

Agri-Gate

Ministry for Primary Industries
Manatū Ahu Matua



Latest news about MPI's Investment Programmes

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Justine's column



Welcome to this edition of Agri-gate. I hope that you had a good Easter break. Despite a short month, there have been a number of recent significant milestones across our investment programmes.

First mussels harvested from SPAT_{NZ} hatchery

One of our recent highlights was announcing the first crop of Greenshell™ mussels from the purpose-built hatchery in Nelson under the SPAT_{NZ} Primary Growth Partnership (PGP) programme. This milestone follows years of investigative work and experimentation by scientists in Nelson, led by programme manager Dr Rodney Roberts, to understand how to get mussels to breed on cue.

The aims of the SPAT_{NZ} PGP programme are providing more certainty for growers, as the mussel industry currently relies on wild spat (baby mussels), a lot of which is collected from seaweed on 90 Mile Beach, and providing the ability to develop a higher value product with the characteristics consumers want, such as size, colour and taste. Many people have said that hatchery spat is a 'game-changer' for the industry. As well as creating a high value product in its natural form, there are also opportunities for example, with nutraceutical products.

One of the requirements of PGP programmes is that, in time, the knowledge from programmes is disseminated

more widely to the industry. We are really excited about the opportunity that the SPAT_{NZ} programme presents for the rest of the industry in New Zealand.

You can check out a video along with hi-res images and a media release on the [SPAT_{NZ} website](#).



Hatchery spat on rope



SPAT_{NZ} hatchery in Nelson



Spawning mussels

Whai Hua PGP programme wrap up

In our last Agri-gate, I mentioned the completion of the Whai Hua PGP programme, which has created immune-enhancing dairy milk products and ingredients. The programme has completed its final report, outlining its achievements, and this is now available on the Whai Hua section of our [MPI website](#).

The Whai Hua programme focused on innovation across the dairy value chain. The large majority of the programme's intended outcomes were achieved across a range of farm production, milk processing, marketing and efficacy research and development.

For example, the programme established an elite herd of 510 cows containing naturally high levels of a target compound which research undertaken by the programme has shown to have immune-enhancing properties. Also, this programme has successfully developed a skim milk powder product containing high levels of this natural immune-enhancing compound.

Research by the programme indicates that this compound in bovine milk acts in a similar way to its counterpart in human milk. Market development opportunities for the skim milk powder product are being pursued with target customers. The Whai Hua programme partners expect the programme to create economic benefits for New Zealand ranging from \$5 million to \$16 million per year by 2021.

We will shortly be engaging an independent company to evaluate the programme. Once this evaluation has been completed, we will share the findings.

Sustainable Farming Fund celebration events

Preparations are well underway for our two upcoming Sustainable Farming Fund celebration events in Hamilton (3 May) and Christchurch (10 May). The Fund is in its 17th year and throughout this time, we have invested close to \$135 million in farmer, grower or forester led projects. If you have RSVPed, we hope you find the day insightful and a great opportunity for networking. We look forward to seeing you there.

In this edition of Agri-gate we have two great projects profiled. One has just completed its first year, and the other has just come to an end. The two projects are quite contrasting and demonstrate the depth and breadth of what our Sustainable Farming Fund supports. Make sure you have a read of the 'controlling leaf roller caterpillars in avocado orchards' and 'sustainable dairy winter grazing project' articles.

Central Plains Water ribbon cutting

On 20 April, I visited Canterbury for the ribbon cutting ceremony for Central Plains Water limited (CPW) which signalled the start of construction of Stage 2 of their scheme. The Minister for Primary Industries Nathan Guy attended the event to celebrate this key milestone in support of the Prime Minister Bill English who cut the ribbon.

The CPW scheme will distribute reliable alpine water to the Canterbury Plains upon completion. Stage 2 will support the construction of a further 20 000 hectares to the schemes capacity. Eventually stages 1 and 2 will distribute reliable alpine water to 43 000 hectares.

Using alpine-sourced water rather than ground water is environmentally beneficial for the Selwyn Catchment, as it reduces pressure on aquifers which are needed to replenish flows in lowland streams that feed Lake Ellesmere/Te Waihora.

Replacing groundwater with river and stored alpine river water has the potential to improve water flows into Lake Ellesmere – Te Waihora, helping the long-term process of improving its water quality.

For a farm to qualify for scheme water it has to prepare a plan with a nutrient budget, and every year the farm will be audited to ensure it complies. If they don't pass the audit then they won't get water, according to CPW.

The CPW scheme was initially supported by government through MPI's Irrigation Acceleration

Fund, prior to Crown Irrigation Investments Limited supporting it from the 'investment ready' stage.

The scheme will be significant for the Canterbury region – a recent report estimates that the economic benefits to be released from the project will be up to \$374 million.

If you'd like to know more about the scheme, we have recently published a [CPW case study](#) document on our website.

While in the region I also visited the Hinds/Hekeao Managed Aquifer Recharge (MAR) project site near Ashburton.

The pilot project is testing the feasibility of adding alpine sourced water to shallow groundwater to help recharge lowland streams during dry periods and reduce nitrate levels in the groundwater.

After the first year, the bores monitoring groundwater conditions downstream have shown positive improvements in both water quantity with rising levels and in water quality with decreasing concentrations of nitrates which is great news.



Prime Minister Bill English cutting the ribbon signalling the start of Stage 2 of the Central Plains Water scheme.

Sustainable Land Management and Climate Change (SLMACC) research programme

Applications have now closed for our 2017 SLMACC funding round.

This year we have had a high calibre of applications, as expected. After our panel meets on 16 May we will be announcing successful applicants by the end of May.

The SLMACC research programme supports research into new climate change knowledge generation in the agriculture and forestry sectors for adaption, mitigation, and cross-cutting issues.

We set research priority project topics each funding round based on themes we want to investigate further for the benefit of the primary industries. The research undertaken provides valuable insights that inform decisions from policy making through to farm management. For more information on the fund, [head to our website](#).

Afforestation Grant Scheme

Applications for the Afforestation Grant Scheme close today. If you are considering applying, make sure you apply [through our website](#) before 4pm today!

Through the AGS, MPI provides grants of \$1 300 a hectare for farmers to plant new small-to medium-sized forests (5 hectares to 300 hectares).

Planting new forests on marginal land can help protect the soil beneath which benefits ecosystems, local industries and communities as well as the environment as trees can help offset carbon emissions and reduce the nation's overall emissions tally.

We hope you enjoy this edition of Agri-gate.

Justine Gilliland
Director of Investment Programmes

From the Chair, PGP Investment Advisory Panel



Adding value – a perspective

Welcome to this edition of Agri-gate. Often we (the primary industries) get told that we need to 'add value' to products. Yes, this is important, but there are a number of reasons why adding value is challenging, particularly for New Zealand. I have a strongly held

view that it's no longer useful to say the primary industries needs to 'add value'. We all know that! Rather, I would prefer that we understand the challenges of adding value, and focus on overcoming these, as Primary Growth Partnership (PGP) programmes are doing.

I've spent a large chunk of my working life trying to add value to primary industry products with some success. I thought I'd take the opportunity to share some of my observations along the way. My hope in doing so is that it helps with any thinking and work you're doing on the topic of 'adding value'.

Why add value?

First the question of why – why do we want to add value to primary industry products? One reason is to move away from supplying commodities, to make ourselves stand out from every other country exporting the same or similar products we do and less susceptible to market fluctuations. A second reason is that people pay more for the products they want. They get something that makes them happy, companies get a higher return for their products, and so do their shareholders, and our economy can get something too. There are plenty more reasons, but I'll leave those for another time.

The path of resistance?

But there are challenges that are getting in the way of our journey to add value.

I think we can reasonably assume that, on average, New Zealand's primary industries are led by intelligent, passionate people. If I'm correct, then we ought to conclude that if we've failed to add value when good sense says we should, the impediment is other than simply not having thought about it or a lack of the IQ to do so. We need to therefore look at why New Zealand fails to add value to a larger percentage of our primary industry exports than we currently do. I'm not about to write an essay on the subject but I think that among the key reasons are:

1. The tyranny of distance from market – for example, to send milk in liquid form is a huge weight increase, and therefore a much higher cost, and it's perishable. However, milk as an ingredient in final products can weigh less, be cheaper and easier to transport to market, and add to the value premium.
2. Perishability – getting perishable product overseas involves a lot of logistics and cost.
3. No home market – compared to New Zealand, almost all other successful exporters, particularly of food/perishable products, have developed over many years in a largish home market. Even when they're exporting successfully, their home market is a big enough percentage of total sales to provide the valuable volume cushion, development platform and research base that's required to produce higher value products. A challenge for New Zealand is the relative small size of our domestic market.
4. The lack of a home market combined with the distance factor, makes for example, spotting opportunities and trends difficult, but not impossible. More importantly, these two factors combined mitigate against trialing or launching products at reasonable cost, particularly when you probably can't bring your failures home to sell or find a home market niche. Perishability adds to the problem.

5. When you live so far from markets you need to ensure you understand them well enough to perform worthwhile product testing, development and marketing. Long-term resource on the ground, in-market, is an important way to understand your markets. Markets can take years of often negative returns to develop and, therefore, money and resource needs to be specifically put aside for understanding your market and related development.
6. We're tiny in terms of capital sources relative to our production and the market investment required.
7. Structure – we're certainly advantaged in many ways by having large, producer-owned companies handling, processing and exporting so much of our production. The advantages are obvious but there are disadvantages also. To use an accounting analogy: what the producer/owners are paid is what conventional structures call 'the cost of goods sold'. But when producers are owners, they want to maximise that accounting line because that's what they're paid. They may not be receptive to the idea that if the cost of goods sold goes down, the profit goes up. And if there are profits then R&D, market and brand development etc can be undertaken over the long-run the producer/owner will therefore be better served.

But it's not all doom and gloom. Please don't let the above turn you off the idea of adding value. My thoughts above are reasons why I think it's difficult to 'add value', not excuses for not doing so. But we do need to spend our effort on overcoming the impediments, examples of which are visible across PGP programmes, and not telling people what they already know – that we should simply 'add value'. It's great to see exporters trying to establish unique selling propositions wherever they can for a premium.

I'm happy to be a party to arguing for more work to get rid of the impediments to adding value to primary industry products, but I'm not happy to simply say "let's add value". I've heard the latter for 30 years and it's not new information.

Let's concentrate on the why it's not being added and how to fix it.

I hope you enjoy this edition of Agri-gate.

John Parker
Chair of the IAP

PGP Spotlight: Lighter Wines PGP Programme

The Lighter Wines Primary Growth Partnership (PGP) programme, previously known as Lifestyle Wines, has its sights on developing high-quality, lower alcohol and lower calorie wines ('lighter wines') to position New Zealand as the top producer in the lower alcohol wine category internationally.

The programme is a partnership between NZ Winegrowers and the Ministry for Primary Industries (MPI), and has involvement and additional investment of time and cash from 18 wineries, ranging in size from boutique wineries to multi-nationals. It's the largest innovation programme ever undertaken by the New Zealand wine industry.

Coming up with the goods

Historically lower alcohol wines aren't known for being the best quality, so the Lighter Wines PGP programme is driven by market research and demonstrated consumer demand for lighter wines (less than 10 percent alcohol by volume) with the same sensory experience as full-strength wines. To achieve this, it's investigating natural vineyard and winery techniques, with the trial and commercial wines developed assessed by both professional and consumer panels to evaluate the sensory properties of the wine.

The programme is now approaching its fourth year and there have been some very encouraging achievements to date.

There have been a number of commercial releases of lighter wines by participating wineries using research and information developed by the Lighter Wines PGP programme – a number have received medals and awards at the 2016 New Zealand Food Awards. Constellation Brands received the Business Innovation Award for their VNO Lighter range and Villa Maria received the Beverages Award for their Lighter Rosé.

"The recent competition results for some of the lighter wines produced as part of 2016 vintage demonstrates the improvement in quality that has been achieved by the participating wineries using research and information from the Lighter Wines PGP programme," says Dr David Jordan, programme manager for the Lighter Wines PGP programme.

"Some of the medals have been awarded in open categories so they are judged alongside full-strength wines, which is a great sign that the sensory experience is getting close to or matching that of the full-strength equivalent wines."

The messaging and placement of lighter wines in-market is also critically important to the programme's success. For example the change to the name of the programme to Lighter Wines better aligns with the programme's consumer research that showed it was preferred to other names. The research also indicated that the previous name of the programme could have the potential to narrow the market opportunity for lighter wines.

The Lighter Wines PGP programme's aim is for the lighter wines it produces to be priced in-line with their full-strength equivalents. New Zealand wines on average achieve premium pricing in all major export markets.

Dr Jordan says that, "to deliver value to the wineries we need to develop lighter wines that achieve the same premium pricing as other New Zealand wines."

A growing category

Consumer demand identified prior to the start of the programme has turned into demonstrated growth in the lighter wines category domestically, with domestic sales doubling since the programme started in 2014 to \$35 million in 2016.

"This was achieved much faster than anticipated and has already exceeded the original domestic market forecast of \$22 million by 2024," says Dr Jordan. "The focus is now starting to shift to export markets with the aim of enabling a domestic and export market of \$285 million per annum by 2024."

Ongoing monitoring of market data is also showing that the lighter wine category is incremental to existing sales in other categories. This is important to ensure that the investment in this research and development by the programme isn't just substituting production of one wine with another, but rather complementing it.

Work still to be done

"While we have been able to identify some methods on-vineyard and in-winery to produce lighter wines, and some good quality wines are being produced, we still have a lot of work to do," says Dr Jordan.

"We are looking at different methods of producing lighter wines and expanding the varieties so that there are a number of tools available to wineries, and the ability to produce a range of lighter wines."

The focus so far has largely been on Sauvignon Blanc, with some production of Rosé and Pinot Gris. Work is now underway to look at some red varieties, particularly Pinot Noir, where there is also consumer demand. The aim is to reduce some heavier wines of around 14-15 percent alcohol by volume to 12-13 percent.

If this work is successful, it should see New Zealand well on its way to establishing itself as the number one producer in the world of lighter wines.

Controlling leaf roller caterpillars in avocado orchards

Leaf roller caterpillars roll up leaves and stick them together for shelter, they then feed on the inner surface of the leaves and eat through the leaves as they mature.

This damage can be serious for host plants, which is why the Avocado Industry Council are carrying out a Sustainable Farming Fund (SFF) project which involves trialing leaf roller pheromone mating disruption technology (MD).

MD technology is already used in New Zealand apple and summer fruit crops, and the purpose of this SFF project is to develop MD technology for use in avocado orchards. The key objective for year one of the project is to refine the pheromone blend needed for avocado tree dwelling leaf rollers, by carrying out small scale field trials.

If the technology can be successfully applied to the avocado industry, breeding can be controlled as the pheromone confuses the males to such a degree that they are unable to find the female and mate with her.

Through this trial, a variety of pheromone blends were placed in avocado trees. The release of the pheromone (via a small plastic and wire loop) confuses the males surrounding the tree. To determine which blends were the most successful, a female leaf roller was placed inside each trap and dissected afterwards to see if it had been mated with.

So far, the concept has proved promising for disrupting the mating cycle of leaf roller species significant to the avocado industry. The full results of the 2016-2017 trials will be available by the end of June on the

New Zealand Avocado Industry Council's website.



One of the pheromone blends placed on an avocado tree.



Determining how MD technology can be applied to avocado trees will be a significant development for the avocado industry.



Dead female leaf rollers ready for dissection.

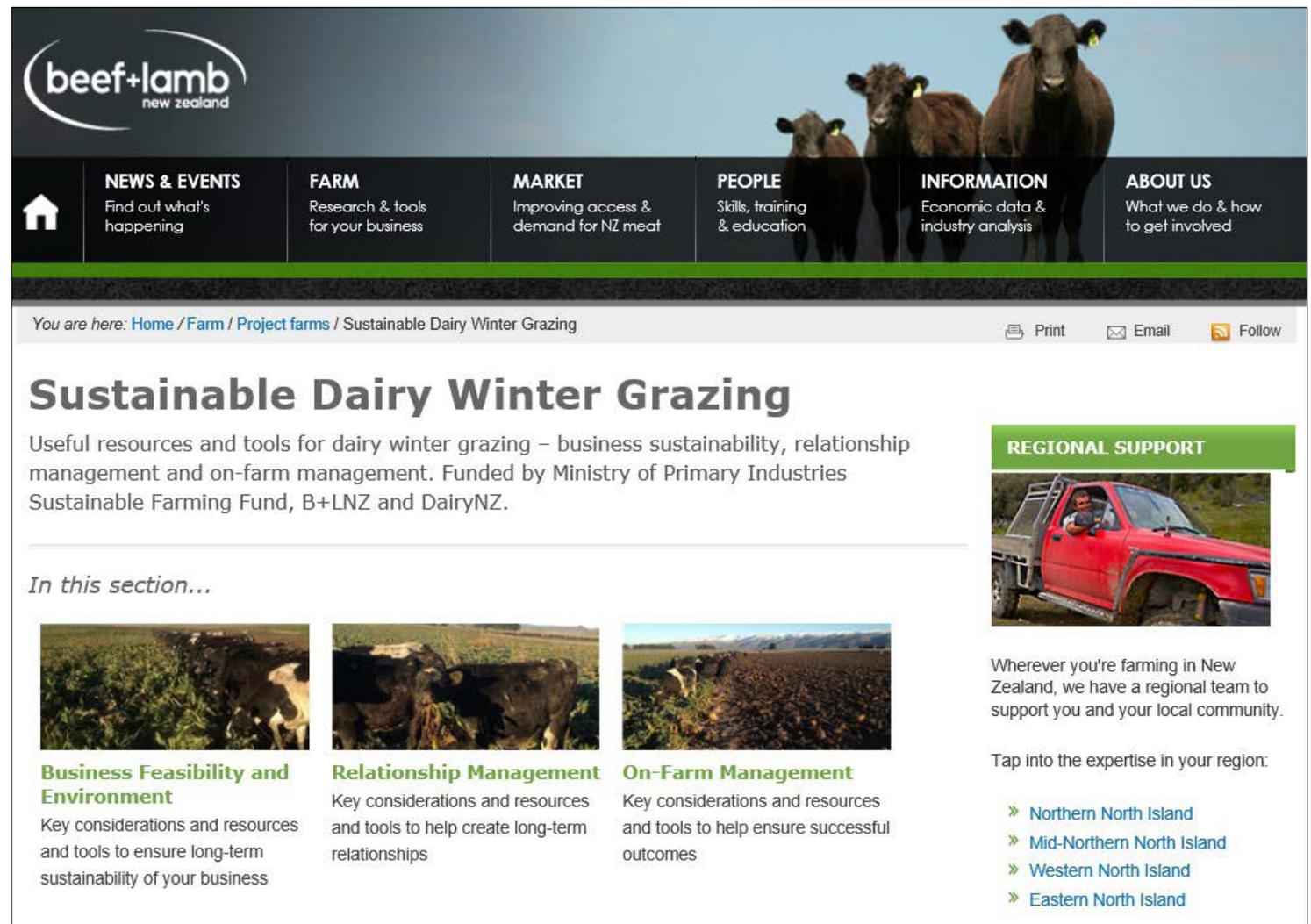
Sustainable Farming Fund spotlight: Sustainable Dairy Winter Grazing project

Through the Sustainable Farming Fund (SFF), MPI has supported the development of useful resources and tools for dairy winter grazing which are now available online. The resources were delivered by the Sustainable Dairy Winter Grazing project which was funded by the SFF, Beef + Lamb NZ and DairyNZ.

The objective of the project was to give dairy graziers greater and easier access to information enabling them to make sustainable decisions about their business. To achieve this a Dairy Grazing Partnership Group was brought together in Central Otago to facilitate information sharing between graziers, dairy farmers and rural consultants.

The project goal was not to 'reinvent the wheel' in terms of knowledge creation, instead to work with the farmers to identify what the key considerations were for successful winter dairy grazing, what current information and tools were available, what the current gaps were, and to understand how dairy graziers would like to have greater and easier access to information.

The information, case studies, resources and tools are all presented in an easily accessible format and can be found on **Beef + Lamb NZ's website**.



The screenshot shows the Beef + Lamb NZ website interface. At the top, there is a navigation menu with categories: NEWS & EVENTS, FARM, MARKET, PEOPLE, INFORMATION, and ABOUT US. The main content area features a large heading for 'Sustainable Dairy Winter Grazing' and a sub-heading describing the project's focus on business sustainability, relationship management, and on-farm management. Below this, there is a section titled 'In this section...' with three featured articles: 'Business Feasibility and Environment', 'Relationship Management', and 'On-Farm Management'. To the right, there is a 'REGIONAL SUPPORT' section with a photo of a red ute and a list of regional support areas: Northern North Island, Mid-Northern North Island, Western North Island, and Eastern North Island.

The Sustainable Dairy Winter Grazing project was supported by the Sustainable Farming Fund.