

INSIDE DAIRY

Your levy in action

Unified voice

Speaking up for
Horizons farmers

STEPS FOR DRY-OFF SUCCESS



FARMING INSIDE

Prisoners gaining
farm-ready skills

A LIGHTER FOOTPRINT

Improving sustainability and profit

DairyNZ 



OVER THE FENCE...

Internationally, Kiwi dairy farmers stack up well as some of the most sustainable dairy producers in the world.

The emissions created from every glass of New Zealand milk are less than half the global average. It's something we should all be proud of. As a sector, we've come a long way on the environmental journey and that work is only just beginning to realise its value.

DairyNZ plays a key part in supporting farmers with the advice, the science and the farm systems to secure the sector's future. Part of achieving that is through a better DairyNZ.

We have established a new DairyNZ strategy to ensure we're making a real difference for our farmers. This will help shape our focus on the big issues, ensure our services are relevant and accessible, and that you're getting what you need from us.

The strategy has three core promises to deliver a better future for our farmers: better solutions through science, shaping a better future, and supporting better farming. It starts this year, which is also a big one for climate change issues. DairyNZ is working closely on the issue to support you to reduce emissions and, because there is no silver bullet, we are working to ensure any Government legislation is achievable on-farm, while maintaining a profitable business.

The science tells us 11,000 dairy farms collectively reducing their footprint will have an impact.

Shifting day-to-day practices to reduce our footprint even further is a journey. Sustainable farm systems are important for us to continue as world leaders in milk production, because consumers want sustainably produced food.

This issue of *Inside Dairy* looks at our environmental journey – how farmers are reducing nitrogen loss, what our dairy supply companies think, and DairyNZ's own environmental investment of the levy over the past two decades.

This will be a big year for our sector as we continue our good work. To learn more about how to lift profit while contributing to better water quality and reducing greenhouse gas emissions, check out our Step Change programme at dairynz.co.nz/step-change

Tim Mackle
Chief executive
DairyNZ

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ISSN 1179-4909

DNZ03-219

Inside Dairy is the official magazine of DairyNZ Ltd. It is circulated among all New Zealand dairy farmers, and sector organisations and professionals.

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Having maintained profit while reducing their farming footprint, the Willsden Farm team is ready to shift up another gear.



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Breathing rate is the earliest indicator of heat stress. More than 10 breaths in 10 seconds indicates she's hot enough to impact feed intake and production. Sign up for regional weekly heat stress risk updates dairynz.co.nz/heatstress



2. Smart water use

Save water on hot days by pre-wetting your yards with a hose or sprinkler to prevent dung sticking. You'll end up using less water at washdown. Get more water efficiency tips at dairynz.co.nz/wateruse

3. What kind of boss are you?

Are you a sparkling example, or do you have some areas to work on? Either way, take the good boss quiz to find out – dairynz.co.nz/goodboss



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4. Repro review

What was your 6-week in-calf rate? How did it compare to last season? Now's the time to review the methods you used for heat detection, and the outcomes. It's not too early to start planning for next season. Involve your vet, advisers, and farm team in the review process – dairynz.co.nz/improving-repro

5. Your herd's future

Ensure your heifers are weighed regularly to keep them on track for liveweight targets at mating and calving. Visit them often if you can too – it's important to visualise their progress yourself. Get more advice at dairynz.co.nz/heifers



We appreciate your feedback

Email insidedairy@dairynz.co.nz or call us on 0800 4 DairyNZ (0800 4 324 7969).



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Environmental work is delivering

New research proves farmers' environmental actions are making a difference, writes DairyNZ chief executive Tim Mackle.



Farmers have undertaken a huge amount of work and investment to improve environmental outcomes over the last 20 years. Excluding stock from waterways, improving effluent and irrigation practices – all are standard procedures on farms today. Many steps were taken voluntarily, well ahead of regulations.

We've always believed this work contributed to better water quality, but the exact benefits have been difficult to quantify scientifically. One of the challenges has been the significant expansion of dairy land and contaminant footprint, which has offset the environmental benefits of individual farmers' work. Research by Our Land and Water National Science Challenge, contributed to by DairyNZ, shows your environmental work is having an impact. It also shows our water quality would have been in a far worse state if that work hadn't been done.

Today, New Zealand rivers have better water quality than if farmers had not adopted better environmental practices. In fact, 45% more nitrogen and 98% more phosphorus from dairy land would have entered our waterways over the years studied in the research – 1995 to 2015 – if farmers hadn't done this work.

We know there's been a lot of hard work and commitment by farmers nationwide to reduce their footprint. It's great news to have data showing it's working.

The Sustainable Dairying Water Accord, one of New Zealand's

largest voluntary environmental efforts, has been pivotal in making these improvements.

Modelling shows if all known and developing mitigations were implemented by all dairy, sheep and beef farmers by 2035, potential nitrogen and phosphorus loads may decrease by one-third, and sediment by two-thirds, compared to 2015. For many catchments, this will be enough to meet current water quality objectives. The practical and economic feasibility stills needs to be tested across different scales.

This is important because many of our catchments don't meet the new national bottom lines for water quality. Over the next five years, all regional councils need to work with their communities to establish regional plans to meet the new regulations.

So, we're not there yet, but we're well on our way.

We're embarking on a similar journey for climate change. As a sector, we are committed to delivering on He Waka Eke Noa, to demonstrate what can be achieved through sector-led initiatives.

A lot of work to protect waterways – such as changing the way we use nitrogen – also helps to reduce emissions.

DairyNZ knows how important it is for us to move on climate change, but at a pace that doesn't leave farmers, families and communities behind. It's important the Government supports farmers to make change over a generation.

"We're not there yet, but we're well on our way."

CONSUMERS EYE DAIRY'S IMPACT



Increasingly, dairying's environmental efforts count towards consumer choice in local and global markets. Here's what Synlait, Miraka and Fonterra have to say.

Synlait

► Hamish Reid, Director, Sustainability and Brand

"We chose to embed sustainability into our business, to set tough targets and galvanise our team for these reasons:

- Our industry faces environmental and social challenges, so transforming the way we produce, process and distribute food is critical.
- The world is waking up to these challenges and demanding that we step up. We're supporting our staff, suppliers, customers, communities and investors to operate in a more sustainable manner.
- Our customers are buying more from us and paying more for the food we produce based upon our actions.

By placing equal importance upon people, planet and profit, we can all thrive in perpetuity."

Miraka

► Murray Hemi, Kaitiaki o Te Ara Miraka

"Sustainability? I think we need to go further. In Miraka's case, our focus is on restoration, regeneration, renewal:

- Restoration of Miraka's relationships with urban communities.
- Regeneration of our own natural environment.
- Renewal on-farm so Miraka farmers make powerful decisions for the right reasons.

Why go further? At Miraka, we have a saying about our farm supply whānau: '100 farms, 100 years'. To endure, Miraka needs a resilient milk supply base, a strong rural community, and a vibrant healthy environment now and for the future.

"To achieve this, we need to take everyone with us: our teams, our farm whānau, our community, and our customers. Is this approach great for business? Only if you want to be around for 100 years! Kia mauriora tatau."

Fonterra

► Richard Allen, Group Director, Farm Source

"Fonterra has global customers whose incentive plans include reducing the carbon footprint of their value chain. Nestlé has a target for net zero emissions by 2050, and Starbucks aims to reduce carbon emissions by 50% by 2030.

"From grass to glass, sustainability is at the heart of our strategy. Over a third of our farms now have farm environment plans, greenhouse gas emissions reports are available to all, we're not installing any new coal boilers at our factories and in 2020, in collaboration with Foodstuffs, we also launched New Zealand's first carbon zero milk.

"We know New Zealand milk is already famed for its natural pasture-grown goodness. By continuing to innovate and evolve our sustainability strategy, we're ensuring Fonterra maintains its strong position as a preferred source of dairy nutrition at home and around the world."



Dairy farmers and milk production companies are well aware of the role sustainability plays in the sector's future.

Getting farmers' voices heard

Bringing farmers and council planners together can be tough. Here's how environmental groups in Otago are making it happen with help from DairyNZ and others.

"The farmer's voice is the number one requirement for success. You've got to have their input, or you don't have any ownership."

That's the firm view of Lloyd McCall, who has been working with local water and river care groups to ensure their views are heard by the Otago Regional Council, most recently in relation to Plan Change 8.

Refining region-specific rules

"Plan Change 8 focuses mainly on effluent management, intensive winter grazing and stock exclusion from waterways," explains Lloyd. "A key concern for us was the acceptance of clay

ponds, plus issues with the five-metre setback rule – most dairy farmers here have already fenced their waterways.

"The rules around intensive winter grazing and forage crops also needed regional adjustment – Otago's Plan Change 8 doesn't include pugging and slope scores. Another big one is critical source management, aquifers and groundwater seeps."

Help makes a difference

As former project leader for Otago South Rivercare (OSRC) and project manager of the Pomahaka Water Care Group (PWCG),

"(We) created farmer-written submissions with a practical approach to everything, right there in the room."

Lloyd's really appreciated the help they've received.

That's included assistance from DairyNZ's Justin Kitto and Hanna Stalker, and other farmer organisations. Lloyd's also enjoyed working with Justin and DairyNZ's Nick Tait to help develop DairyNZ's Enviroplanner (now the Envirowalk app), and having DairyNZ involved in the catchment groups' forums.

"Our Justins and our Hannas and our Nick Tait's – and formerly, DairyNZ's Helen Moodie – you need those people and forums like the Dairy Environment Leaders to keep doing things. It can get lonely otherwise," says Lloyd.

Taking talking to the source

Lloyd, Justin and Hanna met with the Otago Regional Council, and the project group also held two meetings to link farmers in with the council's roadshow on Plan Change 8.

"We got maybe 70 to 80 farmers at each meeting. We and the council's representatives sat down with them and created farmer-written submissions with a practical approach to everything, right there in the room.

"With the existing clay ponds issue, we got some big wins at the regional council level because of the input from farmers in the catchment groups, DairyNZ and other farmer groups working together. I think that we, the council and DairyNZ are pretty close to being on the same page about the effluent stuff, and it's not insurmountable. Everyone wants sustainability for their businesses, our whenua and families."

Plan Change 8 is in progress with the Environment Court – get the latest at environmentcourt.govt.nz/cases-online



Lloyd McCall says the 'pub talk' among farmers in his area has switched from "production to environmental stuff".



CLIMATE CHANGE

HOW WE'VE GOT YOUR BACK

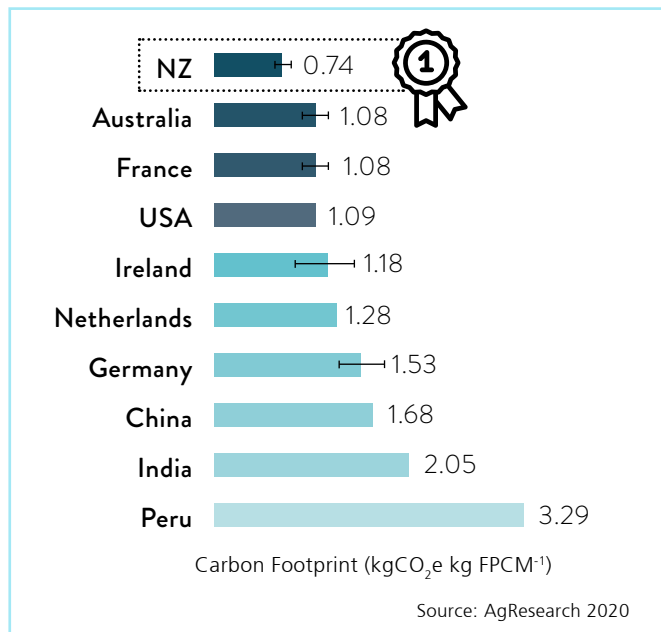
A quick overview of what we're doing to support dairy farmers on climate change.

With climate change in the spotlight now more than ever, DairyNZ is working hard to provide options for the dairy sector to reduce emissions. At the same time, we're making sure the Government, and every New Zealander, is aware of the world-leading nature of dairy farming, and the progress you've already made. Here's a summary of some of that work.



Proving you're the most efficient

Research commissioned by DairyNZ shows New Zealand has the lowest carbon footprint for milk in the world. We're proudly sharing this with the Government and the public.



Leading by example

DairyNZ's Climate Change Ambassador programme, launched in 2018, is helping dairy farmers lead the dialogue around climate change, while also raising awareness of farmers' efforts to reduce emissions. We have 13 ambassadors nationwide.



Ensuring your voice is heard

The Climate Change Commission will propose emissions budgets, and advise the Government on how these budgets could be met. This will determine the amount of greenhouse gases the New Zealand dairy sector can emit. It will include advice on what potential reductions in biogenic methane might be needed in the future. The Climate Change Commission is making its proposals available for public consultation on February 1, 2021.

DairyNZ will help you understand the details so it's easier for you to make a submission. At the same time, we'll be developing our own submission, based on robust science, policy and economic evidence.



Taking control of our future

When the Government wanted to implement a broad-based tax on farmers that wouldn't improve environmental outcomes, DairyNZ helped lead the charge to find an alternative that would put farmers in the driver's seat. The farming sector's alternative proposal, He Waka Eke Noa, will deliver better environmental outcomes by equipping farmers with the information, tools and support needed to reduce emissions.


He Waka Eke Noa partners recently released Farm Planning Guidance for reducing greenhouse gases. This is the first product in the He Waka Eke Noa toolkit for mitigating and adapting to climate change.

There are many farm management options for reducing nitrate leaching and greenhouse gas emissions, while staying profitable. Learn about them at dairynz.co.nz/climatechange

Leo Donkers (left) and Terry Kilday.



PLAYING FOR LONG-TERM GAINS

CHANGING HOW THEY FARM HAS ALREADY ENABLED THE WILLSDEN FARM TEAM TO REDUCE THEIR FARMING FOOTPRINT WHILE MAINTAINING PROFIT. NOW IT'S TIME TO SHIFT TO THE NEXT LEVEL. 

Willsden has been able to maintain profit through maintaining cost per kg MS. That's been achieved by growing more grass, using less supplements and N fertiliser, and increasing MS per cow.



"A LICENCE TO FARM COMES WITH REQUIREMENTS."

"It's a fact of life: a licence to farm comes with requirements," says Canterbury farmer Leo Donkers.

Leo is a founder and managing director for the Camden Group of farms. Leo and his current general manager Terry Kilday are keen to share what they've achieved on one of the group's farms, Willsden, maintaining profit while focusing their environmental efforts on meeting regulatory targets.

"The main aspect around regulations is to maintain our consent to farm," Leo says. "However, we want to be good custodians of the land too, leave the land in a better condition than when we found it, and be profitable and sustainable.

"We also want to provide a good working environment in which our staff can develop and grow, and maintain a high level of care for our cows. We see these goals as non-negotiable."

Farm in focus

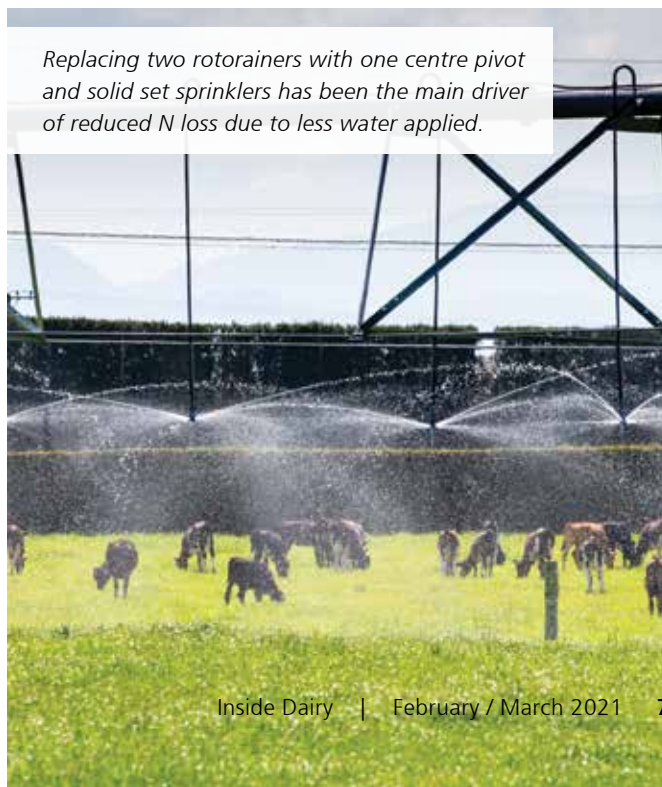
Willsden Farm Limited is a 305ha (effective), fully irrigated farm near Te Pirita currently managed by Tom Chapman. The farm peak milked 1075 Kiwi-cross cows last season. It's a System 3-4 farm, but Leo and Terry's shared goal is to go to System 3.

Leo and his brother John formed Camden Group 27 years ago. As well as its four dairy farms, Camden Group owns two support farms (which charge any feed and grazing back to the farms) and is involved in

a dairy farm equity partnership and has a share in a machinery syndicate.

The group's farming approach is grounded in seven principles, called 'The Camden Way'. These principles cover caring for people and community; animals; soil, water and air; technology and farm systems; compliance; finance; and risk. All are focused on exceeding expectations and requirements. (Read more at camdengroup.co.nz)

Replacing two rotorainers with one centre pivot and solid set sprinklers has been the main driver of reduced N loss due to less water applied.



FARM FACTS

NAME:

Willsden Farm, one of four dairy farms in the Camden Group (CG)

OPERATORS:

Leo Donkers CG managing director; Terry Kilday CG general manager; Tom Chapman, Willsden farm manager

LOCATION:

Te Pirita, Canterbury

FARM SIZE:

305ha (effective)

HERD SIZE:

1075 Kiwi-cross

FARM SYSTEM:

3-4

PRODUCTION:

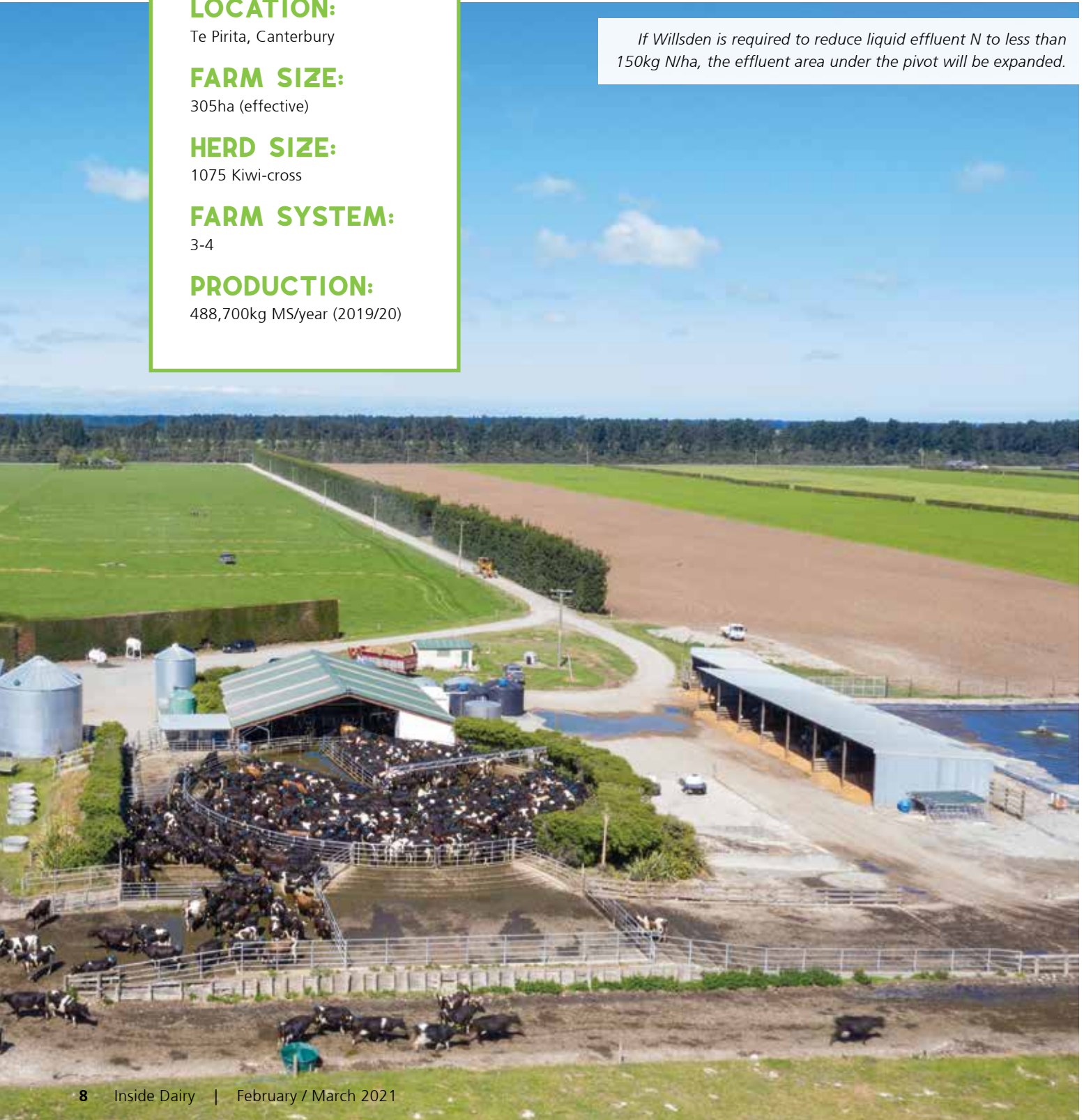
488,700kg MS/year (2019/20)

The challenge

Like all dairy farms in the Selwyn Waihora water zone, Willsden needs to reduce its nitrogen (N) losses by 30% by 2022 to meet Environment Canterbury's (ECAN) requirements.

Rather than seeing ECAN and the Canterbury Land and Water Regional Plan as regulatory adversaries, Leo and Terry prefer to work with the regional council as a partner, alongside DairyNZ, Ravensdown, and the other South Island Dairying Development Centre partners.

If Willsden is required to reduce liquid effluent N to less than 150kg N/ha, the effluent area under the pivot will be expanded.





Leo checks the moisture meter operation which Willsden uses to make decisions on when to irrigate.

"We need to be very close to all of them and ensure all our people understand what we're trying to achieve from the Camden Group point of view and the South Island point of view as well," says Leo.

Research from the ground up

Having seen the success achieved around N-loss targets by Lincoln University Dairy Farm (LUDF), Leo and Terry were keen to tap into that knowledge. Willsden is one of 45 partner farms in 'Selwyn and Hinds – Meeting a Sustainable Future', a local project led by DairyNZ's Virginia Serra (see sidebar, page 12).

"For me it's been great having a valuable sounding board there with DairyNZ as research partners," says Leo. "It's also important that farmers learn from farmers and are led by farmers. So, it's about making sure we have the information stream that gives us the best information to make the right decisions."

"IT'S ALSO IMPORTANT THAT FARMERS LEARN FROM FARMERS..."

Terry and Leo say Camden Group is also focused on other environmental activities across Willsden and their other farms, as well as looking after people and cows – elements which are increasingly important to dairy consumers worldwide.

"We follow good management practices (GMPs) for issues like rubbish disposal, recycling, dead stock disposal, things like that," says Leo. "The GMPs around social and animal welfare issues are high on our list for our farming system and for our continued access to overseas markets. All of these practices come at a cost – but we are committed to GMP and the positive social licence it brings."

LEO AND TERRY'S TIPS FOR REDUCING N LOSSES



1. Improve irrigation efficiency – use pivot and fixed grid systems (short return, low application rate) plus soil moisture monitoring to apply just enough, just in time.



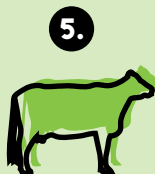
2. Have an annual N plan and monitor against it. Willsden uses HawkEye for this reporting.



3. Apply one round of N fertiliser per month and use lower rates.



4. Do individual paddock soil tests for pH, P, K and S; and correct any nutrient deficiencies.



5. Use new pasture species with 50% tetraploids to grow more pasture in the cooler months and utilise N at risk of leaching.

Willsden's tetraploid ryegrasses utilise nitrogen even when other species' growth has slowed.



"IT'S GOOD FOR THE ENVIRONMENT, GOOD FOR PEOPLE, GOOD FOR THE COWS, AND GOOD FOR PROFIT."

It's paying off

Willsden has already achieved ECAN's regulatory N loss target of 30%, with a 2020 N loss of 46, which is a reduction of 45% from the farm's baseline of 83kg N loss/ha.

"So for us, coming from 270kg fertiliser N/ha down to 189kg (all ha) in 2019/2020 – we've got one of our farms at 168kg fert N/ha – that shows that if we follow LUDF's procedures and principles, we'll get to below 190kg N per hectare of land in pasture" says Leo.

Reducing their fertiliser N use enables the Willsden team to drop the farm's N surplus and N leaching levels as well. "Being more efficient on these means we can get more productivity that leads to profit and tick the environmental box too," Leo says.

Willsden is currently in the top 20% of Canterbury farms for profitability. The economic and environmental gains the farm's been achieving in recent years gives them confidence that they can be sustainable in all areas of their farming system.

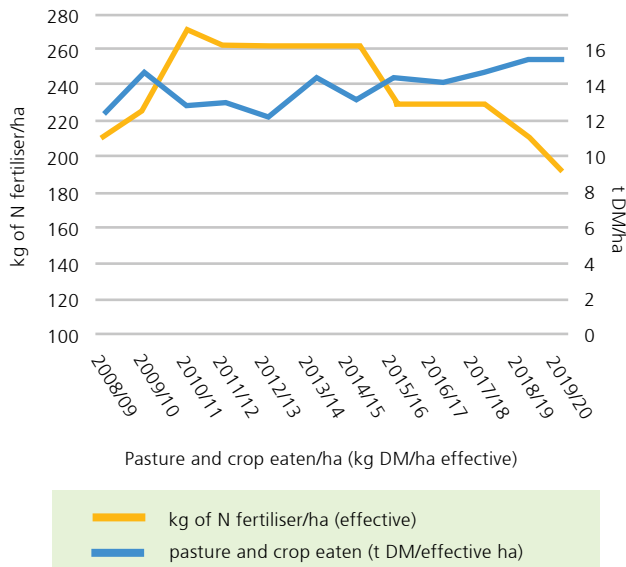
As well as the costs saved by reducing their N fertiliser use, Willsden's better pasture growth through targeted ryegrass



The Camden Group ensures team members like Tristan Caparos have more time to learn about environmental issues and understand the regulations around them. They also save time through 3-in-2 milking.



Figure 1. Annual nitrogen use and pasture and crop eaten on Willsden Farm, 2009-2020*



*source: DairyBase

species is helping to soak up N in the cooler shoulder periods of the season, which is reducing the need for additional supplement. By joining the local Central Plains Water Limited (CPW) irrigation scheme in 2015, Willsden changed from deep well pumping to receiving pressurised water delivered to the farm. *Figure 1* above shows this turning point.

How they've done it

"Prior to joining CPW, we'd already installed a large pivot on one area of this farm to apply water more efficiently. That's had huge benefits," says Leo.

The setup means Willsden has "gone from having deep wells, with pumps where you push a button and walk away and you get the power bill a month later" to having to be very organised when ordering water every afternoon from CPW, "especially when we are on restrictions and have to pay for additional stored water".

"That makes us very, very efficient," says Leo. More targeted and efficient irrigation through using soil moisture monitoring and pivots also translates to less nutrient losses, as the less water used, the less drainage occurs through the soil profile – and therefore, less N is lost.

Improving the way they store and manage effluent has given them the confidence to reduce synthetic N applications to effluent paddocks. They also now have more choice about when to apply the effluent.

Between 2012 and 2016, 80% of Willsden Farm was re-grassed with tetraploid grasses making up 50% of the seed mix. These species utilise more N in the soil as they continue to grow in the cool season and shoulder periods. "That's increased our productivity and it's used the available soil N, which may otherwise have been leached," Leo says.

"Growing more grass has reduced our supplement use, lowering our costs and reducing our staff workload. That is sustainable productivity. It's good for the environment, good for people, good for the cows, and good for profit."

PROGRESS AT WILLSDEN: BASELINE TO PRESENT 2013 TO 2020

45%

reduction in
N losses

Fertiliser
use drop ↓

78kg N/ha


(to 189kg N/ha)

Nitrous oxide
emissions down

15%



FOUR-FIFTHS of the farm
re-grassed

Soil drainage drop **38%** 
(drainage 0-60cm was 4.5 times/year
– now 2.8 times/year)



Leo says, in the future, Willsden will look to install pivot and fixed grid for all the farm.

It's a team journey

Leo says Willsden is committed to encouraging its staff to get up to speed on regulations and compliance, including the requirement to complete farm environment plans, audits and monitoring.

"We encourage all staff to attend field days and keep up to date on new research findings. We also have a lot of in-house discussion, where everyone's encouraged to learn how Camden Group's strategy fits in, its direction and how we implement any system or policy changes to meet new regulations," says Leo.

Terry says everything they do is seen by the staff as very good management practices. "That makes us preferred employers and helps us attract very good people. In our minds, having the right people in our team means everyone achieves their goals."

People's perceptions count

GMP is critical to New Zealand dairying's global markets, say both men. In particular, Terry and Leo agree that pasture-to-plate credibility needs to be truthful, transparent, sustainable and repeatable. "It also needs very good advocates on the ground, both locally and overseas," says Terry.

They believe that taking a 'whole farm' view and doing environmental things well not only helps improve public perception around dairying farming, it also demonstrates good standards across the sector. "Many environmental efforts are good for people as well," adds Terry.

Overall, the partnerships Camden Group has been involved with along the way have given the Willsden Farm team what Terry describes as "the confidence to go out there and show a change actually works".

WHAT IS THE SELWYN AND HINDS PROJECT?

'Selwyn and Hinds – Meeting a Sustainable Future' is a five-year DairyNZ project featuring 45 partner farms. It aims to support farmers in the Selwyn Waihora and Hinds catchments to significantly reduce their N losses on farms, while maintaining profitability. Selwyn Waihora zone requires a reduction of 30% by 2022: Hinds requires 15% by 2025, increasing to 36% by 2035.

A recent assessment of 210 farms sampled from all dairy farms in Selwyn and Hinds found all had changed their practices and the vast majority were on track to achieve targets set by the regional council.

The most common actions the surveyed farmers reported taking were changing their irrigation system or management (94%), improving effluent systems or management (90%) and reducing nitrogen fertiliser use (80%).

Find out more at dairynz.co.nz/sustainablefuture



Where blue meets green

Completing a farm environment plan has recognised the Shaw family's previous environmental work, while giving them some fresh ideas.

To improve nutrient management and reduce farming's impact on water quality, it'll be essential for every New Zealand farm to have a farm environment plan (FEP) by 2025.

The Shaws, Jim and Helen with son Ross and wife Karla, are early adopters, having already gone through the process.

Farming in Reporoa, Waikato, the family have steadily grown their business over the last 10 years, increasing the farm from 135ha to 400ha. Before doing an FEP, they'd already invested substantial sums in environmental improvements.

They kickstarted their FEP process in 2019 when they contacted a Fonterra sustainable dairy adviser to help them create a plan.

The process identified on-farm environmental risks, outlined mitigation strategies, recorded environmental improvements, and mapped out good farming practices, covering waterways,



As a schoolboy, Ross Shaw (left), pictured with wife Karla, helped his parents Jim and Helen (right) plant and water the pin oaks now thriving on the farm.

"We've seen real gains over the last 12 months."

effluent management, soil and land, nutrients, water, and irrigation.

Ross says the site visit took about four hours, and he spent the best part of a day putting it all together.

"It was good for us to see that we've already done a lot of what the industry is trying to achieve, and to have this work acknowledged in our FEP."

The farm ranges from flat to steep rolling country with a 150-metre difference from top to bottom. There are multiple soil types on the property: peat, sandy loam, and pumice. The family has retired small areas of wetland that act as sediment traps, and steep areas prone to erosion.

Improvements are a work in progress, says Ross.

"Working closely with the Waikato Regional Council, we've planted more than 250 poplar poles, as well as a mixture of 700 flaxes and toetoe for erosion control and for their aesthetic value.

"Sometimes you can't shift races away from drainage areas, so we've built them up and set them back from existing drains and changed the camber so that water drains towards the paddocks."

Part of the farm (110ha) is irrigated, so the Shaws have installed soil moisture probes to accurately identify areas that need watering.

"We're not using less water, but we're making more timely decisions about when to turn it on and off. And we probably only use it about 80 days of the year over summer."

Ross thinks FEPs are a good idea.

"It was good to take the initiative and work with a non-judgemental adviser familiar with the sector. And we've seen real gains over the last 12 months. The native plantings have reduced erosion and in future we'll consider further enhancements that aren't too financially onerous."

Visit dairynz.co.nz/fep to learn more about FEPs.

20 years of environmental progress

Here are some highlights
from the past two decades,
made possible by
your milksolids levy.



2002 Pastoral Greenhouse Gas Research Consortium (PGgRc) formed

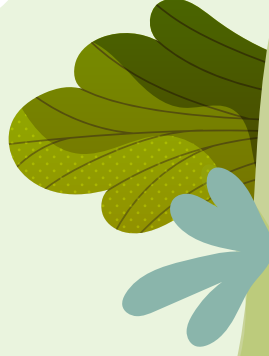
DairyNZ is a foundation partner of the PGgRc, formed to provide options to reduce methane emissions from ruminant animals. PGgRc has identified low-methane feeds and is working on other mitigation technologies, such as methane vaccines and breeding options for low-methane cows, which are still being tested.

2011 Demonstrating ways to reduce N leaching

Partly funded by DairyNZ, the cross-sector Pastoral 21 programme showed how nitrate (N) leaching could be reduced by 30-40% on research farms, with some impact on profit.

2013 Forages for Reduced Nitrate Leaching (FRNL) starts

The DairyNZ-led FRNL programme has provided forage production options that can lead to a more than 20% reduction of N leaching from dairy farms.



2013

Improving water quality

The Sustainable Dairying: Water Accord was a voluntary commitment from the dairy sector to improve New Zealand's waterways. Achievements include fencing off 98% of significant waterways, installing bridges and culverts on 100% of stock crossing points used by dairy cows, and assessing 100% of farms for effluent management practices.

2014-2019

Regional research developed

The options developed in Pastoral 21 and FRNL are being further tested on farmlets in Northland, Taranaki and Southland to ensure farmers have access to regionally relevant research. An example is Northland Dairy Development Trust's Reducing Reliance on Imported Feed Trial.

2018

Testing solutions on-farm

Three regional projects kicked off in 2018:

1. Farmers in the Tararua Plantain Project have been incorporating plantain into their systems to reduce N loss.
2. Farms in Selwyn and Hinds catchments have been adapting their practices to reduce N losses, moving towards council targets.
3. Southland farmers have united to tackle water quality issues in the Aparima catchment. The project is supporting all catchment farmers to have an effective farm environment plan. A 2020 survey showed 80% had a plan, up from 23% in 2019.

2018

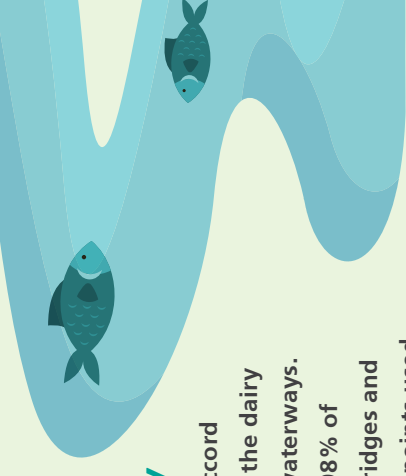
GHG project kicks off

To gain a better understanding of how changes to reduce greenhouse gas emissions and N leaching might affect a farm's profitability and productivity, DairyNZ initiated the Greenhouse Gas Partnership Farm project.

NOW

Step Change launched

DairyNZ launched Step Change in 2019 to deliver options to help you (farmers) to achieve environmental goals while increasing profit. These options have been tested by the projects highlighted in this article. For more information, visit dairynz.co.nz/stepchange



Skills for new life outside the wire

Working on Waikeria Prison's commercial-scale farm is giving a select group of inmates the skills and experience for a future in dairying.



When Ben* walked out of prison four years ago, it would have been easy to go back to what he knew – drinking, drugs, violence, and crime.

Instead, he took a skill he'd learned in prison, fencing, and used it to chart a new course.

"I grew up in a really violent home," says Ben. "There was more drugs and alcohol than food. Growing up in that gang environment, I didn't have much of a chance."

Convicted of manslaughter at the age of 15, Ben served six years behind bars, three of them at Waikeria. But the chance to gain hands-on farm experience changed his life.

"While I was in the Māori Focus Unit, I got the opportunity to go out onto the farm in the fencing unit. I was able to learn the skills of fencing – it was really awesome and it helped me with a lot of things in life."

Four years since his release, Ben's career in farming is on the up. He's working on a dairy farm in Tokoroa and has earned himself two New Zealand Dairy Industry Awards over the last few years.

Inviting farmers inside

Ben recently shared his story of transformation with local farmers at a Waikeria Prison field day, supported by DairyNZ.

The purpose was not just to show farmers how the prison farm operates, but to also encourage them to consider employing inmates through the Release To Work (RTW) programme, which helps minimum-security prisoners transition to employment on the outside.

Waikeria's 1200ha farm comprises two separate dairy units, milking around 1800 cows (total) in 40-bail and 60-bail rotaries, once a day, all year round. It's a pasture-based system, with some crops grown on site, but no bought-in feed. Production is on target for 500,000kg MS this season.



"The hardest, biggest criminals are the best with the calves."

"Everything that happens on farms happens on our farm," says Stewart Morgan, industries manager. "But it's not just about the farm or the business – it's about what we can do to support the men in our care and get them some real opportunities back in the community."

There's capacity for 30 prisoners to be working on the farm daily. Trained by Corrections instructors, the men earn industry qualifications from Primary ITO.

"These guys could come out and work on any of your farms – they've already got a number of skills," Stewart told the farmers. "Some have gone on to become 2ICs and farm managers."

"Some of our guys have never touched an animal before, but believe it or not, they can be the best farmers. The hardest, biggest criminals are the best with the calves."

Giving them a go

One farmer with experience hiring ex-offenders is Daniel Lund, who milks 400 cows on his family's 120ha farm at Pokuru, not far from Waikeria.

"I was short-staffed, so I rung up the prison. The first bloke, he was real good. That was about five years ago, and I've had about 10 or 12 since then," says Daniel.

"With the lack of staff around, it just seems to be the perfect solution."

Daniel has been impressed by the men's work ethic and core skills they bring from working at Waikeria.

"They've all got great respect that you've given them the opportunity. A lot of people think, 'Don't you worry they're going to flog your chainsaw or something?', but there's never ever been that sort of carry-on."

Daniel's current farm worker, someone he employed through RTW, has continued working for Daniel since his release.

"He's a good milker. He just needs a couple more years' experience. I'd say he'll stay till the end of the season, then he'll be ready to move on, get a job with a bit more responsibility."

Time well spent

One prisoner who's currently training on the Waikeria farm says he knew nothing about farming before coming to prison, but is now keen to pursue it as a career.

"I was brought up in a poverty area — a lot of drugs and a lot of gangs. I fell into the drug dealing game and I pretty much ended up in here," he said.

"It's an awesome opportunity for me to be able to learn how this all works, from milking the cows and handling calving, to fencing and knowing where to put the cows. I pretty much know how to do most of the job now, and I'm grateful because I can get a good job now when I get out."



Future success stories

Ben says many of the men leaving prison will struggle to find work because of their criminal record. But if farmers are willing to give them a shot, it can be a life-changing opportunity.

"Life could have gone another way for me. If these guys get a chance like I did, then maybe they'll have a success story too," he says.

"But we'll never know if they don't get that opportunity."

** Ben's surname has been omitted to protect his privacy.*

To learn more about Waikeria's Release to Work programme, contact John Siemelink:
027 376 6871 or john.siemelink@corrections.govt.nz

To attend a Waikeria farm field day, contact DairyNZ's Stephen Canton: 027 475 0918
or steve.canton@dairyNZ.co.nz



"I'm grateful because I can get a good job now when I get out."



GOOD BOSSES GET ORGANISED FIRST

Being prepared is the first task Jared and Victoria Clarke sort out, so they can give their team the focus they deserve. Jared shares their perspective on being good bosses.

"I find that if something goes wrong, it's generally because I haven't got myself organised or haven't communicated stuff well enough to my team," says Jared.

He and his wife Victoria sharemilk 2050 Kiwi-cross (on two dairy platforms) on Richard and Chrissie Wright's 522ha (effective) farm between Methven and Mayfield, south west of Christchurch.

They're very committed to doing the right thing by their 'Two Rivers' team (10 full-timers and three to four permanent/casual relief milkers or calf rearers).

"I work on the farm and talk to the unit managers every day," says Jared. "We also sit down for a chat every two weeks or so. As for the one-on-ones, Victoria and I do that with each team member, three to four times a year."

Time saved talking

Jared says these meetings are a timesaver, ensuring things are less likely to go wrong in the long run. In particular, the one-on-ones sort any concerns earlier rather than later.

"The point is to give each team member a really clear and easy opportunity to tell us what's happening with them in their life and what's going on for them.

"We try and listen without judgement. Along the way, you also need to tell your team when they've done a good job and say 'well done'; and when they haven't, show them a solution around that."

Learning the language

Jared and Victoria also recognise and respect diversity within their team and have made some effort to learn new languages.

Team members come from South America (Chile and Brazil), India and Sri Lanka. The couple attempt to speak Spanish to the team most of the time but have found Punjabi and Sinhalese more challenging.

That's where using a Kanban job board to list tasks by type and frequency has come in useful. The Two Rivers team started using this tool (dairynz.co.nz/Kanban) after attending a DairyNZ workplace design event about 21 months ago.

"It's really good to have something that's written down and visual, so we all know what we're talking about," says Jared.

Being a Good Boss

"I was talking to one of my mates the other day about this,"



Mount Hutt frames calf rearers Keyla Tiburcio and Andrea Page.



Assistant farm manager Rudnei Silva checks on the calving mob.

Jared says. "I think it's really important that you want to be a good boss – and know how to be a leader and a manager at the same time.

"We always refer to the people who work on this farm as 'team', 'guys' or 'team members'. I hate the words 'workers' or 'staff'. After all, we're all human, we all wear gumboots and we all work in the rain."

JARED'S TIPS ON BEING A GOOD BOSS

- Listen to and care about your team.
- Respect and value each other.
- Be inspired by your past good bosses.



Find out more at dairynz.co.nz/goodboss

Plan now for dry-off success

It's about nailing dry-off now, so cows and people are good to go next season.

Decisions made at this time of year can have a big impact on-farm in the coming season. That includes how and when to start drying off cows.

Following these steps below will help your dry-off run as smoothly as possible, safeguarding the cows and team for next season.



Dry off manageable mobs

Spread the task over several days or weeks to manage feed budgets and people. If you're transporting cows by truck and trailer immediately after dry-off, set the group size by the number that can fit comfortably in a single truck/trailer unit.



Roster on extra staff

Work on the basis that one person can comfortably clean and treat about 15 to 20 cows/hour, for a maximum of two hours. A spare person to mark cows, hold tails, provide spare tubes, and keep track of cows being treated is also invaluable.



Use trained people

Your vet practice may offer vet technicians to help with drying off large mobs or offer training for farm teams, based around DairyNZ's *Healthy Udder*. Find out if your practice offers this.



Choose dry days for drying off

Check the weather forecast before finalising dry-off days and postpone for a day or two if it's raining. Getting teats clean when the udder is dripping water is almost impossible and may increase the risk of cows getting sick.



Treat cows separately

Don't start using dry cow antibiotics if milk is still going into the vat. Draft cows out and bring them back in when the pipe is disconnected. If you're doing a large mob, wash down the platform before bringing them back in, to reduce dirt being splashed onto cows' teats.



Follow 'MRS T' (mark, record, separate, treat)

All treatments need to be recorded. Marking cows that receive dry cow therapy (DCT) is especially important if only parts of the herd are being dried off.



Wear gloves

Gloved hands are much easier to keep clean, which reduces the spread of bacteria between teats and animals.



Clean immediately before treatment

Keep the time between cleaning and treating a teat as short as possible, to avoid treating a dirty teat. Clean and treat one teat before moving onto the next. Work on the back teats first, then the front; this helps reduce the chance of contaminating teats. Use *Healthy Udder* to remind the team about the best way to administer products.



Teat spray after treatment

Dedicate one person to do this task well. Use freshly made-up teat spray.

Check out dairynz.co.nz/healthy-udder and dairynz.co.nz/mastitis for more information.





More profit, more freedom

Farming can offer unique lifestyle benefits, but achieving those benefits requires a laser-like financial focus, says DairyNZ business specialist Paul Bird.



Consumer demand for sustainably produced dairy products has never been stronger. Although that puts New Zealand in a strong position – the world wants our milk – it also means farm policies and infrastructure changes need to be considered, which could impact profitability.

To keep expenses down and profit up, we need to focus on all aspects of the farm system and on what drives farm management decisions.

In each region, farms in the top 50% for profit are generating \$800 more operating profit/ha/year than the average (Figure 1). This is an extra \$800/ha, or \$117,000/year for the average-sized farm. Farm businesses that want to thrive over the next five to 10 years will need to find this potential profit.

What drives you?

We know many farmers are motivated by the lifestyle farming offers, the ability to spend time with family, working outside with animals, and owning and improving the land for future generations.

What's your reason for farming? It's crucial to know the answer to that because it's the basis of your strategic plan. However, don't use the non-financial reasons for farming as an excuse for avoiding the finances. Neglecting the books can hold you back from achieving your goals.

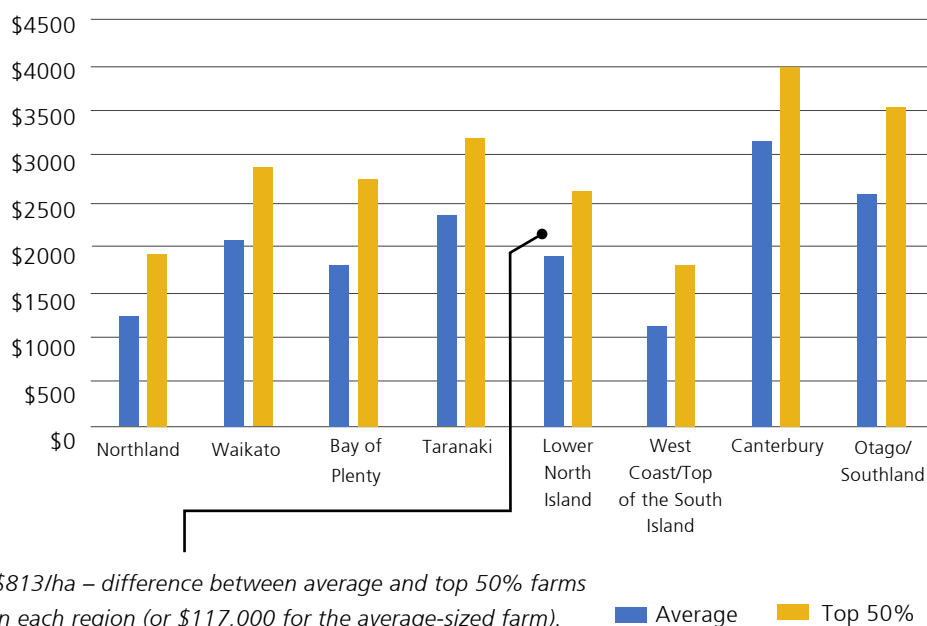
Many farmers will need to lift their profit if they want to achieve their non-financial goals. Profit is required to build wealth and give you the freedom to focus on what's important to you. Without the certainty of land appreciation (Figure 2), profit is even more important as the primary means of increasing wealth.

Begin with benchmarking

The starting point for increasing profit is to benchmark your financial performance with similar farms to decide if you have the potential to improve.

Benchmarking should be done annually and used to develop next year's farm plans and forecast cash budgets. The dairy sector is better equipped to help you do this than virtually any other industry. DairyNZ provides many sources of benchmarking information, including the DairyNZ Economic Survey, DairyBase and individual farm case studies.

Figure 1. Operating profit per hectare 2018/19 season



Your accountant or consultant may also provide their own valuable benchmarking system.

Understanding operating profit

Operating profit is one of the key performance indicators used to measure dairy farm performance. Farm system research trials and regional focus farms present their findings using operating profit.

The term 'operating profit' is an accounting metric for measuring the profit generated by a business from its core business, where interest and taxes are excluded. It's similar to EBIT (earnings before interest and tax), but the main difference is that EBIT may include non-core business profit, e.g. income from a rental property.

Increasing operating profit

Do this by reducing operating expenses, increasing gross farm revenue, or a combination of both.

Reduce your operating expenses by assessing each expense item, then:

- cut wasteful expenditure by reducing inefficient management practices
- remove expense items by making changes to your farm system or policies
- pay less per expense unit (per kg, per hour, per item) by making bulk purchases or negotiating with suppliers.

Increase your gross farm revenue by:

- increasing feed intake by lifting cow numbers or improving

production per cow through pasture utilisation or economic and sustainable supplement use

- improving herd genetics
- increasing income per kg milksolids through dairy company premium milk schemes or specialty milk supply (e.g. organic, A2) or dairy company choice
- increasing stock income, e.g. by improving herd fertility, which leads to extra stock sales.

Money on the mind

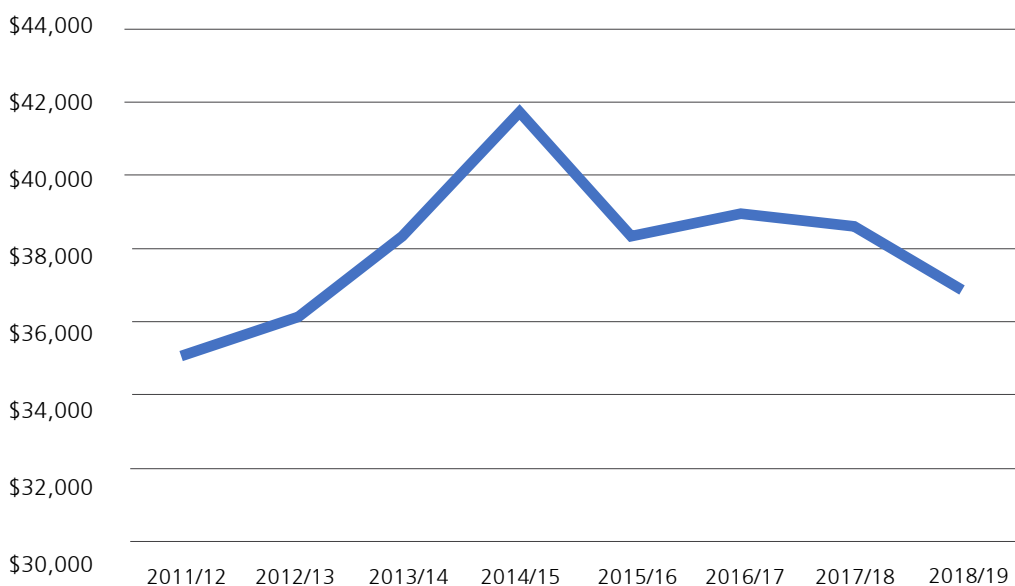
Create a financial management culture by ensuring the people around you are talking about profit. When you meet with your accountant or consultant, are you discussing ways to improve or fine-tune your financial performance? If not, ask why.

If you're part of a DairyNZ discussion group, ask your consulting officer or group facilitator to calculate your operating profit, then get feedback from the group on how you can improve it.

If you have family involved in the business, or if you employ staff, do you review the farm financial performance together each season? Do you set new targets? Create the expectation with your children that, if they want to be involved in farming, financial management is just as important as knowing how to cup cows.

If you want to improve your focus on profit and set yourself and your business up for the future, contact your local DairyNZ consulting officer or check out the resources and support available at dairynz.co.nz/business-analysis

Figure 2. New Zealand average dairy farm sale price \$/ha (inflation adjusted 2018/19 dollars)



Take control of your business

Want to spend some time focusing on your business without the interruptions of day-to-day life?

Sign up for Mark and Measure, DairyNZ's three-day business course for contract milkers, farm owners, herd-owning sharemilkers and variable order sharemilkers. The course is suitable for couples, partnerships and individuals at any stage of the farm business journey.

Through Mark and Measure, you'll:

- determine a vision and set goals aligned with your values
- learn key business concepts and skills
- gain confidence through customised course content
- meet like-minded people and benefit from networking opportunities.

Course dates: Taupo, May 18 to 20; Queenstown, June 15 to 17; West Coast, June 29 to July 1.

Register now as places are limited – dairynz.co.nz/markandmeasure

MARK & MEASURE

2021

Kudos for DairyNZ fertility project

A DairyNZ-led team has picked up an award for its groundbreaking collaborative research into improving dairy fertility genetics.

The Improving Dairy Fertility Genetics research project won the Primary Industries Award at the 2020 Kudos Awards late last year.

Project co-leader Dr Susanne Meier says the research has determined new ways to select inherently fertile cows. It has also demonstrated that genetic selection for cow fertility will improve herd reproduction.

"It is tremendous to receive this award recognising the value of the research," she says.

The work is part of DairyNZ's Pillars of a New Dairy System research, which has funding from both DairyNZ and the Ministry of Business, Innovation and Employment. Additional support is received from AgResearch, LIC, CRV Ambreed and AbacusBio.



DairyNZ senior scientists (left to right) Claire Phyn, Chris Burke and Susanne Meier at the Kudos Awards.

Open Farms looking for hosts

Would you like to help reconnect urban Kiwis with our land, food and farmers?

Open Farms is now recruiting farmer hosts for the nationwide Open Farm Day on Sunday, February 21, 2021. If you're interested in sharing your farming story and running an open day, you'll be given all the support you need to make it happen.

DairyNZ is proud to support Open Farms. We believe that helping everyday Kiwis to understand farming is best done on-farm and in person.

Host registration is open until February 10. To find out more and register, visit openfarms.co.nz



Sustainability: a matter of Trust

West Coast farmer Stuart Bland talks about two key projects he and wife Debbie are involved in which are helping local farmers stay on track and improve sustainability.

Stuart and Debbie Bland own and farm 95ha (effective) in the Upper Grey Valley, about 15 minutes south of Reefton. It's their twelfth season on the farm and their third year as one of two monitor farms for the West Coast Focus Farm Trust (WCFFT) project.

Stuart says being involved with the Trust is really beneficial, and not just for them.

"Because all farmers can have access to the project's information, it will help everyone make their businesses more sustainable environmentally and economically."

Data from the monitor farms is collected weekly by a project field worker and put into DairyNZ's DairyBase for all to see (dairynz.co.nz/dairybase).

"The project has access to our financials too. It's given us a better understanding on how that figure at the bottom spits out. We can also talk to Angela Leslie (DairyNZ consulting officer) when we need to."

Stuart says a weekly email to subscribers summarises overall production and production per cow, what grass growth there's been, what the rainfall has been and what soil temperatures are. "That enables farmers to line things up with how much supplement's been fed to get that result."

Each monitor farm also hosts an annual field day: this year's will be on the March 10 and 11.

"It's where farmers can learn a lot off each other. It's amazing what you can pick up," says Stuart. "It's great getting those experts in, as many farmers don't usually have access to those people."

Stuart's currently moving from Federated Farmers' local dairy spokesperson to environmental spokesperson. He also recently became involved in a related project, Sustainable Land Management and Climate Change (see sidebar), which is also using data from both WCFFT monitor farms to see where they sit against other West Coast farms in DairyBase.

"It's our figures being used, so that makes it real to us – it's not just a made-up demonstration sheet," says Stuart. "This sort of stuff will be really valuable to farmers so we can work out some strategies to manage our environmental footprint. The workshop information is likely to be presented at our field day."



Debbie and Stuart Bland say the projects "will help everyone make their businesses more sustainable".

Spotlight on the WCFFT

The West Coast Focus Farm Trust (WCFFT) project is backed by key funders DairyNZ, Westland Milk Products, and CRV-Ambreed, along with contributions from Ravensdown-ARL labs.

In 2020 the WCFFT teamed up with DairyNZ and AgResearch to provide farm data for a Sustainable Land Management and Climate Change project. This sustainability project aligns its priorities with the dairy sector's Dairy Tomorrow strategy and DairyNZ's Step Change programme.

More info and field days

WCFFT project:

Visit the project's Facebook page at dairynz.co.nz/WCFFT

WCFFT field days:

Contact DairyNZ's Angela.Leslie@dairynz.co.nz or call her on **021 277 2894**.

February events

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1	2	3	04 SOUTHLAND/SOUTH OTAGO The Milton Discussion Group meets 10.30am to 1pm, talking crops and how to attract the right people to work on farms. Contact Guy Michaels on 021 302 034.			7
8	9	10	11 CANTERBURY/NORTH OTAGO Register for a one-day Biz Start event in Glenavy and learn about business structures, taxation and budgeting. Contact Alice Reilly on 027 379 8069.			14
15	16	17 BAY OF PLENTY Discuss management issues and lower cow numbers at the Rerewhakaaitu Discussion Group, 10.30 am and 1pm. Phone Kevin McKinley 027 288 8238.			20	21
22	23 WAIKATO Head along to our Succeed In Business Group to enhance your skills and career options, at the Matamata Civic Memorial Hall between 11am and 1pm. Register with Lizzy Moore on 021 242 2127.			27	28	

TO SEE WHAT ELSE IS HAPPENING IN YOUR REGION DURING FEBRUARY AND MARCH, GO TO [DAIRYNZ.CO.NZ/EVENTS](https://dairynz.co.nz/events)

NORTHLAND

Have you got your summer strategies sorted for the warmer months?

Our webpages at dairynz.co.nz/summer contain plenty of information and resources to help your farm team, including a summer management plan, dry summer management guide, heat stress prevention tips, and strategies to get you through summer and ready for autumn.

WAIKATO

Supporting farmers on the Hauraki Plains, the P3 Trust (Profitable, Progressive Plains) is a farmer-led project assisting dairy farmers to improve profitability, lifestyle, and community outcomes.

Part of the project is the P3 Trust Hauraki Monitor Farms, five high-profit farms which share their information through field days and a weekly newsletter.

Find out more about the monitor farms and register for the newsletter at dairynz.co.nz/p3

BAY OF PLENTY

We recently caught up with Bay of Plenty farmers Nick Dowson and Rick Phillips, pilot farmers involved in the DairyNZ Flexible Milking Project, for an update on how milking three times in two days (3-in-2) is working for them.

"I'm on board 100%. There's a lot less pressure and the early finish every second day is nice. There's more time to spend with family and friends," says Rick.

Read the full story at

dairynz.co.nz/no-turning-back-from-3-in-2

TARANAKI

Stratford's Daryl and Karyn Johnson are in their second season milking three times in two days (3-in-2) year-round. This season, we're following their progress through the DairyNZ Flexible Milking Project.

Their primary driver for making this switch came from increasing not-in-calf rates, particularly in their younger cows. With long walks for cows up and down hills, 3-in-2 was already a tool the couple had used during mid-late lactation with no loss in production, so it was a natural decision to look at this as an option.

Follow their progress at dairynz.co.nz/flexible-farms

DairyNZ consulting officers

North Island – Head: Rob Brazendale 021 683 139

Northland		
Regional Leader	Leo Pekar	027 211 1389
Far North	Amy Weston	027 807 9686
Lower Northland	Hamish Matthews	021 242 5719
Whangarei West	Ryan Baxter	021 809 569
Waikato		
Regional Leader	Wilma Foster	021 246 2147
South Auckland	Mike Bramley	027 486 4344
Hauraki Plains/Coromandel	Michael Booth	021 245 8055
Te Aroha/Waihi	Euan Lock	027 293 4401
Cambridge	Lizzy Moore	021 242 2127
Hamilton	Ashley Smith	027 807 3049
Huntly/Tatuanui	Brigitte Ravera	027 288 1244
Matamata/Kereone	Frank Portegys	027 807 9685
Pirongia	Steve Canton	027 475 0918
Otorohanga/King Country	Phil Irvine	027 483 9820
Waipa South	Kirsty Dickens	027 483 2205

Bay of Plenty		
Regional Leader	Andrew Reid	027 292 3682
Central Plateau	Colin Grainger-Allen	021 225 8345
South Waikato/Rotorua South	Angela Clarke	027 276 2675
Eastern Bay of Plenty	Ross Bishop	027 563 1785
Central Bay of Plenty	Kevin McKinley	027 288 8238

Taranaki		
Regional Leader	Mark Laurence	027 704 5562
South Taranaki	Ashely Primrose	027 304 9823
Central Taranaki	Mark Laurence	027 704 5562
Coastal Taranaki	Mark Laurence	027 704 5562
North Taranaki	Ian Burmeister	027 593 4122

Lower North Island		
Horowhenua/Coastal and Southern Manawatu	Kate Stewart	027 702 3760
Wairarapa/Tararua	Abby Scott	021 244 3428
Eketahuna	Rob Brazendale	021 683 139
Hawke's Bay	Gray Beagley	021 286 4346
Northern Manawatu/Woodville	Janine Swansson	027 381 2025
Central Manawatu/Rangitikei/Whanganui	Rob Brazendale	021 683 139

South Island – Head: Tony Finch 027 706 6183

Top of South Island/West Coast		
Nelson/Marlborough	Mark Shadwick	021 287 7057
West Coast	Angela Leslie	021 277 2894

Canterbury/North Otago		
Regional Leader	Rachael Russell	027 261 3250
North Canterbury	Amy Chamberlain	027 243 0943
Central Canterbury	Alice Reilly	027 3798 069
Mid Canterbury	Hugh Jackson	027 513 7200
South Canterbury	Rachael Russell	027 261 3250
North Otago	Alana Hall	027 290 5988

Southland/South Otago		
Regional Leader	Ollie Knowles	027 226 4420
West Otago/Gore	Keely Sullivan	027 524 5890
South Otago	Guy Michaels	021 302 034
Northern/Central Southland	Nicole E Hammond	021 240 8529
Eastern Southland	Nathan Nelson	021 225 6931
Western Southland	Ollie Knowles	027 226 4420

DairyNZ directors

Jim van der Poel	021 848484
Elaine Cook	027 223 2049
Colin Glass	027 486 4064
Jacqueline Rowarth	027 694 4334
Peter Schuyt	027 557 4242
Jo Coughlan	021 522 142
Tracy Brown	027 291 1716
Mary-Anne Macleod	021 923 332

LOWER NORTH ISLAND

People who live and work on the land have to cope with a number of challenges, from long working hours to unexpected weather events, isolation and financial pressure. They're all factors that can affect mental wellbeing. To take care of yourself, and be able to help others, one of the best things you can do is talk.

Coming to Longburn on February 11, GoodYarn is a hands-on workshop that will give you the practical tools and confidence to talk to people in rural communities about mental health.

Numbers are limited. Register by February 5 by contacting kate.stewart@dairynz.co.nz

CANTERBURY/NORTH OTAGO

As part of the DairyNZ Flexible Milking Project, we're following three Canterbury/North Otago farms that have adopted flexible milking strategies.

The farms include:

- Ed von Randow from Oamaru, where Waiareka farm (managed by Ed) has shifted to full-season 3-in-2 (three times in two days) milking
- John Totty in Staveley, who believes using 10-in-7 will give the results he wants without a drop in production.
- Ben Wilson in Kirwee, who switched to 3-in-2 mid-lactation to combat lameness in cows.

Keep up to date with how the season is tracking for each farm at dairynz.co.nz/flexible-farms



Ben Wilson and his farm team.

SOUTHLAND/SOUTH OTAGO

Angela Reid manages North South Farms, a property under FarmRight management in Northern Southland, and which is part of the DairyNZ Flexible Milking Project.

Having previously tried once-a-day milking (OAD) late season and experiencing a loss in production, Angela found using 3-in-2 (three times in two days) during mid-late lactation a more sustainable way of reducing milking frequency. She's now keen to explore the additional people and profitability benefits of using this structure over the busier times of the year.

Read more at dairynz.co.nz/flexible-farms



Making the case for Horizons dairy farmers

With a proposed plan change on the cards for Lower North Island dairy farmers, DairyNZ’s team went into bat with a better solution.



Graeme Doole
Principal economist, DairyNZ

A ‘plan change’ is the formal process used by regional councils to prepare changes to an existing policy in a region. These processes have ramped up across New Zealand after the release of the National Policy Statement for Freshwater Management in 2011 and subsequent amendments in 2014, 2017, and 2020. These processes demand considerable resource from DairyNZ and partners. This article provides an overview of our recent involvement in a process in the Lower North Island.

New plan needed

Plan Change 2 (PC2) was proposed in 2019 by Horizons Regional Council in the Manawatū-Whanganui region. In response, DairyNZ and Federated Farmers lodged a formal submission and subsequently worked together to present evidence in the council Hearings in October 2020. The proposed PC2 focuses mainly on updating nitrogen (N) leaching limits set for intensive land uses, including dairy, located within 32 targeted areas (water management sub-zones, or WMSZs) in the Manawatū-Whanganui region.

Horizons Regional Council proposed PC2 because it realised the N-leaching limits defined in the original One Plan were not working as planned, given these limits related to an outdated version of the Overseer software.

Shortly after the One Plan became Operative, Overseer went through a significant version change (from 5.4 to 6.0). The effect was that, for many farmers, the model’s estimate of N loss increased on average by 60% to 80%, without any change in farm system or farming practices. Currently, around 166 affected dairy farms are unconsented. The targets set in the One Plan are financially unattainable for most, if not all, of those farms due to the Overseer version change.

Horizons Regional Council has proposed an updated set of N limits under PC2. However, DairyNZ and Federated Farmers are proposing an alternative approach, which we’ll refer to as the ‘dairy sector proposal’.

A more workable proposal

Our proposal would require farms to decrease their N leaching by 10%, or to the 75th percentile of N loss in the catchment. In these policy-making processes, it is often not credible for intensive land uses to refuse to make any changes. The social and policy context in which we farm has changed – reducing our environmental footprint is as

important as ever. The DairyNZ and Federated Farmers proposal is focused on achieving environmental improvement, while also helping to ensure the ongoing resilience of our farms and communities.

Our assessment focuses on three proposals: the One Plan, the proposed PC2, and the proposed dairy sector solution. The difference between the alternative proposals is clearer when we compare the average leaching reductions required within them. On average, unconsented farms in the region lose around 45 kilograms of N per hectare per year. Under the One Plan, in which N-leaching limits are based on an outdated version of Overseer, an average reduction of 60% is required across the 166 unconsented farms. In comparison, PC2 requires an average reduction of 30%, and the dairy sector proposal requires an average reduction of 15%.

Why lower reductions?

There are sound scientific and economic reasons why the lower reductions in the dairy sector proposal make sense.

The first reason is that water quality modelling showed that, relative to 'current state' concentrations of soluble inorganic N (SIN), the difference in what would be achieved from implementing the dairy sector proposal versus PC2 was small.

For example, of the 32 targeted WMSZs, the proposed dairy pathway resulted in the same water quality as PC2 in 19 WMSZs. In the remaining WMSZs, the modelled difference between PC2 and proposed dairy SIN concentrations was less than 5%, on average. The difference would be even less if we consider the

reality that some farms will not be able to meet their PC2 limit.

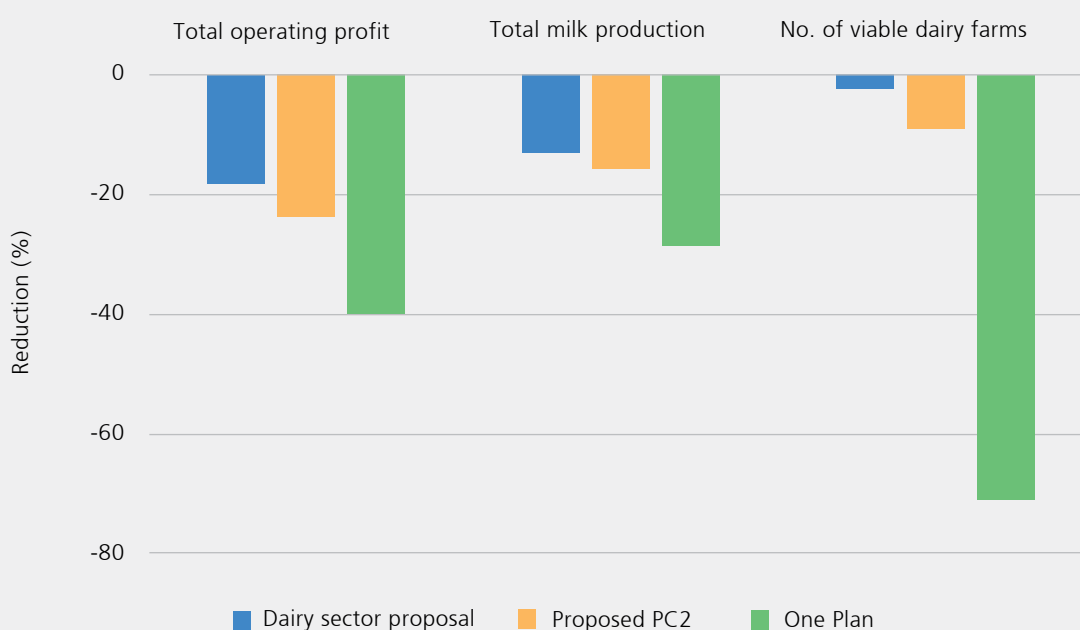
Secondly, while minor improvements in SIN will be observed across the different policy proposals, these are unlikely to have any effect on 'real-world' water quality outcomes impacted by N – for example, reduced growth and/or incidence of slime (periphyton) on rocks, along with improved water clarity.

"There are sound scientific and economic reasons why the lower reductions in the dairy sector proposal make sense."

DairyNZ's principal water quality scientist, Dr Craig Depree, identified that the SIN targets set by Horizons Regional Council ('Schedule E' targets of the One Plan) are generally too conservative and are a misleading indicator with regard to water quality impacts. Indeed, the different policy proposals would likely have no measurable impact on periphyton biomass in streams in the region (acknowledging that most are already meeting their relevant periphyton objective).

Lastly, the PC2 proposal is estimated to have large economic effects on farms and the region (*Figure 1*). The N-leaching limits set under the One Plan and proposed PC2 are quite tight. Plus, despite years of research, there is still a lack of cost-effective ways for dairy farmers to achieve large reductions in N leaching at scale. The dairy sector proposal takes this into account, leading to lower economic impacts. The data series titled 'No.

Figure 1. Predicted impacts of each policy option on the aggregate performance of the 166 unconsented farms in the Manawatū-Whanganui region*



*The calculated reductions are computed relative to a scenario in which no N-leaching limits exist.

of viable dairy farms' in *Figure 1* reflects how each policy affects farms' ability to pay debt. Farms are much more likely to stay viable under the dairy sector proposal. These economic impacts flow on to affect the Manawatū-Whanganui and New Zealand economies, given the significance of dairy production to our nation's economic prosperity.

Seeking the best solutions

New Zealand dairying's environmental footprint is under the microscope, and regional councils are increasingly required to set catchment limits for contaminants like nutrients. This means it's vital for DairyNZ to provide robust and independent technical evidence at Hearings to support practical outcomes for dairy farmers. We must be working with farmers to understand what policies mean on the ground. Also, our work involves helping to highlight and resolve unworkable issues – alongside farmers, we need to identify those parts that don't work, and offer solutions.

The team approach

DairyNZ has a team of leading policy experts and scientists, who work across the core areas on which we engage with



The evidence of DairyNZ's environmental change specialist, Adam Duker (far right), built on years of engagement with farmers.

regional councils and the Government on environmental policy. The way DairyNZ worked in PC2 was similar to how we work in most plan-change processes. In short, we worked as a team and got the best people to help us understand different policy options' effects on the environment, dairy farmers, dairy farms, and communities. We worked closely with Federated Farmers, to unify our voice and benefit from each organisation's broad expertise.

"We must be working with farmers to understand what policies mean on the ground."

Our team approach was central to ensuring we strongly presented robust independent technical evidence. This evidence supported our practical proposals to mitigate unnecessary adverse impacts on those potentially affected by the PC2 regulations.

The team members

Bal Matheson is an experienced resource management barrister. He led the legal case put forward by DairyNZ and Federated Farmers. The case was managed by Nikki Edwards, a lawyer at Federated Farmers who specialises in resource management issues. Crafting the submission was a tricky process. It involved co-ordinating a team of independent experts to present evidence that was technically robust, but importantly, was also communicated in a way people could understand. Nikki did this exceptionally well, especially given the wealth of scientific information she had to be across to do a good job.

Federated Farmers' Dr Paul le Miere provided strong technical input, particularly on issues to do with N loss, mitigation, measurement, and monitoring. Coralee Matena, also from Federated Farmers, provided policy advice and support, as well as keeping everything on track.

The impact of the failed consenting pathway for farmers, and the proposed PC2, was in part told by Andrew Hoggard, Federated Farmers' national president. His contribution built on the strong submissions put forward by other farmers that attested to how this proposed policy would affect their livelihoods, families, and communities. Decision-makers always pay extra attention when farmers make submissions – it makes the whole process so much more relatable. Also, DairyNZ's work has been built on years of engagement with farmers, led by Adam Duker, DairyNZ's environmental change specialist in the Lower North Island, as well as a recent DairyNZ project undertaken with the Horizons Dairy Leaders Group.

DairyNZ's contribution was co-ordinated by Justine Young and Matt Highway.



Riparian planting is just one way Manawatū-Whanganui dairy farmers are already mitigating nutrient loss into waterways on their farms.

Adam Duker provided independent technical evidence relating to the impacts of each policy option on affected dairy farms, and included case studies to contextualise their impacts. Environmental planning involves trying to ensure that policies are fit for purpose and structured to best achieve their environmental goals, while reducing unfavourable cultural, economic, and social impacts. This was put forth in evidence from Gerard Willis, a leading environmental planner, who has been working on aspects of the One Plan since 2007.



Andrew Hoggard, Federated Farmers' national president, gave evidence about the impact of the policy options on farmers' livelihoods, families and communities.

Dr Craig Depree, DairyNZ's principal water quality scientist, provided an in-depth analysis of the water-quality evidence put forward by Horizons Regional Council. While recognising nutrient-related degradation in some water management sub-zones, in particular the coastal lakes, an important focus of his independent evidence was to challenge the general narrative about the state of nutrient-related degradation in streams.

Dr Graeme Doole, DairyNZ's principal economist, used a cutting-edge economic modelling framework to support the submission. His evidence built on the work done in DairyNZ's Essential Freshwater submission in 2019 and work done with leading farmers in the region over the last 12 months. This work compared the effects of different policy options on the financial resilience of farms. Overall, tight N limits were shown to greatly reduce the ability of farm businesses to withstand price, climate, and policy shocks.

What's next?

The PC2 Hearings took place in October 2020, and at the time this article was written, we were still waiting for an outcome. Our experience is that it is always difficult to pick the outcome. However, as in farming, you always attempt to 'control the controllables' by doing a good job, even if the cards may not fall your way. The quality of the dairy sector submission was high, and we now await a recommendation from the Hearings commissioners on this plan change process.

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