

## APPENDIX 1

### PROPOSED PROGRAMME FOR ADDRESSING IMPACTS OF NUTRIENT LOSS FROM DAIRY FARMS ON WATERWAYS WITHIN THE HORIZONS REGION

#### Background

Fonterra has proposed in its submission on the Horizons Proposed One Plan (POP) that the dairy industry be given an opportunity to demonstrate its ability to address the impacts on water quality that result from nutrient loss from the Region's dairy farms. This is as an alternative to the regulatory approach currently proposed within POP.

Fonterra recognises that there is scope for improvement in the water quality of a number of waterways within the Region and that through changes in the industry's collective activities, the contribution of the dairy industry to this reduced water quality can be reduced. Fonterra believes that such a change can be best implemented via a non-regulatory approach.

In developing this proposal Fonterra has used the following guiding principles:

- The objective must be such that its achievement can be measured and influenced by the actions of the industry, with the support of the Council and community, during the timeframe available (Fonterra has recommended a period of 5 years);
- There must be practical actions, that are currently available and able to be incorporated into general farm practice, that can be taken by the industry to achieve the objective;
- It must be possible to demonstrate that these actions can have an impact within the timeframe available;
- Those making changes in their practices must be able to do so in a way that recognises their multiple objectives (social, economic, environmental) for a sustainable dairy farming operation;
- Any changes in behaviour and activity that occur within the industry must be sustainable in the long term.

Whatever the result of the Commissioners' considerations, the dairy industry will be required to work with the Region's dairy farmers to improve their level of awareness of nutrient loss related impacts and opportunities to reduce these. The focus of this programme would necessarily change to take into account the Panel's decisions on the Proposed One Plan to ensure those farmers within WMZs entering the regime were provided priority attention.

The focus of this programme is on managing the impact of nutrient loss on water quality. It is recognised that there are other dairy farming activities that can impact on waterways, however these are currently being dealt with by either the Dairying and Clean Streams Accord or current regulatory approaches (e.g. farm dairy effluent management).

The area for priority action within the programme will be those Water Management Zones (WMZs) identified by Horizons as being priority catchments. This will not prevent the remainder of the Region's dairy farmers also engaging in the programme of

work. 433 dairy farmers operate within the WMZs with approximately another 450-500 other dairy farmers within the Region.

Fonterra, Federated Farmers, DairyNZ (lead) and Horizons Regional Council staff met on 13 January 2010 to begin the development of a strategy for addressing a range of dairying related issues. This meeting confirmed that improved management of nutrient loss from dairy farms is a goal for all stakeholders, along with existing goals to improve effluent management activities. The outcomes of this project will inform and modify this programme of work.

Separate discussions have been held with the fertiliser industry. A commitment has been made by this industry to deliver industry audited Nutrient Management Plans (currently the vast majority of dairy farmers have a Nutrient Budget – a Nutrient Management Plan also identifies areas of nutrient risk and initial direction on how to reduce these risks) to dairy farmers within the Horizons Region. These Nutrient Management Plans will be the cornerstone of many aspects of this programme. Confirmation of the delivery plan for this work is underway.

### **Objective**

Improving the nutrient management performance of dairy farmers within the Horizons Region as a means to reduce the impact of nutrient loss on water quality within the Region's waterways.

### **Methodology**

The objective will be achieved through a range of activities and approaches, some occurring in parallel and others occurring sequentially. These will include:

- Benchmarking
- Determining guideline targets
- Raising awareness
- Supporting a behavioural change process
- Capability development
- Assessment of the costs and benefits of alternative methods of nutrient reduction and the farm system changes required to achieve them
- On-going research into new technologies for managing nutrient losses – including the regional efficacy of nitrification inhibitors
- Monitoring
- Reporting

### **Benchmarking**

Benchmarking will provide:

- a base line to measure improvement in nutrient loss and on farm activity; and
- information to better focus development of the awareness and support programmes.

A programme of work, including farm surveys, will be undertaken to determine:

- current nutrient loss rates from dairy farms throughout the Region (along with associated farm performance, land use capability and environmental data directly related to nutrient loss)
- nutrient management activities undertaken by farmers currently (and therefore the range and cost of further activities available for use)
- current levels of land manager awareness and knowledge of nutrient loss matters.

### Determining guideline targets

Having benchmarked the current situation, the industry will provide farmers with indicative nutrient loss guidelines. It is proposed that these would be based on the range of nutrient loss determined from the benchmarking exercise, so farms (those farms under similar conditions) could see where their nutrient loss levels are in comparison with similar farms within the Region.

Guideline targets would be set at appropriate points within these ranges to achieve realistic and useful improvement in catchment (WMZ) and regional nutrient loss levels.

A potential plus of this approach is that by using farms operating under similar conditions farmers should have confidence that achieving the guidelines targets is feasible (i.e. it has been achieved by another group of farmers).

### Raising Awareness

Land managers (farmers and farm managers) are the group who will make on-farm decisions that will impact on the extent of nutrient loss from the Region's dairy farms. Given the limited extent to which many land managers have been exposed to the issue of nutrient loss, it is assumed that the level of issue awareness will be low (this will be confirmed and/or quantified during the benchmarking process). This will need to be addressed to achieve a desire for change in behaviour.

Having determined the extent and type of information needs land managers have, a programme of awareness raising will be developed and implemented. This programme will include;

- field days and/or discussion groups,
- direct one-on-one communication with industry technical representatives,
- use of industry hard copy and electronic information sources
- guidelines about the costs, benefits and suitability of different options for nutrient loss management, taking into account the type of land use and number of cows per hectare

Rural professionals will often have contact with land managers. It has been identified that as a group they will also need to be aware of the nutrient loss issues within the Region and the objectives of the dairy industry. In providing advice on a range of

farming matters, especially with regard to nutrient application, animal feeding and productivity, and farm infrastructure, the decisions made by a land manager should not occur in isolation to the nutrient loss objectives.

Rural professionals will be targeted through a similar, though specifically targeted, programme using similar information pathways.

### Supporting a behaviour change process

The key element to creating and sustaining a change in nutrient loss levels from the Region's dairy farms will be to take the now aware group of land managers and provide them with access to appropriate information that:

- provides options for managing their nutrient loss
- provides confidence that such changes can be made within the skill set, experience, and farm system constraints (environmental (soil type), climatic (rainfall), economic (debt levels) and stock concentration (intensity)
- reinforces the benefit of achieving the nutrient loss objective (both for the individual, industry as a whole, and the wider regional community),
- provides ongoing feedback on the extent of changes made over time.

No separate work stream has been developed to advance this component of the programme as it is considered that this will be a key driver for the way in which all components of the programme are designed and delivered.

### Capability development

Land managers are unlikely to have the range of skills and knowledge to make appropriate decisions on all aspects of their farm system that impact on nutrient loss. A farm system is complex and a change in any single part of that system often has subsequent impacts elsewhere (e.g. changing grazing policy can impact supplementary feed needs and/or profitability). It is important to ensure land managers have access to adequate information sources and suitably experienced support people to ensure achievement of the nutrient loss objectives occurs in a manner that also allows the economic and social objectives of land managers to be achieved.

The dairy industry will work with land managers to identify capability needs and gaps that will support the attainment of the nutrient loss objective. It is envisaged that this will occur through direct feedback during the awareness and behavioural change components of the programme.

Having identified these needs/gaps the dairy industry will work, either directly or in conjunction with rural professionals and researchers, to fill these gaps.

### Monitoring

Changes over time in both nutrient loss from the Region's dairy farms and in the nutrient management activities undertaken on farm, will be monitored through ongoing farm data collection. This will allow for;

- refining and/or refocusing of the programme,
- maintaining land manager awareness,
- providing performance updates to key stakeholders (e.g. Horizons Councillors, the regional community).

Monitoring will occur to allow for meaningful comparison with the initial bench marking process and as such would be against a similar range of parameters (e.g. nutrient loss levels (regionally and by WMZ), and land manager action to manage nutrient loss).

The frequency of monitoring will be at least annually.

### Reporting

Reporting will provide the opportunity to communicate the state of progress towards development and delivery of the programme the achievement of the nutrient loss goals. It will also support the programme components of raising awareness and supporting behaviour change.

Reporting will occur to;

- farmers/land managers (individually, within WMZs, and regionally),
- rural professionals,
- industry stakeholders,
- regional stakeholders,
- Horizons Regional Council.

The frequency and manner of reporting will vary depending on the group and issue however reporting on progress against objectives will be aligned with monitoring (at least annually).

### Success

Success of the programme will be measured by the extent to which the objective has been met. Indicators of success will include:

- Improving trends in nutrient levels in waterways over the period of the programme, taking into account the nutrient contributions of point-source and non-dairy diffuse discharges, and delays between implementation of land use changes and evidence of their effects in waterways;
- Increased knowledge of nutrient loss management awareness and capability among land managers;
- Increased numbers of land managers taking steps to mitigate nutrient loss;
- Increased knowledge within the dairy industry of alternative methods of nutrient reduction, and the costs and benefits of each.

### Roles and Responsibilities

#### Dairy Industry

- provision of support for research and infrastructure development (information systems for bench marking, monitoring and reporting).

## Dairy Farmers

- to make appropriate changes to on farm activities to support the achievement of the programme's objective
- provision of adequate information, engagement with other stakeholders
- take individual and collective responsibility for driving farmer engagement in the programme at a regional and WMZ level.

## DairyNZ

- provision of technical expertise on nutrient management options, tools, survey development, and information/extension to farmers and rural professionals
- use of communication pathways to farmers and rural professionals
- assessment of the costs and benefits of alternative methods of nutrient reduction, the stock intensity on any one farm, and the farm system changes required to achieve them
- on-going research (in partnership with others) into new technologies for managing nutrient losses – including the regional efficacy of nitrification inhibitors

## Federated Farmers

- provision of regional and WMZ leadership
- use of communication pathways to and from farmers.

## Fonterra

- assistance with programme coordination (DairyNZ to lead)
- provision of industry leadership
- maintenance of existing support for Dairying and Clean Stream Accord related sustainability programmes (and others which may be put in place in the future – including the assistance which may be provided by our team of Sustainable Dairy Specialists).

## Other dairy processors

- involvement to the extent they consider appropriate.

## Rural Professionals

### Fertiliser industry

- provision of nutrient management expertise to farmers (nutrient management plans and budgets)
- provision of expert knowledge on nutrient management practices to the programme.

#### Farm advisers

- provision of appropriate advice to farmer clients which acknowledges the objectives of this programme and supports its achievement
- provision of expert knowledge on nutrient management practices to the programme.

#### Horizons Regional Council

- provision of expert knowledge on nutrient management practices to the programme
- provision of information regarding water quality within the WMZs and the region as a whole
- use of communication pathways to farmers and the wider regional community.