

DELIVERING TAILORED FARM ENVIRONMENT PLANS AT SCALE

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Abstract

In November 2017, Fonterra released their first Sustainability Report on environmental and social performance. Fonterra believe that New Zealand can have a globally competitive dairy industry, a thriving economy and a healthy environment. We all want swimmable waterways for our families to enjoy. That's why Fonterra and its farmer shareholders are going to continue to be part of the solution to the water quality challenge.

Fonterra has committed to helping its farmer shareholders to farm within regional environmental limits and encourage strong environmental practices. A key tool to assist farmers in meeting these commitments is the use of tailored Farm Environment Plans, and the delivery of these tailored Farm Environment Plans is a core activity of the Fonterra Farm Source Tiaki Sustainable Dairying Programme.

Through the Tiaki Sustainable Dairying Programme, Fonterra continues to develop and invest in systems, digital tools and people to support on-farm change. In particular, Fonterra has had to ensure that its systems, digital tools and people can develop and deliver Farm Environment Plans at a significant scale to meet a variety of different needs; from different regional regulatory requirements to different property variations and different farmer personality types across New Zealand.

Introduction

With ever-increasing customer, consumer and community expectations around sustainable food production, Fonterra as a dairy Co-operative is committed to continuing to promote the greater adoption of good management practice on farm. This paper outlines the systems and processes Fonterra has developed which has enabled them to deliver tailored Farm Environment Plans at scale in New Zealand. While this includes tools and capability, it also explores wider changes in their approach to engaging with farmers as securing farmer buy-in is essential if Farm Environment Plans are to be an effective vehicle for changing farming practices and attitudes on a broad scale.

Fonterra was a signatory to the 2003 Clean Steams Accord and the subsequent 2013 Sustainable Dairying: Water Accord promoting greater sustainable practice in the dairy industry and has been actively working with farmers on farm in the support space for a number of years. In 2010, Fonterra invested in a small team of experts who reacted to significant effluent non-compliance issues and this team has since evolved to a much larger, proactive team of Sustainable Dairying Advisors (SDAs) who support farmers one-on-one using state-of-the-art systems and processes. It is with this rapid development of in-house tools and capability that the opportunity to develop a new way of working with farmers was recognised; that is, the transition from a compliance focus to a service focus.

Tiaki Sustainable Dairying Programme

In July 2017, Fonterra launched the Tiaki Sustainable Dairying Programme as a way to reframe the conversation with farmers around environmental sustainability on farm. Fonterra recognised that to continue supporting farmers would require a more holistic view of environmental risks and opportunities that are entirely specific to each individual farm – a tailored approach. This was a natural evolution from the work that had already been done in the sustainable dairying space as the previous focus on compliance had seen the development of a strong foundation, both on farm and in terms of Fonterra’s investment into tools and capability.

The name “Tiaki” is derived from the Maori word “kaitiakitanga” referring to stewardship of the land and the concept of “Tiaki” can be summarised as ‘to care for’ or ‘to nurture’. The Tiaki Sustainable Dairying Programme provides Fonterra farmers with on-farm sustainability tools and services, which are tailored to the needs of each individual farm. This includes existing services such as effluent management and nitrogen reports, and also newer services such as consent support and Farm Environment Plans. Fonterra is able to consider all the pressures being faced by its farmers, from regulation, communities and from global consumers and deliver one-on-one support through the Tiaki Sustainable Dairying Programme.

Tools and Systems

Sitting behind these service offerings are a number of world class tools and systems. Most notably, Fonterra had invested in geographical information systems (GIS) software accessible via desktop or remotely on iPads. This was driven by the need to verify the exclusion of stock from waterways across its entire farmer base. The potential for data capture grew and Fonterra began to use this spatial technology to map nitrogen management blocks, riparian management units and also to overlay information such as soil types, slopes and legal titles. The latest development has seen the ability to capture good management practice, environmental risk areas on farm, assign actions and timeframes. This increased functionality has enabled the production of Farm Environment Plans and this is reflective of the transition Fonterra was making towards not only dealing with single issues at a time but to consider all issues within each individual farm context.

Farm Environment Plans

Fonterra have been supportive of the direction of regional plans towards including Farm Environment Plans. They believe that tailored Farm Environment Plans are the best way to support the increased adoption of good management for practices that impact water quality. Fonterra considers a Farm Environment Plan to be a live plan that documents any current good management practice as well as any potential risks on the farm and outlines clear actions with associated timeframes to address any risks identified.

When initially developing Farm Environment Plans, Fonterra used the following as a minimum criteria. Farm Environment Plans should be:

- Farm Specific: An analysis of the farmer’s individual property
- Actionable: Manageable and relevant suite of actions and associated timeframes, agreed with the farmer
- Effective: Supports the implementation of good management practices on farm and meets regulation
- Supported: Support will be provided through implementation
- Regionally relevant: Tailored to local environmental, regulatory and community factors

These principles emphasise the need to produce nationally consistent but regionally relevant plans. To support this, Fonterra also has a detailed process that is followed by their Sustainable Dairying Advisors who are delivering the Farm Environment Plans. This is summarised below:

1. Prior to the farm visit, understand the farm system through an assessment of the latest Overseer files and any information held in internal systems;
2. During the one-on-one farm visit, review the farm's information including farm map and Overseer file with the farmer to identify potential risks and opportunities;
3. Conduct a farm walk/drive to identify potential risk areas (including well managed risk areas), scale of risk and linkages to water. Consider waterways, effluent, nutrient, water-use and land management;
4. Throughout the visit, discuss and note actions to address any identified water quality related risks and set practical timeframes with the farmer; incorporating industry good management practices where appropriate;
5. Utilise the GIS tool to document, photograph and record actions and timeframes for any identified risks; and
6. Back in the office, consolidate all information gathered during the farm visit into a Farm Environment Plan template, including any good management practices that are already underway, and any identified environmental risks and agreed actions.

At this stage, the Sustainable Dairying Advisor would discuss the draft Farm Environment Plan with the farmer and distribute the finalised version, either hard copy or electronically, for implementation.

Typically, a farm visit will take 4-5 hours. This is dependent on a number of factors including the farm size and complexity of the farm type; and in addition is the time taken before the visit to prepare and afterwards to produce the final Farm Environment Plan.

Report Design

Fonterra has recognised the potential for their systems and communication channels to be treated as change management tools. For example, Fonterra have found GIS technology as being a valuable tool to engage farmers and to improve the visual connection to their particular farm. Similarly, a well-designed report connects people with the right information and thus has the ability to either educate or support informed decision making. Fonterra was determined to produce a high quality report design that is easily understood by farmers. This calibre of report would then empower farmers as they move onto implementation of their Farm Environment Plan.

A Fonterra-produced Farm Environment Plan will cover all environmental issues identified during the farm visit. Each issue will be rated for the level of environmental risk, described fully, given a GIS recorded location and will have a time bound action to address the risk. Visual aids such as maps and photographs are utilised heavily for clarification (see Figure 1).

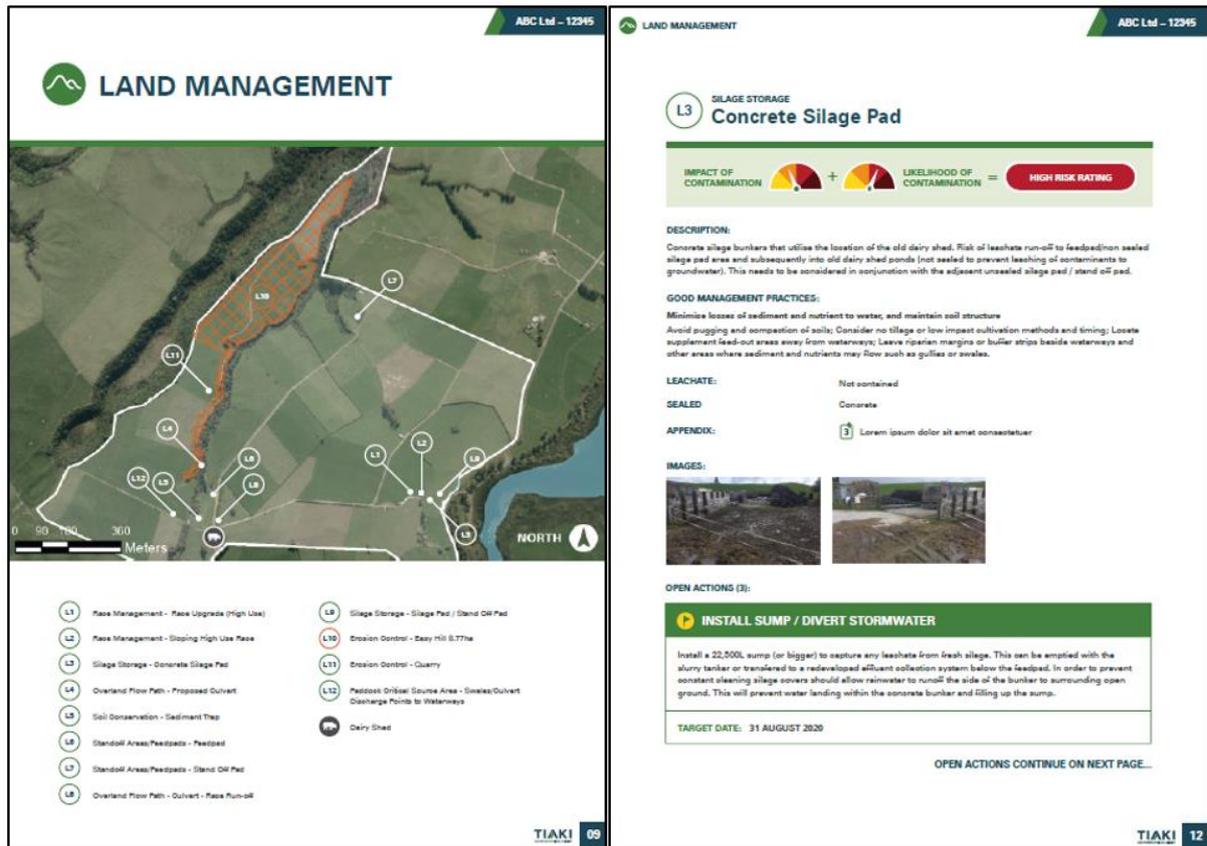


Figure 1 Example of a Land Management summary map as well as an assessment of silage storage in a Fonterra Farm Environment Plan

Fonterra uses a qualitative matrix approach as a way to guide discussion with the farmer around relative environmental risks. Each individual issue is rated for the level of environmental risk based on two measures, the impact and the likelihood of contamination. This is communicated through simple dials (see Figure 2). The result is that once all issues are identified across the farm these risk ratings can be plotted on a matrix (see Figure 3), with impact of contamination on the y-axis and likelihood of contamination on the x-axis. This means that the Farm Environment Plan can consider multiple contaminant types at a time and has the potential to capture other issues such as greenhouse gas depending on the direction of regulation or customer requirements. The result is a Plan that can always be updated to reflect the complete picture on farm. This helps farmers to understand the implication of each potential environmental issue on their farm and prioritise the implementation of actions.



Figure 2 Easy to understand dials are used to rate each environmental issue

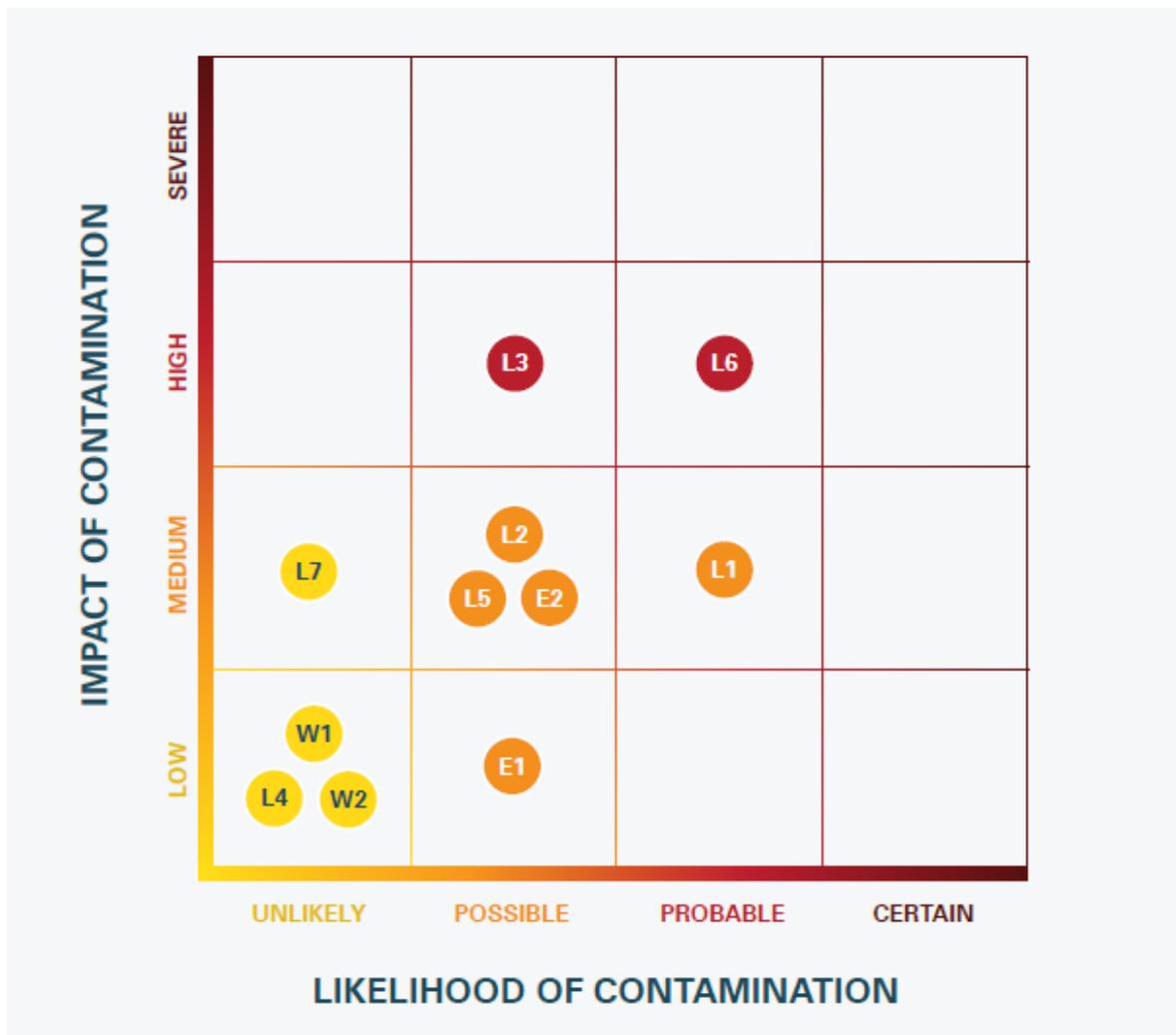


Figure 3 A risk matrix plots each individual environmental issue against two measures, impact of contamination and likelihood of contamination

While there is a standard design and minimum criteria for a Fonterra-produced Farm Environment Plan to ensure national consistency, there has always been an expectation that each Farm Environment Plan will be regionally relevant. Hence Fonterra has dedicated considerable effort to building in a level of flexibility throughout all systems and processes.

A key example of this is the ability to cater to farms in both regulatory and non-regulatory regions. Where relevant, Fonterra must ensure that each Farm Environment Plan can comply with local regulation. For example, in January this year, Environment Canterbury confirmed that Fonterra’s Farm Environment Plan template met the requirements of the Canterbury Land and Water Regional Plan (LWRP). Under the LWRP, all farms requiring a land use consent to farm must produce an environmental plan to support it. It had been recognised early on by Fonterra that the requirements set out in the LWRP meant that the Fonterra GIS tool needed to be able to capture industry good management practice imbedded in regulation. Such enhancements were introduced to meet the explicit regional rules but could also be utilised to support those in non-regulatory regions as well by providing recognition of work already complete or alternatively serve as the basis of a more individualised action.

Fonterra has committed to delivering an output that is individually tailored every time and is exploring the improved utilisation of website and mobile application channels as an opportunity to encourage farmers to more actively interact with their own information as compared to

traditional static reports. As more Farm Environment Plans are delivered, Fonterra will need to remain flexible and rapidly adapt to the evolving farming context in order to secure a service that is valued by farmers.

People and Capability

While it was found that the use of technology was highly engaging for farmers, Fonterra credits the support structure and human relationship behind it as being the key to achieving lasting change on farm.

Fonterra is able to leverage their regional teams to keep informed of the pressures faced by farmers and the services that they both need and value. Fonterra currently has a team of 20 Sustainable Dairying Advisors across New Zealand. These Sustainable Dairying Advisors are based within the regions with an in-depth understanding of local issues as well as technical expertise to be able to support farmers meet their environmental goals.

Together with farmers, Fonterra has moved beyond compliance. Their Sustainable Dairying Advisors now work proactively with farmers to better understand the aspirations they have for their farm and as sustainable dairying grows in significance, Fonterra have found no shortage of demand for Farm Environment Plans. Farmers recognise the value of Farm Environment Plans regardless of if they are faced with regulation. For example, as part of a farmer/council collaboration in the Bay of Plenty region, Fonterra stepped up to deliver Farm Environment Plans to 26 proactive Tarawera Lake farmers. These were the first Farm Environment Plans delivered and was an opportunity to grow the capability of the Sustainable Dairying Advisor team. The move towards a more service-oriented approach has highlighted the importance of developing a team who have both technical expertise as well as softer skills. It is the ability to establish strong relationships that improved the farmer experience and is essential for gaining on-going farmer buy-in.

Gaining farmer buy-in is crucial to ensuring that the Farm Environment Plans being created will be implemented by the farmer and not seen as a 'tick box' exercise. It is for this reason that Sustainable Dairying Advisors work one-on-one with each farmer to assess their farm together. Improved levels of engagement and endorsement from farmers of the Farm Environment Plans are evidence that Fonterra is on the right track. However, delivery of Farm Environment Plans is just the first step, the end goal is implementation of the Plan in order to improve the environmental sustainability of their farming operation. Fonterra has a strong history of achieving change on farm and, having led the way with waterway fencing, are committed to this continued level of success.

Conclusion

With the dairy industry under increased scrutiny from communities and customers who are taking an active interest in how their food is produced, companies are seeking innovative ways to promote more sustainable farming practices. It is through the Tiaki Sustainable Dairying Programme that Fonterra aims to deliver solutions to support farmers to adopt good management practice on farm with farm environment planning as their headline service.

Throughout the process of developing the tools and capability that sit behind this service, Fonterra has been determined to put the farmer first. This can be seen in the flexibility built into the tools and processes, which produce an output that is absolutely tailored to each individual farm and also in the culture of service that they have fostered within their Sustainable Dairying Advisor team. In practical terms, the effectiveness of Farm Environment Plans as vehicle for change on farm will be determined by whether farmers implement the actions outlined in their plans. Therefore, it is of utmost importance that Fonterra and the wider industry continue to engage with farmers at every step.