

Sustainability Report

FOR THE YEAR ENDING 31 JULY 2018
FONTERRA CO-OPERATIVE GROUP LIMITED



Dairy for life

Working together, for tomorrow.

We are working together,
for tomorrow.

By improving how we dairy, we can
make a positive impact on the world.
That means caring about nutrition, for
our environment and for our communities.



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About this report

This report covers the activities of Fonterra Co-operative Group Limited and of joint ventures under Fonterra's management control. It covers economic, social and environmental impacts for the year ending 31 July 2018 – 'FY18'. This report sits alongside our 2018 Annual Review which sets out our financial performance.

➔ www.fonterra.com/annualreview2018

In certain sections throughout the report, we have included data relating to periods prior to FY18 where such data is relevant to, or useful context for the reader. Where we have done so, we have made it clear which year(s) the data relates to.

This is our second stand-alone sustainability report (our first was in 2017) and we intend to continue this reporting on an annual basis.

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option. We have included an index of disclosures against the GRI standards on *page 90*.

The GRI Standards are the world's most widely used standards for sustainability reporting, enabling organisations to measure and report their most important sustainability topics. For more information see:

➔ www.globalreporting.org

An independent assurance of the report has been completed by Bureau Veritas. This provides assurance that the report complies with GRI Standards and provides an accurate and fair representation of Fonterra's sustainability performance. Refer to the Assurance Statement on *page 92*.

We understand the importance of understanding stakeholder perspectives so we'd appreciate your feedback on this report and our performance. Please email us at sustainability@fonterra.com

Letter from the Chairman and Chief Executive

The Sustainable Co-operative is one of three core platforms for Fonterra’s strategy and in many ways is the most vital as well as the most challenging.

Our Co-operative has a strong heritage of respecting our natural resources and working with them to produce quality pasture-based milk.

We have changed as times have changed, recognising the importance of sustainability and the role it plays in ensuring our economic contribution, as well as our contribution to healthy lifestyles, can be both grown and maintained.

In some areas, such as the proactive steps taken from the early 2000s to fence waterways and better manage nutrient losses, we have shown leadership from within Fonterra. In others, such as our alignment and commitment to the United Nations Sustainable Development Goals (SDGs), we are joining forces across sectors and society to contribute to a healthier planet and the lifestyles of the people on it.



John Monaghan, Chairman and Miles Hurrell, Chief Executive Officer

External perspectives are invaluable, and we are looking forward to both guidance and challenges from our newly formed Sustainability Advisory Panel. We expect them to be part of our conscience as well as a constructive critic.

This is our second independently assured sustainability report. It acknowledges that while we are making good progress across our environmental, social and economic goals, some of the progress will be hard won. We have set industry-leading targets in many areas, and these need to be challenging, not easy. Where we have tried, but not quite made the mark, we say so. Where we have reached a milestone, we acknowledge it.

In many of our priority areas, such as nutrition, the environment and the community, we are proud to report good progress, as well as the work yet to be completed.

For example, we now have 71% of our everyday and advanced nutrition products meeting our Food and Nutrition Guidelines, endorsed by the New Zealand Nutrition Foundation. This is significant progress towards our target of 75% by 2020 and underlines our commitment to ensuring dairy remains an essential and affordable part of a healthy diet for all ages. It is especially pleasing that we can now electronically trace 92% of our products back to the source of our milk – this is a level of reassurance consumers expect and meets our Trusted Goodness promise.

We launched our Cared for Cows Standard, bringing an independently verified certification to the way our farmers treat their herds every day. Consumers care about animal welfare as much as our farmers, so it is important we can verify our claims that we care.

Consumers can also be reassured that New Zealand has among the lowest greenhouse gas emissions per litre of milk collected in the world at 0.87 per kgCO₂-e/kg FPCM¹. This too underlines our commitment to play a leading role in supporting New Zealand to reach our carbon reduction goals, while also reinforcing we have more work to do to bring our manufacturing emissions down.

Sustainability embraces environmental, economic, ethical and community concerns and it can often be a difficult balancing act to align them all. In the year covered by this report, our farmers have weathered some very difficult climatic conditions, from drought to floods, and they have seen production and anticipated incomes fall.

Despite the tough year, they have continued to set their sights high and to carry a significant share of our sustainability workload. They more than anyone recognise it is important to their families, their community, our country and the planet. They deserve and have our thanks. We also appreciate the work of our Fonterra employees, our suppliers, partners and customers for their contribution to this year’s progress.

Sustainability is not a long-term goal – it is an infinite one. Every year of work that we report represents a small step along the way.

John Monaghan
Chairman

Miles Hurrell
Chief Executive Officer

Our Values

We’re an organisation that spans many countries and cultures, and values are hugely important to us. But when you boil it down, there are just four simple things that guide us. And it doesn’t matter who or where we are within Fonterra, these are the values we all share.

 CO-OPERATIVE SPIRIT	 DO WHAT’S RIGHT
 CHALLENGE BOUNDARIES	 MAKE IT HAPPEN

¹ FPCM – Fat-and-protein-corrected milk.



Global Context

Around the world, the way food is produced and consumed is at the centre of many of the sustainability challenges facing society.

The future of food will be shaped by the global response to these challenges.



The Earth's climate has experienced warming of approximately 0.85°C during the last century and flood-related disasters have increased by 65% in the last 25 years. Not only does agricultural food production need to help reduce greenhouse gas emissions, it must also adapt to the increased variability in weather patterns.



2 billion people are already suffering from 'hidden hunger.'

Micronutrient deficiency or 'hidden hunger' is estimated to affect two billion people. The insufficient intake of key micronutrients such as iron, iodine and vitamins can impact development and exacerbate disease, and the impacts are not always visible.



Severe food insecurity was higher in 2017 than it was in 2014 in every region except northern America and Europe.



1 in 8

More than 1 in 8 adults are obese, placing them at much higher risk of acute and long-term health problems.



22%

Over 22% of children under five are still affected by stunting, which can impact cognitive development and school achievement.

Our Challenges

The world needs good nutrition to meet the demands of an expanding global population and rising rates of malnutrition.

The way the world is collectively producing food is depleting natural resources and creating waste faster than our planet can cope with. We believe the global food system must shift from compounding the problem to being part of the solution.

With New Zealand’s natural environment and some of the world’s most effective farmers, we’re well positioned to lead change. Dairy is a source of high-quality nutrition which, if produced efficiently and responsibly, can help improve the management of ecosystems while enhancing rural livelihoods.

Our ambition is to make the best nutrition in a way that regenerates our farms, our country and the world. We have a long way to go to achieve this, with significant challenges.

Some of these challenges are:

- Delivering sustainable nutrition
- Optimising the role of dairy in sustainable diets
- Transitioning manufacturing to net zero emissions
- Transitioning to regenerative farming
- Achieving social equity in our communities.

“

The global population is expected to grow by one billion by 2030, food production overall is depleting natural resources and rural communities are migrating to cities in search of better livelihoods.

How do we transform our food system to produce sufficient good nutrition, while regenerating the environment and returning decent livelihoods to farmers?”

Carolyn Mortland
Director Social Responsibility



“

Access to nutrition, education, employment and income continue to be significantly influenced by a person’s social background, their ethnicity and gender identity or expression. An inclusive and respectful world is essential for a fairer and sustainable future.

How do we eliminate social inequity, not just directly in our own workplace but through our influence on the supply chain and the wider society we interact with?”

Susan Doughty
GM Diversity, Inclusion and Talent



“

Sustainable diets will involve different food sources fulfilling different roles. Dairy is a source of high-quality nutrition, but it’s being associated, often inappropriately, with negative environmental impacts and animal rights concerns.

How do we properly evaluate the nutritional value of food sources against their environmental and social impacts? What is the best balance of different nutrition sources and the role for dairy within this?”

Dr Jeremy Hill
Chief Science and Technology Officer



“

Using heat to pasteurise milk and dry it into powder is great for food safety and for turning a short shelf-life, seasonal product into long-life valuable nutrition, but it requires significant amounts of energy.

How do we transition manufacturing processes to net zero emissions while maintaining a secure energy supply and safe long-lasting nutrition?”

Robert Spurway
Chief Operating Officer, Global Operations



“

Different farming practices have different impacts on the environment, animal welfare and the quantity of high-quality nutrition that can be produced profitably.

How do we transition to farming that regenerates nature and our environment while ensuring farmers can make good financial returns with the highly-productive pasture-based farming model that consumers value?”

Matt Bolger
Director Farm Services



Our Approach

A sustainable future for our Co-operative is part of our core strategy – it’s how we create long-term value for future generations.

We consider the long-term challenges and transitional changes we face as a global food producer to ensure we are acting and planning today with a long-term view, managing risks and identifying opportunities to deliver sustainable business outcomes.

To communicate our approach to sustainability we have grouped our priorities under **three pillars**:

- Nutrition:**
- Improving health and wellbeing through the products and services we deliver.
- Environment:**
- Achieving a healthy environment for farming and society.
- Community:**
- Delivering prosperity for our farmers and wider communities.

- On-track
- Behind plan



Nutrition

✓ **Address public health challenges** by improving the nutritional profile of our products and promoting healthy diets.

✓ **Improve access to adequate nutrition** by developing affordable products tailored to specific nutritional needs of communities.

✓ **Improve the wellbeing of individuals** by leading innovation in advanced dairy nutritional products to address specific health needs.

FY18 delivery

● Launch a new affordable product.

● Continue to reformulate products to nutritional guidelines.

FY19 delivery

● Launch a new affordable product.

● Continue to reformulate products to nutritional guidelines.

● Continue to rollout electronic product traceability.

Medium-term targets

● 2019: 100% sites certified to leading Food Safety and Quality (FSQ) level.

● 2020: 75% product portfolio meeting endorsed nutrition guidelines.

● 2025: 100% product portfolio meeting endorsed nutrition guidelines.

Long-term contribution

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Environment

✓ **Improve the health and biodiversity of our land and waters** by reducing the impacts of farming and manufacturing and working in partnership with others.

✓ **Lead the transition to a low-carbon future** by investing in innovation and infrastructure to remove greenhouse gas emissions from our supply chain.

✓ **Meet the growing nutritional demand** through improvements in productivity and minimising waste from farm to consumer.

FY18 delivery

● Agree action plans for 50 catchments.

● Deliver 1,000 Farm Environment Plans (FEPs).

● Pilot climate action plan on 100 farms.

FY19 delivery

● Deliver another 1,000 FEPs.

● Commission biomass co-firing at Brightwater.

● Establish global targets for waste reduction.

Medium-term targets

● 2025: All farms have FEP.

● 2026: All sites treating wastewater to leading industry standards.

● 2030: Climate neutral growth for farming.

● 2030: 30% reduction in GHG emissions for manufacturing operations.

● 2050: Net zero emissions for manufacturing operations.

Long-term contribution

6 CLEAN WATER AND SANITATION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

Community

✓ **Support healthy sustainable livelihoods for our farmers** by returning the most value from every drop of milk by moving more of our milk to higher value.

✓ **Provide positive livelihoods for our people** by developing a diverse, skilled and agile workforce and promoting a healthy and safe working environment.

✓ **Invest in the future of our communities** by sharing what we do best and building farming capability in key emerging dairy markets.

FY18 delivery

● Agree target for diversity and inclusion.

● Introduce family violence support initiative in New Zealand.

● Deliver 20+ million free portions of dairy nutrition for New Zealand children.

FY19 delivery

● Halve the gender pay gap for New Zealand employees from 2% to 1%.

● Continue to deliver free portions of dairy nutrition for New Zealand children.

● Deliver earnings per share forecast.

Medium-term targets

● Continue to invest in community programmes in key markets.

● World-class injury prevention (total recordable injury frequency rate).

● World-class engagement.

● Return on capital above our weighted average cost of capital.

Long-term contribution

1 NO POVERTY

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

10 FONTERRA SUSTAINABILITY REPORT 2018

FONTERRA SUSTAINABILITY REPORT 2018 11

Our Approach

Our Progress

	Indicator ¹	Target ²	FY16	FY17	FY18	Status	See page
Nutrition	Percentage of everyday and advanced nutrition products that meet endorsed nutritional guidelines. Fonterra consumer branded products.	75% by 2020 100% by 2025	–	–	71%	●	Page 29
	Percentage of manufacturing sites certified by an independent third party to leading food safety management system (e.g. FSSC22000)	100% by 2019	–	81%	90%	●	Page 34
	Total electronic traceability from finished product back to milk supply	All Fonterra products by 2020	–	62%	92%	●	Page 34
Environment	Net change in GHG emissions from dairy farming since 14/15 (NZ) (Pre-farm gate tCO ₂ -e)	Neutral to 2030	–	252,000 below baseline	817,000 below baseline	●	Page 55
	Farms with water meters on significant water intakes (NZ)	85% by 2020	50%	51%	53%	●	Page 52
	Farms participating in nutrient management reporting and benchmarking (NZ)	100% by 30 Nov 2015	86%	95%	97%	●	Page 50
	Farm Environment Plans (FEPs) (NZ)	100% by 2025	–	–	10%	●	Page 50
	Reduction in absolute manufacturing GHG emissions from FY15 baseline	30% reduction by 2030	3.6% reduction	4.7% reduction	3.0% reduction	●	Page 57
	Manufacturing sites are treating wastewater to leading industry standards	100% by 2026	25%	25%	26%	●	Page 51
Community	Employee engagement	World-class	3.65	3.85	4.00 ³	●	Page 77
	Female representation in senior leadership	50% by 2022	–	30.5%	30.1%	●	Page 75
	Ethnic representation in senior leadership	20% by 2022	–	–	9%	●	Page 75
	Total recordable injury frequency rate (TRIFR) per million work hours	World-class (<5)	6.4	5.2	6.1	●	Page 78
	Return on capital	Above our weighted average cost of capital	9.2%	8.3%	6.3%	●	Page 14

¹ All targets are global unless stated otherwise (e.g. NZ).

² All targets are by the end of the calendar year stated.

³ Our FY18 survey was moved to the start of FY19, a more suitable time of year for increased participation and it is expected to continue at this timing.

About Fonterra

Fonterra is a New Zealand-based dairy co-operative which brings together 10,000 farmers to care for people and the land through generations.

Our New Zealand-based advantage is our pasture-based farming model, with our farmers closely connected to the natural environment and their local communities.

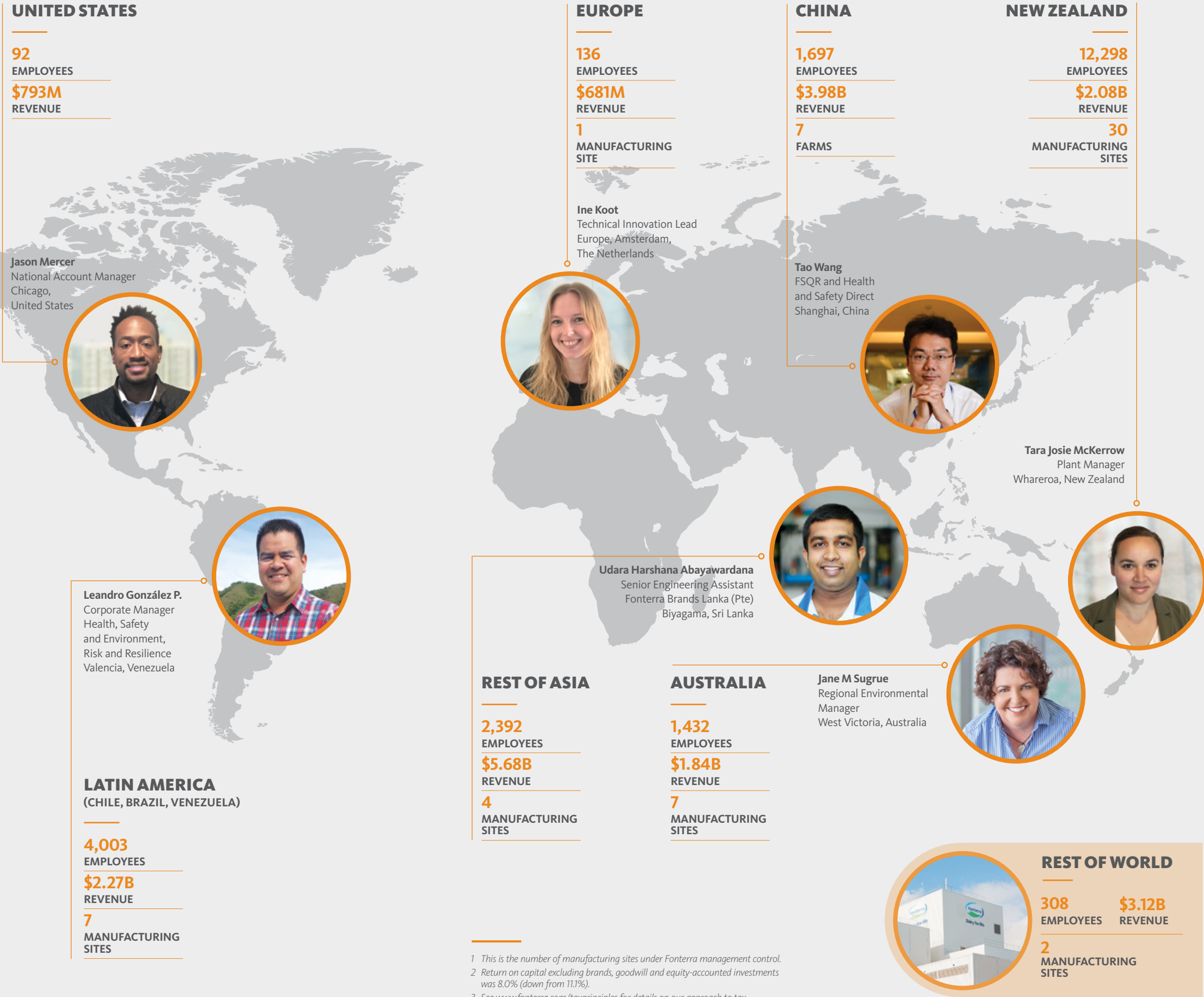
From our home in New Zealand, and from the farmers we work with in a number of other markets, we make high-quality dairy ingredients, foodservice and consumer dairy products, which are sold into 138 countries around the world.

GLOBAL DATA
22,358 (▲ FROM 22,269)
EMPLOYEES
\$20.4B (▲ FROM \$19.2B)
REVENUE
51
MANUFACTURING SITES¹
6.3% (▼ FROM 8.3%)
RETURN ON CAPITAL²

22,358
\$20.4B
REVENUE

Global revenue from sale of goods: \$20.4B (up from \$19.2B)		
Economic value distributed	FY18 \$ million	FY17 \$ million
Payment to suppliers (farmers) for NZ-sourced milk	10,115	9,471
Payment to suppliers (farmers) for non-NZ sourced milk	1,245	932
Tax expense ³	42	20
Profit after tax attributable to shareholders	221 loss (earnings of -\$0.14 per share)	734 (earnings of \$0.46 per share)
Dividend payment to equity holders of the Co-operative	161 (dividend of \$0.10 per share)	642 (dividend of \$0.40 per share)

For our full financial results, please refer to our Annual Review:
➔ www.fonterra.com/annualreview2018



1 This is the number of manufacturing sites under Fonterra management control.
2 Return on capital excluding brands, goodwill and equity-accounted investments was 8.0% (down from 11.1%).
3 See www.fonterra.com/taxprinciples for details on our approach to tax.

Inputs - Our dependencies

We rely on the social capital of our Co-operative as **10,000 New Zealand farmer shareholders** working together.

We rely on positive relationships with governments to enable trade and collaboration with others, to efficiently and effectively deliver nutritional products to the world.

We rely on the know-how, systems and intellectual property that more than **170 years of dairying** experience in New Zealand and more than 90 years of investment in research and development has generated.

We rely on a strong financial base to operate and invest in infrastructure for the future.

We employed capital of **\$9,552 million** from our farmer shareholders, unit holders and from debt during FY18.

We rely on the property, plant and equipment that allow us to collect milk, and make and distribute our products to the world.

With a total net book value of \$6,810 million at the end of FY18 this included:

- 500+ milk collection tankers
- 51 manufacturing sites.

Over **22,000 talented employees** directly contribute around the world.

Over **29,000 farmers and farm workers** use their skills to provide us with milk. And thousands of people in our supply chain are vital to the provision of the goods and services we procure.

Our farmers and their **4.7 million milking cows** rely on **1.8 million hectares of pastoral land** where rain, sunlight and soil grows natural grass. Some additional inputs include fertiliser, irrigated water and animal nutrition.

Manufacturing processes farmers' milk, combining it with other ingredients and materials to make our products. This includes **29PJ of energy** and **54 million cubic metres of fresh water**.

Outcomes - Our value creation

We exported to 138 countries and we are working to encourage international trade and increase common understanding through stakeholder engagement.

We partner with others to achieve positive social impact at scale through programmes such as Fonterra Milk for Schools, KickStart Breakfast, Living Water, Sustainable Catchments and Fonterra Grass Roots Fund.

Our people, processes and systems mean:

- **90%** of our manufacturing sites are **certified** to leading food safety standards
- **92%** of our products can be **electronically traced** back to milk supply.

We are working to deliver further innovations such as farming practices, methane reduction, improved nutrition and efficient manufacturing.

We create financial value for our investors and farmers by generating demand for their milk in higher-value products (up 3% to 45% in FY18).

- Return on capital was **6.3%**
- **\$10,115 million** paid to farmers for New Zealand-sourced milk
- **\$161 million** paid as dividend.

We are working to deliver a respectable return on capital and a strong payout to our farmers.

We manufactured **4 million tonnes of finished goods** and commissioned new infrastructure including:

- New cream cheese, butter and UHT plants in New Zealand
- New cheese plant in Australia.

We are upgrading our assets to be more resource-efficient and meet the changing demands of our customers.

We are working to improve health and wellbeing through the products and services we deliver. We provide a workplace that delivers:

- A safe environment (TRIFR = 6.1 per million hrs)
- High staff engagement (MySay = 4.00)
- Good development opportunities.

We are working to increase our positive impact by developing a diverse and inclusive workforce and providing support services to our farmers.

Our supplying farms emit **20 million tonnes of CO₂-e** and can impact local water quality. We are working with our farmers to achieve a healthy environment for farming and for society.

Our manufacturing sites emit **2 million tonnes of CO₂-e** and **discharge 59 million cubic metres of water**, which can impact local water quality.

We are investing to improve resource efficiency, transition to renewable energy and achieve leading standards of wastewater treatment.



Our Stakeholders

Taking into account the views and perspectives of our stakeholders, and building relationships, is critical to the long-term success of our Co-operative.

Our stakeholders are the people and organisations that we interact with and influence along our value chain, both directly and indirectly.

Over the past year we have strengthened our stakeholder engagement around several specific sustainability topics. For example, for Sustainable Catchments, see section on [page 48](#).



Central and regional governments

We engage with central and regional governments at many levels, coordinated through our Government and Stakeholders Affairs team. We also work in partnership on important issues such as climate change (Pastoral Greenhouse Gas Research Consortium), NZ Water (Department of Conservation), and children's wellbeing (KickStart Breakfast programme).

Topics of most importance:

- Climate change and mitigation
- Food safety and quality
- Protecting health and safety of people at work
- Human rights
- Using water responsibly, including water quality and availability.



Farmer shareholders and supplying farmers around the world

We engage with our New Zealand farmers shareholders at meetings and roadshows, and through the formal governance of our Co-operative.

We also engage with farmers on an ongoing basis directly through employees, such as Area Managers and Sustainable Dairying Advisors.

Topics of most importance:

- Financial performance
- Food safety and quality
- Biosecurity risks to animals, plant and human health
- Organisational governance.



Employees

We engage with our employees on an ongoing basis through our everyday interactions, regular engagement surveys and engagement with unions.

Topics of most importance:

- Food safety and quality
- Using water responsibly, including water quality and availability
- Minimising waste
- Protecting the health and safety of people at work.



NGOs

We engage with non-governmental organisations (NGOs) through collaboration and consultation on specific topics, e.g. The Forest Trust on palm products sourcing and the New Zealand Nutrition Foundation on nutrition guidelines.

Topics of most importance:

- Using water responsibly, including water quality and availability
- Climate change and mitigation
- Nutrition and health
- Minimising waste.



Investors (including unit holders, bond holders and banks)

We engage with our investors on a regular basis through updates, formal reporting and meetings coordinated through our Capital Markets team.

We also share information through this report and the Carbon Disclosure Project.

Topics of most importance:

- Financial performance
- Biosecurity risks to animal, plant and human health
- Food safety and quality
- Climate change, including energy use
- Water
- Minimising waste.



Customers and consumers

We engage with our business-to-business customers on an ongoing basis through our account management teams and by sharing information through programmes such as SEDEX and the Carbon Disclosure Project.

Our engagement with customers provides us with insight on their consumers and we engage with our own direct consumers through our service teams, email and social media, and consumer research.

Topics of most importance:

- Using water responsibly, including water quality and availability
- Food safety and quality
- Biosecurity risks to animal, plant and human health
- Climate change
- Human rights
- Animal health and welfare.

Responding to what's important

Nutrition and health – see [page 28](#)

Improving the range and formulation of our nutrition portfolio to meet our independently endorsed nutrition guidelines.

Food safety and quality – see [page 34](#)

Working towards all manufacturing facilities being certified to benchmark standards, embedding a culture of food safety and investing in electronic traceability and food defence mechanisms.

Water – see [page 48](#)

Reducing water use and improving wastewater quality at our manufacturing sites. Working with our farmers to minimise their impact on water quality. Working with our communities to improve the health of waterways at catchment scale.

Climate change – see [page 54](#)

Improving energy efficiency in our operations and transitioning to low carbon energy sources. Improving productivity on farm and investing in research and development to help reduce animal emissions.

Packaging and waste – see [page 62](#)

Seeking opportunities to decrease materials used, increase reuse and recycling, and reduce our solid waste to landfill.

Animal health and biosecurity – see [page 66](#)

Working with government agencies to minimise the impact of *M. Bovis* and supporting farmers to eliminate practices that contravene the five freedoms.

Employment rights – see [page 74](#)

Working with employees and unions to ensure we have a fair working environment, that encourages diversity and inclusion, and on-going learning and development.

Health, safety and wellbeing – see [page 78](#)

Continuing to focus on getting employees, contractors and visitors home safe every day and influencing our supply chain and wider society to do the same.

Human rights – see [page 80](#)

Continuing to assess the risk of human rights violations in our value chain and providing specific support for highest areas of risk: bullying and domestic violence.

Responsible procurement – see [page 82](#)

Assessing and influencing our supply chain to reduce the risk of social and environmental abuses.

At a governance level, the Co-operative Relations Committee of the Fonterra Board provides governance oversight of the management of Fonterra's relationships with key external stakeholders including relationships with governments, NGOs and community representatives.

This year, we directly surveyed representatives of key stakeholder groups to help us further understand the relative importance of sustainability topics for reporting. We have also used previous materiality assessments, as published in 2017, to inform our understanding.

Using the topics that we covered in the Sustainability Report 2017 as a starting point, we used the relative importance and non-importance indicated by this year's stakeholder survey responses to inform the coverage in this report. The responses were assessed by stakeholder group and the results for each stakeholder were treated on an equal basis. Topics of high importance to many stakeholder groups have therefore been given priority in this report. Topics of lower importance to many stakeholder groups have been omitted from this document, but may be disclosed on our website or in other reports or publications.

To determine the content for this report we applied the GRI's principles for defining report content including context, completeness, stakeholder inclusivity and materiality. The boundary for each material topic was defined on the basis of our materiality analysis.

Our Contribution to United Nations Sustainable Development Goals



Fonterra supports the United Nations Sustainable Development Goals (SDGs) and we are committed to playing our part, by working collaboratively to deliver change at scale.

The Dairy Declaration of Rotterdam¹ recognises the SDGs as the overarching framework for achieving sustainable development to 2030 and the critical contribution the dairy sector will play.

We understand that the SDGs and their underlying targets can help us refine our sustainability approach, not only to reduce risks, but also to identify opportunities for growth that contribute positively to their achievement.

We have analysed our business activities, material issues and value chain against the SDGs and their underlying 169 targets. Here we identify the specific goals where we can make the most material contribution, the objectives we have prioritised for specific indicators and where this occurs in our value chain.

¹ A joint declaration of the UN Food and Agriculture Organization and the International Dairy Federation signed in 2016.

Sustainable Development Goals		Our contribution	Indicator	Dairying	Operations	Consumption
	End poverty in all its forms everywhere	Create positive employment opportunities along our value chain	1.2	●	●	
	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Provide access to safe, affordable nutrition	2.1			●
		Address malnutrition through products tailored to specific health needs	2.2			●
		Share our dairy expertise with small-scale producers	2.3	●		
		Lift dairy productivity to meet growing nutritional needs	2.4	●	●	●
	Ensure healthy lives and promote well-being for all at all ages	Responsibly provide products to support wellbeing of mothers and infants	3.1 3.2			●
		Continue to improve the nutritional profile of our products	3.4			●
		Promote healthy and informed consumer choices	3.4			●
	Achieve gender equality and empower all women and girls	Ensure equal participation and opportunities for women in the workforce	5.5	●	●	
		Share our dairy expertise with female small-scale producers	5.5	●		
	Ensure access to sanitation and water for all	Reduce the impact of farming and manufacturing on water quality and ecosystems	6.3 14.1 15.1	●	●	
	Conserve and sustainably use the oceans, seas and marine resources	Increase water efficiency in areas of constrained supply	6.4	●	●	
	Sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	Protect and restore freshwater ecosystems	6.6	●	●	
	Promote inclusive and sustainable economic growth, employment and decent work for all	Provide positive and inclusive employment for all groups	8.5	●	●	
		Address labour and human rights issues in our supply chain	8.7 8.8	●	●	
		Provide a safe and secure working environment	8.8	●	●	
	Ensure sustainable consumption and production patterns	Manage and use natural resources efficiently	12.2	●	●	●
		Reduce food waste throughout our supply chain	12.3	●	●	●
		Reduce waste generation through our operations and product packaging	12.5		●	●
	Take urgent action to combat climate change and its impacts	Support farmers to build resilience to climate change	13.1	●		
		Reduced emissions across our supply chain		●	●	



Our Nutrition

We are working together to deliver great dairy nutrition.

By unlocking the potential in dairy through science and innovation, we are developing products that contribute to balanced nutrition and respond to people's changing needs, attitudes and lifestyles. It's all part of making sure dairy plays its part in a sustainable food system.

Nā tō rourou, nā taku rourou ka ora ai te iwi.

With your food basket and my food basket the people will thrive.



Dr Jeremy Hill
Chief Science and Technology Officer

"As global food systems transform, we must consider both optimal land use for production and optimal diets for consumption. What is the best balance of different nutrition sources and what is the role for dairy within this?"

Current assessment tools tend to focus on individual aspects such as adequate protein and greenhouse gas emissions, ignoring complexities such as bioavailability – the body's ability to absorb the nutrition. How do we robustly consider nutritional and health attributes such as these alongside the broader environmental and social implications, so we properly plan a transition to a sustainable food system?"

Our Nutrition

Our dairy products can play a valuable role in addressing deficiencies in diets and improving the health and wellbeing of people around the world.

Not all proteins are equal. We eat protein to help us build muscle and other body tissues. Some foods contain good proteins but they are not readily digestible. Other foods have a poor range of proteins but they are easily absorbed. Protein sources, such as milk, contain high-quality proteins and are readily digested to make these available within our bodies!

But malnutrition is not just about protein. Micronutrient deficiency is the ‘hidden hunger’ that affects an estimated two billion people. A diet lacking in key micronutrients can be adequate to live, but have serious implications for an individual’s health and their children.



How Fonterra is making this happen

We are focused on providing healthy and responsible products. We will:

- ✓ **Address public health challenges** by improving the nutritional profile of our products and promoting healthy diets
- ✓ **Improve access to adequate nutrition** by developing affordable products tailored to specific nutritional needs of communities
- ✓ **Improve the wellbeing of individuals** by leading innovation in advanced dairy nutritional products to address specific health needs.

KEY HIGHLIGHTS

- **Nutritional profile:** 71% of our everyday and advanced nutrition products meet independently endorsed nutrition guidelines – see [page 29](#)
- **Affordable products:** Our planned launch of a new affordable product this year has been delayed to FY19 but it is still under development – see [page 30](#)
- **Advanced nutrition:** We launched a new dedicated medical nutrition division – see [page 29](#)
- **Food safety and quality:** 92% of our products have electronic traceability from the finished product back to where the milk was collected – see [page 34](#)

Dairy products are nutrient-dense foods

They provide energy and high-quality protein which helps grow and repair muscles. They also help meet the body’s needs for:

- Vitamin B2** (Riboflavin) which helps reduce tiredness.
- Vitamin B12** which supports normal brain function.
- Vitamin A** which supports vision and immune function.



- Phosphorus** which helps generate energy from nutrients.
- Potassium** which supports muscle function.
- Calcium** which helps build strong teeth and bones.

Fonterra’s contribution to the SDGs from a nutrition perspective.



- Provide access to safe, affordable nutrition (2.1)
- Address malnutrition through products tailored to specific health needs (2.2)
- Lift dairy productivity to meet growing nutritional needs (2.4)



- Responsibly provide products to support wellbeing of mothers and infants (3.1 and 3.2)²
- Promote healthy and informed consumer choices (3.4)
- Continue to improve the nutritional profile of our products (3.4)

¹ These two aspects of protein quality are measured by the Dietary Indispensable Amino Acid Score (DIAAS).

² See [page 28](#) for our position on the responsible promotion of breast-milk substitutes.

Where we sell

Global Ingredients

Fonterra supplies dairy ingredients to many of the world's leading food companies. These include bulk products such as whole milk powder, bulk butter and cheese.

We also produce advanced ingredients, which have superior product performance supported by Fonterra's own research and process innovation. Advanced ingredients products include functional proteins, medical grade lactose, high-spec whole milk powder and extra-stretch cheese.


GLOBAL INGREDIENTS SOLD TO OTHER COMPANIES*

2,986 (▼ FROM 3,019)

VOLUME (METRIC TONNES, THOUSANDS)

\$16.3B (▲ FROM \$15.3B)

REVENUE (\$ BILLION)



Consumer

Fonterra manufactures, markets and distributes our own consumer products. These products include branded dairy products sold direct to consumers, such as milk, milk powders, yoghurt, butter and cheese. Our three global brands are Anchor,[™] Anlene[™] and Annum[™].

Foodservice

Fonterra supplies foodservice products to customers in over 50 countries. Foodservice is one of the largest industries in the world and encompasses food and beverages that are consumed out of the home such as in restaurants, cafés and bakeries.


TOTAL CONSUMER & FOODSERVICE*

1,798 (▲ FROM 1,783)

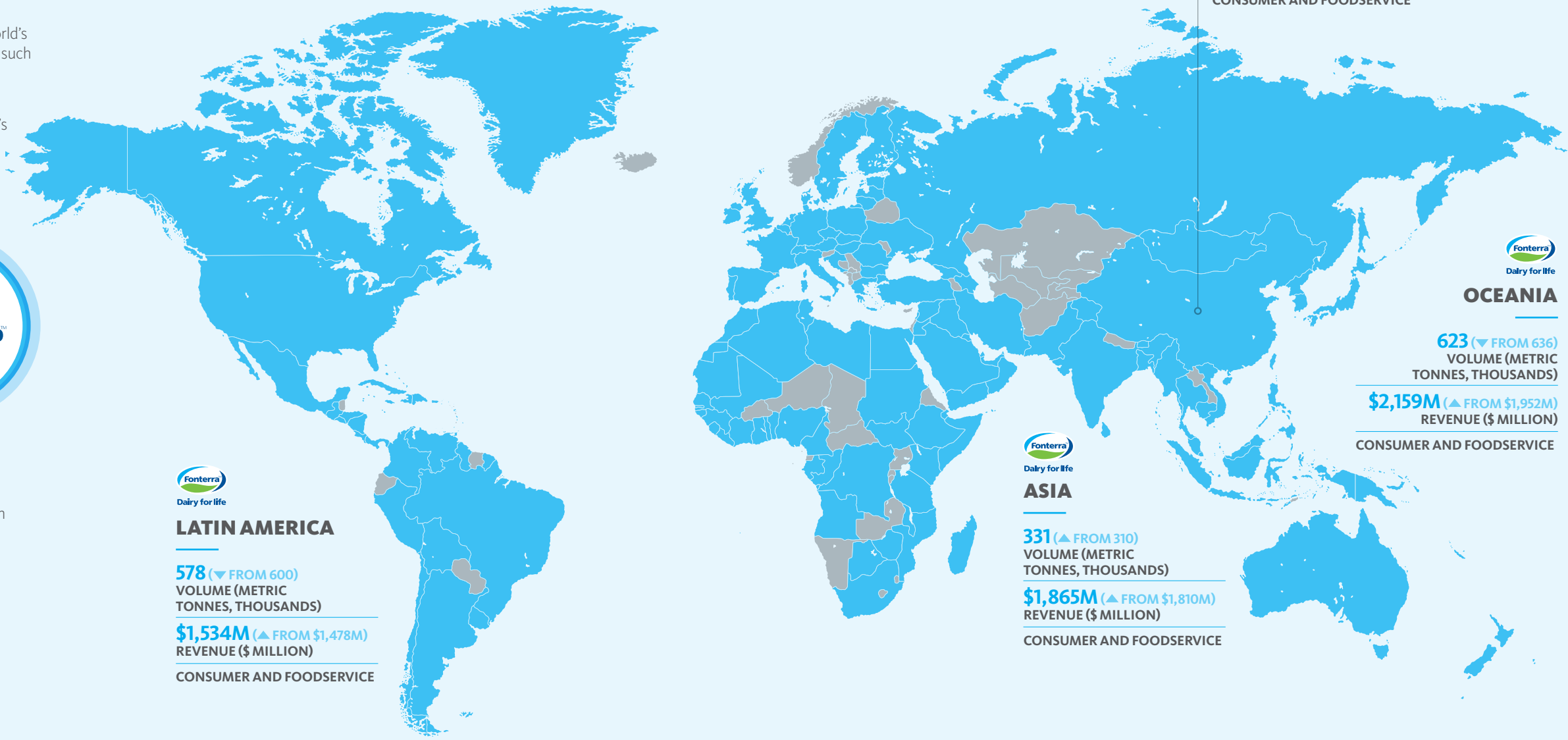
VOLUME (METRIC TONNES, THOUSANDS)


\$7.12B (▲ FROM \$6.52B)

REVENUE (\$ BILLION)



* Group totals also include China Farms revenue of \$0.3 billion and 22,000MT and the elimination of revenues and volumes from internal sales of \$3.26 billion and 683,000MT.





LATIN AMERICA

578 (▼ FROM 600)

VOLUME (METRIC TONNES, THOUSANDS)

\$1,534M (▲ FROM \$1,478M)

REVENUE (\$ MILLION)

CONSUMER AND FOODSERVICE



ASIA


331 (▲ FROM 310)

VOLUME (METRIC TONNES, THOUSANDS)

\$1,865M (▲ FROM \$1,810M)

REVENUE (\$ MILLION)

CONSUMER AND FOODSERVICE



GREATER CHINA


266 (▲ FROM 237)

VOLUME (METRIC TONNES, THOUSANDS)

\$1,564M (▲ FROM \$1,277M)

REVENUE (\$ MILLION)

CONSUMER AND FOODSERVICE



OCEANIA

623 (▼ FROM 636)

VOLUME (METRIC TONNES, THOUSANDS)

\$2,159M (▲ FROM \$1,952M)

REVENUE (\$ MILLION)

CONSUMER AND FOODSERVICE

138
COUNTRIES

Our products were delivered to 138 countries this year.

Health and wellbeing

Good nutrition is essential for people to lead healthy and fulfilling lives. There's work to do to achieve this.

The recently published *State of Food Security and Nutrition in the World*¹ highlights worrying health statistics related to poor nutrition. In 2017, the number of undernourished people increased to 821 million, reversing a long downward trend. At the same time, adult obesity climbed to 672 million. In many countries, undernourishment, obesity and micronutrient deficiencies – the triple burden of malnutrition – co-exist.

When pregnant women have poor access to food, the risk of low birthweights and stunting in children increases. In turn, children with low birthweight or stunting, have a higher chance of being overweight later in life. Disturbingly, stunting still affects more than 22% of children under five globally.

As a food company, we recognise the valuable role dairy products can play in addressing deficiencies in diets and improving health and wellbeing for people around the world. This section covers our global approach to nutrition and its contribution to health and wellbeing.

We focus on the branded consumer products we control directly, but we also seek to add value to our range of foodservice and ingredient products, by influencing and helping our customers with new product innovations.

Our approach

The Fonterra Group Nutrition Policy sets out our overarching commitments to deliver highly nutritious dairy products to the world.

The policy is supported by detailed guidelines that define nutrition criteria for the composition of products, and inform our marketing practices across all branded consumer products and ingredients.

The New Zealand Nutrition Foundation has independently reviewed and endorsed these guidelines as evidence-based, founded in robust nutritional science and reflecting international directives on nutrition and health. These guidelines complement national food standards and regulations, as well as our own education and advocacy activities to raise awareness of the value of dairy nutrition in healthy, balanced diets. For example, our criteria for added sugars and refined carbohydrates are intended to help consumers achieve the World Health Organization's (WHO) recommended guidelines for limiting daily added sugar intake.

We support the aim and intent of the WHO Code for the Marketing of Breast Milk Substitutes and are committed to complying with the relevant industry codes and legislation in all countries where our products targeting infants and young children are sold.

As part of our consumer products strategy, and to guide our research and development processes, we have grouped our products into four categories:

- **Advanced nutrition** – Daily dairy nutrition with targeted nutritional fortification based on sound science, promoting specific health benefits based on robust evidence (e.g. Anlene Heart-Plus™, NZMP Super Fortified Instant Skim Milk Powder).
- **Everyday nutrition** – Daily serves of dairy nutrition, promoting the important and flexible role of dairy in meeting the daily nutrient requirements of a healthy, balanced diet (e.g. Anchor™ Milk).
- **Affordable nutrition** – Products formulated based on sound science to address specific needs of communities, providing access to affordable nutrition to fight under nourishment (e.g. Anchor™ Fortified Milk Drink in Ethiopia).
- **Occasional and indulgent** – Promoted as occasional products to be enjoyed in moderation as part of a healthy, balanced diet (e.g. Tip Top ice cream).



What we've been doing

Improving the nutritional profile of our consumer products

We continue to improve the nutritional benefits of our products. Our dairy nutrition criteria define minimums for dairy protein, calcium, riboflavin, niacin, vitamin B12, phosphorus and potassium content. We are also minimising the addition of added sugars and refined carbohydrates to less than 2% of total daily energy requirements per serve, minimising added sweeteners (natural or artificial), limiting sodium in products positioned for nutrition and health, and limiting total fat content.

We have set ourselves targets for our everyday and advanced nutrition products and this year we have established our baseline (see Our Performance section on [page 32](#)). See the Case Study on Improving Nutrition on [page 31](#) for examples of improvements this year.

Investment in innovation

The Fonterra Research and Development Centre (FRDC) is one of the largest of its kind in the world, with over 300 scientific and technical experts. It's here that we invest most in innovation, driving scientifically supported benefits from dairy to meet the nutritional needs and expectations of society.

This year, we continued our research into the effects of dairy products on mobility, demonstrating that dairy protein has a positive impact on muscle protein synthesis.

Looking at women's health, our research has shown that milk fortified with calcium and vitamin D improves bone density in post-menopausal women. Similarly, for pre-menopausal Chinese women living in Malaysia, we showed that fortified milk supplements improved vitamin D levels and grip strength, and maintained bone density.

Building on previous research into our proprietary probiotic strain DR20™, which has shown to help treat children's eczema and potentially reduce the risk of gestational diabetes when taken during pregnancy, a new study published this year indicated that DR20™ can also help reduce postnatal depression by 50%.

Established new dedicated medical nutrition division

With NZMP ingredients positively contributing to this area for many years, this year we decided to establish a specialised medical nutrition division. The small team is tasked with pioneering a range of dairy nutrition solutions for people who are recovering from disease and illness at all stages of life, or who want to take preventative actions to help them live longer and healthier lives. This is part of our strategy to unlock the health benefits of dairy, delivering a positive impact on society and delivering higher value for our farmers' milk.

As part of this new venture, we are participating in a major international project with 24 science and nutrition organisations to investigate the role of diet in maintaining nourishment and function in people over 70 years. Older people in many countries, including New Zealand, are at higher risk of health issues because of poor nutrition. In Europe, about 20% of older adults who live at home are malnourished or at risk of malnutrition. In New Zealand, almost 75% of older adults involved in a recent Massey University study were found to be at risk of malnourishment, or were malnourished, when they were admitted to hospital.

28 FONTERRA SUSTAINABILITY REPORT 2018

¹ FAO, IFAD, UNICEF, WFP and WHO. 2018. *The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition*. Rome, FAO.

Health and wellbeing continued.



Developing affordable nutrition

In countries with emerging markets such as Ethiopia, a significant proportion of the population survives on less than US\$10 a day.

We have recognised the opportunity to create value by helping to fight malnutrition through targeted new products that nourish families living on less than US\$10 a day. It's not just the taste, nutritional and dietary aspects of the product that will ensure it is a success. We also need to consider access for consumers living in remote and rural areas, and design innovative communication channels to reach our target audience.

We had planned to launch a new affordable nutrition product this year, but the development phase has taken longer than we estimated. We've engaged with government officials, NGOs, doctors and teachers in key markets to determine the most important nutrient deficiencies. We've been working closely with consumers to co-create such a product – undertaking testing with them and adjusting the product based on their feedback. This included the team spending time living with consumers in remote areas to understand their life, daily habits and how they prepared meals. We are now investigating the new product launch for the year ahead.

Investigating complementary nutrition

Dairy is a unique source of nutrition: a complex mix of proteins, fats, lactose, minerals and other micro-nutrients with the flexibility to play a fundamental role in healthy, balanced diets as recognised by governments and health experts around the world. Consumers value the natural goodness of dairy and we are confident they will continue to purchase it as a premium source of nutrition.

To help meet the world's increasing need for food, especially protein, we believe a sustainable diet will involve a combination of traditional and alternative nutritional sources.

We're therefore working with a wide range of world-leading organisations, including research institutes and start-ups, to investigate the potential of complementary nutrition sources such as plant and fermentation-produced nutrition. Over time these ingredients may play a role in our business alongside our core dairy business, giving more options to customers and consumers.

Supporting action on health

In 2017, we signed up to the New Zealand Ministry of Health's Healthy Kids Industry Pledge. We are committed to identifying and contributing solutions that aim to help reduce rates of obesity for all children in New Zealand. This year, we continued to improve the formulation of our everyday products in New Zealand (see [page 29](#)), rolling out Health Star Ratings on a further 46% of our applicable¹ products (achieving a total of 93%) and continuing to deliver our in-school nutrition programmes (see [page 36](#)).

In 2018, we made a submission to the Australian Federal Inquiry into the obesity epidemic. Our submission reinforced our support for government, industry and community-based initiatives that promote the consumption of dairy products as one of the core food groups, and support increased physical activity to improve health outcomes for all Australians.

¹ Applicable products are those intended for everyday consumption in New Zealand and where the packaging is not also used for export to regions where the Health Star Rating is not accepted.

² Excluding infant formula follow-on milk where lactose is added to comply with the regulations for the category.



CASE STUDY

Healthier options for mothers in Malaysia

Annum[™] Materna is specially formulated to support the nutritional needs of pregnant women or women planning to have children. Annum[™] Lacta is specially formulated to meet the nutritional requirements of breastfeeding mothers.

This year, we launched a no added sugars formulation for the Annum[™] Materna plain flavour, and a reduced sugar version for the chocolate flavour. These are intended to help address common pregnancy concerns such as excessive weight gain and the risk of pregnancy induced diabetes due to excessive sugar intake.

The new formulation is also fortified with probiotic DR10[™] to support good gut health.

At the same time, we released a new no added sugars version of Annum[™] Lacta.

These releases complete our rollout of no added sugars across the entire Annum[™] range² in Malaysia.



Health and wellbeing continued.

Our performance

Our targets					
Indicator	Target	Performance			Commentary
		FY16	FY17	FY18	
Percentage of everyday and advanced nutrition products that meet endorsed nutritional guidelines ¹ (Fonterra consumer branded products globally)	75% by 2020 100% by 2025	—	—	71%	We assessed our portfolio for the new target we set in FY17 and we are pleased with the baseline. Innovation will be required to deliver some of the remaining improvements but we are on track to achieve the targets.

Awards and recognition

Anchor™ Protein+ Plain Yoghurt won the best Dairy Product of 2017, awarded by The New Zealand Healthy Food Guide. Annum™ Materna was awarded the Malaysian Parenthood magazine and Readers’ Choice Award 2018.

Our commitments to population nutrition and obesity prevention were independently assessed this year by universities in New Zealand and Australia using a methodology developed by INFORMAS². The assessment is primarily based on information that is publicly available and we were pleased to be ranked second overall in New Zealand, with top marks awarded for our corporate population nutrition strategy, and we ranked ninth in Australia. We welcome the opportunity to continue engaging with researchers in both jurisdictions, to improve transparency around our nutrition commitments and our overall results in any future studies.

Compliance with regulations

In the past year, we had one perceived breach of marketing guidelines. No financial penalty was imposed. We are focused on ensuring we meet our compliance obligations.

WHAT’S NEXT

- We will continue to improve the nutritional value of our consumer branded products and minimise added sugars, salt and refined carbohydrates.
- We will complete our new product development and launch at least one new affordable nutrition product.
- We will continue to invest in research and development and new innovations for our entire product range.

¹ Assessment of existing products is based on protein and calcium criteria only because most of the portfolio predates the guidelines and information on other criteria is not available. All new products are assessed against all guideline criteria.
² An international network of researchers that benchmarks food environments in over 30 countries worldwide.



CASE STUDY

Helping consumers spread their protein intake across the day

Scientific evidence suggests that protein intake should be spread throughout the day to support optimal muscle health. However, many consumers get most of their protein in their evening meal.

This year, we relaunched our Anchor website with a suite of nutrition articles to help consumers understand the role of protein in diets and make informed choices for a healthy diet.

Our range of Anchor™ Protein+ products, which include high-protein milks, yoghurts and smoothie boosters, are designed to help consumers spread their protein intake across the day.



Food safety and quality

Safe food. Safe people.
World class quality.
It's our promise.

We make a promise to our customers and consumers to make our food to standards of uncompromising food safety and world-class quality. That's why all our food products are assessed for health and food safety impacts prior to initial launch and on an ongoing basis.

Our approach

Fonterra operates a Food Safety and Quality System to ensure that, wherever we are in the world, we have a clear, consistent framework to deliver safe, quality products and services. Our Food Safety and Quality System is made up of four key components: our Food Safety Policy, business unit requirements, partner requirements, and our food safety and quality behaviours.

At Fonterra, food safety and quality is everyone's responsibility – from our farms all the way to our customers and consumers around the world. Accountability for performance extends from the Board of Directors, through the Fonterra Management Team, to individual managers, workers, contractors working on Fonterra sites and providers of goods and services. To ensure consistency of approach and continuous improvement, the Group Food Safety, Quality and Regulatory (FSQR) organisation and operating model, including the Food Safety and Quality Council, has been embedded across Fonterra. Our Food Safety and Quality System is subject to regular scrutiny from third-party audits by regulators, key account customers and certification bodies.

What we've been doing

Trust in Source

We are working towards all our manufacturing facilities being independently certified to benchmark quality standards¹ by 2019. This year, we have progressed to 90% of all manufacturing sites achieving this level. In addition, our own farming operations in China have achieved this benchmark.



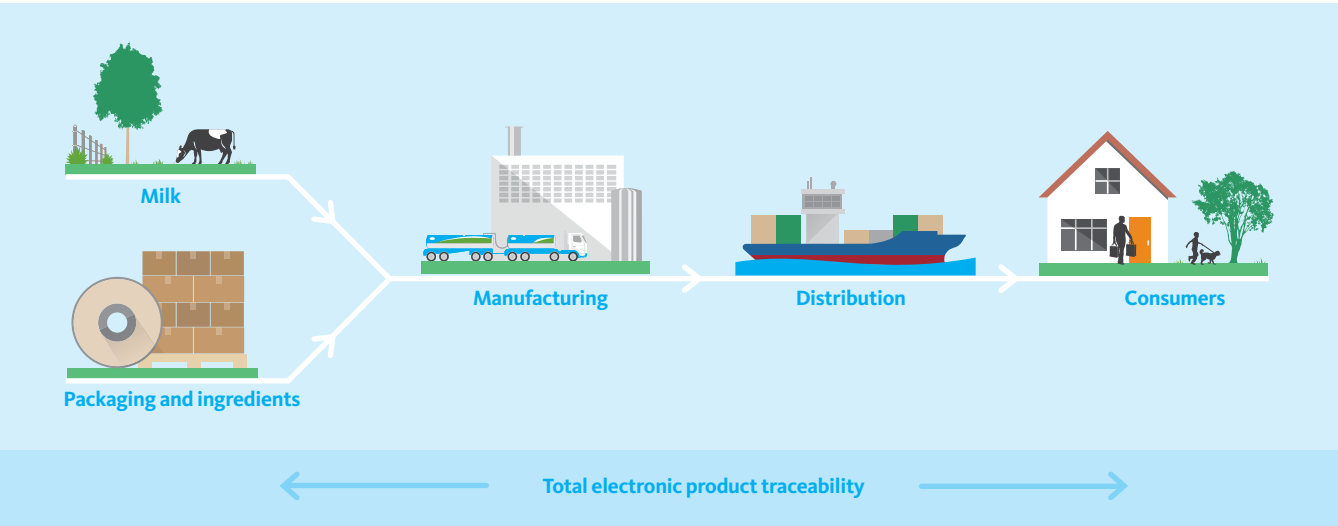
Having systems and processes in place is essential, but thinking and living quality is what makes the biggest difference. Strengthening food safety and quality as a cornerstone of our culture has been our focus over the past four years. In FY17, independent research showed the success of these efforts and this year we have built on that success with a number of global initiatives, including the preparation of standardised induction programmes. These induction programmes apply to both operational and non-operational employees, which starts the conversation about food safety from the moment they join the organisation.

Product traceability

We have been investing significantly to integrate our systems and enhance our electronic capabilities around traceability. This now allows us to very efficiently track batches of product, the ingredients that went into them and the primary packaging, from the raw milk we collect and process right through to the consumer. Some activities that used to take more than two hours can now be completed in minutes. All the important inputs are visible in one system for trace-enabled sites, which is now 92% of our global manufacturing plants.

This underlying technology allows us to provide new, external traceability services for consumers. By scanning a unique QR code on the product they are about to buy, consumers can check that it is authentic and also find out additional information about its provenance. Scanning the product after purchasing it will give them up-to-date status information too.

This service was launched in FY17 across our Annum™ paediatric and maternal products in New Zealand and via online sales in China. During FY18 this has been extended to retail sales of paediatric products in China and Hong Kong.



Our performance

Our targets				
Indicator	Target	Performance		Commentary
		FY17	FY18	
Percentage of manufacturing sites certified by an independent third party to leading food safety management system (e.g. FSSC22000)	100% by the end of 2019	81%	90%	Good progress and expected to achieve target on time.
Total electronic traceability from finished product back to milk supply	All Fonterra products by the end of 2020	62%	92%	Good progress made during the year and on track to achieve target.

No recalls

During the year, there were no consumer recalls of product for safety reasons.



QR Codes

Full electronic traceability gives consumers rapid access to provenance information about the specific item in their hand.

WHAT'S NEXT

- We are now looking to influence and support the third-party manufacturers who provide services to us, building on the lessons we have learned from our own sites about the importance of food safety culture.
- We will continue to expand the external traceability services available to consumers, with Vietnam, Indonesia, Singapore and Thailand scheduled for QR coded Annum™ and Materna products during FY19.
- Making use of the underlying technologies that have been established for traceability, we are now looking to provide new complementary services to employees and customers to further increase food safety practices and give consumers even more confidence that they are buying authentic, safe products.
- We will also be expanding our use of food crime prevention technologies to further protect our products, customers and consumers.

¹ A standard recognised by the Global Food Safety Initiative, currently FSSC22000 or BRC.

In-School Nutrition

Fonterra Milk for Schools

Fonterra's Milk for Schools initiative is helping more than 140,000 school kids aged 5-11 get access to nutritious milk every day. The programme is funded by Fonterra and our farmers and delivered in partnership with schools, with around 1,420 participating across New Zealand.

Since the introduction of the programme, we have been working with researchers to evaluate the impact of the programme on the health of participating children and we have seen positive results. A University of Auckland study of children participating in Fonterra Milk for Schools showed that over the first two years of the programme the percentage of children consuming the recommended minimum amount had risen from 72% to 84%. Another study by Massey University found that participating children grew at the same rate as the control group, in terms of height and weight, but that they had significantly improved bone health.

We had a lot of fun this year celebrating our fifth birthday and delivering our 100 millionth portion of milk. We held a competition for participating schools, with five winning schools getting a visit from New Zealand rugby legend Richie McCaw in a helicopter.



Fonterra Milk for Schools
This initiative is helping more than 140,000 school kids get access to nutritious milk every school day.



KickStart Breakfast

A nutritious breakfast and a nurturing environment can help kids achieve their potential. The KickStart Breakfast programme, which we deliver in partnership with the Ministry of Social Development, Sanitarium, and local community volunteers, is helping provide this to Kiwi kids who might otherwise miss out. Fonterra provides the Anchor milk, Sanitarium provides the Weet-Bix, and local schools are responsible for running the KickStart Breakfast club.

This year, KickStart grew to 976 breakfast clubs and served more than 125,000 breakfasts every school week. That's more than five million portions of milk for the year.



KickStart Breakfast Clubs
As well as providing a healthy breakfast, the clubs also foster a safe and nurturing environment for children to get the best possible start to their school day.

Trusted Goodness

Fonterra's commercial strategy is to turn more of our farmers' raw milk into higher value products. As consumers are becoming increasingly concerned about where their food comes from, and how it's made, in many cases they are willing to pay a premium when there are assurances that the company behind that food acts in a responsible and ethical way.

In FY17, we launched the Trusted Goodness™ quality seal and on-farm claims as a way to independently demonstrate specific attributes of our products and the good work by our supplying farmers.

Independent certification is an important way to give our customers and consumers confidence. For each specific claim, our farmers provide information each year. Additional verification is required and our specific processes must be certified by an independent party such as AsureQuality who are accredited by JAS-ANZ.

Grass and Pasture-Fed Standard

New Zealand's natural, grass-fed advantage and non-GMO status are increasingly valued by our customers and consumers.

To support our grass-fed claim, we developed a Grass and Pasture-Fed Standard that is third-party verified. This standard outlines the requirements for our grass-fed dairy:

- a minimum annual average of 80% grass feeding and
- a minimum of 90% time on pasture.

These are amongst the highest rates in the world.

Non-GMO Project Standard

We see value in maintaining optionality around the use of technology and the possibilities offered by new and emerging life science technologies such as gene editing. Such advances could potentially offer significant benefits for sustainable nutrition, animal welfare, human health, biosecurity and the environment.



We also listen carefully to our customers and consumers and recognise the value in New Zealand's global reputation for its genetically modified organism (GMO) status, as supported by the current New Zealand regulatory framework. To date, no genetically modified plants or animals have been released in New Zealand, and the use of recombinant growth hormones on dairy cows is prohibited.

The Non-GMO Project is a mission-driven non-profit organisation dedicated to building and protecting a non-GMO food supply in North America. Its Non-GMO Project Standard is one of the fastest growing voluntary labels in the United States retail sector. To become verified, all inputs into an individual product must be evaluated for compliance, including everything from the cows' feed, to the activities at the specific site where the product is manufactured.

This year, a further 19 products were verified for Non-GMO Project manufacture, taking the total to 37 ingredient products sold under our NZMP brand into the North American market. We also completed Non-GMO Project verification of our organic milk supply and associated manufacturing sites.

Cared for Cows Standard

This year, we launched our Cared for Cows Standard. While we already had high standards of animal health and welfare, by having independent certification against this standard we will be able to reinforce the good work done by our farmers.

The programme involves some extra annual data collection from farmers covering key indicators of animal health and welfare performance and additional verification as part of our on-farm assessment.

For more information see Animal Health and Welfare on page 66.



Our Environment

We are working together to find ways that regenerate nature and our environment.

By understanding the connection between land, animals and water, and using resources wisely we are finding a path to regeneration. It's all part of our transition to a more sustainable way of dairying.

*Tiakina te whenua i tēnei rā,
hei oranga tangata mō ngā rā e heke mai nei.*

*Caring for the land today,
so that the land cares for us tomorrow.*



Robert Spurway,
Chief Operating Officer,
Global Operations

"As we transition manufacturing processes to net zero emissions, we must maintain a secure supply of energy. Large quantities of energy are required to pasteurise milk and dry it, turning it into valuable nutrition with a long life. What are the best alternative energy sources to ensure reliable supply so we do not waste valuable nutrition, or cause other environmental or animal welfare impacts?"



Matt Bolger,
Director Farm Services

"As we continue to invest in sustainability on farm, we want to retain the pasture-based farming model that farmers, communities and consumers of New Zealand products value. How do we help our farmers transition to farming that regenerates the environment and reduces greenhouse emissions while improving productivity?"

Our Environment

Globally, food production systems are facing a transformational challenge to meet the demands of a growing population within environmental limits.

Dairy is a rich source of many vital nutrients but the industry needs to find more efficiencies and improve its practices to achieve positive environmental outcomes.

New Zealand farmers lead the world in many aspects of sustainable dairying, with high productivity, year-round pasture grazing and lower use of supplementary feeds. However, the scale of the industry in New Zealand means that our environmental footprint is of national significance.

We are working in our sites, with our farmers and our communities to improve our environmental performance. To achieve positive environmental outcomes requires working together to deliver improvements at scale.



How Fonterra is making this happen:

We are focused on improving our productivity and protecting the environment. We will:

- ✓ **Improve the health and biodiversity of our land and waters** by reducing the impacts of farming and manufacturing and working in partnership with others
- ✓ **Lead the transition to a low-carbon future** by investing in innovation and infrastructure to remove greenhouse gas (GHG) emissions from our supply chain
- ✓ **Meet the growing nutritional demand** through improvements in productivity and minimising waste from farm to consumer.

KEY HIGHLIGHTS

- **Protecting New Zealand's waterways:** Our farmers have essentially excluded all their dairy cattle from waterways on their farms – see [page 50](#)
- **Investing in resource-efficient manufacturing:** Investments in our Pahiatua site have improved water efficiency by 64% since FY15 and lessons are being shared to accelerate progress across our other sites – see [page 53](#)
- **On-farm GHG emissions:** Pilot of greenhouse gas reporting completed with 104 farms to help improve emissions efficiency on farm – see [page 56](#)
- **Biosecurity response:** We have helped respond to the first detection of *Mycoplasma bovis* into New Zealand, seeking to minimise its impact and eradicate it if possible – see [page 66](#)



Fonterra's contribution to the SDGs from an environmental perspective.



Share our dairy expertise with small-scale producers (2.3)

Increase productivity through sustainable practices (2.4)



Reduce the impact of farming and manufacturing on water quality (6.3)

Increase water efficiency in areas of constrained supply (6.4)

Protect and restore freshwater ecosystems (6.6)

Reduce impact of farming and manufacturing on marine ecosystems (14.1)



Manage and use natural resources efficiently (12.2)

Reduce food waste throughout our supply chain (12.3)

Reduce waste generation through our operations and product packaging (12.5)



Reduce emissions across our supply chain

Support farmers to build resilience to climate change (13.1)

Reduce impact of farming and manufacturing on freshwater ecosystems (15.1)

Our farming and manufacturing activities



New Zealand is our home – it’s where our shareholder farmers are based and where we source most of our milk. We also have operations around the world.

This map shows the locations of the manufacturing sites we manage and that we report in this section. It also shows the small number of farms that we directly manage around the world. The litres of raw milk collected refers to the total raw milk that we collected from farms in the region.



LATIN AMERICA
(CHILE, BRAZIL, VENEZUELA)

7
MANUFACTURING
SITES

497M LITRES
RAW MILK COLLECTED

1
FARM

NETHERLANDS

1
MANUFACTURING
SITE

SAUDI ARABIA

1
MANUFACTURING
SITE

SRI LANKA

1
MANUFACTURING
SITE

14M LITRES
RAW MILK COLLECTED

1
FARM

CHINA

296M LITRES
RAW MILK COLLECTED

7
FARMS

AUSTRALIA

7
MANUFACTURING
SITES

2,046M LITRES
RAW MILK COLLECTED

NEW ZEALAND

30
MANUFACTURING
SITES

16,985M LITRES
RAW MILK COLLECTED

29
FARMS

ETHIOPIA

1
MANUFACTURING
SITE

MALAYSIA

2
MANUFACTURING
SITES

INDONESIA

1
MANUFACTURING
SITE

How we work with farmers

Our farmers are at the heart of our Co-operative. We’ve built our expertise on the legacy of thousands of dairy men and women who have taken their milk to the world to meet the changing needs of consumers.

Today, more than 85% of our milk comes from the farmers in New Zealand who own Fonterra and we also source milk in other countries around the world (see map on the previous page).

In this section, we cover farming practices on all farms directly supplying milk to Fonterra’s manufacturing sites globally.

Farms we manage

We directly manage a small number of farms around the world. In New Zealand, we manage 29 Fonterra owned farms which neighbour our manufacturing sites. We use these farms to manage excess water and nutrients from our manufacturing sites. The irrigation and spreading of nutrients acts as a fertiliser, improving soil health and supporting pasture growth. We then grow and supply supplementary animal feeds to our farmers.

In China, we operate seven large-scale farms and produce raw milk for use in local products. This complements the dairy products we export to China from New Zealand and Australia. These farms use a housed farming system rather than the pasture-based model most commonly found on the farms which supply us with milk. We also directly manage farms for training and demonstration purposes – one in Sri Lanka and one in Chile (see Dairy Development on page 85).



Expectations for supplying farms

We encourage and support farmers to adopt good management practices and to continuously improve profitability, environmental efficiency and resilience. We have a set of policies and standards that support sustainable dairy farming. Our *Farmer Handbooks* set expectations for farmers when it comes to the environment, animal health and welfare, biosecurity, and food safety and quality.

Our Raw Milk Harvesting Standard sets out the minimum requirements that all farmers must meet. It applies across all markets we source milk from and forms the basis of the on-farm audits that we conduct.

Through a combination of our own staff and third parties, we regularly assess supplying farms around the world:

- In New Zealand, every supplying farm is visited each year by an independent farm assessor. This year, we adjusted the approach to help streamline the assessment and introduced a more detailed assessment to provide greater value. It is expected that each farm will participate in a detailed assessment once every five years and this year we completed 2,087 (21% of supplying farms).
- In Australia, farmer suppliers are visited multiple times each year by our own staff and independent assessments are scheduled based on prior compliance levels. Every farm is assessed at least once every two years and in FY18, 73% of farmers were assessed.
- In Latin America, each farm is assessed by a combination of our own staff and third parties. In addition, our New Zealand based team audits a random selection of farmers on an annual basis.
- In China, our farms are under our direct control. These farms are subject to assessments by our New Zealand Milk Sourcing team and Internal Audit team. These farms have also been independently assessed to the benchmark food safety and quality standard for farms called SQF.

New Zealand on-farm assessments			
	2016/17	2017/18	Commentary
Number of assessments	9,891	9,694	This represents more than 99% of supplying farms during 2017/18. The lower number corresponds to fewer supplying farms.
Percentage of farms with effluent infrastructure capable of 365-day compliance	82%	86%	Progress continues to be made towards achieving 100%.
Percentage of farms referred to SDAs with major or critical non-compliances	3.2%	3.9%	There was a slight increase in referrals because we have included those arising from Farm Environmental Plans as well as from annual assessments.
Number of milk collection suspension notices issued	78 farms due to stock exclusion	98 farms due to stock exclusion 8 farms due to effluent requirements	There was a slight increase in the number issued as we focussed on completing our stock exclusion ¹ targets.

On all farms where it is identified that requirements are not being met, our Sustainable Dairying Advisors (SDAs), or equivalent, develop an action plan with the farmer which includes target dates for completion. We may also suspend the collection of milk until we are satisfied that all minimum requirements are being met and that any actions required to avoid a repeat of the issue have been completed.

Sustainable dairying – on-farm support services

We have farmer engagement and support programmes in every country we source raw milk from. These programmes enable us to build relationships with farmers, communicate our requirements with them and support them to improve their farming systems. We tailor these programmes to reflect the priority farming issues in the country and to encourage performance that goes beyond the minimum requirements.

In New Zealand, our Tiaki sustainable dairying programme provides our farmers with specialised regional expertise through our team of SDAs, which we grew from 17 in FY17 to 24 in FY18. It has proven quite difficult to recruit people with the required skills to fill this role, but by the end of 2018 we will have 28, just short of our target of 30. A priority for us is helping farmers establish a Farm Environment Plan (FEP), unique for their farm. Using digital mapping tools that we have developed and a suite of good management practices, we can help the farmer identify risks to the environment and agree prioritised improvement plans.

We have used our experience from New Zealand to provide new support services and digital tools to our supplying farmers in Australia over the past year, with the aim of adding tangible value to our suppliers. So far, around 85% of our Australian farmers have signed up to Farm Source™ Digital, and the new 24/7 service centre is receiving between 200 and 300 calls each week.

In addition to the support provided by our Australian Farm Source team, we back special projects funded in part by our Anchor™ Sustainability Fund. In the last year, the fund approved 25 innovative on-farm projects. These projects need to provide an environmental or animal welfare benefit, improve farmer profitability, and be of value in terms of innovation for the dairy industry.

Fonterra Farm Source™ stores

Fonterra operates a network of 70 Farm Source™ stores throughout New Zealand. These stores operate as retail farm supply stores for the farming community and wider public while also offering specific support services for our supplying shareholders. Farm Source is a wholly owned subsidiary covered by the same management systems and policies as our other operations.

In Australia, we do not have retail stores but this year we introduced a Farm Source™ Partners service, which leverages our scale to provide special deals and savings for farmers supplying us in Australia.

¹ Stock exclusion means keep dairy cattle out of waterways to improve water quality. See Water section on page 48.

How we manage operations

Our manufacturing sites share the same environment as our farmers, with environmental challenges interconnected between farms and sites.

We must also take into account the potential localised environmental impacts of our sites, particularly on freshwater quality and biodiversity. This means using water responsibly, and investing in best practice water treatment.

About 95% of our processing by raw milk supply happens in New Zealand or Australia, but we also manage a number of other sites around the world.

We share some manufacturing sites, which are operated by joint-venture partners. These sites are excluded from our performance reporting. The majority of these sites are run by DFE Pharma, a joint venture between Fonterra and Royal FrieslandCampina.

The Fonterra Group Environmental Policy defines Fonterra's commitment to safeguarding natural resources through reducing environmental impacts across our global value chain, including applying our precautionary approach where serious threats may exist. The policy is available online.

➔ www.fonterra.com/environmentalpolicy

All sites have a manager specifically responsible for environmental compliance. At most sites, this is a dedicated environmental manager and they are often supported by a site Environmental Management team. Their focus is on managing site-wide environmental performance and compliance with local environmental requirements.



Independent evaluation and certification of sites

Our manufacturing sites are subject to regular internal and third-party audits. Internal audits are conducted by staff independent of the site and are used to identify areas for improvement. Third-party audits give regulatory authorities and our customers independent assessments of our performance.

For example, independent audits against the Sedex Member Ethical Trade Audit (SMETA) standard for labour practices, environment, health and safety and business practices are required by some of our customers. Other customers require us to undertake an annual assessment by EcoVadis. This year we achieved a Gold rating for the first time.

Other third-party audits are part of independent certification of site Environmental Management Systems (EMS) to international standards, such as ISO14001. Independent certification to ISO14001, or an equivalent such as EnviroMark Diamond, provides a third-party evaluation of the performance of our EMS.

Our focus this year has been transitioning existing certified sites to the updated 14001:2015 standard. This is assessed at a site level but it now also considers our broader influence over our value chain. At the end of FY18, we had successfully transitioned all sites with existing certification to the new standard. This covers more than 60% of our manufacturing sites and we are now working to expand this.



Gold rating
For a number of customers, we are independently assessed each year by EcoVadis. This year we achieved Gold rating.



Environmental compliance

In the past year, our operational sites had five incidents of non-compliance with environmental regulations which resulted in fines or non-monetary sanctions. All occurred in New Zealand including: a fine of \$750 for discharging stormwater in an unauthorised manner from our Kapuni site; a fine of \$500 for taking more water from a stream than allowed by our permit at our Whareroa site; a fine of \$750 for exceeding wastewater discharge consent limits from our Whareroa site; and two fines of \$750 each for two separate incidents of discharging milk solids to water at our Whareroa site (see Significant Spills).

In the past year, our China Farms received three notices related to environmental non-compliance. The non-compliance related to a delay in the installation of environmental monitoring equipment and improper discharge of effluent. As the negative impacts of the non-compliance issues were not serious and our China Farms had promptly taken the necessary measures to eliminate the impacts, the ultimate fines for each instance were relatively minor, ranging from RMB20,000 to RMB40,000 (\$4,400-8,800).

In addition to the non-compliances list above, there were some minor non-compliances, which did not result in any monetary or non-monetary sanctions.

In all cases we have taken action to improve processes and minimise the risk of further non-compliances.



Significant spills

In New Zealand, there were two significant spills at our Whareroa site and one at our Takanini site. At Whareroa, 60,000 litres of skim milk was spilled when a coupling failed. Additional locking clips have been fitted to prevent a reoccurrence and sensors adjusted to allow earlier detection. There was also a spill of 36,000 litres of cream due to human error. Automation has been added to prevent reoccurrence.

At Takanini, 60,000 litres of glycol spilled due to the failure of a fitting on a rental chilling system. The majority of the spill was absorbed by soil around the unit but there was some leakage into the estuary. Auckland Council were notified and their pollution response team visited the site. The remediation included monitoring of the water quality in the estuary for a period of three months.

Five spills were also recorded in New Zealand from separate tanker incidents, which resulted in an estimated total of 45,500 litres being spilled. The most significant of these was a tanker accident in Taranaki, which spilled an estimated 20,000 litres. When a tanker accident results in a spill we have containment and clean-up procedures to minimise any impact.

In Australia, there were two significant spills. At Dennington, following a dryer deluge, around 1,000 litres of milk were discharged into the Merri River. The Environmental Protection Authority was notified of the incident. On a private property in Tasmania, around 6,000 litres of milk leaked from a milk tanker and then into a local creek. In both cases, the clean-up work we did to minimise any impact to the environment satisfied local authorities.

Water

Healthy freshwater and ecosystems are essential to the long-term success of our business, and to the communities where we live, work and farm.

That's why we are working to improve our water efficiency and improve water quality wherever we operate.

This section covers our impact on water arising from the manufacturing operations that we manage globally and in relation to the farmers from whom we collect milk.

Our approach

Our manufacturing sites extract water from a range of sources and create wastewater. Our approach is to make use of resource-efficient technologies as we build new plants or upgrade existing ones, and to improve the efficiency of our operating practices. Manufacturing sites measure their water use and monitor water quality as part of their regulatory requirements. By becoming more water-efficient, there is less wastewater to treat before we discharge it. This means when we upgrade our wastewater treatment facilities we can go beyond minimum compliance requirements and aim for leading industry standards.

On farm, our approach is to work with farmers to identify their water impact risks and prioritise improvement actions specific to their situation.

In New Zealand, where we collect and process most of our milk, the health of waterways is an important issue for all New Zealanders. We share this passion for our natural environment – we want our rivers and lakes to be swimmable for our children and our grandchildren, and we want our freshwater systems to be strong enough to support nature and the many uses people have for them.

Please refer to “How we work with farmers” on [page 44](#) and “How we manage operations” on [page 46](#) for more information on our general approach to improving our environmental performance.



What we've been doing

Sustainable catchments

We want to see sustainable water catchments in the regions where we operate, and this means working with others to help protect and regenerate the waterways to meet the specific environmental aspirations of the local community.

To achieve improvements at scale, individual farmers and single manufacturing sites are not enough. We want to connect and empower farmers, sites and local communities so that more can get involved and accelerate progress, starting in New Zealand.

Our Living Water partnership with the New Zealand Department of Conservation is focused on five catchments to identify game-changing and scalable solutions that demonstrate dairying and freshwater can thrive together.

Living Water is currently working with 39 other groups and organisations and with 92 Fonterra dairy farms. Across the five catchments, the farmers involved are implementing freshwater improvement activities that go beyond regulatory requirements and 5,823ha of land has already been enhanced through protection, restoration and pest control.

We are now extending our involvement to support farmer and community action across a further 50 catchments in New Zealand. We've been working alongside local stakeholders such as regional councils, the Department of Conservation, iwi, farming leaders and other industry members to identify where our help is wanted and what contribution we can make. We aim to build on existing community efforts and work with other land users and businesses to help achieve the community's environmental aspirations. In many cases, these include not just water quality and freshwater biodiversity, but also predator management and related terrestrial biodiversity.

Collective action on catchments

Our Living Water partnership with the New Zealand Department of Conservation is focused on five catchments. We are now extending our involvement to support farmer and community action across a further 50 catchments.



Farm Environment Plans (FEPs) are tailored improvement plans for each farm. To help accelerate progress at a catchment level, we are clustering the development of FEPs.

1 Waiotahi Catchment, Bay of Plenty

As part of wider community action, FEPs have been developed for all 16 dairy farmers in this catchment and the farmers have started to implement their improvement actions. The Bay of Plenty Regional Council have been pleased with the work completed and see the importance of rolling out FEPs in other catchments.

2 Tutira Catchment, Hawke's Bay

Community groups and iwi have been working together to improve the water quality of the lake, particularly given its use for recreational activities. Dairy farmers are one of the smaller land users but have shown strong buy-in to establishing FEPs. Six of the seven farms in the immediate lake catchment now have FEPs and another seven farms in the wider region have them too.

3 Kaikoura Catchment

A government restoration fund was set up to help the 21 farmers in this catchment get further ahead than they were before the November 2016 earthquake. The farmers have been keen to demonstrate how they're moving towards good management practice. The 21 farms not only have FEPs, they have also installed soil moisture probes to support on-farm management decisions.

4 Waituna Catchment (Living Water Programme)

Waituna is a wetland, internationally recognised by the RAMSAR Convention. This catchment is managed in a holistic way by a Joint Governance Group involving Fonterra, Department of Conservation, Southland District Council, Environment Southland and iwi. This group makes decisions on what work needs to happen to ensure the water quality improves.

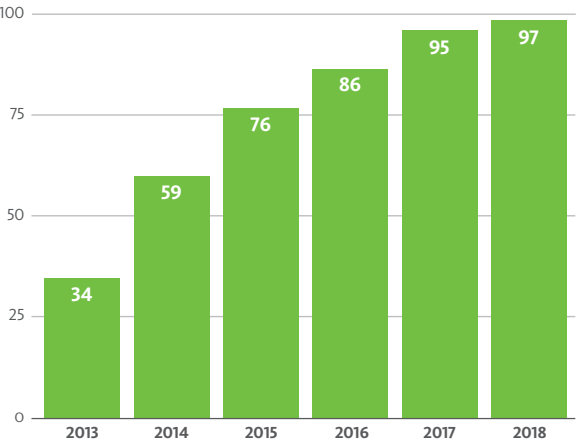
Water continued.



Improving water quality and use on farm

In New Zealand, our farmers have fenced 99.6% of permanent¹ waterways and installed bridges or culverts at 99.9% of regular crossings that keep cows out of waterways. This stops cows from excreting into the water and avoids the potential damage to river and stream banks, which can contribute to erosion and sediment. The next step for improved riparian management is having documented plans describing the specific planting and maintenance activities for each farm. We've made significant progress this year, up from 4% to 25% of our farms, but we've deliberately shifted our focus to establishing Farm Environment Plans (FEPs). An FEP not only considers the riparian management activities but also the wider environmental priorities specific to the farm. At the end of FY18, we reached our target of 10% of farmers having an FEP. Meanwhile the rollout of our nutrient management programme has taken longer than originally planned, but 97% of our New Zealand farmers are now taking part. This helps them identify if and where they can reduce their nutrient use and, as a result, minimise the risk of excess nutrients moving from their soil into waterways.

Participation of New Zealand farmers in our nitrogen management programme (%)



In Australia, in addition to on-farm support services provided by our Farm Source™ team, we support special projects funded in part by our Anchor™ Fund. For example, this year we have been working with Rigneys' farm in Tasmania on a trial to re-introduce dung beetles. Dung beetles are great at transferring cow manure from the surface into the root zone of pasture. Unfortunately, dung beetle colonies have been eliminated from some regions due to some farming activities such as the use of certain animal health products. We are working with the Rigneys to trial the introduction of four different species of dung beetle. The primary goal is to improve soil health by using the natural cow manure and reduce the need for added fertilisers. This will not only reduce the risk of potential nutrient run-off to waterways, it is also anticipated to reduce fly numbers, lower the occurrence of intestinal worm parasites and save the farmer money.



Dung beetles
Inspecting the dung beetles reintroduced onto Rigneys' farm, Tasmania to help improve soil health.

¹ A permanent waterway is any waterway or drain that is wider than 1m and deeper than 30 cm or significant wetlands.



Reducing water use and improving wastewater quality at our manufacturing operations

This year, we have continued several years of investment in our Pahiatua site, making it our most water-efficient site in New Zealand (see Case Study on *page 53*). We also improved water efficiency at a number of other sites including Hautapu, Lichfield, Te Awamutu and Waitoa.

In New Zealand, our target is to improve water efficiency by 20% by 2020 (from a 2015 baseline). For several years, we had been trending in the wrong direction but we have reversed the trend and achieved improvement. We still have significant work to meet our original target, but we have multiple improvements being made and a prioritised plan for further progress.

Our Nutrient Management team have been changing the way we treat excess nutrients retrieved from wastewater treatment at some of our sites. Taking these nutrients, which originally came from collected milk, and using them to improve soil health on our farms supports the growth of valuable and nutritious grass and maize silage. This means we can 'close the loop' back to some of our supplying farmers, who use the silage to help their cows produce quality milk. It also means that the risk of nutrients leaching into waterways is further reduced.

WHAT'S NEXT

On farm

- We will continue to support our New Zealand farmers as they establish Farm Environment Plans (FEP), focusing on the specific priorities for their farm.
- We will use this approach to not only drive improvements in water quality but also increase the focus on water usage, especially in water stressed regions.
- We will investigate applying our approach to tailored farm environment planning in other countries where we source milk, and aim to set new targets that cover our global on-farm activities around water.

Manufacturing

- We will continue to focus on operational improvements within our manufacturing sites, sharing lessons from sites that successfully improve water efficiency with our other sites around the world.
- We will also invest in new water processing technology such as reverse osmosis – a membrane filtration system which can be used to purify the water extracted from cow's milk during processing. This technology will go live in FY19 at our Darfield site and is expected to significantly reduce the amount of water drawn in and decrease the amount of water the site discharges for irrigation.
- We will progress a prioritised sequence of such investments to reduce our water usage and upgrade our wastewater treatment to leading standards.

Water continued.

Our performance

On-farm New Zealand					
Indicator	Target	Performance			Commentary
		FY16	FY17	FY18	
Length of defined waterways with dairy cattle permanently excluded	100% by 31 May 2017	97.4%	98.4%	99.6%	This major investment by farmers is now considered complete, although continued investment will be required to maintain the exclusion.
Regular crossing points on farm have bridge or culvert	100% by 31 May 2018	99.5%	99.8%	99.9%	This major investment by farmers is now considered complete.
Farms with waterways have documented riparian management plan	100% by 31 May 2020	n/a	4%	25%	A significant improvement this year reflecting our ability to capture data about those plans completed by credible parties other than our own Sustainable Dairying Advisors. This is now being progressed with Farm Environment Plans (see below) and we intend to revise the target to 2025 for alignment.
Farms with water meters on significant water intakes	85% by 2020	50%	51%	53%	Potential impacts on water quality have been treated as higher priority, so progress has been slow here. The largest users of water are those farmers with irrigation and we know that they all have water meters. We will use our focus on FEPs to accelerate progress.
Farms participating in nutrient management reporting and benchmarking	100% by 30 Nov 2015	86%	95%	97%	The effort required to achieve this was initially under-estimated but full adoption level has now almost been achieved, allowing almost all farms to benefit from the information.
Farm Environment Plans (FEPs)	100% by end 2025	—	—	10%	This new target was set in FY17 and our aim to achieve 1,000 farms by the end of FY18 has been achieved. Our goal for FY18 is for a further 1,000 farms to have completed an FEP.

Manufacturing					
Improvement in water efficiency (water used per cubic metre of milk processed)	20% reduction by 2020 from FY15 baseline ¹ for NZ	1.6% reduction from baseline	1.3% reduction from baseline	2.4% reduction from baseline	We are pleased that an improvement in water efficiency has been achieved this year. Our priority now is to accelerate this good trend.
Manufacturing sites are treating wastewater to leading industry standards	100% of sites by 2026 (global target)	25%	25%	26%	Another site qualified as leading standards this year. We have also upgraded a number of wastewater treatment plants and have a plan of upgrades for the coming years.

Water withdrawn by source	FY18	
	Volume (000 m³)	Percentage
Surface water (including water from wetlands, rivers, lakes and oceans)	25,066 ▼	46%
Groundwater	19,165 ▲	35%
Municipal water supplies or other public or private water utilities	9,782 ▲	18%
Other (e.g. rainwater collection)	0	0%
Total	54,013 ▲	

Water discharge	FY18	
	Volume (000 m³)	Quality (COD² mg/L)
Discharged to irrigation	15,591 ▲	1,417 ▼
Discharged to river	23,671 ▼	80³ ▲
Discharged to ocean	14,041 ▼	2,049 ▼
Discharged to municipal	5,274 ▲	1,864 ▼
Discharged to other	0	0
Grand Total	58,577 ▼	

¹ In prior reporting water withdrawn for cooling at our Kapuni site had been omitted from our FY15 baseline, and this has now been corrected.
² Chemical Oxygen Demand – an indicator of water quality measuring chemicals in water that can be oxidised.
³ The main reason for worsening average quality to river is the inclusion of data for Chile. Edgecumbe infrastructure was upgraded during FY18 but Edgecumbe remains a high contributor to this average.



CASE STUDY

Water efficiency at Pahiatua

Our Pahiatua site is located in a water-sensitive zone of New Zealand, so when we started investing to increase its capacity, we knew it needed to be resource-efficient. The site now processes up to four million litres of milk per day, producing milk powder that is exported around the world. It is now our most water-efficient site in New Zealand.

Since FY15, we have completed multiple initiatives to reduce water use including the newest and largest dryer. As the milk is dried into powder, we can capture the water evaporated from the milk as steam, condense it, and use it instead of ground water.

Improving water efficiency not only reduces the amount of water drawn in, it also generally reduces the amount of wastewater that needs to be treated and discharged. However, when capturing steam to reuse it, we found that we sometimes ended up with more water than we needed. This was a problem in FY18 when wet weather restricted our ability to use the treated wastewater for irrigation.

We needed to reduce our wastewater volumes by finding new ways to use the condensate water. For each new usage we also needed to meet stakeholder expectations such as food safety and health standards, regulatory and religious compliance, legal requirements and market access.

During FY18, the site resolved all stakeholder concerns and installed the necessary infrastructure to increase reuse. With the changes made, we expect further savings of about 500,000 litres per day during the peak season for FY19 – the equivalent of 18 tanker loads.

We are now looking at options to expand the solution to the other two powder plants at Pahiatua and to rollout the learnings from Pahiatua to several other sites in New Zealand. The estimate savings are likely to be several million litres of water every day.



Climate Change



Climate change has a critical influence on feeding the world into the future.

Food producers must help mitigate the impact of climate change through reducing emissions, and adapt to the effects a changing climate has on agricultural production.

Agriculture and associated land use change account for about 24%¹ of global greenhouse gas (GHG) emissions. It is likely that agricultural production will face significant disruption from changes to climate and increased variability in weather patterns.

There is a huge variance between the most and least efficient producers of each food type. Our less-intensive pasture-based farming model places us as one of the most efficient dairy producers in the world. At the same time, as New Zealand is a large agricultural exporter, agricultural emissions represent 50% of the country's GHG emissions, with dairy accounting for approximately half of this.

The majority of our emissions remain on farm. Our challenge is to continue to drive on-farm efficiency, to transition to lower emission energy sources – and to consider the role of dairy foods in efficient diets of the future.

Our approach

The GHG emissions associated with dairy products primarily come from the cows on the farms. Dairy cows produce methane during digestion, emitted mainly through burping. Nitrous oxide emissions also occur from urine, dung and fertilisers applied to the pasture. Other sources of on-farm emissions include use of energy in farm operations and milk cooling, and emissions relating to farm inputs such as feed and fertiliser.

Within our own operations, the majority of our GHG emissions arise from the energy we use, particularly to pasteurise products for food safety and to dry them for long-life and efficient transportation.

As a result, the GHG emissions from the distribution of our finished products to our customers and consumers around the world only account for about 1% of our total GHG emissions.

Based on climate change projections, food production in many parts of the world is expected to experience negative impacts from resulting changes in natural resources. However, a large proportion of Fonterra's existing supply base is in regions where less significant changes are expected. For example, in New Zealand the climate is conducive to pasture-based farming and this is likely to continue under most climate change projections, albeit there may be some regional shifts. This provides Fonterra with opportunities to continue to produce safe, world-class quality food products. We have conducted initial vulnerability assessments and are using the results to help us plan.

We have set specific targets for GHG emissions arising from our farming and manufacturing operations and we have initiatives underway to help achieve these.

Please refer to "How we work with farmers" on [page 44](#) and "How we manage operations" on [page 46](#) for further details of our approach.



What we've been doing

Reducing on-farm emissions

On-farm life cycle assessments

To help us understand the full carbon life cycle to the farm-gate for our main milk supply regions, and identify areas for improvement, we commission regular independent analysis.

In New Zealand, for the 2016/17 season, the estimated cradle-to-farm-gate carbon intensity, including land use change (LUC) is 0.87 kilograms of carbon dioxide equivalent per kilogram of fat-and-protein-corrected milk (kg CO₂-e/kg FPCM). A recent change in methodology by the Ministry for Primary Industries equates to an increase of approximately 17% in the LUC component compared to that used previously. Given its significance, we have used this to recalculate and restate prior years so the underlying trend can be viewed. The underlying average carbon intensity has been trending down from a high in the 2010/11 season, primarily due to increased production per cow and a decrease in the use of animal feeds brought onto the farm during the last two years. However, compared to the baseline 2014/15 season for our target, the on-farm emissions intensity in 2016/17 was worse by 0.8%.

In China, for the 2016/17 season, the estimated cradle-to-farm-gate carbon intensity ranged from 1.24 – 1.48 kg CO₂-e/kg FPCM across the seven farms with the overall weighted average being 1.35 kg CO₂-e/kg FPCM, down from 1.62 kg CO₂-e/kg FPCM in the previous year. This improvement has arisen primarily from higher feed conversion efficiency – more milk for the same amount of feed.

Our most recent assessment for Australia was in FY17 for the 2015/16 season, at 0.92 kg CO₂-e/kg FPCM.

On-farm improvements

Our primary focus is on improving on-farm productivity, with good animal husbandry and feed management examples of where we can continue to improve emissions intensity. In New Zealand, milk solids produced by each cow increased by 1.4% per year on average over the last 28 years, with the strongest improvements from 2007 to 2016.

Caring for dairy cows throughout their lives, from the minute they are born, not only improves the quality of the milk they produce, it also sees each cow continue to produce more milk year-on-year over a longer lifespan (see Animal health and biosecurity on [page 66](#)).

Feed management is not just about growing grass – it's about choosing the right combination of grass and other feed crops to grow on the farm, optimising the use of fertiliser, managing pests and maintaining soil health. Improving the quality of the feed to the cows and getting the mix right increases production and improves emissions efficiency. Optimising fertiliser use not only reduces the risk of nutrients entering waterways, it also decreases the amount of brought-in fertiliser needed to achieve the same level of production, thereby reducing the production of nitrous oxide.

In New Zealand, we completed a pilot of farm-specific GHG reporting with over 100 farmers this year (see Case Study on [page 56](#) for further details).

In Australia, the renewable energy content of electricity is much lower than New Zealand. This means considering energy management on farm is much more important, and seeking alternative fuel sources for heating water on farm makes sense. Rod and Clive Orgill are farmers in Gippsland who received support through one of our Anchor™ Fund projects this year to install a biomass boiler. Waste wood from their firewood business is used to generate hot water for their dairy shed wash down. This saves money, reduces emissions and is providing a more reliable hot water supply.

In China, where our dairy cows are housed and provided with a mixed diet of brought-in feeds, choosing where the feed is sourced from is important. Increasingly we are working with local farmers (see Dairy Development on [page 85](#)) and this year we successfully trialled sourcing alfalfa (lucerne) locally rather than importing it internationally.

¹ IPCC (2014) Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

CASE STUDY

Farm-specific GHG reporting pilot

The New Zealand Dairy Action for Climate Change Plan was launched in June 2017 by DairyNZ, the industry-wide organisation representing New Zealand dairy farmers, in partnership with Fonterra and supported by the Ministry for the Environment and the Ministry for Primary Industries.

This year, collaborating with DairyNZ and other experts, we set up an on-farm pilot involving more than 100 Fonterra farmers to investigate farm-specific GHG emissions reporting. The primary objective of the pilot is to assess the type and quality of data that needs to be captured on farm to provide farmers with reporting that helps them reduce GHG emissions over time. A secondary objective is to train the selected group of farmers on biological emissions and methods to reduce these so that they can engage and then share that knowledge with other farmers.

We already had an established nitrogen reporting programme with our farmers so it made sense

to build on this to collect a small amount of additional information and provide reporting in a similar style and format.

At this stage, only the major direct GHG emissions from dairy animals are compared. These include methane (CH₄) emissions from enteric fermentation and manure management as well as nitrous oxide (N₂O) emissions from urine, dung and fertilisers. From past lifecycle analysis we know that these account for more than 90% of the total on-farm footprint.

The resulting report (see below right) provides the farmers with total emissions (in kilograms of carbon dioxide equivalents) per hectare per year, broken down by source.

We have evaluated the use of different models to estimate the GHG emissions and we are now looking to evaluate a second year of data for the same farmers so we can see the quality of trend information to help with on-farm decision making.



Climate Change continued.

Investing in breakthrough technologies

We continue to invest in research and development, primarily through the Pastoral Greenhouse Gas Research Consortium (PGgRC). We want to identify breakthrough technologies which can provide a step reduction in the biological emissions produced by cows. Our intention is to not only use such solutions to reduce emissions in regions where we farm, but also increase the impact by promoting them more widely.

While there are some promising pathways being investigated, such as breeding of cows, vaccines and inhibitors, we also face some dilemmas. For example, to maximise the effectiveness of inhibitors administered through supplementary feed, the cows would need to spend more time in sheds or on feed pads being fed the special feed. This not only increases the farming costs, it is at odds with the growing demand from consumers for dairy produced from grass-fed cows. This means our focus is on inhibitors that can be fed at milking time, and then reduce emissions while the cow is back out on the pasture.

We strongly support innovation based on sound science and we continue to monitor the possibilities offered by new and emerging life science technologies such as gene editing. Such advances could offer significant benefits for sustainable nutrition and the environment. We also listen carefully to our customers and consumers and recognise the value in New Zealand's genetic modification status. To date, no genetically modified plants or animals have been released in New Zealand (see Trusted Goodness on page 37).



Reducing manufacturing emissions

Energy efficiency

Improving energy efficiency in our manufacturing operations has been a long-term strategy and it remains a priority. Benefits include reducing the amount of energy we consume, saving costs and reducing emissions. Reducing the energy we consume will also help reduce some of the hurdles in our transition to lower emission energy sources. Less energy potentially means less capital and less additional operating costs, and it is more likely that an alternative energy source will be available at the scale required.

Through our long-running focus on energy efficiency in New Zealand manufacturing, we have achieved a 19.3% reduction in energy intensity since 2003 against a target of 20% by 2020. This year, that is saving 5.7 petajoules, enough energy to power over 220,000 households in New Zealand.

In Australia, we started to transition our product storage and logistics to a purpose-built, energy-efficient facility, operated by a third party in Melbourne. The facility operates in low oxygen conditions and needs minimal lighting. The high-bay pallet stacking also allows for a smaller footprint than conventional warehouses. Only once the transition is completed and historic facilities are decommissioned will the energy savings be fully realised.

Around the world, our energy efficiency improved in six countries while declining in another five, giving an overall improvement of just over 1%. While there was a similar pattern for emissions intensity, overall our emissions intensity from manufacturing has remained unchanged at 0.53 tonnes of carbon dioxide equivalent per tonne of dispatched production.



Climate Change continued.

Transitioning to cleaner sources of energy

In addition to energy efficiency improvements, we are also progressing changes to alternative, lower emission energy sources. Finding viable alternatives to coal is the first priority in our transition to a low-carbon future and achieving our goal of net zero emissions from manufacturing by 2050.

Our coal use now only occurs in New Zealand, where a third of our sites still rely on it, primarily in the South Island. Our use of coal increased slightly this year due to changes in the mix of products made and where these were made. Fluctuations in the volume of milk to be processed in different regions and the need to retain a secure supply of energy means our usage of coal is likely to change from season to season. We have already started the transition towards other fuels, but the scale of our coal use and the lack of economically viable alternatives means that we will remain reliant on coal for longer than we would like. Our intention is that no new coal boilers will be installed at any sites. We are confident that this will be the case from 2030, but prior to that there is a small risk that our legal obligations¹ to process milk may require us to, and this will only be as a last resort.

In the North Island, we are looking at options to transition our coal sites, including to natural gas as this is a more emissions-efficient source of energy, but we recognise that transitioning to renewable sources of energy is the best option.

In the South Island, where natural gas is not available, we are investing in a combination of wood biomass and increased use of electricity.

The challenge with adopting wood biomass in New Zealand and Australia is the security of supply and obtaining sufficient volumes within a reasonable distance of the sites. Running out of energy and being unable to process large volumes of milk generates its own environmental impacts and transporting biomass over long distances quickly diminishes its emissions reduction benefit. As a first step, we are converting the boiler at our Brightwater site to co-fire wood biomass with coal. This is on track to be up and running



before the end of 2018. This co-firing is estimated to reduce factory emissions by about 2,400 tCO₂-e per year or the equivalent of taking about 530 petrol cars off the road.

To better understand the challenges with increased electricity use, we conducted a feasibility study to consider fully electrifying milk processing at Edendale (see Case Study opposite). This has identified an approach that we can apply across all our sites and we plan to apply this at our Stirling site as a pilot to transition away from coal.

Divesting from coal

Reinforcing our commitment toward renewable energy, our subsidiary Glencol Energy Limited has stopped all coal mining operations completely.

For the proposed Mangatangi mine, we have sold the land and surrendered the mining permit.

For the Kopako 3 mine, we have stopped extracting coal and we are completing rehabilitation of the site. The coal pit has been transformed into a lake with hundreds of natives planted around the edge. The majority of the mine land has been restored as farmland.

Reducing logistics emissions

By removing the water content from milk by drying it, we remove weight and bulk. This also preserves the nutritional content for a long time without the need for refrigeration, reduces waste and makes it very efficient for export.

International trade will continue to play a vital role in achieving a sustainable global food system. With climate change, some parts of the world such as New Zealand will be better placed to grow food efficiently for consumption. It is therefore important that, although only 1% of our total emissions, we continue to look for opportunities to further improve logistics, reduce emissions and save costs.

¹ The Dairy Industry Restructuring Act (2001) (DIRA) places legal obligations on Fonterra that limits our influence over where, when and how milk volume growth occurs and requires us to expand our processing capacity to meet all potential demand.



Credit: Tim Snow

CASE STUDY

Electric milk

In FY17, we developed a ‘Roadmap to transition to a low emission future’ with the New Zealand Ministry for the Environment. This year, as part of that roadmap, we conducted a study to investigate how we could displace all coal use at our Edendale site with electricity.

Working with a project team, including representatives from a range of industry and academic organisations, we undertook the study knowing that what was learned from our Edendale site – the largest in the Southern hemisphere – could be applied more widely.

Numerous electrification steps were identified. Each of these would reduce the thermal energy used, thereby reducing emissions, but increase electricity usage. Understanding the capacity of the electricity supply to the site allows combinations of steps and their sequence to be assessed to see which could be achieved before triggering a distribution or transmission grid upgrade.

The study identified two phases for transition. The first “optimisation” phase, uses predominantly known technologies to improve energy efficiency and reduce the thermal energy while increasing electricity use. The second “transformational” phase will require technology development and demonstration to occur.

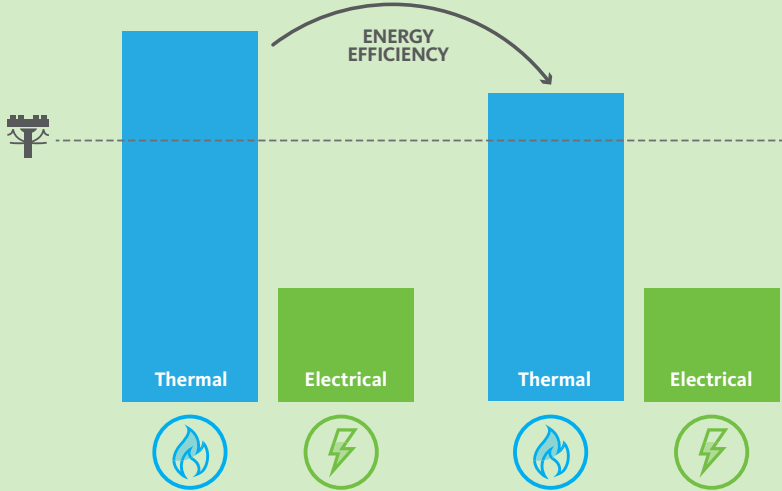
Overall, this study showed that while technically possible to fully displace coal use at Edendale with electricity, it would trigger a transmission grid upgrade and there would be significant capital costs and ongoing costs.

The study has provided a comprehensive approach to guide further improvements to our manufacturing processes to reduce both energy and emissions and help us transition towards net zero emissions.

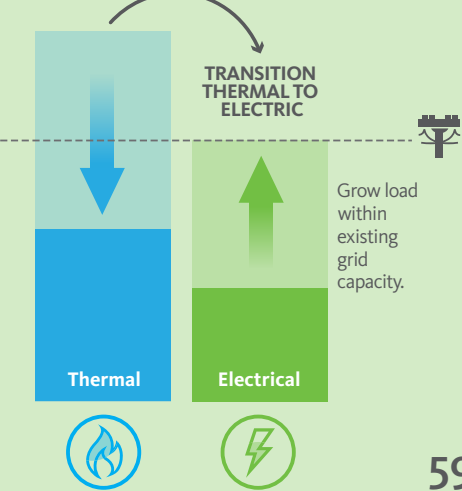
This approach has been applied at three further sites and in August 2018 we announced our plan to electrify our Stirling site. This will eliminate about 10,000 tonnes of coal use per year.

Optimising electrification

STEP 1



STEP 2



Climate Change continued.



Milk collection
In New Zealand, our milk collection activities are already highly efficient. Our fleet of tankers are regularly upgraded to use the latest technology and innovations. One example is on-board sensors, which help with driver training and have improved driving efficiency and fuel efficiency. The activities of the tankers are planned and managed by a sophisticated computer system that helps us collect the milk from the farms and deliver it to the factories, while ensuring legal compliance and minimising the total time and distance required to achieve it.

This year, a legislative change increased the maximum gross weight for heavy vehicles from 44 to 46 tonnes for 8 axle vehicles such as our tankers. Over the year, we have modified each of the tankers slightly, extending the draw bar, so that we can make use of this extra carrying capacity safely. Being able to plan for and transport approximately 2,000 extra litres of milk per load means we can complete work in fewer trips, saving time, costs and emissions.

In Australia, in response to a growing volume of milk, we introduced eight new, more efficient milk tankers. These truck and trailer tankers have 40% more capacity to carry milk and are also more fuel efficient compared to the existing single trailer tankers.

Electrifying the fleet
We are also investigating electrification of our light fleet, forklifts and heavy fleet. Electricity in New Zealand is generated by more than 80% renewables and is therefore a good alternative to petrol and diesel.
We have 113 hybrid vehicles and we have purchased our first four electric vehicles. This is part of our commitment to have 30% of our corporate fleet using electric vehicles and thereby help increase the wider adoption of electric vehicles. Based on other priorities for capital, we will only be introducing electric vehicles gradually and it will take us longer than the original target set for the end of 2019.

In New Zealand we also have a fleet of over 650 forklifts ranging up to 14 tonnes that we are progressively converting to electric power, which generate less GHG emissions than the LPG forklifts we are replacing. In FY18, we introduced lithium-ion battery technology for the first time, growing the total electric fleet to 13 lithium-ion and 254 lead acid battery. Lithium-ion batteries last longer than lead acid, and because they allow on-demand charging only one battery is required per forklift.

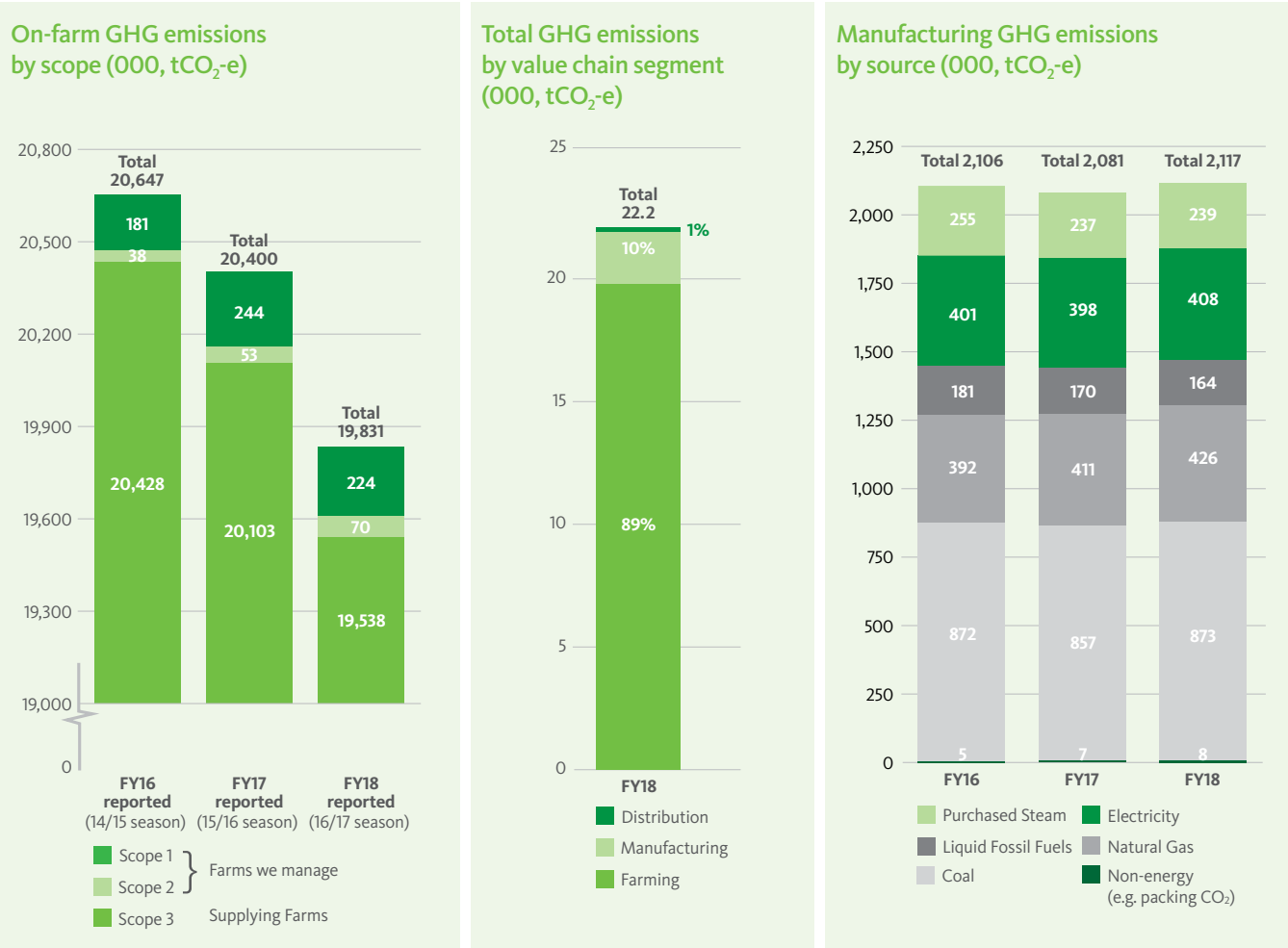
To investigate heavy fleet solutions, our land logistics partner Coda successfully applied for a grant from New Zealand's Energy Efficiency and Conservation Authority (EECA) to help develop and trial an electric truck to transport finished goods between sites in New Zealand. Unfortunately, after six months of collaboration and consultation with like-minded companies looking at different opportunities in Waikato and Auckland, we concluded that the overall risk is unacceptable to proceed further at this time. We do plan to keep reviewing options for more sustainable heavy vehicle solutions and we will continue to engage with EECA and our partners in this process.

WHAT'S NEXT

- On farm our primary focus will remain supporting our farmers around the world to improve on-farm productivity. We will continue to evaluate on-farm GHG reporting and its ability to inform on-farm decision-making that reduces biological emissions. We will also continue to invest in research and development to investigate breakthrough mitigation technologies.
- For our manufacturing operations we will continue to progress our energy efficiency improvements and our transition to lower emission energy sources. In particular, the go-live of our biomass co-firing solution at Brightwater and the planning phase for electrification at Stirling.

Our performance

Climate targets					
Indicator	Target	Performance			Commentary
		FY16	FY17	FY18	
Reduction in manufacturing energy intensity (energy per tonne of production)	20% reduction by 2020 from FY03 baseline (NZ)	18.1% reduction	17.8% reduction	19.3% reduction	We continue to make good progress and we remain on track to deliver by 2020.
Reduction in absolute manufacturing emissions	30% reduction by 2030 from FY15 baseline (Global)	3.6% reduction	4.7% reduction	3.0% reduction	Our overall manufacturing emissions intensity remained constant. Increased production, particularly in Australia, where the emissions intensity of grid electricity is higher, means our progress on absolute reduction has been impacted.
Net change in GHG emissions from dairy farming since 14/15 (NZ) (Pre-farm gate tCO ₂ -e)	Neutral to 2030	– 252,000 below baseline	817,000 below baseline		Our estimated absolute GHG emissions have reduced. This is due to a reduction in the volume of milk collected. Emissions efficiency on farm is 0.8% worse than 14/15 baseline but 3.2% better than the high of 10/11.



For detailed information on the scope, methodology and assumptions used in reporting these emissions, including corrections to prior reporting, see Fonterra Sustainability Reporting 2018 – Environmental Data Reporting Notes.
Transmission losses for FY18 of 66,000 tCO₂-e are excluded from manufacturing breakdown but included in total by value chain. Emissions from biofuels are not shown as protocol excludes them from the total. Biofuels emissions in FY18 were 262 tCO₂-e.

Packaging and waste

Packaging is vital for delivering safe and quality nutrition.

For us, the primary job of packaging is to protect the nutritional value of the natural and perishable product it contains. It also needs to be practical, appealing, provide key information and, ideally, sustainable.

This year, we've seen public interest in plastic grow considerably. It is likely that a combination of factors have driven this such as: media coverage of the plastic in our oceans and how long it lasts; China significantly reducing its recycling of internationally recovered plastics; and the fact that plastic packaging is something consumers interact with on a daily basis.

The majority of our finished goods are ingredients for use by business customers, but we also produce packaged goods for foodservice and consumers.

This section covers the packaging used for all finished goods manufactured at the sites we manage and at third-party manufacturing sites who make finished goods for us. It also covers the solid waste related to all sites that we manage, including manufacturing sites, offices, retail stores and farms.

Our approach

To maximise the nutritional value we deliver, we focus on minimising food loss across our supply chain, from the farm to the consumer. This also helps us deliver the maximum return to our farmers and get better outcomes for the environment.

Improving performance

Our aim is to deliver products right-first-time and capture by-products that were previously considered waste, such as whey, to make them into new valuable products. You can call this minimising waste or maximising yield. We regularly monitor this and a specialist centralised team provides support to manufacturing sites where the performance is falling behind the best.



Our Group Environment Policy requires all sites to: manage hazardous substances responsibly; minimise the production and disposal of waste products; and increase our use of recyclable materials, including packaging. Backing this, we have packaging design guidelines and a cross-functional group of experts to set direction and support progress.

We continue to investigate the use of recycled materials in our packaging, but the risk of contaminants impacting food safety significantly limits our options. In most cases, we seek to use sustainably sourced input materials instead, such as fibre from sustainably managed forests.

Collaboration and co-operation

Generally, the rural communities where our farmers operate do not have the same access to waste and recycling services as urban areas do. We are therefore working with others to develop waste management and recycling solutions that improve environmental outcomes and enable greater access for others to those services.

With recycling and minimising waste to landfill, we have already completed what could be considered the easier items. For New Zealand, we achieved our previous target of 90% diversion from landfill several years ago. We are now in a more challenging phase, where it is important for businesses and other organisations to collaborate and work together. One person's waste can be another person's raw material, or the combined waste from multiple organisations can reach a scale that makes new innovations viable.

We host an annual Recycling Forum to facilitate new relationships and encourage innovation. We also work closely with our customers and, for example, this year we worked with SKYCITY in New Zealand to recycle milk bottles into shampoo bottles.

Considering and stimulating demand for the recycled content is also important. For example, the plastic crates we use for milk bottles and the recycling bins we provide to schools through Fonterra Milk for Schools, include a high percentage of recycled plastic from our own milk bottles.

Many consumers now want access to safe food out of home with the convenience of single serve portions and in packaging that is recyclable. Many manufacturers want the efficiency of scale that comes from a single packaging solution that is sold into different markets. Finding solutions that work for a sustainable future is challenging and will take collaboration and co-operation to solve.

What we've been doing

Using less materials

When designing new packaging, we seek to reduce the amount of materials to an optimal level. This is a delicate balance. Reducing the materials used not only improves transport efficiency, it also means less materials to be recycled, reused or disposed of after consumption. However, we must ensure that packaging is robust enough to avoid damage to our products, which leads to wasted food.

In New Zealand, by collaborating with other industry players, we modified the caps on all our fresh white milk and cream products this year. This involved a change to the caps, the bottles and the filling equipment at multiple sites, reducing the plastic (HDPE) used per cap by 33%. This equates to about 144 tonnes less material per year.

Multi-walled bags in different sizes and different configurations are the most common form of packaging we use. This year, we further optimised the amount of glue used in each bag, and standardised the paper used, reducing adhesive by about 14 tonnes per year and paper by around 60 tonnes per year.

In Australia, we saved more than 125 tonnes of materials by working with the packaging providers for our main cheese and butter products through weight reductions in corrugated cardboard and cheese bags.

In Malaysia, we reduced the weight of the plastic bottle used for cultured milk products, saving about 30 tonnes per year.



Investigating solutions

We continue to investigate packaging and recycling solutions for the more challenging items.

At our Takanini site, one of the largest items left in our waste to landfill stream is the plastic backing from the labels applied to products. There is nowhere to recycle this in New Zealand and alternative backings do not work in our current labelling equipment. We are investigating a recycling solution overseas that we can use until we upgrade our labelling equipment.

For several years, we have been investigating the potential of turning waste plastic into fence posts to use on farms. Trials were successfully completed this year in collaboration with Kiwi start-up Future Post, and we are now looking to retail these through our Farm Source™ stores.

Fonterra Milk for Schools features a recycling programme that has achieved product stewardship accreditation from the New Zealand Ministry for the Environment. The packaging is currently not recyclable in New Zealand so we ship it overseas where it is recycled into products such as school books and roofing tiles. We are working with partners to explore options for local recycling, and looking at alternatives to the plastic straws.

Supporting food banks

Around the world, we support a number of food bank initiatives. This helps us reduce food waste and provides good nutrition for those who need it most.

In New Zealand, we donated more than 100 tonnes of food to the Salvation Army, the Auckland City Mission and Kiwi Harvest this year. In Australia, we continued to support Foodbank, Australia's largest hunger relief organisation, donating over 260,000 meals in 2017. In Chile, we continued to support Red Alimentos.

Packaging and waste

continued.

Our performance

Our targets				
Indicator	Target	Performance		Commentary
		FY17	FY18	
Solid waste sent to landfill (tonnes) (New Zealand)	20% reduction by 2020 from FY15 baseline (NZ)	5,295 7% ¹ cumulative increase	5,663 14% cumulative increase	During FY17 we transitioned to a new waste provider and they measure waste from some of our sites differently to the previous provider. This makes it difficult to meaningfully compare against the FY15 baseline and has contributed to the increase. We are now focused on reducing significantly from our FY18 levels.
Solid waste sent to landfill (tonnes) (Global)	Monitor and report with the aim of significant reduction	15,113 ¹	15,430 2% increase	Given the difficulties we have encountered with data quality in this area, we have not set a global target yet but we intend to in the near future.

In Australia, we are becoming a Redcycle Partner. Redcycle collect soft plastics from special bins located at major supermarkets. This scheme makes it possible for consumers to return previously non-recyclable soft plastics. A similar scheme already exists in New Zealand, operated by the Packaging Forum and covering approximately 70% of the country.

In Australia, the Packaging Technology Team were first time finalists in the 2018 Australian Packaging Covenant Organisation sustainable packaging awards.

In New Zealand, our Farm Source™ stores have stopped providing plastic bags to customers. It is estimated this will eliminate approximately 365,000 plastic bags per year.

DEFINITION

Zero waste:
Is where products and processes are designed to minimise resource use, seeking to conserve and recover resources rather than burn or bury them, and influencing people to change their lifestyle to better emulate natural cycles.

¹ 700 tonnes of waste to landfill was previously overlooked in FY17 when a change to the main service provider led to a gap in the reporting coverage.

WHAT'S NEXT

- We are aiming to set new global targets for our own solid waste to landfill and the packaging we use for finished goods. Ultimately, we aspire to play our part in achieving the concept of 'zero waste.'
- To achieve this, we are initiating a research programme to evaluate the performance and safety of alternative sustainable packaging materials, and how packaging materials might be manufactured from locally-sourced by-products, waste streams and low-impact renewable sources.
- We will continue to reduce the quantities of materials we use and increase yield by minimising waste across our full value chain.



CASE STUDY

Pallets – lighter and longer living

Most of our pallets are made from radiata pine, a renewable natural resource locally sourced in New Zealand. We have over 900,000 pallets in circulation in New Zealand at any one time and every year we send about 150,000 pallets overseas.

We try not to ship the pallet but in some cases a pallet is mandatory. Working with our supplier Timpack, we re-designed one of the pallets used for export. The new design uses fewer and narrower boards, needing 25 less nails and reducing the weight by almost 5kg per pallet.

This has been achieved without impacting the safe load-carrying capacity, performance or life expectancy.

Not only is this a great cost saving, it also results in an annual saving of approximately 190 trees and five tonnes of steel.

At the end of its useful life, Timpack sends the pallet to Reharvest Enviromulch who chip them for reuse in children's playgrounds or for landscaping. In FY18, over 760,000 replaced boards and almost 14,000 pallets went to Reharvest – that's more than 1,600 tonnes of wood that was diverted from landfill.

CASE STUDY

Going Circular

We established NZAgbiz in 2005 to create value from by-products that would otherwise go to landfill. Waste products that are not suitable for human consumption are re-worked into animal nutrition products that are then sold to farmers to help their livestock thrive.

The materials that NZAgbiz collects from Fonterra and other dairy manufacturing sites are turned into useful animal nutrition products like calf milk replacers, pig feed products and specialist animal health supplements such as probiotics, colostrum powder and electrolyte replacements.

Any waste product NZAgbiz cannot re-work is sold as ingredients for other stock feeds, soaps and bio fuels.

At NZAgbiz, we also recycle the packaging which historically would have gone to landfill because it was contaminated with food. For example, for infant formula which cannot be released, we de-can the product and recycle everything from the plastic lid to the plastic scoop and aluminium seal. The tin itself is crushed and collected by metal recyclers.

During FY18, we produced about 12,000 tonnes of finished goods for sale and sent the following for recycling:

- 104 tonnes of metal
- 60 tonnes of paper and cardboard
- 120 tonnes of plastic.



Animal Health and Biosecurity

Cows are the heart of every dairy farm, and their health and welfare is of paramount importance to us

We work with our farmers to meet globally recognised standards as set by the World Organisation for Animal Health, and eliminate practices that contravene the Five Freedoms.

Even with good animal husbandry, diseases and pests remain an ongoing threat, especially with increased international trade and travel. Biosecurity is a set of preventative measures designed to reduce the risk of transmission of infectious diseases and pests to livestock and crops that impact animal, plant and human health as well as the community, livelihoods and the environment.

This section covers animal health and welfare and biosecurity for farms we manage and farms that supply us with raw milk around the world.

Our approach

Our farmers are required to uphold high standards of animal welfare and comply fully with the latest regulations and codes of welfare. These requirements are set out in Fonterra's Terms and Conditions of Supply, and are guided by our overarching Group Animal Welfare and Biosecurity Policy and supporting standards.

We support our farmers to continuously improve animal health and welfare outcomes. We work with industry bodies and training organisations to ensure farmers have access to high-quality information that sets out expected best practice, relevant regulatory requirements and access to training where required. We work with industry partners such as meat processors, transportation companies and regulators to ensure best practice controls are in place.



The development of strategy, policy and standards for the global management of farm animal welfare is the responsibility of Fonterra's General Manager – Veterinary, Technical and Risk Management. The management and implementation of Fonterra's animal welfare policies and strategies is undertaken at a local level, supported by our centralised veterinary and risk team.

Globally, our International Milk Quality team assesses animal welfare as part of their milk quality audits in all markets outside of New Zealand where we source milk. This enables Fonterra to identify any issues and recommend improvements to farmers. Many markets also have local veterinary and milk quality support teams to manage this work.

What we've been doing

Responding to biosecurity incursion

In July 2017, samples taken from a dairy herd in the South Canterbury region of New Zealand tested positive for *Mycoplasma bovis* (*M. bovis*), a bacterium which is widespread internationally but had never been identified in New Zealand before. The bacterium causes disease in cattle which has significant implications for disease management, animal welfare and production. However, it poses no risk to milk quality or food safety.

Since the incursion was detected we have worked with the Government, sector groups and other dairy companies to minimise the implications to both animal and farmer welfare, and support efforts to eradicate the disease. The Farm Source™ network, tanker operators, and other teams have helped develop and coordinate two rounds of testing of every herd supplying milk and organised more than 60 information meetings for farmers.

Good progress is being made towards eradication of the disease. Once clear of the disease farms are having their biosecurity controls lifted and can get back to business with the restocking of their herd. We will continue to support the eradication process and monitor the compensation process on behalf of our affected farmers.



Antimicrobial resistance

Antimicrobial resistance (AMR) is of growing concern around the world, with the threat of standard treatments becoming ineffective against many common pathogens of importance to human and animals. Our milk testing regime includes specific testing for inhibitory substances such as antibiotics and there are financial penalties for farmers associated with non-compliance.

We support the prudent use of antibiotics with the aim of optimising therapeutic effect and minimising the risk of developing resistance. By being particularly careful with those antimicrobials of critical importance for treatment of human disease, agriculture can help to ensure that antibiotics remain effective for the treatment of disease in the future.

Our predominantly pasture-based farmers only use low levels of antibiotics in animals, as our cows have low levels of disease. In fact, although New Zealand has been ranked the ninth highest user of antibiotics for humans¹ it has been ranked as the third-lowest user of antibiotics in animals in the world² Australia is ranked the fifth lowest user in agriculture²

In New Zealand, we are working with regulators and wider livestock sector to implement improvements for the management of AMR. In Australia, the dairy industry strategy is aligning with the Australian Animal Sector National AMR Plan 2018 and taking a whole-of-industry approach to best-practice management and prevention of over-use.

Our performance

Somatic cell counts

Somatic cell count (SCC) is not only an indicator of milk quality, a low SCC also gives an indication of good animal husbandry. Results shown above are well below the European Union standard, a widely quoted standard. We have delivered excellent results in this area and will continue to work towards lower counts.

¹ "Global increase and geographic convergence in antibiotic consumption between 2000 and 2015", Klein, E. Y. et al, PNAS April 10, 2018 115 (15).
² Review on Antimicrobial Resistance (2015). "Antimicrobials in agriculture and the environment: reducing unnecessary use and waste".

Somatic cell counts by location		
	2016/17 ³	2017/18
	Average (mean) 000 cells/ml	Average (mean) 000 cells/ml
New Zealand	177	180
Australia	186	178
China	167	168
Chile – Soprole	283	313
Chile – Prolesur	249	322
European Union import/export standard	400	400

Growth hormones

Due to animal welfare concerns, we do not support the use of hormonal growth promoting substances (HGP) or substances stimulating increased milk production, such as rBST. Regulations prohibit the use of both these substances in New Zealand and Australia, and these are not being used on our farms in China or Sri Lanka. In Latin America, there continues to be some isolated usage of rBST.

Inductions

Our policy is for no routine use of calving inductions. This has been successfully implemented in New Zealand and we are working with stakeholders to achieve the same outcome in other regions.

Lifespan

Cows in New Zealand have long and productive lives. The latest available information indicates cows average 4.5 lactations (6.5 – 7 years) with a calving interval of 369.5 days.⁴ These measures jointly reflect high reproductive performance, which can only be achieved under conditions of good animal management.

WHAT'S NEXT

- We will continue to work with farmers and regulators to support strong biosecurity and promote good animal health and welfare practices.
- Building on the existing data collection, farm assessment and monitoring activities we already have in place around the world, during the season ahead we are rolling out an independently certified “Cared for Cows” programme, which launched in June 2018 in New Zealand.

³ We have restated all results for 2016/17 to standardise the calculation to mean of mean for all supplying farms for the year. Care is required when comparing data from different sources as aggregation methods differ.
⁴ DairyNZ, New Zealand Dairy Statistics, 2016-17



Our Community

We are working together to care for people.

By mentoring young talent, providing people with opportunities, and supporting our communities, we can make a positive social impact. It's all part of our efforts to support the sustainable wellbeing of society.

He Waka eke noa.

We're all in this together.



**Susan Doughty,
GM Diversity,
Inclusion and Talent**

"As we seek to eliminate social inequity within our own workplace and through our influence on the supply chain, we must respect potentially conflicting priorities such as privacy and recognise the complexities within the supply chain.

People are not obliged to disclose personal details such as age, ethnicity or gender identity therefore how do we monitor our progress on improving inclusion?

Some raw materials have complex supply chains and can be associated with human rights abuses. Can we keep buying the material and influence the supply chain so the smallholders are treated fairly?"

Our Community

Caring for people is at the core of our Co-operative, from providing support and positive livelihoods to our farmers, through direct and indirect employment in our supply chain, to providing nutrition to people around the world.

Who are our communities

We contribute to three interconnected communities:

- The people who own and work on the farms that supply us with milk, and others who work in our supply chain providing us with goods and services
- The people who are employed by Fonterra, all around the world
- The people in the communities where we live and work.

Caring for people

As a farmer co-operative, the essence of our strategy is about returning the most value we can from every drop of our farmers' milk. Only in this way can we generate livelihoods for them that will endure for the long term and flow on into their local communities.

To deliver this requires a highly-effective team. We care about our workforce. We want them to be safe at work, have opportunities to develop and be treated fairly.

In addition to contributing to society through our daily business activities, we also seek to contribute by sharing our expertise and by investing for social impact.



How Fonterra is making this happen

Our focus is on improving the long-term wellbeing of our farmers and communities. We will:

- ✓ **Support healthy sustainable livelihoods for our farmers** by returning the most value from every drop of milk by moving more of our milk to higher value
- ✓ **Provide positive livelihoods for our people** by developing a diverse, skilled and agile workforce and promoting a healthy and safe working environment
- ✓ **Invest in the future of our communities** by sharing what we do best and building farming capability in key emerging dairy markets.

KEY HIGHLIGHTS

- **Economic contribution:** \$20.4 billion revenue, \$10.3 billion returned to New Zealand farmers for 2017/18 season¹: see our Annual Review 2018 for more information:
➔ www.fonterra.com/annualreview2018
- **Diversity and inclusion:** New targets set for gender and ethnic representation in senior management – see [page 75](#)
- **Health and safety:** Slight increase in injury rate for staff, contractors and visitors to our sites but the injuries were less severe – see [page 78](#)
- **Fonterra Milk for Schools:** Every school day, 140,000 Kiwi children are drinking milk Fonterra and our farmers provide for free – see [page 36](#)



696
We contributed to 696 community initiatives through our Grass Roots fund.



29,000
There are over 29,000 farmers and farm workers supplying milk to Fonterra around the world.

BREAKDOWN OF GENDER PAY (F/M²):

1.10
Global
0.98
New Zealand
0.92
Australia



Fonterra's contribution to the SDGs from a community perspective.



Create positive employment opportunities along our value chain (1.2)



Share our dairy expertise with small-scale producers (2.3)



Share our dairy expertise with female small-scale producers (5.5)

Ensure equal participation and opportunity for women in our workforce (5.5)



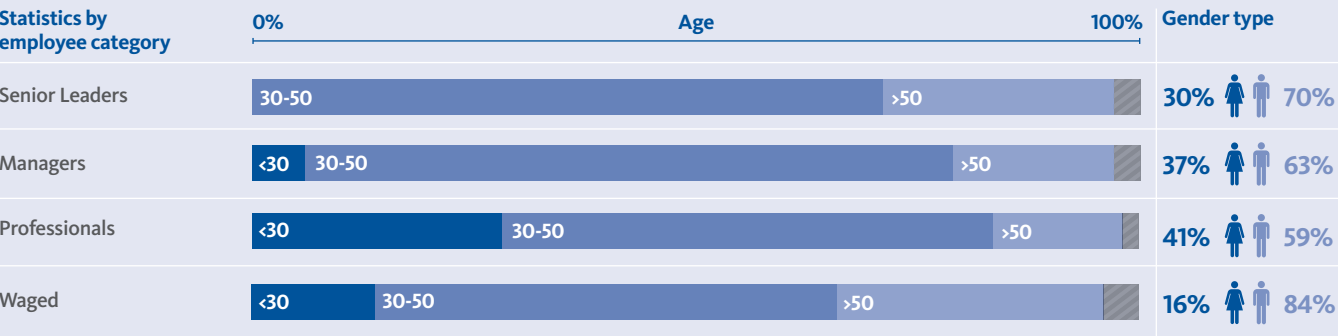
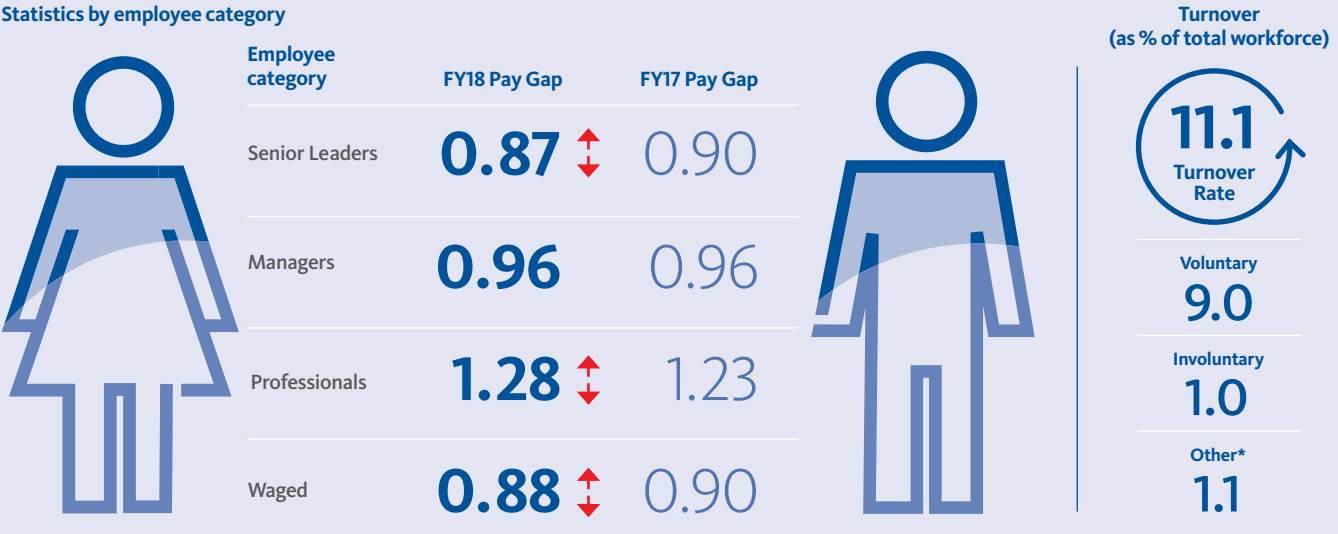
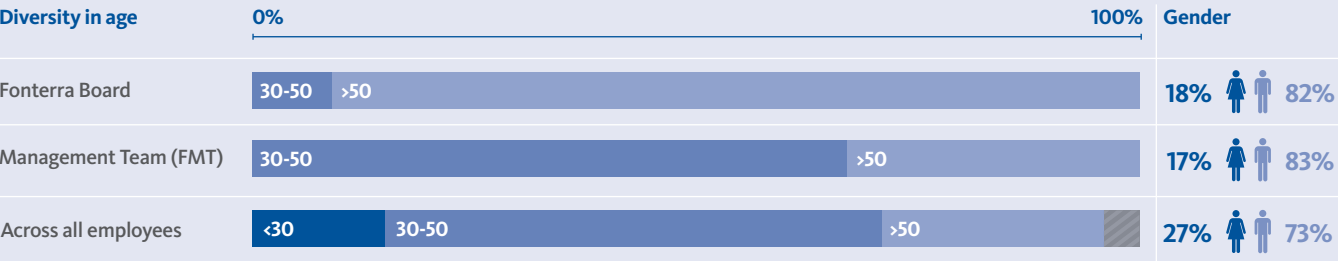
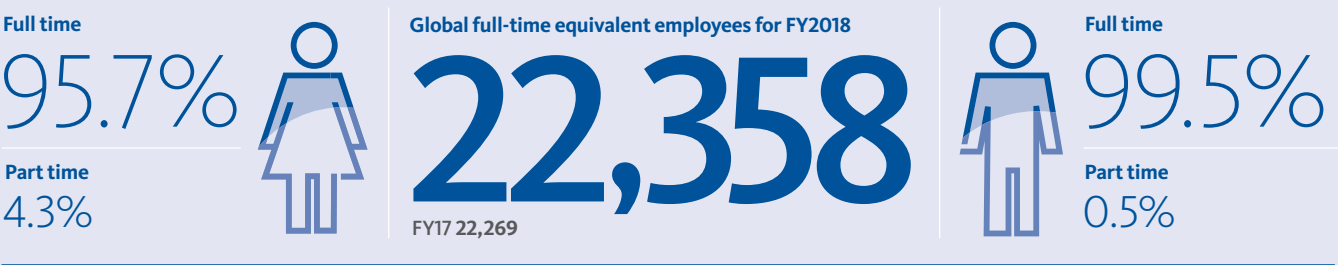
Provide positive and inclusive employment for all groups (8.5)

Address labour and human rights issues in our supply chain (8.7, 8.8)

Provide a safe and secure working environment (8.8)

¹ Includes Farmgate Milk Price and Dividend.
² Ratio of female base pay to male base pay with 1.0 indicating equity and less than 1.0 indicating females paid less.

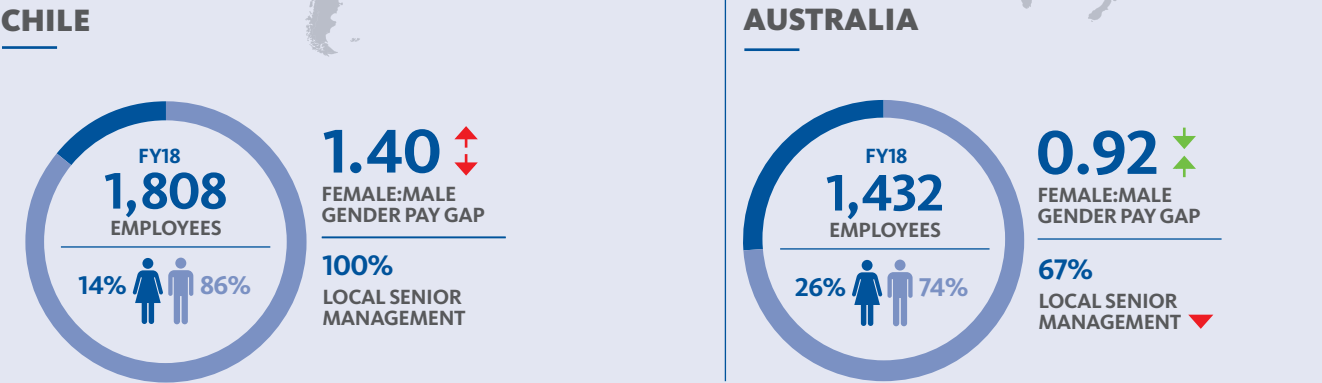
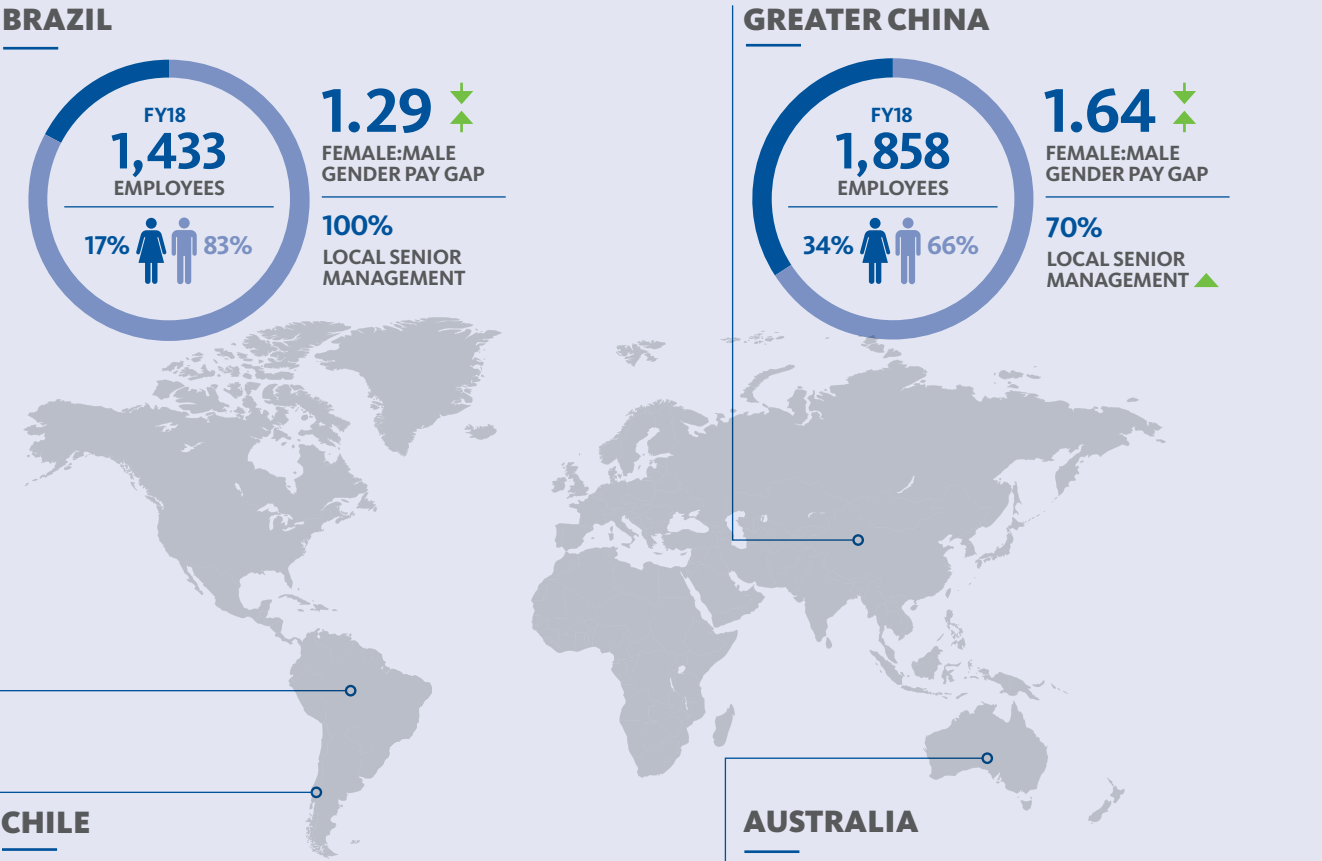
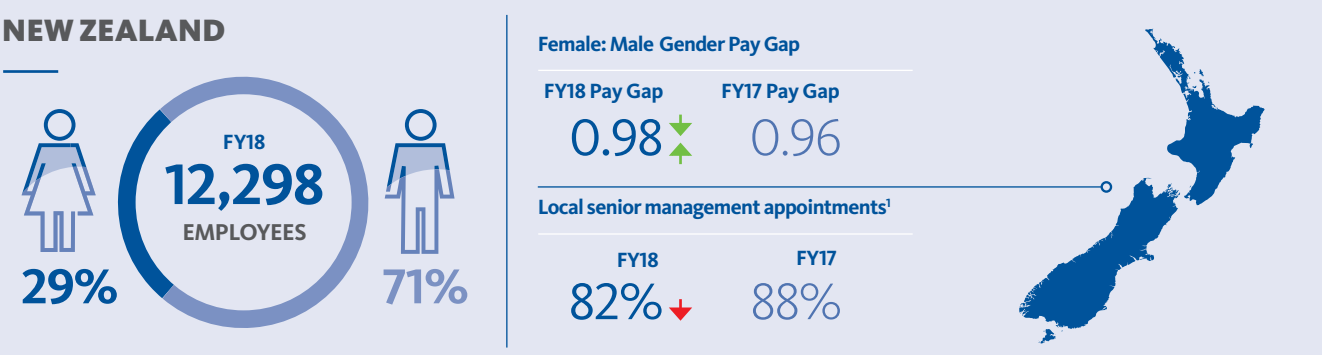
Our People



Our employee data is drawn from our global SAP-based employee data systems. The gender, age and turnover data excludes the employees in our Latin America joint venture operations. Numbers are reported for all fixed-term and permanent employees on a full-time equivalent (FTE) basis, except for turnover and new hires reporting which excludes fixed-term employees and is based on headcount, and gender pay gap data, which includes permanent staff only. There are no significant seasonal variations in the employee data reported. Casual staff contracted by Fonterra are excluded from these figures as this represents only a very small proportion of the regular workforce.

Age Unknown

*Contract end, legal retirement, or deceased.



¹ Percentage of senior management team who are citizens or permanent residents of the country

Doing what's right by our people

Our people are at the heart of our success. We're focused on building a diverse and inclusive workforce that is highly-engaged and effective, while also investing in employees to help them respond to the ever-evolving nature of work.

Most of our 22,000 employees work in processing and distribution. They are supported by employees in corporate roles such as sales, marketing, finance and human resources. This section covers all people who we employ directly and work in sites or offices that are owned or controlled by Fonterra.

Our approach

Our overarching people strategy is centred around simplification, preparing for the future and a focus on organisational health and engagement. Our approach to managing and developing people is defined in global policies covering ethical behaviour, diversity and inclusion, and people management. These policies are supported by local guidance to reflect relevant regulations and norms. An understanding of and connection with local markets is vital to our success. By hiring and developing local talent, we contribute towards the shared success of our Co-operative and the countries where we operate.



Labour rights

Fonterra has a long-standing agreement with the International Union of Food (IUF) and the New Zealand Dairy Workers Union which recognises our commitment to the Conventions of the International Labour Organisation (ILO) for all Fonterra employees.

We have union agreements and relationships in many markets. For example: in New Zealand with the Dairy Workers' Union (DWU) and E Tū; in Australia with the National Union of Workers; and in Malaysia with the Malaysian Food Industry Employees' Union. In New Zealand, 61% of all full-time equivalent Fonterra employees are covered by collective bargaining agreements.

Respect for each other

Our Code of Business Conduct and global policies set clear expectations for how our people need to act and behave.

We will not tolerate any discrimination due to ethnicity, cultural background, gender identity or expression, age, national origin, disability, religious affiliation, sexual orientation, education, thinking style or any other form of diversity, for our employees, farmer shareholders, stakeholders, suppliers or customers.

We fund an independent and confidential service, facilitated by Deloitte, available to all employees to seek advice and raise concerns related to ethical or unlawful behaviour. This year, 42 disclosures were made globally. Of these, seven related to discrimination. After investigation, three were found to be unsubstantiated, one was withdrawn by the complainant and three were upheld in part. These three incidents were in the same location and steps were taken following the complaint to promote a more supportive and inclusive environment.



What we've been doing

Learning and development

Learning and development activities are important for building the capabilities of our people and helping us achieve our ambition. We expect that every employee, supported by their leaders, will embrace the need for lifelong learning. Fonterra supports development in many ways, including with innovative technologies.

A new initiative 'amp' helps employees develop their careers by spending up to a third of their time on projects outside their day jobs across areas where they have a special interest or particular skill. It is powered by a web-based app where people build a profile and match their expertise to listings of internal projects, helping Fonterra tap into existing talent.

"Love it, so easy to use and great way to find talent, share expertise and grow and develop people in new areas."

Robyn Moore, GM Brand Experience

Other innovative programmes piloted and then made available to the wider business this year were Degreed, MyCoach and THRIVE.

Degreed is an online learning experience platform that gathers relevant content for individuals including articles, videos, podcasts, books and courses. MyCoach is a tailor-made mobile app that uses role play to help people improve skills such as giving and receiving feedback and having courageous conversations. THRIVE is an immersive learning experience that helps employees build a deeper understanding of Fonterra's end-to-end value chain, including an online element and a face-to-face simulation.

We also offer access to qualifications through development programmes such as DAIRYCRAFT. In partnership with the Primary Industry Training Organisation, DAIRYCRAFT currently helps operators in our New Zealand manufacturing sites and distribution centres to develop relevant technical skills and gain a national qualification. To date, 161 employees have completed the 18-month programme and 500 are currently enrolled. This year, we have expanded the programme and added more locations.

Diversity and inclusion

Embedding diversity and inclusion is the right thing to do for our people and it helps drive better business performance. With diverse and inclusive teams, we can think differently about how to do things better, smarter and faster, and anticipate the needs of our diverse customers and communities.

This year, our Board approved targets to increase the number of women and ethnic minorities within our senior leadership levels to 50% and 20%, respectively, by 2022. These were set based on research and our historic imbalances. We'll still hire based on merit, but setting targets is important to help drive change. We are committed to ongoing measurement to track progress. As part of the Champions for Change initiative in New Zealand, which we joined when it launched in 2015, we were one of the first organisations to take part in the new diversity reporting framework introduced for the 2017-18 reporting year.

We have begun to create a more complete picture of the diversity of our people by asking them to voluntarily provide information like gender identification, nationality, ethnicity and age. At present we are unable to classify over a third of our employees. This is partly due to our own system limitations, which we strive to improve over time. However, this is likely to remain a challenge due to international regulations and the high proportion of operational workforce with limited access to systems. Collection of some information must remain voluntary to respect privacy rights.

Doing what’s right by our people continued.



This year, we hired our first diversity and inclusion leader to drive the development and implementation of our global strategy. One focus has been around flexible working, which is a key enabler for diversity and inclusion, and we have developed a new flexibility toolkit to support our people.

We also have a Rautaki Māori (Māori strategy) to build Māori capability and forge stronger relationships with groups representing the interests of the indigenous Māori people of New Zealand. Some of the highlights this year included launching our Te Mātāpuna app, which makes Māori culture and language more accessible to employees, and delivering an employee Māori language learning pilot through Te Wānanga o Aotearoa.

We ran our own Diversity and Inclusion Week in March and we also recognised significant events throughout the year such as Māori Language Week, Diwali and Chinese New Year. Employee-led affinity groups are supported to help foster an inclusive environment.

Partnerships and community engagement are another key part of our strategy. The organisations we work with include Global Women, Champions for Change, TupuToa and First Foundation in New Zealand, Workplace Gender Equity in Australia and the local government in Saudi Arabia to help bring more women into the workplace.



Gender pay gap New Zealand 0.98
The female to male pay gap in our largest employment country improved from 0.96 to 0.98.

Closing our gender pay gap

Our approach is that there should be no unexplainable gender pay gap for any employees, taking into account factors such as tenure, qualification levels or experience. Our pay gap is also impacted by the gender ratio of our employees, with manufacturing being a historically male-dominated area.

For waged employees, this principle is embedded in our collective employment agreements, with consistent remuneration for each employment category irrespective of who is employed.

For other employees, Fonterra uses a range of independent and external third-party pay market data to benchmark our competitive pay position and to ensure internal consistency. We use pay bands to determine the relative pay levels across the workforce. Our pay approach is governed internally by a transparent remuneration policy.

This year, we conducted a thorough internal pay equity analysis in New Zealand, where the largest number of employees are based. This has helped us identify actions to be taken to close unexplainable pay gaps.

In terms of our gender pay ratio (see [page 72](#)), the female to male base salary across our five largest locations is 1.10 meaning that, on average, female base salaries are higher. This has widened from 1.09 last year because we have increased the scope from just the top five markets! Like last year, the pay ratio is again skewed towards women in the countries with the highest proportion of men working as operators, technicians, drivers and farm worker roles, and the highest proportion of women in more senior roles.

In New Zealand, the female to male base salary is 0.98, meaning the gap has reduced since last year (0.96). This compares well with the national average of 0.908 but still leaves room for improvement. Australia is the location where we have the most significant negative gender pay ratio. This has improved over the past year, from 0.90 to 0.92.

¹ For the same scope as FY17 reporting, the top five markets, the pay gap narrowed by 0.01.



Our performance

Our targets					
Indicator	Target	Performance			Commentary
		FY16	FY17	FY18	
Employee engagement	World-class	3.65	3.85	4.00	The engagement survey for FY18 was moved into early FY19 with a record 19,259 participating (87% of employees) and highest result of 4.00 (out of 5.00).
Female representation in senior leadership	50% by 2022	-	30.5%	30.1%	This slight drop highlights that more targeted intervention is required to increase female representation at senior leadership levels. 50% by 2022 is a new target set in FY18.
Ethnic representation in senior leadership	20% by 2022	-	-	9%	Result based on employees voluntarily providing information this year. More than a third of our global population is still unknown. 20% target by 2022 is a new target set in FY18.

One way we measure how our people strategy is tracking is through our annual engagement survey. In FY17, our global ‘My Say’ survey achieved a 77% participation rate and recorded our highest result since we started surveying in 2010. This year, we moved the FY18 survey to the start of the financial year to increase participation. Although these results were measured in FY19, they do reflect our performance over FY18. A record 87% participation rate was achieved and an increased engagement score of 4.00, building on the improvement from last year.

This year, we won the Deloitte Top 200 Diversity & Inclusion Leadership Award and were voted New Zealand’s Top Graduate Employer in the Talent Solutions and Nxtstep Student Pulse Survey 2018, after previously finishing third. Fonterra’s Learning Solutions team, in partnership with New Zealand consultancy Sysdoc, earned international recognition winning the Silver Award for ‘Best Learning Team’ at America’s Brandon Hall Human Capital Management Academy awards in 2017.

WHAT’S NEXT

- Over the coming year, we’ll work with leadership groups in each country to increase the proportion of women and ethnic minorities within senior leadership levels, in line with our new diversity targets.
- We’re working to get the Rainbow Tick, awarded to New Zealand workplaces that are inclusive and welcoming for people of diverse sexuality and gender identity and the Gender Tick, given to New Zealand employers committed to gender equality.
- We’re prioritising learning for six capabilities – emotional intelligence, change adaptability, learning agility, evidence-based problem solving, entrepreneurship and external orientation.
- For DAIRYCRAFT, we are developing a new pathway to encourage regional youth into a dairy processing career by offering a managed apprenticeship programme at selected sites.

Health, safety and wellbeing

We want all Fonterra people to be healthy, to live a balanced life and to go home from work safely every day.

As a business with thousands of employees, contractors and farmers around the world, interacting with the wider public every day, this topic is fundamental to our business and essential to our long-term success. That's why it has been a particular focus for us for more than 10 years.

Our approach

Fonterra operates a global health and safety management system. The Fonterra Group Health, Safety and Wellbeing Policy sets out our requirements for responsible operation and employee safety. Implementation of and compliance with the policy is overseen by our global Director of Health and Safety, Resilience and Risk.

We are committed to delivering on our health, safety and wellbeing commitments through:

- People, who believe that harm is avoidable and who support a safe and healthy work environment
- Processes, that always prioritise safe work practices and proactively identify and manage exposure to risk
- Plant and equipment that considers design, operation, management and maintenance to always prioritise a safe and healthy work environment.

Accountability for performance extends from the Board of Directors, through the Fonterra Management Team, to individual managers, workers and contractors working on Fonterra sites.

What we've been doing

Safe home audits

Each year we run a global programme of comprehensive Safe Home Assurance Audits in addition to self-assessments performed locally. These audits are undertaken by our Internal Audit team, independently of the business unit, and involve a detailed assessment on site. This year we completed audits at 30 of our sites. For 12 of these, controls were found to be not as



effective as we would like and improvement actions have been identified to address this.

On-farm health and safety

When it comes to health and safety on farms, we have a direct responsibility for our employees, contractors and other representatives, including the safety of those involved in milk collection activities. Our on-farm assessments include health and safety to confirm that relevant areas of the farm are well-managed for risks and hazards, with specific, detailed consideration of the tanker access included in the supplier handbook for New Zealand farmers.

In New Zealand, there are significant numbers of fatalities associated with working in the agricultural industry, with 18 reported during 2016 and nine in the 2017 calendar year.¹ We are active members of the Agricultural Leaders Health and Safety Action Group and working with other organisations, including Worksafe New Zealand and DairyNZ, we are seeking ways to help reduce the risk of injury. Also, through our network of Farm Source™ stores, we make safety information available for our farming communities.

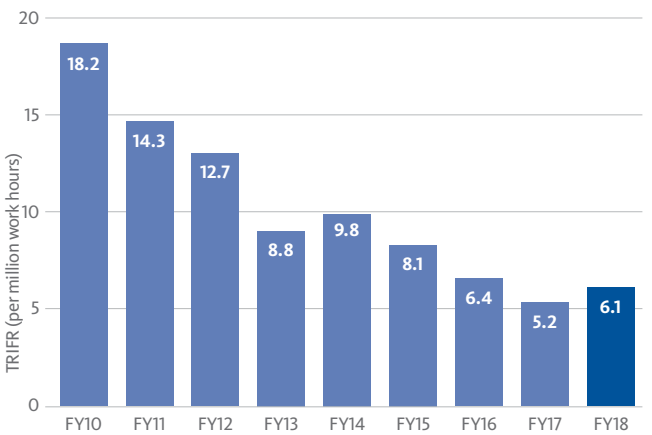
For our own Nutrient Management farms in New Zealand, our Internal Audit team completed Safe Home Assurance Audits at a further six of the 29 farms. Controls were found to be not as effective as we would like and improvement actions have been identified. Improvements arising from actions last year resulted in improved ratings for four assessment categories: Leadership and Engagement, Injury Management, Hazardous Substances and Farm Vehicle Safety.

Helping local community initiatives

Our concern for health and safety extends to the wider community. Through our Fonterra Grass Roots fund we provide financial support for local initiatives that help make communities safer. In FY18, grants were provided to help groups such as volunteer fire brigades, surf lifesaving and land search and rescue. Through bulk buying we were also able to provide more than 10,000 high visibility vests and 25 defibrillators to community groups.



Total recordable injury frequency rate



Our performance

Our targets					
Indicator	Target	Performance			Commentary
		FY16	FY17	FY18	
Work-related fatalities (attributable to Fonterra – staff, contractors, on-site public)	Zero harm	1	0	0	This year there were no fatalities on any of our sites.
Total recordable injury frequency rate (TRIFR per million work hours)	World class for our industry group (<5)	6.4	5.2	6.1	Having achieved a 70% reduction from FY10 to FY17, this year we saw a slight increase and 284 employees required medical treatment, restricted work duties or time away from work, because of a work-related injury. We remain committed to achieving our target.
Number of serious harm injuries	Zero harm	21	17	14	Serious harm injuries ² have continued to decrease, reaching 14, our lowest recorded level. We remain focused on reducing this further.
Percentage of staff participation in at least one health and wellness programme per year	Measure and report only	19%	18%	-	This year, rather than a single global approach, employees participated in a range of regional wellbeing activities, including an "Unlocking Your Life" programme in Australia. This means we are unable to report an overall participation rate.

Our performance

Our initiatives to date have dramatically improved the health and safety of our people, even as we have grown our operations and business complexity. This has been achieved by focusing on areas of vulnerability, building resilience and considering what it takes to keep our people safe.

In Australia this year, our Stanhope team won a WorkSafe Victoria Award for their commitment to health and wellbeing. During the expansion project, the team developed 'The Village' initiative to build a sense of community to keep each other safe.

¹ Source: Worksafe NZ Workplace fatalities by industry
² Serious harm injuries are injuries that cause temporary or permanent loss of body function and include those to/involving both employees and contractors.

WHAT'S NEXT

- We continue to seek further improvements by analysing events and executing a broad range of improvement initiatives.
- We are establishing a Global Wellbeing Forum with a specific emphasis on the mental health aspect of personal wellbeing. The forum is intended to encourage local ownership of wellbeing in our business units around the world, but in an aligned way where locally developed best practice can be shared to accelerate progress.

Human Rights

As a large-scale employer, working in many countries around the world, it is our responsibility to care for the rights of people directly and indirectly impacted by our operations and decisions.

Our approach

Since adopting ISO26000 in 2014 we have been improving our visibility of and accountability for human rights issues.

Our approach has its foundations in our values and is built on the UN Guiding Principles on Business and Human Rights. The Principles require that businesses should avoid causing or contributing to adverse human rights impacts through their business activities, and address such impacts should they occur.

What we've been doing

Human rights due diligence

Human Rights 'due diligence' is a process to identify and prioritise actual and potential human rights issues in an organisation's direct and indirect sphere of influence. For Fonterra, this is an important step in developing our understanding of our potential impacts so we can implement policies or actions to address them.

In 2017, we conducted a human rights due diligence evaluation for four countries, which captured approximately three-quarters of our employees: New Zealand, Australia, Brazil and Chile. The results showed that some of our people had concerns about bullying and harassment, long working hours and the potential for human rights risks in our non-milk supply chain (see [page 82](#)).

Addressing bullying

New Zealand has high rates of bullying, and this spills over into workplaces, affecting around one in five working people. It's not just an issue in New Zealand, it impacts workplaces globally and can have a serious and ongoing impact on mental health and wellbeing.



At Fonterra, we believe that everyone has the right to work in a safe environment free from any form of bullying or harassment. We do not tolerate these harmful behaviours in our workplace and are taking steps to speak up, stand together and stop them from occurring. We have committed to a number of initiatives designed to create a 'culture of care'. This year, building on existing proactive and reactive measures in place, we have had our processes reviewed by external legal experts, we have simplified our policies and guidelines and made them more accessible, and we're developing a new Global Standard on Bullying, Harassment and Discrimination to apply globally.

We have also developed new online and face-to-face bullying and harassment training for employees. Some of this training was piloted at our Te Rapa site earlier this year with great feedback.

To help raise awareness of these issues we joined the Pink Shirt Day movement, providing training material to all New Zealand people managers and raising awareness with employees globally.

Our performance

We've made good progress on due diligence this year, and established a governance group to oversee the findings. We're continuing our focus on addressing bullying and harassment, and if any other issues are identified from our ongoing due diligence process, we will be seeking to put additional action plans in place.

WHAT'S NEXT

- In 2019, we will extend the due diligence process to employees in other key regions, and continue with our assessment and response to any issues identified in our on-farm and non-milk supply chains.
- We will consider extending the initiatives we have introduced to help address family violence to other regions.
- We intend to publish an updated Group Bullying, Harassment and Discrimination standard, complete the development of new training resources for staff, and then commence their rollout.

IN 2016 POLICE RECORDED:
118,910



**FAMILY VIOLENCE INVESTIGATIONS
- ONE EVERY 5 MINUTES**

New Zealand statistics.
Source: areyouok.org.nz

**ONE IN SEVEN
- YOUNG PEOPLE -**



**REPORT BEING HARMED ON PURPOSE
BY AN ADULT AT HOME**

New Zealand statistics.
Source: areyouok.org.nz

**IT IS
OK TO ASK
FOR
HELP**

CASE STUDY

Addressing family violence in New Zealand and Australia

Family violence is one of New Zealand and Australia's biggest human rights issues. New Zealand has the highest reported rate of family violence in the developed world.

The workplace is often a safe place from the violence at home, where a sense of value and worth can be maintained and victims can seek help away from the scrutiny of the abuser.

This year we launched a new initiative aimed at making Fonterra a safe place for New Zealand and Australian employees impacted by family violence. We wanted to ensure we have a caring and sensitive environment where people can talk about family violence, and know how to get confidential support if they need it.

In New Zealand, we asked Shine's DVFREE experts to help us develop our domestic violence policy and to train a group of employees. The trained employees provide initial workplace support and

facilitate access to expert external support through partners such as Shine. We also launched a support package including additional leave of up to 10 days for victims and three days for supporters of victims, as well as provision for 'users' of violence who want to attend rehabilitation.

In Australia, we also introduced up to 10 days of paid leave for victims, in what we believe is an industry-leading position, well above the legal requirement recently introduced.

Recognising the wider impact of this issue, we also worked with a number of other organisations and developed a toolkit for other businesses to use as a starting point for their own internal policy and support programmes. This has been made publicly available via: www.businessworkingtoendfamilyviolence.co.nz/

shine*
making homes violence free

Responsible Procurement

Our business has considerable scale and with that comes the opportunity to influence for good.

In terms of procurement, this means working to source goods and services produced in an environmentally and socially responsible way and that positively influences behaviours in our supply chain.

By far the largest single input to our business is raw milk, collected directly from farmers. For more information on how we work with our farmers, in New Zealand and around the world, see [page 44](#).

This section covers our non-milk supply chain, including capital projects.

Our approach

We have a Group Procurement Policy and Procurement Standard which set out our global requirements for procurement of non-milk goods and services, including capital projects. This includes key principles such as assuring the health, safety and wellbeing of people, food safety and quality, environmental sustainability and social practices. The requirements apply for all purchasing, but for significant items, a specialist procurement team must be involved in purchasing decisions.

All staff are responsible for complying with the standard, which is owned by the Director of Procurement, with the CFO accountable for ensuring the Group Standard is fully implemented across the organisation. The Group Policy is approved by the Board of Directors.

The Fonterra Supplier Sustainability Code of Practice sets our expectations of vendors including upholding standards related to human rights, fair working conditions and environmental protection.

→ www.fonterra.com/sustainabilitycop

We select vendors based on a balanced set of criteria and recognise that some may have weaker aspects of social or environmental performance. We believe that influencing and working with vendors who show a willingness to improve is the socially responsible thing to do.

As part of our regular assessment of vendors across a range of characteristics, we specifically consider social and environmental risks.

What we're doing

Vendor assessments

As part of our on-going human rights due diligence process, this year we assessed our top 400 non-milk suppliers (accounting for 75% of spend) for the risk of potential human rights abuses. We identified that the salient risks are most likely to be: discrimination and bullying or harassment, followed by bribery and corruption, and then unsafe working conditions. These primarily relate to the ingredients we are sourcing from outside of New Zealand – typically from countries with systemically poor governance of labour conditions. As a socially responsible organisation, we are committed to providing meaningful work and income in emerging markets, while also encouraging our suppliers to continually improve labour practices.

Palm products

Palm products are one of the highest-profile raw materials in our supply chain. The production of palm oil and palm by-products, primarily in Malaysia and Indonesia, are associated with a number of environmental and social issues. We therefore have a specific focus on this area (please see Case Study on Palm products opposite).



CASE STUDY

Palm products

The production of palm products is often linked to unsustainable practices, including deforestation, habitat destruction and poor human rights practices. We are committed to sustainable sourcing of palm products and we are working with others to improve practices across the supply chain.

Palm oil is used in a limited number of our products. Palm Kernel Expeller (PKE), a by-product of the palm oil production, is used as a supplementary feed for cows. Approximately 30% of PKE imports into New Zealand are procured through International Nutritionals Ltd (INL), a joint venture between Fonterra

and Wilmar, and sold through our Farm Source™ stores. We have been a member of the Roundtable for Sustainable Palm Oil (RSPO) since 2010 and by 2015 all our palm oil purchases were certified by RSPO.

In 2016, we launched our Palm Product Standard. This requires palm product vendors within our supply chain to publicly commit to “No Deforestation, No Peatland Development, and No Exploitation” and have processes to meet these commitments.

In 2017, we joined The Forest Trust, working with them to evaluate the performance of our palm products supply chain and compliance with our standard. Our supply chain is complex and tracing PKE back to individual smallholders is very resource intensive. To make the biggest difference, our stakeholders have recommended we focus our efforts on priority areas of risk and support common tools for transformation.

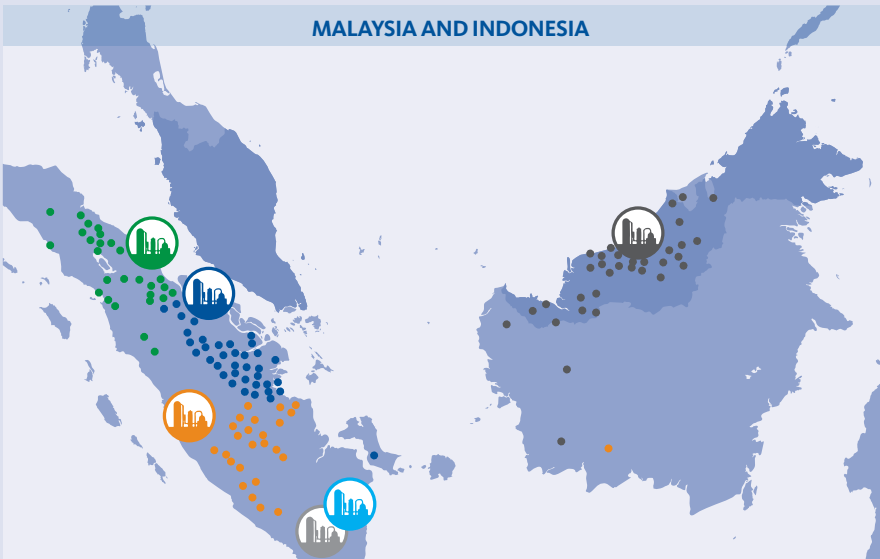
Wilmar, our largest supplier, and Agrifeeds both make detailed traceability information available on their web sites:

→ www.wilmar-international.com/sustainability/progress/traceability/

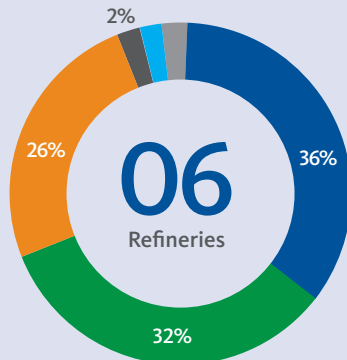
→ www.agrifeeds.co.nz/information/agrifeeds-pke-supply-chain/

In the past year, we have analysed our supply chain to identify priorities for further action and established a process with Wilmar for traceability data and grievance alerts. We have also hosted conversations with key stakeholders to seek feedback on our progress and approach.

PKE Supply Chain via Agrifeeds



Breakdown by refinery



275
Mills

94%
Traceable to mill

Responsible
Procurement continued.

Our performance

Our targets				
Indicator	Target	Performance		Commentary
		FY17 (CY2016)	FY18 (CY2017)	
Sourcing 'segregated supply' palm oil from credible organisations	100% by end of CY 2018	2.7%	7.0%	Despite slow initial progress, indications are that we will achieve 70% by the end of CY2018 with close to 100% RSPO segregated palm oil for New Zealand and Australian procured items. We have faced challenges in markets such as Saudi Arabia, Thailand, Indonesia and Chile but we will continue to work with suppliers to transition to segregated supply.
PKE traceable to mill	100% by end of CY 2018	96.7%	93.9%	Traceability went down slightly in 2017 due to a new mill being added to supply and this mill missing information that prevents it being considered traceable. Traceability will continue to improve and AgriFeeds has made this information publicly available on its website.
PKE traceable to plantation	100% by end of CY 2018 (excluding smallholder)	17.7%	19.4%	While visibility continues to improve slowly, this is now recognised as an impractical target. Alternative indicators to better monitor changes to sustainable production are being discussed with stakeholders.

Payment terms

In 2016, we changed our vendor payment terms, increasing the time it took us to pay vendors. This brought us in line with international practices, and many of the existing agreements we had with our own customers.

It's a decision we acknowledge put pressure on many of our smaller vendors, and damaged our relationships. Since introducing the longer payment terms, we have worked with many individual vendors to set payment terms that recognised the pressure on their cash flows.

This year, we reviewed the situation and adjusted the standard payment term for all small New Zealand and Australian businesses¹. From August 2018, all small businesses in these countries are paid on the 20th of the month following the invoice date.

¹ We consider a vendor small if we spend less than \$300,000 per year with them, they have annual turnover of less than \$10 million and less than 20 employees. This is aligned with the New Zealand Ministry of Business and Innovation and Employment description.

WHAT'S NEXT

- We will be expanding our engagement with specific vendors in high-risk areas to ensure they better understand our expectations, and we better understand the practices in their supply chains.
- We will continue to explore ways in which our procurement spend and vendor management approach can help improve social outcomes in our supply chain.
- For palm products, we will continue to engage vendors and work with our partners to support transformation of the palm industry towards a sustainable supply. We will also update our Palm Product Standard to reflect recommendations from stakeholders on best practice.

Dairy
Development



Our dairy development activities support local dairy farmers in key markets to sustainably increase production, improve milk quality and profitability, and thereby help to build thriving communities.

As a farmer-owned Co-operative, our global success is built on the dairy expertise we have developed. By sharing that expertise and the lessons we continue to learn, we can make a greater contribution to sustainable development. To achieve this we work closely with key external stakeholders including local government agencies, universities and New Zealand industry experts to tailor our approach to specific needs.



Milk collection
in Sri Lanka

Milk from small-scale farmers being collected on the way to a milk collection centre in Sri Lanka.

Sri Lanka

In Sri Lanka, we are developing the capability of local dairy farmers and collecting their milk to produce fresh dairy products for the local market. We have established seven milk collection centres in the regions and trained staff to collect, test and cool the milk before it is transferred to food production facilities.

We also established our demonstration and training farm at Pannala in 2016 as a way to build capabilities further. In its first year of operation, we exceeded our goal to provide training for more than 2,500 farmers per year. This year, 1,036 farmers received training at the farm. Competing priorities for staff meant that we did not achieve our annual target.

The tuition is provided through a combination of classroom and on-farm training activities and our network of supplier relationship officers provide further support by visiting farms and leading farmer discussion groups.

This year, we introduced new milk testing technology, tailored to suit the Sri Lankan conditions. This has provided a step change in the quality of milk test results, which will help improve milk quality. The instrument is now available commercially in Sri Lanka and is being adopted more widely.

To track outcomes from the development activities, we have introduced performance indicators, monitored across a sample of farmers in Sri Lanka. During the 2017 calendar year, farmers worked on fodder improvement, planting techniques, harvesting and silage making. This allowed farmers to reduce their use of supplementary feed and lowered their average cost of production by 30%¹.

¹ Based on 37 farmers who provided more than nine months of data across 2017.

Dairy Development continued.



Second cohort of young farmers from Chile before heading to New Zealand.

China

Encouraging the development of young Chinese talent in agriculture is an important aspect of our dairy development work. More than 90% of employees on our China Farms are locally recruited and trained. We have also provided financial support to a further 209 agriculture and food science students from 10 Chinese universities. This takes our total to over 1,000 since the Fonterra Scholarship programme launched in 2010.

We have been working with local authorities and research teams in China and New Zealand to build a circular economy solution. Treated effluent from our China Farms is used as a restorative fertiliser to improve soil health on arable land to grow feed for our cows. This year we have specifically set up demonstration plots where we are providing the local farmers with advice on irrigation and crop management, and monitoring effluent application and soil quality over time. Our goal is to demonstrate measurable results to encourage wider adoption of the approach by local farmers, helping secure soil health for their long-term livelihoods.

Indonesia

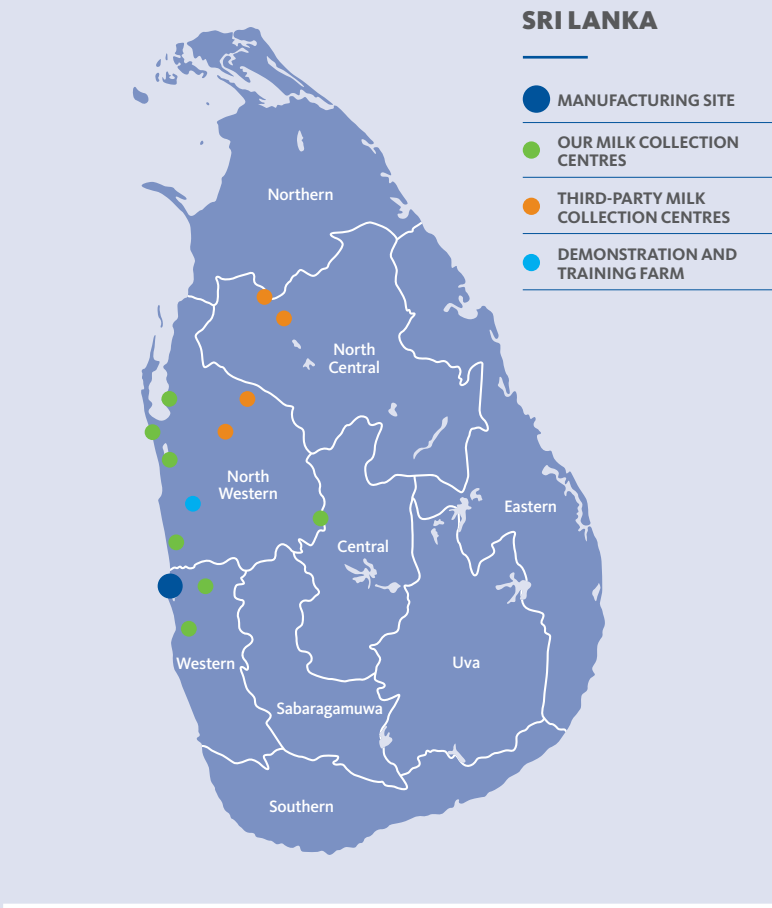
Our dairy development work in Indonesia sees farmers receive practical and classroom training in Indonesia and a study tour to New Zealand. Now in its sixth year, 15 local farmers in Indonesia completed our one-year development scholarship this January. The extension training includes animal husbandry, feed management, food safety and quality, health and safety, and caring for the environment. The alumni network then helps build local farmer learning groups for continued sharing within the group and the broader farming community as they apply their learning.

We have also launched a dairy cluster in West Sumatra. Supported by local government and working in partnership with the local dairy co-operative, we are training about 70 farmers. We are also training local catering staff on using fresh milk as an alternative nutritional ingredient to develop market opportunities for the milk produced.

Chile

In FY17, working with our Chilean subsidiary Prolesur, we established a new exchange scheme to give young Chilean farmers the opportunity to learn from leading farmers in New Zealand. Through paid, hands-on work experience with Fonterra farmers, young people from southern Chile learn pastoral dairy farming skills so they can return home and contribute to the dairy development potential there.

From our first group of 11 young Chilean farmers, nine completed their full year in New Zealand and the second group of 17 have arrived.



CASE STUDY

Encouraging dairy entrepreneurs in Sri Lanka

Most dairy farming in Sri Lanka involves hand-milking a few cows. This means there are challenges around farm productivity and milk quality, but there are also opportunities.

Kalum Prasanna from Kuliypitiya started dairy farming at an early age, however he lacked the knowledge needed to successfully manage a dairy farm. After leaving to explore other industries, Kalum returned to dairy farming in 2015 and began supplying fresh milk to Fonterra Brands Sri Lanka.

Kalum started with two cows and has grown his herd to nine, producing around 80-100 litres of milk per day. Kalum also has his own milk collection centre, collecting around 150 litres of milk daily from 15 dairy farmers. Based on training received at Fonterra's Demonstration and Training farm and supported by the National Agri Business Development Programme, Kalum has improved his own operation and is helping other farmers increase their productivity. Kalum is now looking to increase his herd to 20 and install a biogas plant to produce energy that can be used to power his home.

Anusha Lakmali's husband works in the army and is often stationed away from home. With two sons and growing educational expenses, they were looking for a new income stream. Starting with a single cow, Anusha quickly learned how to weave the farming activities into her daily routine and now has two cows. Anusha also provides a collection service, collecting around 125 litres of milk from five or six other small-scale farmers on her route to the milk collection centre at Gampala. She now hopes to grow her business and supply Fonterra with 300 litres of milk every day.

Fonterra's end-to-end dairy development initiative in Sri Lanka is empowering and improving the livelihoods of farmers like Kalum and Anusha by creating regular incomes. These livelihoods are powered by new product development, to build local demand for fresh, healthy dairy nutrition sourced from local dairy farmers, and are supported by the development of the end-to-end supply chain.

Supporting our communities

Our main contribution to our communities is through our daily business, but we also invest in and support the communities that we rely on to be strong and resilient.

Our approach is to share our expertise and invest in activities aligned with our sustainability priorities: nutrition, environment and healthy, safe communities.

Fonterra Grass Roots fund

The Fonterra Grass Roots Fund financially supports initiatives that help to strengthen our communities, bringing them together, caring for the environment and promoting safe and healthy lifestyles.

Launched in 2007, it is now active in New Zealand, Australia and Sri Lanka, with decision-making distributed regionally.

FY17
\$750k distributed to 432 initiatives

FY18
\$770k distributed to 696 initiatives

¹ A portion is 200ml of milk for Fonterra Milk for Schools and an estimated 140ml of milk for KickStart Breakfast. In prior years KickStart has considered a portion 200ml but analysis indicates 140ml is more realistic.

New Zealand and Australia

In New Zealand, in addition to providing financial grants we also directly provided more than 10,000 high visibility vests and 25 defibrillators. Buying in bulk lets us help more groups.



25 Defibrillators provided across New Zealand



FY18
\$7.2M 23.6M portions¹
We also provide dairy nutrition through our In-school programmes - see page 36



In Australia, we've supported initiatives across Victoria and Tasmania. Members of the 1st Drouin Scouts needed new tents for camps to help young scouts safely learn good life skills.



14 scholarships awarded

Junwen Yang, a milker on our Ying Farm, was one of the first recipients of a further educational scholarship for his son.

Greater China

In Greater China, we have introduced a new scholarship scheme to help the children of our China Farm workers further their education. This year, 14 scholarships were awarded. They are based on criteria including family income and college admission.

We have also continued to fund lectures by influential Girls' Protection, an NGO, to provide 'protect your body' guidance to more than 100 children. The course seeks to help the children protect themselves against harassment.

Latin America

For 18 years, Soprole has supported school sports across the length of Chile covering athletics, basketball, football, mountain biking, swimming, volleyball and chess. Participation is encouraged to help develop values such as tenacity and unity.

A further education scholarship is also awarded in each discipline for the top participants when they graduate from high school.

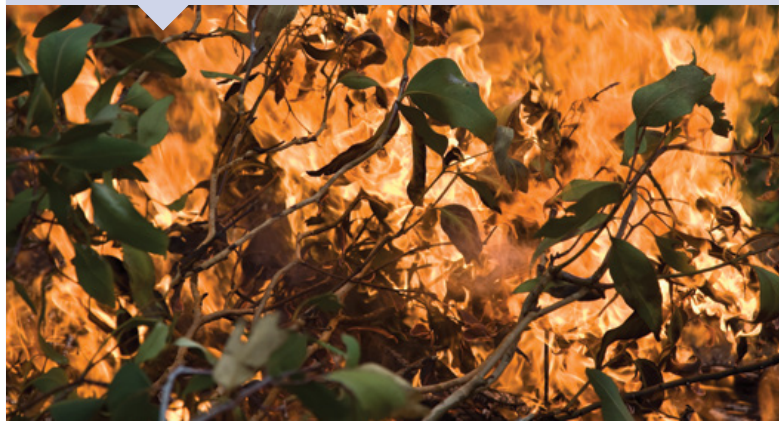


A helping hand in times of crisis: Australian bushfires

On 18 March 2018, the Western Victoria dairy region in Australia was hit by a bushfire, which quickly destroyed homes, sheds, fences and stock, and at one point threatened the Cobden township and Fonterra's manufacturing facility. Sixteen Fonterra farms were directly affected, with another 70 farms impacted through loss of power and other disruptions.

Our local Farm Source team helped to source generators, reconstruct fences, and provided technical advice on milk quality and animal health issues. Fonterra paid for milk not able to be collected (due to lack of access to farms or power shortages), delivered clean water to affected farms using our fleet of tankers, and donated products for fundraising events.

Building on the support services we provide our employees, we partnered with our Employment Assistance Programme (EAP) provider and 'Nurse on call' to provide on-site counselling to both the community at large, as well as local volunteers and workers.



Once they got the barge working really well, it transported in: 2 full fuel tankers and 2 chilled food trucks for the community; and 6 empty trucks to collect dairy products.



Cyclone Gita

In February 2018, Cyclone Gita hit the South Island of New Zealand. A slip on the only road out of Takaka caused the town, the Golden Bay area and Fonterra's plant to become cut off. Our operations team had to work quickly, by activating their business continuity plan. This involved hiring a barge to move products out of the factory. Only 20 hours after the storm, after securing a berth at Port Nelson and building a ramp to give the trucks access, the first successful eight-hour trip was made.

Realising there was room on the barge for more vehicles, our team worked with the local civil defence and other authorities to coordinate moving essentials such as food and fuel to help the stranded community. After six days, the Takaka hill road re-opened to truck traffic only. During that time, the factory kept collecting from the local farms and the community had access to essentials.

Global Reporting Initiative Standards

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option.

To achieve 'Core' compliance with the GRI standards we must report against at least one disclosure for each material topic.
For more information: ➔ www.globalreporting.org

REF	TOPIC TITLE	REFERENCE	
GENERAL DISCLOSURES			
102-1	Name of the organisation	Fonterra Co-operative Group Limited	●
102-2	Activities, brands, products, and services	About Fonterra. See page 14	●
102-3	Location of headquarters	See page 94	●
102-4	Location of operations	Our farming and manufacturing activities. See page 42	●
102-5	Ownership and legal form	About Fonterra See page 14	●
102-6	Markets served	Where we sell. See page 26	●
102-7	Scale of the organisation	About Fonterra. See page 14	●
102-8	Information on employees and other workers	Our people. See page 72 ¹	●
102-9	Supply chain	Our Value Creation. See page 16	●
102-10	Significant changes to the organisation and its supply chain	No significant changes occurred in the reporting period FY18	●
102-11	Precautionary principle or approach	How we manage operations. See page 46	●
102-12	External initiatives	Associations, endorsements and memberships. See page 94	●
102-13	Membership of associations	Associations, endorsements and memberships. See page 94	●
102-14	Statement from senior decision-maker	Letter from the Chairman and Chief Executive. See page 4	●
102-16	Values, principles, standards, and norms of behaviour	Our Values. See page 5. Details on our Code of Ethics are published on page 70 of the Fonterra Annual Review 2018	●
102-17	Mechanisms for advice and concerns about ethics	The Way We Work Hotline is described on page 70 of the Fonterra Annual Review 2018	●
102-18	Governance structure	A full list of Board Committees is published on page 70 of the Fonterra Annual Review 2018	●
102-20	Executive-level responsibility for economic, environmental, and social topics	Accountability for sustainability in Governance and Ethical Business ²	●
102-40	List of stakeholder groups	Our stakeholders. See page 18	●
102-42	Identifying and selecting stakeholders		
102-43	Approach to stakeholder engagement		
102-44	Key topics and concerns raised		
102-41	Collective bargaining agreements	Labour Rights. See page 74	●
102-45	Entities included in the consolidated financial statements	A list of entities is included on page 50 of Fonterra's Annual Financial Results 2018. The same entities apply to this Sustainability Report, except where explicitly excluded	●
102-46	Defining report content and topic boundaries	Responding to what's important. See page 19 Global Reporting Initiative Standards. See page 90	●
102-47	List of material topics	Responding to what's important. See page 19	●
102-48	Restatements of information	Refer to Environmental Data Reporting Notes for details ³	●
102-49	Changes in reporting	No significant changes other than improved data coverage and quality	●
102-50	Reporting period	About This Report. See page 2 (Period is 1 August 2017 – 31 July 2018)	●
102-51	Date of most recent report	December 2017 for period 1 August 2016 – 31 July 2017	●
102-52	Reporting cycle	About This Report. See page 2 (Annual reporting cycle)	●

102-53	Contact point for questions regarding the report	About this report. See page 3 (Email: sustainability@fonterra.com)	●
102-54	Claims of reporting in accordance with the GRI Standards	Global Reporting Initiative Standards. See page 90	●
102-55	GRI content index	Global Reporting Initiative Standards. See page 90	●
102-56	External assurance	Bureau Veritas Assurance Statement. See page 92	●
ECONOMIC TOPIC DISCLOSURES			
201-1	Direct economic value generated and distributed	About Fonterra. See page 14. Community. See page 88 Refer to Remuneration on page 77 of Annual Report 2018	●
202-2	Proportion of senior management hired from the local community	Our People. See page 72. Doing what's right by our people. See page 74	●
205-2	Communication and training about anti-corruption policies and procedures	Awareness and training in Governance and ethical business ²	●
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Legal compliance in Governance and ethical business ²	
ENVIRONMENTAL TOPIC DISCLOSURES			
302-1	Energy consumption within the organisation	Climate change – Our performance. See page 61 ³	●
302-3	Energy intensity	Climate change – Our performance. See page 61 ³	●
302-4	Reduction of energy consumption	Climate change. See page 57-60	●
303-1	Water withdrawal by source	Water withdrawn by source. See page 52	●
305-1	Direct (Scope 1) GHG emissions	Climate change – Our performance. See page 61	●
305-2	Energy indirect (Scope 2) GHG emissions	Climate change – On farm lifecycle assessments. See page 55	●
305-3	Other indirect (Scope 3) GHG emissions		●
305-4	GHG emissions intensity		●
306-1	Water discharge by quality and destination	Water discharge. See page 52	●
306-3	Significant spills	Significant spills. See page 47	●
307-1	Non-compliance with environmental laws and regulations	Environmental compliance. See page 47	●
308-2	Negative environmental impacts in the supply chain and actions taken	How we work with farmers. See page 44	●
SOCIAL TOPIC DISCLOSURES			
401-1	New employee hires and employee turnover	Our People. See page 72 ¹	●
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Health, safety and wellbeing. See page 78	
404-2	Programmes for upgrading employee skills and transition assistance programmes	Learning and development. See page 75. Employee Assistance Programme in Governance and ethical business	
405-1	Diversity of governance bodies and employees	Our People. See page 72	●
405-2	Ratio of basic salary and remuneration of women to men	Gender pay. See page 76. Our People. See page 72 ¹	●
406-1	Incidents of discrimination and corrective actions taken	Respect for each other. See page 74	●
412-1	Operations that have been subject to human rights reviews or impact assessments	Human Rights. See page 80	
415-1	Political contributions	Responsible political involvement in Governance and ethical business	
416-1	Assessment of the health and safety impacts of product and service categories	Improving the nutritional profile of our products. See page 29 Food safety and quality. See page 34	●
417-2	Incidents of non-compliance concerning product and service information and labelling	Compliance with regulation. See page 32	
417-3	Incidents of non-compliance concerning marketing communications	Compliance with regulation. See page 32	
419-1	Non-compliance with laws and regulations in the social and economic area	Legal compliance in Governance and ethical business	

1 For more information, see: ➔ www.fonterra.com/2018AdditionalEmployeeData

2 For more information, see: ➔ www.fonterra.com/2018GovernanceEthicalBusinessNotes

3 For more information, see: ➔ www.fonterra.com/2018EnvironmentalDataReportingNotes

● Within scope of assurance.

Assurance statement

INDEPENDENT ASSURANCE STATEMENT

To: The Stakeholders of Fonterra Co-operative Group Limited

Introduction and objectives of work

Bureau Veritas New-Zealand Ltd ("Bureau Veritas") was engaged by Fonterra Co-operative Group Limited ("Fonterra") to provide independent limited assurance of its 2018 Sustainability Report ("the Report"). This Assurance Statement applies to the related information included within the scope of assurance described below.

This information and its presentation in the Report are the sole responsibility of the management of Fonterra. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance of the accuracy of information included. This is the second year in which we have provided limited assurance over the Fonterra Sustainability Report.

Scope of Assurance

Fonterra requested Bureau Veritas to verify the accuracy and assure the material disclosures, both qualitative and quantitative, presented in the Report. The Report was prepared in accordance with the GRI Standards (2016): Core option. The complete list of assured elements is referred to within the GRI Index of the Report.

The scope of work was limited to the data and information related to sites and operations under which Fonterra has operational control for the period of 1st August 2017 to 31st July 2018.

Methodology

As part of its independent limited assurance, Bureau Veritas undertook the following activities:

- Interviews and follow-up communication with relevant personnel;
- Review of documentary evidence produced by Fonterra representatives;
- Audit of performance data and factual information including source verification; and
- Review of Fonterra's processes for identification, aggregation and analysis of relevant information, report content and performance data.

Our work was planned and executed in a manner designed to produce a limited level of assurance and to provide a sound basis for our conclusions.

Our assurance process is aligned with and informed by Bureau Veritas' standard procedures and guidelines for external verification of sustainability reports, GRI Sustainability Reporting Standards 2016 and the International Standard for Assurance Engagements (ISAE) 3000.

Our findings

On the basis of our methodology and the activities described above, we provide limited assurance that:

- Nothing has come to our attention to indicate that the reviewed statements within the scope of our verification are inaccurate and the information included therein is not fairly stated; and
- It is our opinion that Fonterra has established systems for the collection, aggregation and analysis of relevant information and quantitative data.



Evaluation against the Global Reporting Initiative Sustainability Reporting Standards 2016 (GRI Standards)

The Report has been prepared in accordance with the GRI Standards (2016): Core Option, including appropriate considerations of the reporting principles, profile disclosures, management approach disclosures and performance indicators.

Bureau Veritas' evaluation of the Report included cross checking the GRI Index against referenced documents.

Limitations and Exclusions

Excluded from the scope of our work is any assurance of information relating to:

- Activities outside the defined reporting period;
- Statements of commitment to, or intention to undertake future actions by Fonterra;
- Statements of position, opinion, belief and/or aspiration by Fonterra;
- Financial data audited by an external third party; and
- Other sites and activities not included in the scope.

This independent assurance statement should not be relied upon to detect all errors, omissions or misstatements that may exist within the Report.

Statement of independence, impartiality and competence

Bureau Veritas is an independent professional services company that specialises in Quality, Health, Safety, Social and Environmental management with almost 200 years history in providing independent assurance services.

Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest.

No member of the assurance team has a business relationship with Fonterra, its Directors or Managers beyond that required of this assignment. We have conducted this assurance independently, and there has been no conflict of interest.

The independent assurance team has extensive experience in conducting assurance over environmental, social, security, safety, health and ethical information, systems and processes, and through its combined experience in this field, an excellent understanding of good practice in sustainability reporting and assurance.

Bureau Veritas New-Zealand Ltd
22th November 2018

Andrew Mortimore
Head of Sustainability Services



Associations, endorsements and memberships



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Disclaimer

This report contains some forward-looking statements and projections. There can be no certainty of outcome in relation to the matters to which the forward-looking statements and projections relate. These forward-looking statements and projections involve known and unknown risks, uncertainties, assumptions and other important factors that could cause the actual outcomes to be materially different from the events or results expressed or implied by such statements and projections. Those risks, uncertainties, assumptions and other important factors are not all within the control of Fonterra Co-operative Group Limited (Fonterra) and its subsidiaries (the Fonterra Group) and cannot be predicted by the Fonterra Group.

While all reasonable care has been taken in the preparation of this report none of Fonterra or any of its respective subsidiaries, affiliates and associated companies (or any of their respective officers, employees or agents) (Relevant Persons) makes any representation, assurance or guarantee as to the accuracy or completeness of any information in this report or likelihood of fulfilment of any forward-looking statement or projection or any outcomes expressed or implied in any forward-looking statement or projection. The forward-looking statements and projections in this report reflect views held only at the date of this report.

Statements about past performance are not necessarily indicative of future performance. Except as required by applicable law or any applicable Listing Rules, the Relevant Persons disclaim any obligation or undertaking to update any information in this report.

This report does not constitute investment advice, or an inducement, recommendation or offer to buy or sell any securities in Fonterra or the Fonterra Shareholders' Fund.



