



## Justine's column



This month Hon Jo Goodhew, Associate Minister for Primary Industries, marked the success of the first round of the Afforestation Grant Scheme with a tree planting at Banks Peninsula on 20 July. It was a sunny winter's day on the tree planting site which was attended by locals and

members from our MPI investment team. You can read a full account of the day in this edition of Agri-gate.

Last week we were able to confirm funding for a project that looks at reducing the impacts of the Giant Willow Aphid – a pest that affects the apiculture industry as bees collect honeydew from aphid-infected trees which in turn ruins the honey. The aphids can also place stress on willows, for example by reducing their ability to absorb water and nutrients, and attracting wasps. Through the Sustainable Farming Fund we have committed around \$425 000 over three years into the project. We look forward to seeing positive outcomes from the project.

On the subject of the Sustainable Farming Fund, the 2017/18 funding round opens from 1 August until 8 September for projects starting from 1 July 2017.

To apply, or find out more about the process, visit [www.mpi.govt.nz/sff](http://www.mpi.govt.nz/sff) or email [funding@mpi.govt.nz](mailto:funding@mpi.govt.nz)

We also have a profile of a Sustainable Farming Fund project currently underway in this edition of Agri-gate – check out the story about the *Tamarixia triozae* – a small wasp that could help fight the tomato potato psyllid which affects potato and tomato crops.

Operational changes to the way the Irrigation Acceleration Fund (IAF) is managed came into effect on 1 July. These changes mean that Crown Irrigation Investments Limited (CIIL) has taken over from MPI the management of grant funding that supports the development of regional-scale irrigation schemes in the early stages, while MPI is continuing to manage grant funding for community irrigation schemes and strategic water management studies. MPI, The Treasury and CIIL worked together to ensure a smooth transition.

Earlier this week, the Steepland Harvesting PGP programme ran a successful demonstration to Hon Jo Goodhew, media and industry of new forest harvesting technology in Nelson, aimed at further increasing safety in steep land harvesting operations. The new 'tele-operation' technology provides control, out of harm's way, for a purpose-built tracked feller-buncher forest harvester, from the safety of a purpose built operator cabin and console.



Andy Waters of Wood Contracting Nelson 2014 Ltd and Associate Minister for Primary Industries Hon Jo Goodhew.

Tele-operation enables trees to be felled and bunched by remote control, beyond line-of-sight, and we believe this is the first fully tele-operated tracked harvester purpose built for application on steep slopes anywhere in the world. Steepland Harvesting is a PGP programme between MPI and a consortium of forestry companies and contractors, led by Future Forests Research Ltd (FFR). You can see



Andy Waters of Wood Contracting Nelson 2014 Ltd at the helm of the tele-operated forest harvester.



Keith Raymond from Future Forests Research Limited opens the demonstration of the tele-operated forest harvester.



Russell Dale from Future Forests Research Limited and Associate Minister for Primary Industries Hon Jo Goodhew.

photos from the demonstration on this page, and visit our MPI channel on YouTube to see the technology in action.

The SPATnz PGP programme is enabling selective breeding of high-value Greenshell™ mussels to give mussel farmers and consumers the very best mussels that nature has to offer. The programme hopes to improve returns by breeding mussels with the characteristics demanded by the farmers, processors and consumers.

The progress review for the SPATnz PGP programme has been completed. It provides an independent view on how the programme is tracking towards its goals, and an opinion on future performance.

Overall the review is very positive, with reviewers noting that the programme has had a “successful start”, is “on-track and under budget” and that it has a “high calibre team, led by a

capable programme manager.” The reviewers concluded that the programme is “over and above business as usual”, and “would not have occurred on this scale and to this level of quality” without MPI investment.

The reviewers noted that the programme is very ambitious, covering everything from building hatchery infrastructure to the marketing of new products, and recommended that the programme gives top priority to the production of selectively-bred spat at commercial scale.

We have published a copy of the summary report of the progress review findings and recommendations on our [website](#).

On 1 November we’ll be holding our PGP annual meeting, conference and expo in Wellington. This year our conference is themed ‘New Zealand’s Food and Fibre Future. It’ll focus

on the products New Zealand needs to be exporting in 20 years’ time and, therefore, what research and development and thinking we need now in order to get there. Our Expo will be a showcase of all of our PGP programmes, where people can learn about the programmes and what they’re delivering, and sample some of the high-value food products being developed. Book the date in your diary now.

I hope you enjoy this edition of Agri-gate. If you have any ideas for future editions or feedback on Agri-gate, we’d be keen to hear from you at [funding@mpi.govt.nz](mailto:funding@mpi.govt.nz)

Justine Gilliland  
Director Investment Programmes



## From the Chair, PGP Investment Advisory Panel



There are a number of matters PGP programmes must include in their thinking, particularly as they approach their completion dates.

The first is that PGP programmes must have a clear plan about how longer-term outcomes will be delivered, beyond the life of their programmes. All programme partners must

understand what the drivers are, and ensure they are well positioned and committed towards delivering these. Part of this is about taking a step back and looking at the programme as a whole, not simply focussing on current programme work plans.

One of the other matters programmes must consider is that aspects of programmes can change. For example, the people involved with a programme may change considerably between start and completion and changes in the economic environment might result in opportunities or challenges.

Programmes must be able to understand what these are and what the affects will be. They must also understand what is needed to remain on track. An obvious question to ask or reflect on is “What do we need to do to ensure our programme continues on the right trajectory?”

One of the topics being discussed by the PGP Investment Advisory Panel is how the PGP as a whole can attract further investment and interest in future PGP programmes.

While there is \$727 million of committed investment across the 19 current and 2 completed PGP programmes, and possible new programmes in the PGP pipeline, MPI is able to invest in additional programmes. As a panel, we see a current challenge as reaching those who may have good ideas for the primary industries, but not necessarily realise how PGP may be able to assist in bringing those ideas into reality.

As such, I'd like to encourage you to continue sharing information about the PGP, your programmes and your programme achievements through your networks.

John Parker  
Chair of the IAP

## PGP Spotlight

# Gathering insights and driving improvements through data

Businesses are complex and people are increasingly busy. Deciding where to put time and effort to make those businesses successful needs careful and considered thought. This is no different for primary industry businesses.

Data is being used throughout the primary industries in a number of ways, like driving farm productivity and profitability, and enabling cutting-edge research and development. This is one reason why data and data sharing is a key component across a number of Primary Growth Partnership (PGP) programmes.

Another reason is that data is often needed to drive and deliver innovation. PGP programmes are capturing a wealth of data – massive, complex data sets that are enabling programmes to see patterns and insights, validate work and enable cutting-edge innovation.

### Safe and sound data

“Farmers, growers, meat processors and others are constantly exchanging information about their businesses with multiple parties including accountants and business and farming advisors,” says Ministry for Primary Industries (MPI) PGP Manager Steve Penno.

“There are 19 PGP programmes currently underway across the primary industries, many of which are working together on a range of data initiatives. This makes good sense as they're working to achieve similar goals – ensuring the integrity, security and usability of data, and turning that data into meaningful outcomes.”

A good example is some of the work led by Transforming

the Dairy Value Chain, the Red Meat Profit Partnership (RMPP) and FarmIQ – PGP programmes that, between them, are delivering three collaborative industry data initiatives, with support from agricultural software development company Rezare Systems.

They've developed the ‘Farm Data Code of Practice’ for organisations involved in collecting and storing farm and other data.

“This Code of Practice helps the organisations that collect and store data to demonstrate to farmers and others how it's processed and shared and how it's safeguarded,” says RMPP General Manager Michael Smith.

“This in turn gives farmers peace of mind that their data is safe, is being managed appropriately, and they know how it's being shared.”

The three PGP programmes have also developed a set of common data standards, so data can be standardised and shared across multiple systems.

“We've also developed a common vocabulary for data by defining and agreeing industry – accepted definitions of terms, formats and values for farm information,” says Andrew Fletcher, Programme Manager for Transforming the Dairy Value Chain.

“There are a lot of systems in-use across the industry, so having some commonality for all of the data being collected will certainly help. For example, it'll make it easier for companies to integrate different systems, and it'll also mean that farmers and others won't need to re-enter data into multiple systems.”

The final initiative is about linking data, aptly named Data Linker. This is an industry tool that makes authorised data transfer secure and easy, by enabling data providers to identify data sets to share. Other data applications and organisations can register to receive these for farmer clients.

“Before any data is shared, farmers are first prompted by Data Linker for permission – farmers can revoke their permission at any time,” says Michael.

“Through Data Linker, organisations that request, use and send data must follow a set of standard protocols that make multiple data connections possible, and in a way that’s seamless, secure and efficient.

“In practice, this is about supporting product owners, data analysts, developers and others who build new tools that farmers can use to share data across a number of systems,” he says.

“In the world of open data, this makes good sense.”

Data is also being used to drive improvements in productivity and product quality by connecting different parts of the value chain. Take for example the Farm<sup>IQ</sup> PGP programme, which is establishing an integrated value chain for red meat driven by consumer demand. Farm<sup>IQ</sup> has gone to market with the Farm<sup>IQ</sup> System – a cloud-based farm information system that connects farmers more directly with their processors and consumers.

“This is helping farmers to drive farm performance and lift the value received at the farm gate,” says Farm<sup>IQ</sup> Chief Executive Collier Isaacs.

“The interactive farm database, developed by Fronde, enables farmers to monitor and analyse their farm operation, generating more robust information to support their decision-making. It’s got new ways for them to capture information, including a phone app, and there are ready-made reports to make sense of the data.”

The Farm<sup>IQ</sup> software is integrated with Cashmanager Rural and Farmax, and Farm<sup>IQ</sup> is working on links with a number of other systems. This reduces the number of times farmers have to enter the same data, and they also can more easily build a profile of their business from multiple perspectives all in one place.

“A key feature of the Farm<sup>IQ</sup> System is allowing users to incorporate environmental and health and safety planning in conjunction with other business planning tools,” says Collier.

“Farm<sup>IQ</sup> is bringing the parts of the value chain closer together. Farmers are starting to receive the information they require to produce animals that meet consumer preferences and, therefore, they’re receiving payments based on meat quality.

“Consumers are being offered premium-branded red meat that consistently meets their eating quality preferences. And the processing industry is beginning to build approaches and relationships based on delivering value.”

### Big data, big gains

PGP programmes continue to collect massive amounts of data – so much in fact that some are needing extra computing power to crunch the numbers.

“The combination of new sensor technologies and cheap access to immense computing power is creating new opportunities in the primary industries,” says Steve Penno. “Using richer information to inform business decisions will enable big improvements in performance – just as it has in other industries such as manufacturing. Precision agriculture is a great example of this.”

This wealth of data, often referred to as ‘Big Data’, is being used by PGP programmes to achieve massive gains for the industry.

For example LIC is leading gene-sequencing research – in other words determining the sequence of DNA in an

organism’s genome – to provide genetic information to help improve the national dairy herd. This work is a key part of the Transforming the Dairy Value Chain PGP programme.

“We’re collecting a massive amount of data. Our work also involves complex models, algorithms, statistical applications and other mathematics which requires some serious computing grunt,” says LIC Chief Scientist Richard Spelman.

LIC turned to New Zealand eScience Infrastructure (NeSI), based at Auckland University. NeSI is a government organisation that gives researchers access to New Zealand’s most powerful cluster of computers.

“This has enabled LIC to make a number of important genetic discoveries that improve the dairy industry’s knowledge of the underlying biological mechanisms behind important dairy cattle traits,” says Richard.

“These include discovering new genetic variations that can affect a cow’s ability to carry a calf to full term and a mutation in the prolactin hormone that impacts milk production, coat length, and also the animal’s ability to sweat and therefore cope with heat.”

This work has enabled LIC to screen bulls and undertake a breeding programme aimed producing cows with greater heat tolerance.

Another PGP programme, Ravensdown’s Pioneering to Precision, is collecting unprecedented levels of data about the nutrient status of hill country farms.

The programme seeks to improve fertiliser practice on hill country farms through remote sensing of the nutrient status of farm land and develop precision application of fertiliser from that, so the right amount of fertiliser is applied at the right place, and at the right time.

“We’re capturing a significant amount of data using hyperspectral camera technology, used by NASA, to detect

a range of light spectrums invisible to the naked eye,” says Ravensdown General Manager of Innovation and Strategy Mike Manning.

“These light spectrums provide a wealth of information about the vegetation on farms, including nutrients, which we are using to develop an understanding of how to convert remote-sensed data into a precision fertiliser application system.

“We’ve collected terabytes of data and the early results are looking promising. The data is well correlated and at a very good resolution – down to the level of one square metre, which will enable farmers to plan the application of fertiliser in a much more precise manner.”

“Data is a core component of many of our PGP programmes,” says Steve Penno.

“The advent of big data will have a significant impact on the primary industries. We expect that it will drive significant gains in productivity and profitability.

“There’s a lot we do know already, but there’s a wealth of data information and understand yet to be discovered, which is really exciting.”



## New wasp set to attack crop pest

This month, the Environmental Protection Authority approved the release of parasitic wasp (*Tamarixia Triozae*) which may be key to controlling the tomato potato psyllid. The wasp originates from Mexico and the United States. The release and implementation project is supported by MPI through the Sustainable Farming Fund.

Horticulture New Zealand have been working towards having the wasp released in New Zealand. Its Sustainable Farming Fund project solely focuses on identifying release strategies for the wasp at trial sites and monitoring those over three seasons.

The project is also supported by Potatoes New Zealand, Tomatoes NZ, Vegetables New Zealand, the NZ Tamarillo Growers Association and Heinz-Wattie's NZ supporting the view the tomato potato psyllid is a devastating pest affecting a range of horticulture industries.

The project is in its first month, so the EPA announcement was a pleasing start.

In April this year, MPI announced \$6.9 million in funding towards 25 projects through the Sustainable Farming Fund, starting from 1 July.

Over the past 16 years the SFF has invested over \$125 million in community-led projects benefiting New Zealand's primary industries.



*Tamarixia triozae* [Source: Plant & Food Research Ltd]



Tomato potato psyllids that can devastate potato and tomato crops.



## Forestry planting scheme now underway

Associate Minister for Primary Industries Jo Goodhew marked the success of the first round of the Afforestation Grant Scheme, by planting a *Eucalyptus Globoidea* tree at Akaroa on the Banks Peninsula on 20 July.

The re-launch of the scheme last year will see \$3.77 million invested in 2 900ha of new forest planted this year through 81 separate grants.

The new AGS builds on the success of the previous scheme and over the course of five years will see more than 15,000ha of new forest planted across the country

The AGS is an excellent way for people to make better use of low quality land by planting a wide range of tree species. The benefits of increased afforestation are significant and wide-ranging; not only does it contribute to New Zealand's overall climate change contribution, but it can also play a significant role in reducing soil erosion, improving water quality and mitigating extreme weather effects.

For more information on the AGS, visit [www.mpi.govt.nz/ags](http://www.mpi.govt.nz/ags)



Associate Minister for Primary Industries Hon Jo Goodhew and grantee Roger Beattie on his Ataahua Farm where the tree planting took place.