" and "Land units"). If EFPs are going to be farmer-centric (Stokes et al. 2021), implementation of the policies must include translation of the rules into guidance that makes sense to its intended end users. One of the team commented on the importance of providing good guidance to farmers saying, "Farmers have the solutions more often than not and it's just about capturing those and getting it into an actionable plan". Advisors and consultants play an important role in the translation of policy to practice. In our case, trust was an important ingredient of the relationship between farmers and advisors. Macintosh et al. (2021) has also noted the importance of trusted advisors for the facilitation of learning and effective implementation of farm plans.

II. Cost of environmental planning

New regulations will come at a cost to farmers. The cost can include the time to complete the paperwork and developing the FW-FP, and the costs of new works or mitigations in the action plan. Our example required 45 hours of developer time, and 8 hours of certifier time, which would equate to $6,750 and $1,200 respectively, at a rate of $150/hour. The development cost is not far from the $6,000 estimate made by Ministry for the Environment in their Regulatory Impact Statement (MfE 2022). This is lower than the case studies reported by French et al. (2023) who estimated costs of $10,000 – $20,000 to set up a new FW-FP, or to update an existing farm plan. These costs are substantial for farmers and do not include actions on the ground to benefit freshwater. Farmers want to see tangible benefits for their investment, for example a reduction in the cost of compliance (Stokes et al. 2021) and the evidence on farm of environmental improvements (Emery and Franks 2012). Unfortunately, some of the benefits of farm planning are realised in the future, which is another challenge with implementation as the benefits not immediately recognised.

The New Zealand Farm Assurance Programme (https://www.nzfap.com/) is one mechanism used in the drystock industry to align product premiums and international market access with sustainability, thus providing a more immediate benefit. However, water quality is seen as a local issue, and market demand may not reward behaviour in the same way as with a global issue like greenhouse gas emissions (Wedderburn 2020; McDowell and Kaye-Blake 2023).

III. Changing regulations

Freshwater farm plans have been put on pause by the government while changes are being made. According to French et al. (2023), one farmer said in relation to FW-FPs they were "…not going to choose to get up to speed until the rules are set because they might change the rules on you – so a waste of time". There is not only disengagement with the regulations, but a reluctance to implement actions on farm beyond what is required (Percy et al. 2025). According to Percy et al. (2025), Canterbury farmers were worried that "…by being proactive they risk being penalised in the future if rule parameters change. Instead, they have chosen to hold some improvements in reserve ready for a toughening of the rules". In our case, the rules did indeed change while the farmer was developing his plan. It is uncertain

how much the rules might change in the future, and how much of what has been developed can go towards the new version of FW-FPs.

The proposed Waikato Regional Plan Change 1 (PC1) (Waikato Regional Council 2020) will also apply to the sheep and beef property in our case, likely requiring the preparation of another EFP. As PC1 is subject to appeal to the Environment Court, and changes are anticipated, its requirements were not considered as part of this case study. However, continued uncertainty, including how regional and national requirements for farm plans interact, is likely to contribute to inaction on the part of farmers.

Digital farm plans are one way to potentially ease the way if and when regulations change because they are easy to update, add to and share with advisors and with regulators. However it has been recognised that digital connectivity in rural areas is likely to be one of the limiting factors in the FW-FP system (Macintosh et al. 2021). As we have seen in our case, getting a farm plan out of one's head and into a digital platform is a significant hurdle, and they may not revisit the plan again.

IV. Increasing complexity

The evolution of farm planning has been well documented by the NZ Grasslands Association, from optimising stock and fertiliser to drive production on a Taranaki dairy farm (Cook 1982), to detailing the benefits of a cloud-based software system (Isaacs and White 2016), to the inclusion of more subject specialists in farm planning (Mackay et al. 2023). The review by Stokes et al. (2021) summarises a similar journey of increasing complexity of farm planning in New Zealand. What is less well known is how transferable lessons from voluntary farm planning are to a regulatory EFP context.

In the past, successful implementation of erosion control was achieved through a consistent approach, focusing on a single issue with a well-trained team and "a common language of the problem" (Stokes et al. 2021, p2). Introducing regulations also introduces consequences for landowners of inaction, and the implementation of policy becomes more critical than voluntary action.

Reflecting on the impact of government policies on NZ sheep and beef farms, a key recommendation by French et al. (2023) was that more time needed to be dedicated to consultation of policies before they are implemented. However, we would add that ensuring sufficient time is given to set up systems for implementing policies is equally important and often overlooked. It has been recognised that "policies do not succeed or fail on their own merits" (Hudson et al. 2019, p1) and that the success of a policy depends on the success of its implementation (Khan 2016).

Although New Zealand's inadequate performance in implementing policy has been highlighted in reports from the Parliamentary Commission for the Environment (PCE) report from 2004 (Taylor et al. 2004), and the Office of the Auditor-General in 2011 (OAG 2011), it still receives little attention. Pilots were run in 2022 in some regions to test the FW-FP process, but these were hastily conceived and not reported on. A bottom-up approach to design how the system would work in practice would have been preferred.

In an overseas position paper that is equally applicable here, Pahlka and Greenway (2024) observe that "…the *what* matters little if our nation's leadership doesn't put equal consideration into *how* to do it" (p1). Consultation on a policy is important, but we will not know if the policy is meeting its intended outcomes and "works" until we try it out in the real world. The more complex systems we aim to implement, the more time we need to set up streamlined systems and test with users, so that we make compliance as manageable as possible, and improve the feedback between policy and implementation.

Conclusions and recommendations

Regardless of the changes made to the FW-FP system, implementation will be challenging. Farmers will need support if FW-FPs are going to lead to meaningful improvements in water quality outcomes as is intended. Through this study we identified some practical actions that can be undertaken by Regional Councils and those that support farmers in different capacities:

- **Preparation guidance**: Develop a series of clear, direct questions as a starting point for FW-FP development, tailored specifically to the farm type (i.e. sheep and beef, arable, dairy etc.). This could be framed as: *How to get help to make your farm plan and what you need to have ready*. This preparation guide should also include the purpose and scope of FW-FPs, or other farm plan system, and potential time commitment.
- **Overcoming barriers to technology**: Investigate how to best assist farmers with the mapping requirements and who might be best suited to offer this help. An example might be access to building capability in digital mapping. As far as possible, facilitate compatibility between systems to avoid duplication of effort. The benefits and value proposition of a digital farm plan must be articulated, the pathway made plain.

  Strategies to address farmers concerns about the costs, complexity, and risks of changing regulation should be part of any plans to implement regulated should be part of any plans to implement regulated farm planning. In addition, allowing time to test and

evaluate systems, in collaboration with councils and industry, to check that the policy works in practice as intended by the policy makers before gazettal should be intentionally embedded as part of the process.

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