

Before Hearing Commissioners at Christchurch

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*under:* the Resource Management Act 1991

*in the matter of:* Submissions on the Proposed Hurunui and Waiau River  
Regional Plan

*between:* **Fonterra Co-operative Group Limited**  
*Submitter*

*and:* **Dairy NZ**  
*Submitter*

*and:* **Canterbury Regional Council**  
*Local Authority*

Statement of evidence of **Michael Christian Hide** on behalf of Fonterra  
Co-operative Limited

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## STATEMENT OF EVIDENCE OF MICHAEL HIDE

### INTRODUCTION

- 1 My full name is Michael Christian Hide.
- 2 I hold a Bachelors of Resource Management from Lincoln University which was conferred in 2001.
- 3 I am employed by Fonterra Co-operative Group Limited (*Fonterra*), as an Environmental Programme Specialist and have been in this role since 2010. I am responsible for developing Fonterra's on-farm environmental programmes in consultation with the industry's stakeholders, and implementation of those programmes within the business.
- 4 As part of my role with Fonterra I have also been working under contract to DairyNZ to develop an audited nutrient management system for milk supply companies. This system was piloted in the Hurunui catchment (among others) over the past 18 months.
- 5 Prior to this role I held the position of Sustainable Dairying Specialist, also with Fonterra. I commenced this role early in 2009 and was responsible for working one-on-one with our supplier shareholders to improve their environmental management and liaising with the dairy industry's wider stakeholders and regulators.
- 6 Prior to my employment with Fonterra I worked for Environment Canterbury as an Environmental Protection Officer for 7 years. This position involved monitoring compliance with resource consents for the agricultural, industrial and local government sectors.
- 7 I am familiar with the Proposed Hurunui and Waiau River Regional Plan (*the Proposed Plan*) to which these proceedings relate.
- 8 I am authorised by Fonterra to provide this evidence on its behalf as a Fonterra representative.
- 9 I am presenting this evidence on behalf of Fonterra and Dairy NZ. Given the strong alignment of interests between Fonterra and Dairy NZ in relation to the Proposed Plan, the two organisations have elected to present a joint case before the Hearings Commissioners.
- 10 I am not offering evidence as an expert witness, although I do have considerable practical experience in water quality and related farm management matters given my work for Fonterra and for previous employers.

## **SCOPE OF EVIDENCE**

- 11 My evidence will deal with the following:
- 11.1 Fonterra and its interests in the Hurunui, Waiau and Jed Catchments (*the Catchments*), the Canterbury Region and Nationally;
  - 11.2 Fonterra's interest in the Proposed Plan;
  - 11.3 Current nutrient management practices;
  - 11.4 Opportunities for further nutrient management improvements;
  - 11.5 Fonterra's sustainable farming initiatives; and
  - 11.6 Trends and changes anticipated based on Fonterra's initiatives.

## **SUMMARY OF EVIDENCE**

- 12 Fonterra is a significant contributor to the Catchments, the wider Canterbury Region, and New Zealand. The co-operative sees potential for further growth in milk supply in Canterbury and is committed to ensuring that this growth is undertaken in a sustainable manner.
- 13 Fonterra is largely supportive of the framework that the Proposed Plan sets out for managing resources within the Catchments. We acknowledge the efforts of Environment Canterbury in using a collaborative approach to drive the development of the Plan.
- 14 However there is remaining concern about the ability of existing farmers to make significant further reductions in the loss of nutrients from their farming systems without risking the long-term sustainability of their businesses.
- 15 Fonterra's shareholders within the catchment are already highly efficient producers of milk and have already made significant reductions in the nutrient losses through efficiency gains, improved management and investment in infrastructure,
- 16 Fonterra, together with DairyNZ and AgITO are committed to driving further improvements where this is possible where doing so does not undermine the long-term business sustainability.
- 17 The recent launch of 'Supply Fonterra' demonstrates this commitment. Supply Fonterra is designed to drive improvements to

milk quality, sustainability and animal welfare, across the supplier base.

- 18 In terms of sustainability, Supply Fonterra currently has three modules that address effluent management, surface waterway management and nitrogen management. These programmes will support the implementation of audited self management within the catchment.

### **FONTERRA AND ITS VARIOUS INTERESTS IN THE CATCHMENTS, THE CANTERBURY REGION AND NATIONALLY**

#### **Assets and economic statistics**

- 19 Fonterra is New Zealand's largest company, accounting for 26% of New Zealand's total export earnings and 89% of New Zealand's dairy production.
- 20 Fonterra's corporate structure is unusual – effectively it is owned by the individual farmers who supply milk to it. Fonterra has approximately 10,500 supplier farms nationally, and produced close to 17 billion litres of milk in New Zealand in the 2011-2012 season. 95% of Fonterra's production is exported to 140 countries around the world. Fonterra's revenue for the year ended 31 July 2012 was \$19.8 billion.
- 21 Within the Region, Fonterra currently employs approximately 1,100 staff. Fonterra has a total of 79 dairy farms supplying milk in the catchments covered by the Proposed Plan. There are no other milk supply companies currently operating in the area. Approximately 19% of national milk production comes from the Central South Island Region.
- 22 Fonterra has significant assets in the Region:
- 22.1 The Darfield milk processing site, located 45 km southwest of Christchurch was officially opened in August 2012. The first stage of development included a milk powder dryer which can produce 15.5 tonnes of milk powder per hour. A second dryer is currently under construction that will be the largest and most efficient milk powder plant in the world when it is completed in 2013. When completed the site will have the capacity to process 6.6 million litres of milk per day. The total investment in the Darfield site will be approximately \$500 million when complete. Fonterra has made this investment, the single largest investment in the dairy industry in New Zealand's history, due to continuing strong growth in the milk supply in Canterbury.
- 22.2 The Clondeboye site in South Canterbury is one of Fonterra's largest and processes approximately 40% of the South

Islands milk. At peak capacity this site processes 13.2 million litres of milk per day through 9 individual plants, producing a variety of products. This site processes the majority of milk produced in the Hurunui and Waiau catchments.

- 22.3 The Kaikoura plant processes up to 245,000 litres of milk per day and turns this into 28 tonnes of cheese.
- 22.4 The Plains drier is located on the Meadow Fresh site on Blenheim Road, Christchurch. This powder plant is the second smallest of Fonterra's plants and is mainly used to process buttermilk powder (a by-product of butter making) with a through put of 380,000 litres per day.
- 22.5 Early in 2012 Fonterra secured the milk processing assets of New Zealand Dairies Limited. These assets include a milk processing site located on a 55 hectare property in Studholme, 50km South of Timaru. The site includes a milk powder plant with capacity to process approximately 800,000 litres per day. The acquisition of this site has allowed Fonterra to further grow its processing capacity to deal with an increasing milk supply, while also adding further transport efficiencies.
- 22.6 Within the Catchments, Fonterra operates a reverse osmosis plant. This facility reduces the volume of milk to be transported out of the catchment by removing excess water from the milk collected off-farm. This reduces truck movements in and out of the district while reducing transport costs and energy usage.
- 22.7 Fonterra also operates a distribution centre, transport depot and offices in various locations around Christchurch.

### **Growth of dairying in Hurunui and Waiau Catchments**

- 23 Canterbury, and in particular the Hurunui and Waiau catchments, are relatively new dairy areas when compared to other parts of New Zealand. The first dairy farm conversion in the Catchments occurred in the early 1980s, and the majority of farm conversions have occurred in the past 20 years.
- 24 This has resulted in farms that generally have newer infrastructure and larger herds than the more traditional dairying areas. The average herd size in the Hurunui district for the 2010/2011 season was 858 cows compared to 757 cows for the wider North Canterbury

Area<sup>1</sup>, which itself has the largest average herd size of any area in New Zealand.

- 25 The benefits that reliable irrigation brings and the largely flat topography of the area, has attracted farmers that are generally progressive thinking and willing to adopt new technologies and farming techniques. These factors have contributed to the North Canterbury area having the highest productivity statistics in New Zealand.

**Fonterra’s interest in the Proposed Plan**

- 26 Fonterra has an interest in the Proposed Plan because of its direct impact on its existing shareholder suppliers in the Catchments, and the effect the Proposed Plan will have on the co-operative’s ability to grow milk supply in the future.
- 27 The wider Canterbury Region has experienced strong growth in milk supply in recent times and Fonterra recognises the potential for future growth from the Catchments.
- 28 Fonterra is supportive of this growth occurring in a manner that balances the social, economic, cultural and environmental well beings of the community. The Proposed Plan, including the Land Use and Water Quality Project (*LUWQ*), has made significant progress in refining where trade-offs are required to find this balance. I support the comments made by Mr Ryan regarding the positive experience had and significant progress that has been made through the collaborative process undertaken in this case.
- 29 Fonterra also supports the bulk of the work undertaken, but seeks to ensure that the methods promoted by the Proposed Plan to achieve this balance will allow for future growth in a manner that does not compromise the viability of the existing farming businesses in the area.

**Fonterra’s submission on the Proposed Plan**

- 30 Fonterra lodged a submission on the Proposed Plan (dated 2 December 2011). The submission was primarily written in support of the submission made by Dairy NZ and Mr Ryan has outlined the general themes in it.

**CURRENT NUTRIENT MANAGEMENT PRACTICES**

- 31 This section of my evidence will detail:

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<sup>1</sup> Livestock Improvement Corporation and DairyNZ; *New Zealand Dairy Statistics 2010 – 2011*; 2011.

- 31.1 The findings of the Audited Nutrient Management Pilot study in terms of the current nitrogen losses and nitrogen use efficiency in the Catchments; and
- 31.2 The main practices which can be used to reduce nutrient losses from dairy farm systems and an estimation of the degree to which they are currently being adopted in the Catchments.

### **Audited nutrient management project**

- 32 In 2011, DairyNZ initiated a project to develop an Audited Nutrient Management system that milk supply companies could use to model nitrogen conversion efficiency<sup>2</sup> and nitrogen loss from their suppliers' farms. The main output of this project would be a protocol on how the OVERSEER model should be used to achieve this.
- 33 The Hurunui catchment was selected as one of three catchments in which the protocol would be piloted. This involved the collection of a range of data from 35 farmers in the catchment, and the modelling of those farm systems within OVERSEER.
- 34 The results showed an average nitrogen leaching loss of 29 kg/N/ha for the Hurunui farms that participated in the pilot for the 2010/2011 season.<sup>3</sup>
- 35 This compares with the average Canterbury figure of 34 kg/N/ha reported by Dr Stewart Ledgard in 2011 based on the analysis of data from the two main fertiliser companies.<sup>4</sup>
- 36 The distribution of the nitrogen conversion efficiency and the nitrogen leaching from the pilot study is shown in Figures 1 and 2 below. The graphs show the percentage of farms that fall within each range of efficiency or loss.

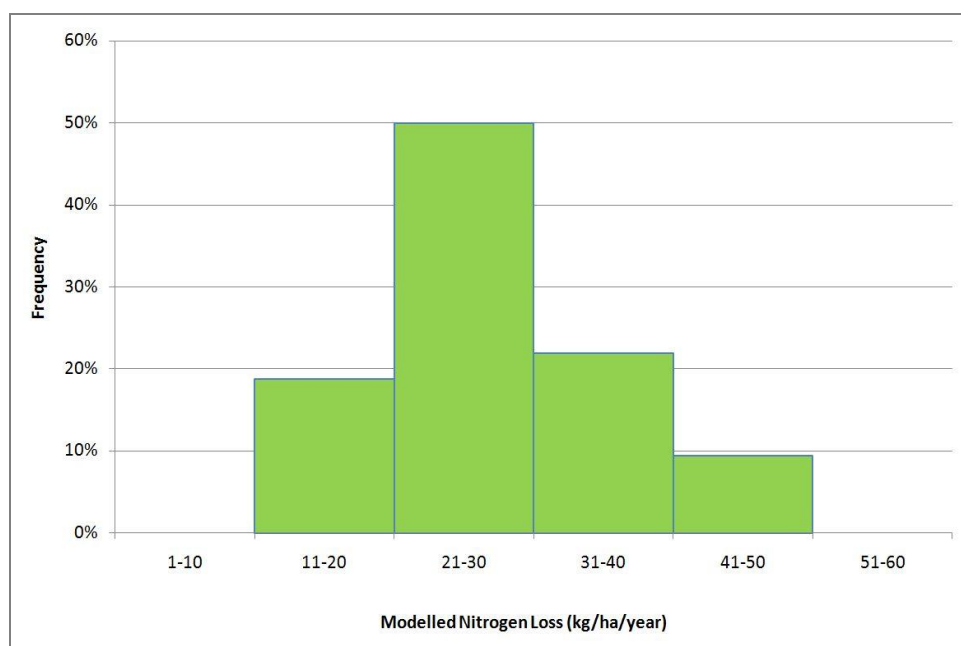
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<sup>2</sup> The concept of "nitrogen conversion efficiency" is discussed in more detail by Dr McCall.

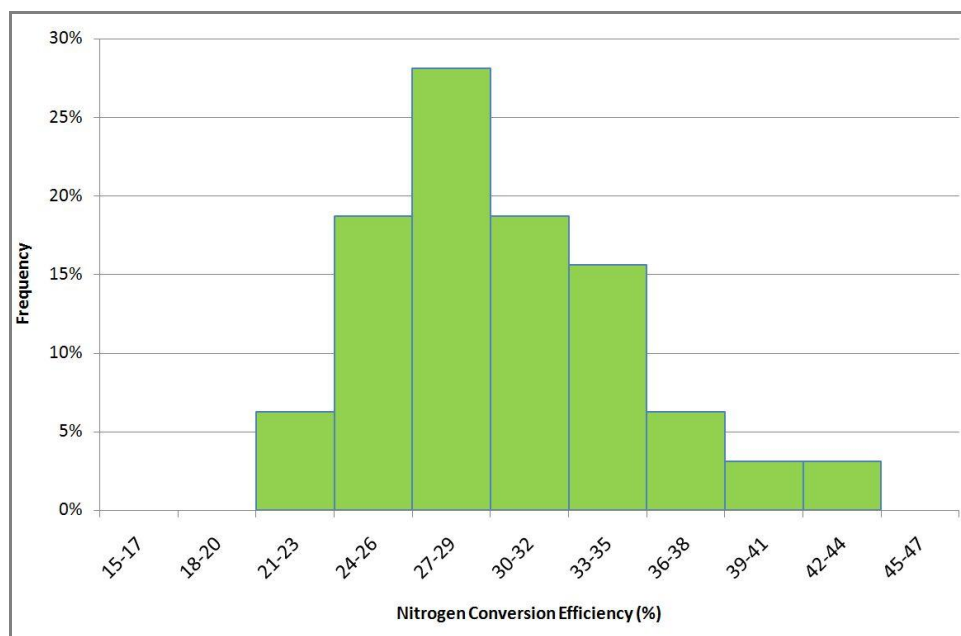
<sup>3</sup> All leaching figures reported are based on OVERSEER version 5.4.

<sup>4</sup> Ledgard, Judge, Waller & John; *Nutrient use efficiency for dairy farming in different regions of NZ*; 2011.

**Figure 1: Modelled nitrogen loss from farms within the Hurunui Catchment**



**Figure 2: The distribution of nitrogen conversion efficiency on farms within the Hurunui Catchment**



- 37 Fonterra is currently working to implement the Audited Nutrient Management system within its business. More details of this programme of work are provided later.



### **Current nutrient management practices**

38 In the following paragraphs I have attempted to establish the degree of uptake of what are currently commonly accepted good farming practices within the Catchments. To do this I have used the following sources of information:

38.1 Data obtained during the pilot study into DairyNZ's Audited Nutrient Management Scheme, as discussed above.<sup>5</sup>

38.2 Information collected by Fonterra during the annual farm dairy assessment in order to measure compliance with the Dairying and Clean Streams Accord targets and Fonterra's minimum standards for effluent management.

### **Nutrient budgets and nutrient management plans**

39 The use of nutrient budgets has increased significantly in recent years and are now common place within the dairy industry.

40 A nutrient budget compares overall nutrient inputs to outputs in a farm system. It can help identify production or environmental issues arising from nutrient excesses or deficits. A nutrient budget can lead to a reduction in the fertiliser recommended and used as part of a farming system and allows farmers to prioritise what nutrients are needed where. Nutrient budgets therefore assist with minimising nutrient loss from farming systems (including N and P).

41 In total, 93 percent of farms within the Catchments had a copy of their nutrient budget available at their latest annual farm dairy and environment assessment (*FDA*).

42 A nutrient management plan defines the nutrient needs of agricultural systems as well as amounts, sources, placement and timing of nutrient applications to maximise nutrient uptake and minimise losses for optimal productivity, profitability and minimal environmental impact. A nutrient management plan is based on the information set out in the nutrient budget.

43 The major fertiliser companies are working to provide nutrient management plans to all dairy farmers over the coming years.

### **Stock exclusion**

44 Keeping stock out of waterways provides significant reductions in the losses of phosphorus, sediment, faecal contamination and, to a lesser extent, nitrogen.

45 The Dairying and Clean Streams Accord (*the Accord*), discussed further below, requires that dairy cattle are excluded from streams,

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<sup>5</sup> This work was completed by Fonterra under contract to DairyNZ and was undertaken during the 2010/11 and 2011/2012 seasons.

rivers, lakes and their banks. Fonterra's monitoring of compliance with the Accord targets in the 2011/2012 season indicated that all but 2 farms in the Catchments had 100% stock exclusion from waterways that met the Accord definition<sup>6</sup>.

- 46 The Accord also requires that "*Farm fences include bridges or culverts where stock regularly (more than twice a week) crosses a watercourse.*" In terms of stock crossings, the monitoring in the Catchments recorded 100 % of regular waterway crossings had bridges or culverts installed.
- 47 The increase in stock exclusion rates that have occurred since the signing of the Accord have largely been achieved through voluntary methods and annual monitoring of progress by Fonterra.

#### **Improving irrigation efficiency**

- 48 Border-dyke irrigation results in higher levels of drainage through the soil profile which results in a higher risk of nitrogen leaching. Additionally, excess water that runs off the end of the borders (wipe-off water) is often discharged to surface water bodies.
- 49 In recent years there has been substantial conversion of border-dyke systems to spray irrigation, driven largely by the efficiency increases that can be achieved.
- 50 Approximately 92% of the dairy land in the Hurunui Catchment is now utilising spray irrigation<sup>7</sup>, and this figure is likely to be representative of the other areas covered by the Proposed Plan.
- 51 Efficient irrigation management through correct scheduling can also reduce excess losses which arise from over-watering.
- 52 Mr Ryan discusses the success that has been achieved in the Pahau catchment from changes in the use of border-dyke irrigation.
- 53 It is expected that these changes from border-dyke to spray irrigation will have significantly reduced the leaching losses of nitrogen from farms in the Catchments due to the reduced drainage that occurs from efficient spray irrigation systems. Losses of phosphorus and sediment have also been significantly reduced due to the changes in irrigation method, and also through improved management of the remaining border-dyke systems.

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<sup>6</sup> The Accord definition is a waterway that is wider than a stride, deeper than a redband gumboot and permanently flowing.

<sup>7</sup> DairyNZ Audited Nutrient Management Project - 2010/2011 pilot study.

### **Improved effluent management**

- 54 Appropriate management of dairy shed effluent application minimises the potential losses of phosphorus, faecal contamination, sediment and nitrogen while aiding pasture production.
- 55 This is achieved by applying effluent to soils at the correct rate and depth and when soil moisture levels are suitable. It is also important to maintain separation distances to waterways and utilise a large enough area to avoid over application of nitrogen to the pasture.
- 56 66% of Canterbury's dairy farms have more than double the effluent application area required to maintain nitrogen levels below the limits imposed in their effluent consents, and this number has been increasing in recent years.<sup>8</sup>
- 57 Fonterra's Sustainable Dairying Advisors (*SDA*) have worked with 39 farmers in the Catchments since the introduction of the 'Every Farm Every Year' effluent programme in 2010, discussed in further detail below. This has involved the development of 25 improvement plans being developed, of which 17 have been completed, with 8 still in progress.
- 58 These plans have addressed a range of issues from infrastructure upgrades to management changes.
- 59 At the regional scale, effluent compliance rates have improved in recent years from 43.2% full compliance in the 2008/2009 season<sup>9</sup> to 70% in 2011/2012<sup>10</sup>. Of most significance is the reduction in significant non-compliance from 19.3% in the 2008/2009 season<sup>11</sup> to 8.6% in 2011/2012<sup>12</sup>. These results have been achieved through a collaborative approach between the industry players and Environment Canterbury. Fonterra continues to support this approach to further improve compliance rates.

### **Dicyandiamide (DCD) nitrification inhibitors**

- 60 The application of DCDs to pasture over the high risk months<sup>13</sup> can reduce the losses of nitrogen from the soil profile. DCD's reduce nitrogen losses by slowing the process in the soil that converts ammonium into nitrate. While pasture plants can utilise nitrogen in both of these forms, ammonium is readily held in the soil while

<sup>8</sup> Environment Canterbury; *The Canterbury Region Dairy Report 2009/2010*; 2010.

<sup>9</sup> Environment Canterbury; *The Canterbury Region Dairy Report 2008/2009*; 2009.

<sup>10</sup> Environment Canterbury; *The Canterbury Region Dairy Report 2011/2012 Season*; 2012.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> The high risk months for nitrate leaching occur over the autumn and winter periods when drainage through the soil is generally higher and plant uptake of nitrogen from the soil is low.

nitrogen is easily lost in drainage water. I understand that there is still scientific debate about the extent of reductions and the cost effectiveness of using DCDs. Dr McCall covers this issue in his evidence.

- 61 In the Hurunui catchment, approximately one third of farmers reported using DCD on all or part of the farm in the Audited Nutrient Management Scheme pilot study.

#### **Optimal Olsen P levels**

- 62 The Olsen P test is used to determine soil fertility and in particular the level of P within soil. Maintaining soil Olsen P levels in the optimal target range reduces the risks of phosphorus loss.<sup>14</sup>

- 63 Based on information from the Audited Nutrient Management Scheme pilot study, in the Hurunui catchment the average Olsen P values were within either the standard or high producing target range on 82 percent of farms. 12 percent of farms had averages slightly above the high producing target range and 6% were below the standard target range.

#### **Housing, wintering pads, on/off grazing, and wintering practices**

- 64 The management of stock over the winter months has a significant impact on losses from the farming system. The vast majority of farms in the Hurunui catchment currently send some or all of the stock off the milking platform over winter, either to attached or detached support blocks or third party graziers.
- 65 Wintering pads are not common in the Catchment. The prevalence of the use of 'on/off' grazing over the autumn months is not known but is unlikely to be high.
- 66 To the best of my knowledge there are no wintering barns or animal shelters within the catchment.

#### **OPPORTUNITIES FOR FURTHER NUTRIENT MANAGEMENT IMPROVEMENTS**

- 67 In this section I will detail the opportunities that exist to further improve nutrient management in the Catchments. Dr McCall will also discuss these matters in more detail in his evidence.
- 68 Overall, dairy farmers within the catchment are largely well advanced in the adoption of the commonly accepted good management practices outlined below. This limits the ability to make

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<sup>14</sup> The optimal target range for the majority of soils within the catchment is 20-30 mg/kg. A higher target range of 30-40 mg/kg is appropriate for high producing farms. (Fert Research; *Fertiliser Use on New Zealand Dairy Farms*; 2009).

further, large scale reductions in losses without significant changes to the farming systems.

### **Nutrient Budgets and Nutrient Management Plans**

- 69 While Fonterra's assessments showed 93% of farmers in the Catchments had nutrient budgets at the time of the FDA, it is unlikely that there are any farmers in the catchment that are not using a nutrient budget to inform their fertiliser use and effluent management systems.
- 70 It is possible that as Nutrient Management Plans become more common place in the catchment that an increased understanding of best management practices for fertiliser use will lead to an improvement in nutrient use. However, based on the results of the pilot study, these best practices already appear to be well understood within the Catchments.<sup>15</sup>

### **Stock exclusion**

- 71 The results of Fonterra's monitoring to date suggests that there are just 2 farms in the Catchments with 'Accord' waterways that are unfenced. However, with improved monitoring and the introduction of tighter rules around stock exclusion by Environment Canterbury it is likely that stock access to waterways will be restricted further than is currently occurring.
- 72 This will provide benefits in reducing the levels of phosphorus, sediment, pathogens and to a lesser extent nitrogen in surface waterways within the Catchments.
- 73 As all major stock crossing points are already bridged or culverted there appears to be minimal opportunity for further improvement in this area.

### **Irrigation efficiency**

- 74 Conversion of the remaining border-dyke irrigation to spray could reduce the losses from those farms, however the extent of improvement that can be expected will be limited due to the small areas remaining.
- 75 Some further gains may be made with the increased use of soil moisture monitoring equipment; however we do not have data on the current level of uptake of these technologies so the extent of this improvement is unknown.

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<sup>15</sup> Examples of such practices include not applying fertiliser during the winter months, reducing fertiliser inputs to the effluent block and applying small amounts of nitrogen frequently rather than large applications.

### **Effluent Management**

- 76 The risk of nitrogen loss as a result of routine effluent application is low. Canterbury dairy farmers use areas of land for effluent application far in excess of that required by the Regional Council, and effluent application is accounted for in the farm's nutrient budget.
- 77 However, farms lacking sufficient effluent storage do pose an increased risk of phosphorus, nitrogen and pathogen loss due to application of effluent to soils when moisture levels are elevated.
- 78 There is potential to reduce these losses through investment in larger effluent storage facilities. A number of farms in the Catchments have already completed this work and Fonterra is working with farmers to assist them to achieve this.

### **Dicyandiamide (DCD) nitrification inhibitors**

- 79 DCDs do have the potential to reduce the losses of nitrogen from the farming system. However as discussed earlier, there are questions about the financial feasibility of DCDs as a mitigation tool that Dr McCall covers in his evidence.

### **Optimal Olsen P levels**

- 80 The majority of dairy farmers already have Olsen P levels that are within the target range for their particular farm. With the increased use of nutrient budgets and soil testing, combined with increases on the cost of fertiliser there is little incentive to farmers to maintain Olsen P at above optimal levels. There may be some further decline from current levels as those properties that are above the target range mine their reserves, but it is not likely that there will be a significant reduction in the total load.

### **Housing, wintering pads, on/off grazing, and wintering practices**

- 81 The uptake of these systems in the Catchments currently is low as the majority of the cows leave the milking platform over the winter months. Additionally, housing stock does not fit with the farming philosophy of many farmers. Based on comments from the four farmers who represented the dairy industry in the Land and Water Project (which is covered by Mr Ryan in his evidence) there was a reluctance to adopting housing into their farming systems.<sup>16</sup>
- 82 While in theory these systems can reduce the losses from a farm, they often involve significant capital investment and changes to the farming system. It is also likely that the the farmer would intensify the operation to cover these capital costs which may reduce the net benefit of installing the facility.

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<sup>16</sup> C. Glass, DairyNZ; *Pers Comm*; 2012.

- 83 There are also potential impacts that result from the growing of feeds to sustain the animals while they are housed (n-loss may simply be transferred to the property that grows the feed crops). These impacts need to be considered as part of a decision to move to this type of farming system.
- 84 There are also risks in committing to a high cost system at a time when there is increasing volatility in the international markets. Dr McCall addresses these issues in his evidence.

### **FONTERRA INITIATIVES**

- 85 Fonterra is committed to being among the most sustainable food producers in the world. We accept that agriculture has a responsibility to minimise its impact on the environment. In accordance with this commitment, Fonterra has implemented a number of programmes to encourage and assist farms with sustainable production and nutrient management, which are of relevance to how the water quality and growth objectives of the Proposed Plan will be achieved.

#### **Supply Fonterra**

- 86 In July 2012 Supply Fonterra was launched. Supply Fonterra is a programme of on-farm initiatives that will help grow and maintain a sustainable milk supply. It is a package of on farm continuous improvement initiatives to help Fonterra future-proof our dairying suppliers' practices.
- 87 At its heart, Supply Fonterra is a long-term change model. It leverages Fonterra's successful history in continuously improving our on-farm food safety performance, and more recently the positive results achieved through the "Every Farm Every Year" effluent management programme, discussed below.
- 88 The programme is founded on four key elements that we know from experience are required to drive change on farm:
- 88.1 Minimum standards that every member of the co-operative must achieve in order to supply milk;
  - 88.2 One-on-one advice and support to guide farmers towards best practice;
  - 88.3 Practical education and resources for farmers, with support from our industry partners DairyNZ and AgITO<sup>17</sup>; and

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<sup>17</sup> AgITO are the industry training organisation responsible for the development and delivery of training courses that develop capability in the agricultural sector.

88.4 Recognition and reward for those who are at the cutting edge of sustainability, milk quality and animal welfare.

- 89 The Environment Programme for Supply Fonterra includes three modules: Effluent Management, Waterway Management and Nitrogen Management which are discussed below.
- 90 There may be future modules of Supply Fonterra to address issues such as water efficiency, greenhouse gases, biodiversity and animal welfare.

#### ***Effluent Management***

- 91 Formerly "Every Farm Every Year", the effluent management component of the Environment Programme involves an assessment by an independent contractor of every farm's effluent system on an annual basis to identify risks with the system. Where an issue is identified, a SDA will meet with the farmer and formulate an agreed Environmental Improvement Plan (*EIP*).
- 92 This EIP will be followed up with the supplier to ensure that the actions agreed are completed, and the minimum standard achieved.<sup>18</sup>
- 93 Where a supplier fails to remedy the situation or work the SDA to develop an EIP, the ultimate sanction is the non-collection of milk.
- 94 Since the launch of this programme in 2010, 2399 EIPs have been put in place with farmers and the actions completed in 1670 cases. These are actions that will increase the resilience of the effluent application systems and allow effluent to be better utilised for growing pasture while reducing the risks of losses to the environment.

#### ***Waterway Management***

- 95 This is a new programme for the 2012 season which is focused on reducing the industry's impacts on surface water quality.
- 96 The minimum standards for this programme are:

96.1 The exclusion of stock from all waterways that are wider than 1 metre, deeper than 30 cm and permanently flowing;

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<sup>18</sup> The minimum standard for the Effluent Management Programme requires our suppliers to have systems in place that manage all effluent sources in a manner that complies with the relevant Regional Council resource consent or permitted activity rules, 365 days a year; and where this is not achieved, that they work with an SDA to create an Environmental Improvement Plan that sets out the actions required to achieve the minimum standard.



- 96.2 All regular crossing points are required to have bridges or culverts; and
- 96.3 Sediment and/or effluent is not to be discharged into any waterway where it is likely to result in a significant adverse effect on the environment.
- 97 The programme will also provide guidance and advice to suppliers about managing the risks from fodder crops and wintering practices, along with stock exclusion on run-off blocks.
- 98 The stock exclusion and crossing requirements will be assessed during the FDA. Working with the farmer, the assessor will use electronic mapping technology and aerial photos to identify the waterways on the farm and the level of stock exclusion that has been achieved. This data will be verified over time to ensure its accuracy.
- 99 Where a farmer does not comply with the minimum standards for stock exclusion, they will have until 1 December 2013 to comply as long as they have an EIP in place. The benefits of stock exclusion and bridging/culverting crossing points for nutrient management are discussed above.

### ***Nitrogen Management***

- 100 This programme is also new for 2012 and seeks to:
- 100.1 Model each suppliers' nitrogen loss and efficiency at year end, using actual farm data, and in accordance with the industry developed protocol for the use of OVERSEER;
- 100.2 Provide this information to farmers in an easy to understand format that shows how they are performing compared to their peers; and
- 100.3 Provide an audited record of nitrogen loss that allows farmers to easily participate in audited self management schemes, or demonstrate compliance with regulatory requirements.
- 101 After the first season Fonterra will have a record of how each farm is performing in terms of nitrogen loss and nitrogen conversion efficiency. This will allow for the development of a support model to assist farmers to reduce losses while increasing efficiency for launch in the 2013/2014 season.

### **Dairying and Clean Streams Accord**

- 102 The Accord was developed by Fonterra, in partnership with regional councils, Local Government New Zealand, the Ministry for the

Environment and the Ministry of Agriculture. The Accord was signed in 2003 and promoted sustainable dairy farming in New Zealand through non-regulatory means.

- 103 The Accord has changed the face of sustainable dairying in New Zealand:
- 103.1 It has driven close to 100% adoption of nutrient budgeting within Fonterra's supply base<sup>19</sup>;
  - 103.2 It has led to significant increases in the levels of stock exclusion and the bridging of crossing points. Further, it has created awareness of why it's important for water quality to exclude stock from waterways and provided the basis for this to now be included as a minimum requirement of supplying milk to the co-operative; and
  - 103.3 The Accord has also created the platform for the development of "Every Farm Every Year" which is delivering results in the effluent compliance area and paved the way for the introduction of Supply Fonterra.
- 104 Fonterra does acknowledge that not all of the targets set out in the Accord were achieved, with particular regard to the effluent discharge compliance rates. There has also been some debate about the accuracy of figures relating to the rates of stock exclusion achieved. Fonterra's programmes outlined above are intended to rectify these issues.
- 105 The Accord came to its conclusion at the end of the 2012 season. DairyNZ is leading a discussion between Fonterra, the wider dairy sector, and a wide range of interested parties on the need for and possible form of an industry-wide successor to the Accord.
- Fonterra's environmental activities within the Region**
- 106 Fonterra has a team of 4 Sustainable Dairying Advisors based in the Canterbury Region. Their role is to work with our farmers one-on-one to deliver solutions and guidance that fulfil the requirements of the Supply Fonterra programmes. Mr Ryan addresses the Successor Accord in his evidence.
- 107 Farmers are also supported in the region by a team of 4 Area Managers who manage the relationship between Fonterra and the farmers. They offer support to farmers on a wide range of issues and are one of the key methods of delivering the 'why' messages to farmers in the sustainability area.

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<sup>19</sup> Nationally, 99% of farms had a current nutrient budget present during their FDA in the 2010/2011 season. (MPI, Fonterra; *The Dairying and Clean Streams Accord: Snapshot of Progress 2010/2011*: 2011).

- 108 While my own role is nationally focused, being based in Canterbury influences the shape of the national programmes that Fonterra develops for Supply Fonterra by ensuring that the unique challenges faced by irrigated, high producing dairy farms are catered for.
- 109 The Catchment Care initiative is a 3 year programme aimed at protecting and enhancing waterways in the communities in which our farmers operate. This has involved planting, fencing and weed removal at a number of sites in Canterbury.
- 110 Fonterra also offers support to the community through the Fonterra Grass Roots Fund. This fund allows for grants of up to \$5000 for projects in three focus areas; Bringing Communities Together, Caring for the Environment, Making our Communities Safer.

### **Other policy-making contributions**

- 111 Fonterra is actively involved across New Zealand in public planning processes where the efficiency and effectiveness of various regulatory responses to dairy activities are being worked through with councils, their communities and other stakeholders.
- 112 Fonterra is also represented on the Land and Water Forum, which comprises a wide group of primary industry representatives, environmental and recreational NGOs, iwi and other organisations with an interest in freshwater and land management. The Government has tasked that Forum with conducting a stakeholder-led collaborative governance process to recommend reform of New Zealand's freshwater management.
- 113 Fonterra has been actively involved with the development of the Land and Water Regional Plan and communicates regularly with the various zone committees in Canterbury.

### **TRENDS AND CHANGES ANTICIPATED BASED ON INDUSTRY INITIATIVES**

- 114 As with any community, the dairy industry is comprised of a number of individuals with a variety of skills, capabilities and capacity for change. At one end of the spectrum there are farmers who are constantly ahead of the crowd, through to others who will always find change challenging.
- 115 Additionally, farmers operate within an infinitely variable set of constraints, be they environmental, financial or simply the physical make-up of the farm. Dairy farming businesses are complex and the definition of best practice is continuously changing.

- 116 The initiatives that the industry invests in are aimed at assisting every farmer to be as close to best practice as they can be while maintaining their profitability and productivity.
- 117 This is not achieved by a one size fits all approach, and this is illustrated by the structure and key elements of Supply Fonterra. In particular, Supply Fonterra is intentionally structured to drive improvements throughout the entire supply base.
- 118 This approach allows for accelerated uptake of best practice that delivers change at an industry level, while catering for the needs of the individual within it.

#### **HOW THE AUDITED SELF-MANAGEMENT SYSTEM WOULD WORK**

- 119 Supply Fonterra has not been developed as a system that would satisfy the requirements of an audited self management system as defined in the Proposed Plan; however it is likely to overlap with and supplement such a scheme. For example, should the system require the measurement of nitrogen losses from a farming system, the Nitrogen Programme could fill this need.

#### **CONCLUSIONS**

- 120 As acknowledged in its submission, Fonterra recognises the need to address water quality and is aware that that dairy farming is one of the main contributors to water quality issues in some areas. Fonterra also recognised room for improved practice among dairy farmers and it is because of this that the initiatives described above have been implemented.
- 121 As discussed above, farms within the Hurunui catchment have already been implementing nutrient management initiatives and will continue to do so in accordance with Supply Fonterra and the Accord.
- 122 Our farmers in this area have demonstrated that they are adaptable and will invest in improved infrastructure where it will improve the efficiency of their operations.
- 123 Supply Fonterra provides a strong platform to support farmers in making that change and adopting new mitigation strategies as and when they become available.

**Michael Hide**

**12 October 2012**

## REFERENCES

Livestock Improvement Corporation and DairyNZ; New Zealand Dairy Statistics 2010 – 2011; 2011

Ledgard, Judge, Waller & John; Nutrient use efficiency for dairy farming in different regions of NZ; 2011

Environment Canterbury; The Canterbury Region Dairy Report 2009/2010; 2010

Environment Canterbury; The Canterbury Region Dairy Report 2008/2009; 2009

Environment Canterbury; Canterbury Region Dairy Report 2011/2012 Season; 2012

Fert Research; Fertiliser Use on New Zealand Dairy Farms; 2009

MPI, Fonterra; The Dairying and Clean Streams Accord: Snapshot of Progress 2010/2011; 2011