



Michael's Desk

Earlier this month I joined Investment Advisory Panel members and others at Fonterra's Research and Development Centre (FRDC) in Palmerston North for a showcase of the Transforming the Dairy Value Chain PGP programme. The day, hosted by Fonterra and DairyNZ, was a valuable mix of presentations at the FRDC and laboratory and farm visits.

Throughout the day we heard and saw first-hand many examples of how this PGP programme is adding right across the value chain. These included the development and application of body condition scoring for cattle; advances in the development of cream, mozzarella cheese and sophisticated product niches; the health benefits of infant formula; and gene-sequencing work, which involves mapping the variations in the genes in a cow's DNA that can impact production and health.

The day also included a showcase of the programme for local media.

One of the things that really hit home is how the PGP is helping to put New Zealand at the forefront in the development of new, innovative and premium food products. It also reminded me of the very exciting market and product development that René Dedoncker, Fonterra's Managing Director Global Brands & Nutrition, spoke about at our PGP Expo in October.

I'd like to thank our Transforming the Dairy Value Chain programme partners from Fonterra, Synlait, DairyNZ and the Livestock Improvement Corporation (LIC), and researchers from Auckland and Massey Universities, for organising and running a very valuable and successful day.



Fonterra Chief Science and Technology Officer Jeremy Hill talks to Investment Advisory Panel member Sir Maarten Wevers and Fonterra Director Malcolm Bailey at the Transforming the Dairy Value Chain showcase.



Fonterra Senior Research Scientist Paul McJarrow talks with Michael Jamieson.

PGP video

Communicating achievements and progress continues to be one of the key focusses across the PGP, and the Transforming the Dairy Value Chain showcase was one way of providing information and perspective about the difference this programme is making.

We've pulled together a short video from footage and interviews at the PGP Expo in October to explain in a nutshell what the PGP is about. I believe it's a useful resource that helps to introduce the PGP and how it's enabling primary industry innovation. It also shows the passion and drive from some of those involved, and is a further way of further increasing the transparency and visibility of the PGP. We aim to use video more in our communications.

You can see the video on MPI's [YouTube channel](#). Thanks to everyone who featured in it.

Clearview Innovations progress review

We've finished another progress review, this time for the Clearview Innovations PGP programme, led by Ballance Agri-Nutrients.

Overall, the reviewers concluded that the programme is "well-run and resourced, and generally progressing towards its intended outcomes." They also noted that, while it's too early to determine whether the programme will deliver the long-term outcomes successfully, they generally believe that the programme is likely to achieve most objectives.

The reviewers noted the good progress being made in a number of areas of the programme. For example, a new decision support tool called N-Guru™ is now available for farmers throughout the country. Ballance sales consultants are offering the software in

conjunction with a Total Soil N Test to help farmers make better decisions about optimising nitrogen fertiliser use.

Another new tool called MitAgator™ will enable expert users to map farm properties and show areas where loss of P, N, sediment and bacterial contaminants is more likely. Strong interest in this tool has been shown from regional council staff and other professionals managing water quality.

Ballance has also launched a new aerial variable rate fertiliser application service called 'SpreadSmart' to improve the precision application of fertiliser on hill country farms and reduce spread to non-target areas.

The reviewers also noted the good use of the 'fast-fail' approach, which is often adopted as a route to long-term success in projects or work streams that make up significant innovation programmes. This means projects or work streams have set stages at which any

failures or risks are assessed for impact. If a project or work stream is deemed unlikely to succeed, then it's stopped, and any relevant lessons are applied to the remaining ones.

The reviewers found that Clearview Innovations is using this approach successfully, so that funds and energy can then be focused on products which are more likely to be commercially viable.

The reviewers have made some recommendations, noting that Ballance is considering making a number of significant changes to the programme, which could impact on programme outcomes.

A copy of the progress review summary report is available on our [website](#).

Michael Jamieson
Acting Director PGP ■



Auckland University researcher Cameron Mitchell talks with, from left, DairyNZ Chief Executive Tim Mackle, Ministry of Business, Innovation and Employment's Max Kennedy and Investment Advisory Panel member Harry Burkhardt.



DairyNZ's Andrea Henry explains body condition scoring to, from left, DairyNZ's Jenny Jago and Investment Advisory Panel members Sir Maarten Wevers and Barry Brook.



LIC's Andrew Scott talks about gene-sequencing in cattle with, from left, Transforming the Dairy Value Chain Manager Andrew Fletcher, MPI Acting PGP Director Michael Jamieson, Transforming the Dairy Value Chain Programme Steering Group Chairman Chris Kelly and Investment Advisory Panel member Melissa Clark-Reynolds.

From the Chair



This month we welcomed Steve Smith to the Investment Advisory Panel.

I'm sure many of you will either know, or know of, Steve. He has an extensive background in the wine industry, and was one of the driving forces behind the Craggy Range Vineyards including 10 years as its Chief Executive Officer. Steve

will bring to the Panel, and the PGP, his extensive experience in developing and marketing high-value, origin-based products and building an internationally-focused primary sector company.

Steve is a member of several boards, including the Advisory Board for the New Zealand Story and the Independent Panel of Experts for the Tourism Growth Partnership. He's also involved in the **Te Hono Movement** and remains involved with Craggy Range in a governance and advisory role.

I'd like to welcome Steve to the Panel and look forward to his valuable contribution.

Although the Panel is continuing to see innovative proposals there are still some parts of our primary industries sector that are not well represented in the PGP. The Panel encourages all in the sector to consider how you can add to the growth of both New Zealand and your own commercial organisations by working in partnership with the Crown. The PGP team at the Ministry for Primary Industries are always willing both to talk to people about what is involved and what the criteria are, as well as to assist with putting together a proposal, and even assisting industry participants to collaborate.

The other exciting thing that the Panel has raised in discussion is the potential impact of the Trans Pacific Partnership (TPP) for the primary industries. When TPP enters into force (expected in two years' time) companies will have improved access to a regional market accounting for 36 percent of global GDP. We believe that there may well be some valuable opportunities to innovate further in our sectors.

As noted by Michael in this edition of *Agri-gate*, MPI has pulled together a short video from footage and interviews at the PGP Expo in October. For those who are already involved in the PGP and wish to encourage others in our industry to consider a proposal, and for those who are not quite sure what is involved, this really is a useful resource. It helps visually to introduce the PGP, shows how it's enabling primary industry innovation and may spark ideas for others in our sector.

The Panel looks forward to reviewing more of your proposals.

Joanna Perry

Chair, Investment Advisory Panel ■



Shot from the PGP video which can be accessed at: <https://www.youtube.com/user/MinPrimaryIndustries/videos>

Programme Spotlight

Three trademarks in four years – Ballance research makes progress

Four down, three up – that's the current score for Ballance Agri-Nutrients' \$19.5 million Clearview Innovations Primary Growth Partnership Programme with the Ministry for Primary Industries.

The four is year four of the seven-year research programme. The three is the number of trademarks filed just past the half-way mark, with products either in-market or ready to launch.

Ballance Science Strategy Manager, Warwick Catto says progress to date on the ambitious research programme is pleasing.

"We are very happy where we are with three very different products which meet our overall target of improving nitrogen and phosphorus use efficiency and reducing losses to the environment."

He says the scope of the research was ahead of its time, with phosphorus and sediment management included in its line of sight.

"When we started this programme back in 2011, farming within limits was really just coming into play, but that's changed and we now have growing regulations around N, P and sediment and managing their impacts. Having the foresight to include this in our scope of work from the onset has proved beneficial.

"As our products move through the commercialisation phase, we are now turning attention to the extension and education part of the program with an emphasis on changing farmers' attitudes and practices as to how they manage nutrients on farm. Our aim is to encourage fast adoption of the tools and techniques they can use," says Warwick.



Ballance Agri-Nutrients science team member out in the field during research trials.

Adopting a staged approach to research has provided Ballance the ability to screen projects as they go through the pipeline. Some of these projects have been stopped; others are being offered to other parties for commercialisation.

"Our early scope of work included some research with biopesticides. With the relationship between pest management and good pasture we decided to do some

preliminary work in this area. We've cracked the science, and we're now looking to commercialise the intellectual property and find the best route to market with other parties."

That has left Ballance free to focus on its three Clearview winners – N-Guru™, MitAgator™ and SpreadSmart™ – and the final phase of the research should deliver another potential four products.

N-Guru™

What is it? N-Guru is modelling software that more accurately predicts pasture responses to nitrogen.

How does it work? N-Guru™ is used in conjunction with a soil 'total N' test, carried out as part of routine soil testing. Where total nitrogen varies sufficiently across the farm, the decision support software can be used to determine variable nitrogen use instead of applying the same amount of nitrogen across the whole farm.

What is the benefit? Backed by extensive research, N-Guru™ has been designed in conjunction with AgResearch to improve the efficiency of nitrogen use on New Zealand pastoral farms. The software is now available for farmers, with Ballance nutrient specialists offering N-Guru™ as part of a farmer's fertiliser recommendation to help make better decisions about the rate and spatial use of nitrogen to maximise production, while reducing the impact on the environment.

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MitAgator™

What is it? MitAgator™ is a tool designed to identify and quantify the areas on farm which are at risk of losing phosphorus, sediment, nitrogen, and microbial contaminants.

How does it work? Also created in conjunction with AgResearch, it takes data files from OVERSEER® and links it with various maps to form a base risk map. Once the base risk maps are developed, a range of mitigation and management strategies can be modelled by both cost and effectiveness, and can be targeted to an individual paddock, or even part of it.

What is the benefit? Currently a prototype model, it has great potential benefits in helping farmers to continue farming within nutrient-restricted catchments.

Regional councils have been particularly interested in the technology because it supports farmers in making the right call on identifying potentially high-loss areas on farm and deciding on which mitigation tools to use. This will help farmers to minimise losses while getting better use efficiency from their phosphate and nitrogen fertiliser.



Screenshot from MitAgator™.

SpreadSmart™

What is it? SpreadSmart™ is technology installed into topdressing planes allowing pilots to focus on flying the aircraft while ensuring the fertiliser is applied at the optimum rate, in the right place, avoiding environmentally sensitive areas and improving returns to farmers.

How does it work? SpreadSmart™ is now available to North Island farmers through Ballance's aerial top dressing business Super Air. The service utilises a digital farm map and the GPS guidance system in Super Air's aircraft to improve accuracy of aerial topdressing.

What is the benefit? SpreadSmart™ delivers aerial top dressing precision with multiple benefits. It keeps fertiliser out of waterways, gullies, forestry blocks, tracks and other no-go zones and allows for different fertiliser products to be specifically targeted to different areas of the farm, improving overall production. It also combines variable rate application, so different parts of the farm get exactly the volumes of fertiliser they need. With fertiliser one of the largest on-farm costs, precision applications also mean budgets go further, improving farm margins. ■



SpreadSmart™ in action.



Soil testing.

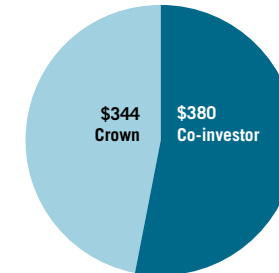
Overview of Primary Growth Partnership Investment

Sector	Programme Name and Co-investor	Total Crown and co-investor investment \$ million	Sector total \$ million	Estimated benefits \$ million (per annum)
Wool	NZ Sheep Industry Transformation (NZSTX) NZ Merino	34	34	250
Dairy	Transforming the Dairy Value Chain Dairy NZ/Fonterra	170		2700
	New Dairy Products and Value Chains Whai Hua Limited Partnership	4	174	9
Fishing & Aquaculture	Shellfish – The Next Generation Shellfish Production and Technology NZ (SPATnz)	26		81
	Precision Seafood Harvesting Precision Seafood Harvesting (PSH)	48	74	44
Meat	FoodPlus – Redefining Meat Horizons ANZCO	77		630
	Marbled Grass-fed Beef Grass-fed Wagyu Ltd	23		80
	Red Meat Profit Partnership Red Meat Profit Partnership (RMPP)	64		194
	Integrated Value Chain for Red Meat FarmIQ	151		1100
	Targeting New Wealth with High Health	25		TBA
Pastoral	NZ Deer Industry Passion2Profit	15	356	TBA
	A New Vision for Pastoral Agriculture PGG Wrightson Seeds	15		200
	ClearView Innovations Ballance AgriNutrients	20		348
Bee Keeping	Precision Application of Fertiliser in Hill Country Ravensdown Fertiliser Co-op Ltd	10	44	120
	High Performance Manuka Plantations Manuka Research Partnership (NZ) Ltd (MRPL)	3	3	1200
Forestry	Innovative Steep-land Tree Harvesting Future Forests Research (FFR)	7		100
	Use of Fumigants for Log and Wood Product Exports Stakeholders in Methyl Bromide Reduction (STIMBR)	2.6 (actual cost)		TBA
	From Stump to Pump Phase 1 (feasibility study) Norske Skog Tasman Ltd (NSTL)/Z Energy	3.6 (actual cost)	13	TBA
Wine	Lifestyle Wines New Zealand Winegrowers	17	17	285
Horticulture	NZ Avocados Go Global Avocado Industry Council	9	9	210
Total			724	

Please note that the figures in this table have been rounded. Therefore the total Crown and co-investor investment for each sector may differ to the sum of the individual programmes.

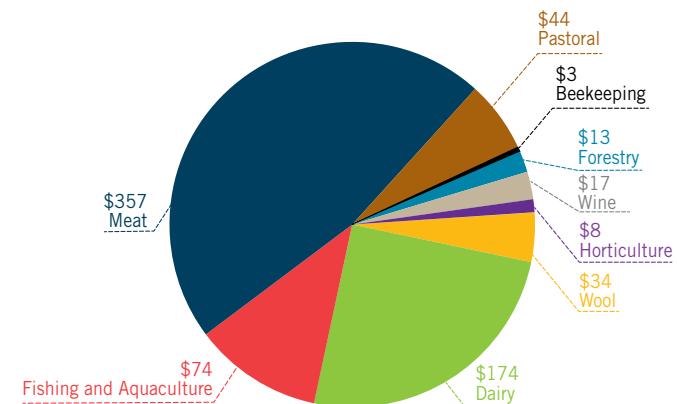
As at 31 October 2015, there were 18 programmes underway and two completed.

Crown/co-investor committed investment (in millions)



Crown/co-investor committed investment by sector (in millions)

Total \$724 million



Total government funding paid to programmes as at 31 October 2015 was \$165 million.