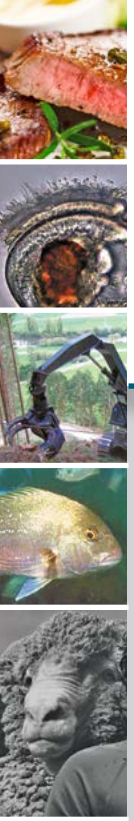


Agri-Gate

News from the Primary Growth Partnership

Ministry for Primary Industries
Manatū Ahu Matua

ISSUE 8 | JULY 2014

Justine's Desk

On 30 June we hit a significant milestone, with the first completion of a PGP programme. The Stakeholders in Methyl Bromide (STIMBR) programme set out to research sustainable and effective alternative phytosanitary and biosecurity treatments for the fumigant methyl bromide, which is used to treat New Zealand logs and other primary sector products for both export and import. Methyl bromide is an ozone depleting substance, approved for quarantine and phytosanitary treatments.

The programme explored alternative fumigants, ways to reduce methyl bromide emissions, and non-fumigant treatment options for methyl bromide. Some of its achievements include implementing a nationwide monitoring protocol and methyl bromide reporting system to report annual methyl bromide use to the Environmental Protection Agency; identifying promising methyl bromide destruction technologies; and developing possible methyl bromide recapture/recycling technology that is a candidate for commercial development. It also developed a proof of concept for Joule Heating technology as a possible niche phytosanitary treatment for high value logs and identified that methyl bromide fumigation rates may be able to be reduced by 40 percent.

The work completed by the programme will allow industry to keep up the good momentum as it seeks alternative treatments for methyl bromide and the development of technologies to reduce emissions to meet the Environmental Protection Agency's 2020 deadline for no release of methyl bromide to the atmosphere.

The programme is now completing its final report, following which the programme will be evaluated.

Our tenth funding round closed on 25 June and we received four proposals seeking $9.3million in government funding, alongside proposed industry investment. The Investment Advisory Panel will consider the proposals at its meeting in mid-August and any successful proposals will then be invited to present a business case for the IAP's further consideration, and for MPI's Director-General to decide whether to approve government investment. The number of proposals and quantum sought for PGP investment is lower than in previous rounds but it's not clear why this is so. This is something the PGP team are currently talking about with industry as part of wider exploration of the primary industry innovation pipeline – a process where ideas with the potential to improve the performance of our primary sector are taken from generation and discovery right through to commercialisation.

We have also now started planning for our Annual Meeting of PGP programmes, together with the second PGP Expo, later in the year. The Annual Meeting is a chance for MPI, the IAP and PGP programmes to get together and share information, ideas, successes and learnings. The Expo that follows is an opportunity for the business community and media to interact with PGP programmes and find out about the exciting and challenging innovations and issues programmes are grappling with. We'll be providing further information about the day over the next couple of months.

Lastly, I wanted to mention a couple of achievements of PGP programmes that have occurred that may have passed a little under the radar.

The Steepland Harvesting programme has completed development of the ClimbMax harvester, a new ground-based harvesting machine which can fell and bunch logs on steep slopes and remove the need for chainsaw operators. Four machines have been built and are now in commercial operation. Development of the Advanced Hauler Vision system to improve productivity of cable harvesting and improve worker safety has also been completed, as well as the HarvestNav on-board navigation system. The HarvestNav provides machine operators with information on harvest area terrain, improving machine operation and safety.

In the Clearview Innovations programme, led by Ballance Agri-Nutrients, four projects have come out of the technical research phase, and product development has started. These include:

- N-Guru™ – this decision support software is now available for farmers throughout the country, with Ballance sales

continued...

ISSN (online) 2350-3289

NEXT ▶

continued...

consultants now offering the software in conjunction with a Total Soil N Test to help farmers make better decisions about nitrogen use.

- MitAgator™ – this tool will enable expert users to map farm properties and show areas where loss of Phosphorous, Nitrogen, sediment and bacterial contaminants are more likely. This tool is due for release in 2015.

The Farm Management System developed in the FarmIQ programme is now in use across all Landcorp farms, and readying for commercial launch later this year.

In the Transforming the Dairy Value Chain programme, there has been significant progress in building increased capability in nutrient, effluent, animal welfare, people and farm system management:

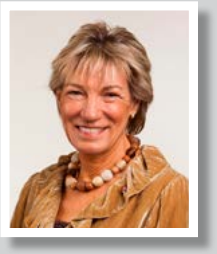
- seven certification and accreditation programmes are now operating;
- seventeen training programmes have been established;
- more than 1600 trainers have been up-skilled to provide advice and training to farmers as a result of training programmes that have been developed or revised; and
- more than 17 000 farmers and rural professionals have been up-skilled through training and webinars.

Surveys demonstrate that the majority of farmers receiving plans under the certification and accreditation programmes have implemented on-farm changes.

These are just some of the many substantial activities making progress across PGP programmes – see our website for more.

Justine Gilliland
Director PGP

From the Chair



Many of you would have seen the questions and answers about PGP in the New Zealand Herald's Agribusiness feature earlier in July. I may be – and hope that I am – preaching to the converted for a considerable number of you; however I thought I'd expand here on one of the questions we were asked that, in my view, is a common misconception of what the PGP is all about. The question was "What's your answer to the critics who say the PGP is just corporate welfare?"

To use hard data, I think the New Zealand Institute of Economic Research's report on the expected benefits of PGP published in June exemplifies this misconception. It concluded, in its 30-year benefit cost ratio analysis, that for every dollar spent now, the economy will grow by $32 – that is the economy as a whole benefiting and not corporate profits. Yes, there will be growth in corporate profits; and so there should be given 50 percent of the investment is coming from those corporates. However, by 2025 there is also predicted to be, for example, an extra $270 per hectare for hill country farmers and $600 per cow for dairy farmers, as well as many other benefits to the economy as a whole such as creating jobs, keeping people safe, protecting the environment and developing new world class technologies.

It's quite obvious from this that the PGP isn't corporate welfare. It's about a partnership between the government and the primary industry investing time and money into innovation and research. It's the partnership aspect that makes the PGP unique, the government and primary sector working together to innovate, fund and deliver in true partnership style. It's about shared risks not corporate welfare. The PGP isn't about funding business as usual activities – it truly is aimed at initiatives that drive real innovation and grapple with the hard issues. It's about using smart ideas and smart action to deliver smart results. All I need to do is refer you to Justine's column to see some examples already of these smart ideas and smart results. There are many others showcased on MPI's website and throughout past editions of Agri-gate.

I have to say though, that for me the icing on the cake that really refutes the corporate welfare argument is the spill over benefits aspect of the PGP programme. Spill over benefits were always aimed to be part of the PGP's outcomes, however, I think the way that the PGP has been operated as a comprehensive programme has already delivered – and has the potential to continue delivering – far more spill over benefits than anyone could have predicted at its inception. For the primary industry itself this means more connected people so that information and technology can be shared, as well as improving processes, boosting productivity and sustainability. For the community this means more jobs, access to new and better food and other products, more vibrant rural communities, and increased local infrastructure and investment.

So is the PGP corporate welfare? The answer is categorically NO.

Joanna Perry
Chair, Investment Advisory Panel

Programme Spotlight

High Performance Mānuka Plantations

The High-Performance Mānuka Plantations programme promises a 16-fold increase in the value of New Zealand's mānuka honey industry.

Photo courtesy of Comvita

The key is increasing the yield and reliability of supply of medical grade mānuka honey, which is commonly used in wound dressings due to its anti-bacterial properties and its ability to resist degradation, even in the presence of fluids created from wounds. Through this strong value-add focus, the programme has set its sights on lifting the value of the New Zealand mānuka honey industry from an estimated $75 million in 2010 towards $1.2 billion per annum by 2028.

"The seven-year programme is a joint partnership between Mānuka Research Partnership (NZ) Ltd (MRPL), Comvita Limited and the Ministry for Primary Industries (MPI)," says MRPL Managing Director Neil Walker.

"Our programme will move the industry from wild harvest to science-based farming of mānuka plantations. We're researching how local ecosystems affect mānuka honey yields and quality and studying a range of mānuka genetic material – combining improved genetics with optimum plantation management and bee keeping practices could enable significant productivity gains in medical grade mānuka honey."

MRPL is a company with a wide range of primary industry interests including Landcorp, Te Tumu Paeroa, the Hawke's Bay Regional Council, Don and Conchita Tweeddale (one of the country's largest beekeepers), Nukuhau Carbon Limited and Arborex Industries Limited.

The programme involves some of the major players, big and small, in the New Zealand mānuka honey industry, joining up to pool resources for a common goal to drive the industry forward.

The PGP programme's co-investors represent a range of interests and all aspects of the supply chain, from small scale plantation owners, apiarists and foresters to large scale interests represented by the Hawke's Bay Regional Council, the Māori community and Comvita.

It's not just productivity gains the programme is seeking explains Neil.

Photo courtesy of Comvita

"Our programme aims to develop profitable alternative land-use options for owners of marginal land and further options for riparian plantings and shelter belts – there are many examples of this type of land prone to erosion and potentially available and suitable," he says.

"We want to double the number and yield of hives by planting blocks at the optimum density with plants tailored to each site that flower strongly and produce abundant nectar. Planting multiple varieties on one site will increase the honey extracted per hive-season, enabling flowering over a longer period than currently."

The programme will have a range of environmental benefits such as increasing the rate of hill country remediation; reducing costs associated with erosion and improving water quality.

MPI has committed $1.4 million to the programme with the balance coming from industry partners as a mixture of cash and in-kind contributions.

Researching mānuka

The programme has now been operating for three years and is based upon the revolutionary concept, initially developed by Comvita, of turning mānuka, a naturally endemic scrub plant, into a specifically bred and cultivated plantation crop.

There are two distinct areas of research, with both investigating the relative role of plant genetics and environmental factors on performance. The first is a study of the effects of soil, moisture, temperature and light on growth, flowering, nectar yield and quality.

"Dihydroxyacetone, a chemical present in the nectar of mānuka – converts naturally to methylglyoxal over time in honey. Methylglyoxal is a compound found in mānuka honey that is associated with anti-bacterial properties when used topically. Some wild mānuka types are high in dihydroxyacetone whilst others have very low levels. Whether this is due to the plant or its location has never been systematically analysed until now," says Neil.

The team at Massey University led by Professor Richard Archer and Professor Michael McManus – along with scientific expertise from Dr Jonathan Stephens of Comvita's innovation team – have established a series of small scale field trials to assess interactions with climate, soils, temperatures and other factors. In the trials to date, plant genetics and soils have had major effects on most variables of interest but light levels have only had minor effects. The variability observed between plants, soils and even between parts of one site has been even greater than expected – getting the right plant in the right place will be important if the medical grade mānuka is to meet its full potential.

The second area of research involves large scale field trials of mānuka plantations assessing establishment factors, growth, nectar yield and quality, apiary issues, plantation management and economic factors for large scale success. Once additional plantings are completed over winter 2014, the programme will study and monitor around 500 hectares of plantation mānuka at several sites around the country. Specially selected mānuka seed lines and mānuka clones selected from Comvita's mānuka breeding programme are being grown and evaluated in these trial sites.

Early results from the plantation trials are encouraging. Some mānuka plantations are producing nectar with twice the level of dihydroxyacetone of wild mānuka growing in the same district. Additionally plantation mānuka is extending flowering duration at these sites.

The emerging picture shows that the target of achieving a 16-fold gain in productivity seems possible.

"Assuming our research is positive and effective, the potential income per hectare from high performing mānuka plantations could be ranking ahead of all other possibilities – and because of the nature of the land, in many instances it's not displacing any current use," says Neil.

"Hives can often be reached at the back of a farm via existing farm tracks and returns can commence three years after planting. This makes mānuka honey more attractive than larger timber trees in a number of settings."

In time, the knowledge from the PGP programme will be available to all people wishing to develop mānuka plantations for medical grade honey production.

The PGP programme is also training three PhD qualified scientists. This bodes well for capacity building in the sector, and if the growth potential of the mānuka honey industry is realised, this would create new job opportunities in rural New Zealand, in particular its back country.

"All the partners involved in the programme are very pleased with progress to this point," says Neil.

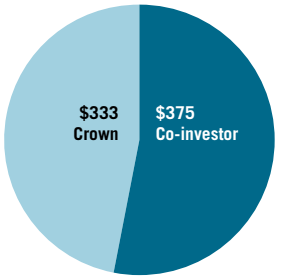
"However, we'll need more time to progress further before we can claim full success. We believe that there will be some further exciting announcements ahead which will enable us to meet the ambitious targets set by co-investors when the programme was first announced."

Overview of Primary Growth Partnership Investment

For 18 Contracted Programmes as at 18 July 2014

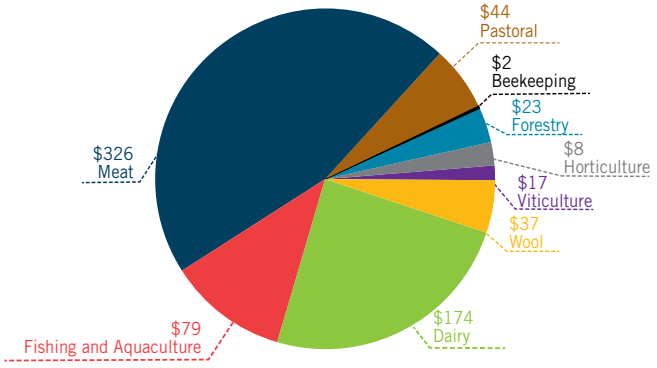
Sector	Programme Name and Co-investor	Total investment $ million	Sector total $ million	Estimated benefits $ million (per annum)
Wool	NZ Sheep Industry Transformation (NZSTX) NZ Merino	37	37	250
Dairy	Transforming the Dairy Value Chain Dairy NZ/Fonterra	170		2700
	New Dairy Products and Value Chains Whai Hua Limited Partnership	3	173	8.6
Fishing & Aquaculture	Shellfish – The Next Generation Shellfish Production and Technology NZ (SPATnz)	26		81
	Precision Seafood Harvesting Precision Seafood Harvesting (PSH)	53	79	43.6
Meat	FoodPlus – Redefining Meat Horizons ANZCO	87		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	325	1100
Pastoral	A New Vision for Pastoral Agriculture PGG Wrightson Seeds	15		200
	ClearView Innovations Ballance AgriNutrients	20		348
	Precision Application of Fertiliser in Hill Country Ravensdown Fertiliser Co-op Ltd	10	44	120
BeeKeeping	High Performance Manuka Plantations Manuka Research Partnership (NZ) Ltd (MRPL)	2	2	925
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)	3		–
	From Stump to Pump Phase 1 (feasibility study) Norske Skog Tasman Ltd (NSTL)/Z Energy	14	23	–
Viticulture	Lifestyle Wines New Zealand Winegrowers	17	17	285
Horticulture	NZ Avocados Go Global Avocado Industry Council	8	8	110
Total			708	

Crown/co-investor committed investment (in millions)



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

Total $708 million



Total government funding paid to programmes as at 30 June 2014 is $113.1 million.