Agri-Gate

Latest news about MPI's Investment Programmes

Ministry for Primary Industries
Manatū Ahu Matua

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Steve's desk

Welcome to this edition of Agri-gate.

A recent highlight was the Grow 2019 Agri Summit. This event, held in Christchurch, was a great opportunity for a wide-ranging group of people to come together to consider the challenges and opportunities facing the food and fibre industries. It provided a forum to explore these and other areas of common interest.

Around 530 people turned out for Grow 2019, which shows the importance people place on the food and fibre industries, and the need to get ahead of the game.

The Ministry for Primary Industries (MPI) was the Foundation Partner for the summit. We had a Sustainable Food & Fibre Futures (SFF Futures) stand at the event for delegates to talk to us about the programme and how to apply for investment. We also featured a new video about SFF Futures which you can check out at **sff-futures.mpi.govt.nz**.

You'll find more coverage of Grow 2019 in this edition of Agri-gate, including some photos from the day. I'd like to thank everyone involved in ensuring this summit was a success and to all of those who attended.

Congratulations to Ballance Agri-Nutrients, MPI's partner in the Clearview Innovations programme, for their win at the South Island Agricultural Field Days at Kirwee in March. They received the Smart Farming Award for MitAgator™ – a world-first software tool developed by the programme that provides farmers with an overview of farm risk areas and mitigation options for phosphorus, nitrogen, *E. coli* and sediment. MitAgator™ offers more control and greater ability for farmers to farm within environmental limits.

Screenshot from our SFF Futures video, available at **sff-futures.mpi.govt.nz**

Clearview Innovations formally wrapped up in October 2018. The programme has prepared a summary of its final report, which is available on the **Clearview Innovations** page of the MPI website. It provides a great summary of the innovations delivered by the programme and the long-term benefits it's enabling for New Zealand.

In this edition of Agri-gate we also feature:

- A short recap of a recent symposium organised by the Hāpi – Brewing Success programme led by Hāpi Research Ltd. The symposium covered the latest hop research, craft beer brewing techniques, and market and taste trends.
- Coverage of the NZ Agricultural Climate Change Conference in Palmerston North on 8–9 April.
- A new programme announced in March involving Forest Growers Research Ltd, a consortium of forest owners and forestry machinery manufacturers, and MPI called Te Mahi Ngahere I te Ao Hurihuri – Forestry Work in the Modern Age.
- A biocontrol trial to tackle horehound, a noxious weed estimated to cost New Zealand dryland farmers more than $6.85 million every year.

I hope you enjoy this edition of Agri-gate.

Steve Penno
Director Investment Programmes

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John Parker's column

Welcome to this edition of Agri-gate.

In some of my conversations with those involved in the primary industries, a common question I get asked is whether Sustainable Food & Fibre Futures (SFF Futures) is open for business and accepting applications for investment. My answer is always yes.

SFF Futures opened for applications in late October 2018. Since that time there has been steady interest and enquiries, and the pipeline of potential projects is building.

If you have an idea for a project that could, for example, deliver benefits for rural communities or good environmental outcomes, develop new value-add products or boost the capability of the primary industries workforce, it could be eligible for SFF Futures investment.

I would encourage you to visit **sff-futures.mpi.govt.nz**. It has a number of resources including a **video** to help you understand SFF Futures and **applicant guidelines** to help you through the application process, including investment criteria and tips.

There is a process in place to ensure, amongst other things, prudent use of public funding and ensuring the project has the best possible opportunity for success. The process differs depending on the type and size of the project.

For example, a small, less than $100,000, community-led project would move through the application process and, having met criteria for investment, get off the line quicker, than a larger, multi-million dollar innovation programme.

Having viewed the material at sff-futures.mpi.govt.nz, I'd then encourage you to have a conversation with the team at the Ministry for Primary Industries (MPI) to get an early steer on whether your idea is something that could gain SFF Futures investment. Contact details are available at **sff-futures.mpi.govt.nz**.

John Parker
Chair, Investment Advisory Panel

Craft beer industry converges on Te Papa

Two hundred local and international craft brewing companies, scientists and hop breeders converged on Te Papa on 6 April for Hāpi Symposium 2019.

The aim of the symposium was to boost knowledge and better inform decision-making of the local craft hop and brewing industries. It was the opportunity to share emerging hop research, brewing techniques, and market and taste trends.

The symposium was organised by Hāpi – Brewing Success, a seven-year programme launched in October 2018 between Hāpi Research Ltd and the Ministry for Primary Industries (MPI). Hāpi Research Ltd is a joint venture between Garage Project, a leading Wellington craft brewer, and Freestyle Farms, a leading Nelson hop farm.

"As well as having some smart craft brewers, Aotearoa is blessed with areas boasting excellent land characteristics for growing premium hops, of which around 80 percent is currently exported," says MPI Investment Manager Guy Tapley. "The symposium provided the opportunity to get like-minded people together to help lift our hop growing and craft beer industries."

The symposium included presentations by international craft brewers, industry thought-leaders and academic researchers, and featured panel discussions and networking opportunities.

The Hāpi – Brewing Success programme will help expand the New Zealand hop industry's scope and regional footprint, and maximise value for our hop growers and craft brewers.

Hāpi – Brewing Success aims to help New Zealand's hop and craft beer industries achieve an additional annual economic benefit of $170 million by 2027.

More details on Hāpi – Brewing Success can be found at **www.mpi.govt.nz**.

Garage Project Co-founder Pete Gillespie at the Hāpi Symposium 2019.

Grow 2019 Agri Summit

Around 530 people packed into Christchurch's Horncastle Arena on 10 and 11 April for the inaugural Grow 2019 Agri Summit.

The aim of Grow 2019 was to help ensure New Zealand's food and fibre sector is innovative, sustainable, collaborative, and profitable, now and into the future.

Conference delegates heard from more than 30 national and international speakers about the unprecedented ways our world is changing, along with possible ways to tackle challenges and take advantage of the opportunities they present.

The summit included interactive sessions and workshops to tackle some of the huge questions for the future of our food and fibre sectors in New Zealand, such as:

- How is technology going to transform the way we grow and sell? Every piece of the supply chain is up for disruption.
- How is the market changing? Consumer tastes are evolving, and so are their expectations of quality, transparency, and social responsibility. What business models should we be exploring? How can we focus less on volume and more on value?
- How is climate change going to affect our primary sector? It's not just changing weather – it's changing government policy and customer expectations.
- What does our social license to operate look like going forward? How can we shift away from the unhelpful friction between urban and rural? What is our actual responsibility when it comes to land use, or clean waterways – and who should pay?

The Ministry for Primary Industries (MPI) was Foundation Partner for the summit.

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MPI's Sustainable Food & Fibre Futures (SFF Futures) stand at Grow 2019.

Steve Penno, MPI Director Investment Programmes, says, "The world is changing in unprecedented ways. Our involvement in Grow 2019 is part of our contribution towards helping ensure Aotearoa's primary sector stays ahead of the game.

"We partnered with Boma New Zealand on Grow 2019 to bring together local wisdom, insight and expertise with global trends and business practices to make sure our food and fibre industry is well prepared for what's to come.

"The Grow 2019 Agri Summit clearly aligns with the goals of the Sustainable Food & Fibre Futures programme that we launched last year."

Boma New Zealand CEO and Grow 2019 creator and curator Kaila Colbin says the two-day summit was an opportunity to face some of the thorniest issues impacting the primary industries – and, more importantly, understand what to do about them through practical, tangible action.

"Our work is about being more intentional and intelligent about the future. And you can't talk about New Zealand's future without talking about our primary industries," says Kaila.

"Food and fibre play a critical role in our national identity, our economy, and our way of life as New Zealanders. A strength of the summit was providing the forum to bring together farmers, producers, distributors, researchers, government, and people from right across the supply chain.

"The high level of interest in Grow 2019 was testament to the importance placed on ensuring these vital industries are sustainable and successful in the long-term."

Spring Sheep Milk Co CEO Scottie Chapman, MPI Principal Adviser Natasha Telles D'Costa and MPI Investment Manager Dan Schofield at Grow 2019.

Boma New Zealand CEO Kaila Colbin during Day 2 of the Grow 2019.

Minister of Agriculture Hon Damien O'Connor opens Grow 2019.

MPI Director-General Ray Smith speaking at Grow 2019.

MC Sarah Perriam talks to the audience at Grow 2019.

Experts gather to talk agricultural climate change

The ability of New Zealand's primary industries to successfully adapt to climate change is vital to securing the country's economic resilience.

This was a key theme discussed at the NZ Agricultural Climate Change Conference (NZACCC) in Palmerston North on 8 and 9 April.

The NZACCC brought together scientists, government policy advisors, farmers and industry leaders to discuss the theme of meeting the challenges of climate change with respect to agriculture.

The conference was organised by the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC), in partnership with the Ministry for Primary Industries (MPI) and the Pastoral Greenhouse Gas Research Consortium (PGgRc).

A total of 270 registrations were received for the two-day event, which the organisers believe reflects the increasing importance now being placed on climate change mitigation in farming.

Presentations were given by New Zealand science, industry and policy leaders, drawing on published scientific work and the research projects being conducted by the NZAGRC-PGgRc and by MPI's Sustainable Land Management and Climate Change Research Programme (SLMACC).

Minister of Agriculture Hon Damien O'Connor opened day two of the conference with a reference to his West Coast-Tasman electorate, saying people there now appreciated the impact of climate change more as a result of recent severe weather events.

Among other things, Minister O'Connor recognised the good environmental stewardship that many farms throughout the country have already implemented, while emphasising the need for farmers to access the latest science and technology to ensure rural communities can continue to thrive.

Looking ahead, the Minister said that as the world changes, overseas countries would need New Zealand produce and might have to pay more for it, but would do so knowing our food supplies came from an ethical and sustainable source.

Presentations at the NZACCC included the release of a Nielsen survey on how farmers' understanding of climate change and its impacts have changed over the last decade and how farmers are now viewing greenhouse gas mitigation efforts in agriculture.

Other presentations raised the visibility and scope of climate change mitigation efforts include discussion of the Climate Change Adaptation Technical Working Group's recommendations on adapting to climate change, and a session on "what farmers can do now and what's in the pipeline".

Presentations from the conference are available on the NZAGRC website: **nzagrc.org.nz**.

Left: Minister of Agriculture Hon Damien O'Connor addresses delegates at the NZ Agricultural Climate Change Conference.

Below: Ministry for Primary Industries Departmental Science Adviser John Roche speaks at the NZ Agricultural Climate Change Conference.

Boosting forest harvesting productivity, safety and skills focus of new programme

Boosting forest productivity, technology, safety and skills and reducing environmental impacts are at the heart of a new programme announced on 14 March 2019.

Te Mahi Ngahere I te Ao Hurihuri – Forestry Work in the Modern Age is a new $29.3 million, 7-year collaboration between Forest Growers Research Ltd (FGR), a consortium of forest owners and forestry machinery manufacturers, and the Ministry for Primary Industries (MPI).

It has its sights on developing a new in-forest harvesting and log sorting system specific to New Zealand's forests, using automation and robotics – a first for New Zealand.

"Technology is increasingly important in improving safety, skills and productivity, and protecting the environment," says FGR Chief Executive Russell Dale.

"Our industry relies on people, but labour shortages and rising costs in harvesting forests and transporting logs are holding the industry back and reducing our ability to grow."

"Our new programme with MPI aims to automate the tasks after felling that have traditionally required substantial labour. These include log branding, log sorting and scaling.

"We want to boost the efficiency of forestry operations, take people away from hazardous harvesting roles, and give them the skills they need for the future."

MPI's Director Investment Programmes Steve Penno says at the heart of the new programme is creating sustainable benefits for New Zealand, by delivering economic, environmental and social outcomes.

"This new programme brings key industry players together to tackle common challenges facing our forestry industry, and will deliver solutions that keep people safe, and boost their skills and capability," says Mr Penno.

"It'll also help to bridge the gap between demand for our logs and the shortfall in labour. All of these are essential for a thriving forestry industry.

"The social, environmental, and economic outcomes expected under the programme are at the core of the Sustainable Food & Fibre Futures programme we launched last year."

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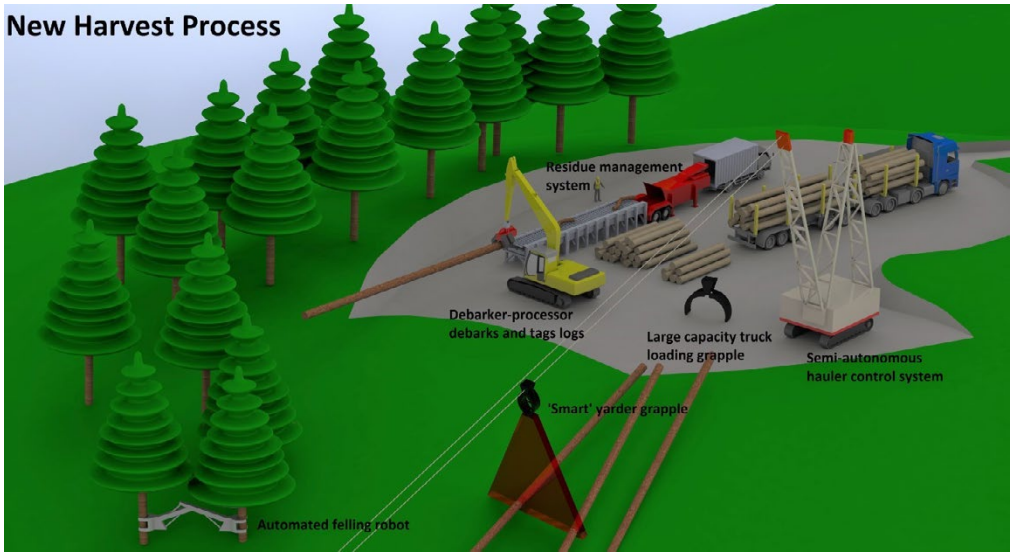

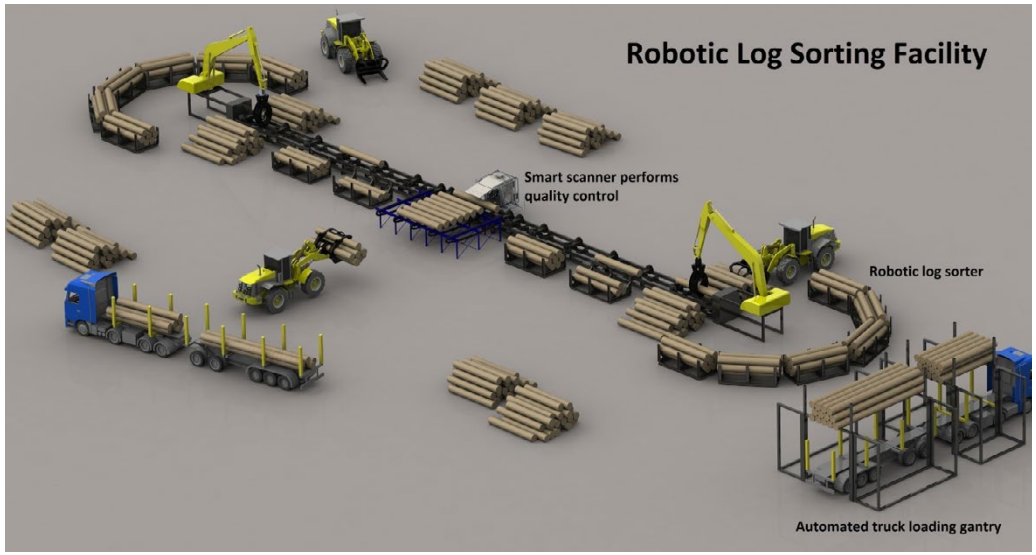

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FGR's Harvesting Programme Manager Keith Raymond says as harvesting shifts to forests planted in the 90s and onto steeper land in smaller, more isolated holdings, the industry faces the challenge of reducing costs and improving efficiency to maintain our international competitiveness.

"Current technology and processes mean logs are handled between eight and twelve times before they're loaded for export. This adds time and cost.

"Unless we make a fundamental shift in our forest harvesting operations, New Zealand may have difficulty meeting demand and remaining competitive. We believe our programme can deliver this shift.

"It will also help to maintain good momentum in forestry innovations and keep New Zealand at the forefront."

MPI and the industry partners are finalising the contract for the programme, which is expected to deliver operational cost savings across industry of $27.5 million per annum by 2025, increasing to $76.8 million per annum by 2031.

Programme at a glance

Forest Growers Research Ltd & Forest Value Chain Consortium **$17.6 m**

Ministry for Primary Industries **$11.7 m**

4 work streams

environmental benefits

increase harvesting

- MPI is investing up to $11.7 million over the life of Te Mahi Ngahere I te Ao Hurihuri – Forestry Work in the Modern Age, and the industry co-investors, Forest Growers Research Ltd and the Forest Value Chain Consortium, are investing around $17.6 million.
- The programme has four work streams:
  - developing new, portable forest harvesting and logistics products from design through to prototype development and testing, including a new centralised log sorting hub.
  - improving forestry residue management and debarking.
  - identifying the specialist skills and knowledge required to operate the new products, and provide training and support for forest workers.
  - commercialising and deploying the programme's new systems and processes.
- Environmental benefits will include better forestry residue management and the associated reduction in forest harvesting debris, delivering water quality management benefits, and using less chemical fumigation through introducing onsite debarking, and fewer earthworks.
- The programme will potentially enable harvesting of an additional 1.65 million cubic metres of wood that would otherwise be uneconomic to harvest, valued at $190 million per annum.
- Te Mahi Ngahere I te Ao Hurihuri – Forestry Work in the Modern Age follows the successful Steepland Harvesting programme led by Forest Growers' Research, which acted as a catalyst for a new wave of innovation in harvesting on steep land.
- That programme delivered a range of new harvesting technologies for felling and extraction on steep land. It made significant headway towards removing workers from the hazardous job of harvesting on steep land.
- Uptake of technology to mechanise felling and log extraction has resulted in reduced accidents in these high-risk areas.
- New Zealand is now recognised as a world leader in harvesting innovations, and New Zealand companies are successfully exporting the new technology to North and South America.

New moths take on task of tackling troublesome horehound

Two new moths have been released into the wild as biocontrol agents to tackle horehound *(Marrubium vulgare)*, a noxious weed estimated to cost New Zealand dryland sheep farmers at least $6.85 million every year.

Importing the new moths from Australia was made possible with a grant of $285,450 from the Ministry for Primary Industries' Sustainable Farming Fund, along with co-funding of $224,180 from the project partners Manaaki Whenua – Landcare Research and the Horehound Biocontrol Group.

The two moths will work together to control horehound by attacking different parts of the weed. The plume moth *(Wheeleria spilodactylus)* attacks the horehound vegetation above the ground, while the clearwing moth *(Chamaesphecia mysiniformis)* attacks the roots.

Horehound is mostly found on hill country farms, where it affects the quality of wool by producing hooked burrs (seed capsules) that stick to wool. It can also taint meat if sheep graze in areas with an abundance of horehound. These lower profit margins for farmers.

Larger horehound plants can produce up to 20,000 seeds each per year, and the seeds stay viable in the ground for seven years or more. Some farmers are retiring areas of land as high horehound infestations mean they're no longer suitable for grazing. Horehound is also troublesome in lucerne crops. Heavy-duty herbicides are needed to control horehound, but this also affects the lucerne crops.

The moths were released with permission from the Environmental Protection Authority (EPA), and following public consultation, into regions including Marlborough, North Canterbury and the Mackenzie District.

Landowner and Chair of the Horehound Biocontrol Group, Gavin Loxton, has been involved with the project from the start. He's taken a personal interest in the project.

"Once we started to gather information about the extent of horehound in New Zealand, we realised that we had underestimated its true distribution," says Gavin.

"We're hopeful the release of the two moths will, over time, make a serious dent in reducing horehound. The moths were released into Australia in 1994, so we've been able to build on their experience."

Manaaki Whenua – Landcare Research's Ronny Groenteman is leading the scientific aspects of the project for the Horehound Biocontrol Group.

"Clearwing moths require specific conditions, like high temperatures during the spring and summer months, to mate," says Ronny. "The moths also require sheltered sites, as they rely on pheromones to attract mates and these are easily diluted in the wind.

"Initially we were uncertain if we'd be able to create the right conditions for the clearwing moths inside the containment facility. Fortunately, the moths responded well to the natural light available in the facility, and started reproducing prolifically.

"We learned that gluing the eggs to the top of a toothpick and sticking them onto cut horehound stems allow the newly hatched larvae to crawl down on to the cut stems, eventually reaching the roots – a winning formula."

Once the moth has successfully established there's no need to repeat the fiddly egg-gluing exercise, since infected root material can be transferred to other farms.

"The plume moth is easier to rear in containment, and much more straightforward to release in the field," says Ronny.

"Our Australian colleagues predict the plume moth will easily establish anywhere horehound is present in New Zealand. In Australia establishment was successful wherever annual rainfall was above 450 mm, which describes most of the horehound-infested land in New Zealand.

Gavin says most landowners are very receptive to the idea of biocontrol and the team hopes the programme will be at least as successful as other biocontrol projects, for example one that focuses on ragwort *(Jacobaea vulgaris)*. Wild horehound, is harvested for medicinal purposes, and the team is committed to working with interested stakeholders to develop techniques that protect some horehound plants from the moths.

The team is currently waiting to see if the moths have established.

"The plume moth has two or three generations per year, so we're hoping to find some sign of them next spring. The clearwing moth, which has only one generation per year, will take a bit longer," says Gavin.

"Together, the two moths will hopefully offer good control of horehound and expand into areas not able to be managed using other control methods."

Horehound plume moth larvae ready for release (photo courtesy of Manaaki Whenua Landcare Research).