

Sustainability Report

FOR THE YEAR ENDING 31 JULY 2017
FONTERRA CO-OPERATIVE GROUP LIMITED

Contents

Chairman and CEO Introduction	1
Our Heritage	4
About Fonterra	6
The Global Context	8
The Dairy Context	10
Our Opportunity	12
Our Approach	14
Nutrition	16
Environment	18
Community	20
Value Chain Diagram	22
Sustainable Dairying	24
Sustainable Operations	46
Sustainable Consumption	60
Sustainable Foundations	76

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 2017 – 'FY17'. This report sits alongside our Annual Review 2017 which sets out our financial performance:

➔ www.fonterra.com/annualreview2017

In certain sections throughout the report, we have included data relating to periods prior to FY17 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 first stand-alone sustainability report. 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 100*.

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 102*.

Letter from the Chairman and Chief Executive

Strong healthy local environments and communities are the foundation for sustainable, profitable dairy farming. That's why, what we call the "Sustainable Co-operative" is one of our three strategic priorities – alongside Strong V3 Co-operative and Innovative Co-operative.

Strong healthy local environments and communities are the foundation for sustainable, profitable dairy farming. That's why, what we call the "Sustainable Co-operative," is one of our three strategic priorities – alongside Strong V3 Co-operative and Innovative Co-operative.

The Sustainable Co-operative recognises our commitment to building sustainability into everything we do. We have made significant progress in some areas, and have plans in place where there is more work to be done. This Sustainability Report brings together all of our initiatives in one publication so that our farmers, unit holders, commercial partners, customers and neighbours can review our progress towards our goals and our promises.

For generations Fonterra has provided dairy products to customers and consumers around the world, producing good returns for our farmers, their families and the economy. The Sustainable Co-operative recognises the need to balance these social, environmental and economic considerations so our products are produced responsibly, as well as competitively.



It also recognises that consumers want clean and healthy food at a reasonable cost, and they want ethical and considered approaches to the way that food is produced. The communities where we operate want this food produced within the local environmental limits they have helped to determine. They also look to us to support social progress through our community initiatives.

We're working right across our value chain to do what's right and have three principal sustainability priorities; help address global public health issues linked to nutrition as the world's population grows, help improve New Zealand's water quality, and play our part in addressing climate change.

This is where we believe we can make the greatest contribution. It's where we're directing our time and resources, and where we have ambitious new targets to create a more sustainable future.

Our Sustainable Co-operative commitment is to support our farmers by investing significantly in the development of new technology and solutions for water quality and on-farm emissions – without impacting production.

We are also committed to reducing the environmental footprint of our processing operations and transitioning to renewable energy as options become viable.

Sustainability, like farming, is an inter-generational effort where progress made in the past is built on in the present to secure the future. We are proud of the progress the Co-operative has made in most areas thanks to the commitment and hard work of our farmers, people, and partners that work alongside our Co-operative.

What is most important is that our responsibilities are being taken seriously, and our many successes celebrated, as this report shows.

John Wilson and Theo Spierings



CO-OPERATIVE SPIRIT



DO WHAT'S RIGHT



CHALLENGE BOUNDARIES



MAKE IT HAPPEN

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.

Our shared values enable us to combine our personal strengths with those of others to make Fonterra stronger, more innovative and more successful.

Our Heritage



1845

A consignment of cheese from Banks Peninsula to Australia becomes New Zealand's first dairy export.



1886

First commercial butter-churning operation started in the Waikato, giving birth to the famous Anchor™ brand.



1927

Dairy Research Institute of New Zealand is created – now the Fonterra Research and Development Centre.



1969

Taranaki farmer Merv Hicks invents the rotary milking shed.



2002

Agreement with International Union of Food and NZ Dairy Workers' Union committing to core International Labour Organization conventions.

1814

British missionary Samuel Marsden lands in New Zealand, bringing a bull and two heifers.



1871

The Otago Peninsula Co-operative Cheese Factory Company is formed, New Zealand's first dairy co-operative.



1923

The Dairy Export Produce Control Board is established to promote New Zealand dairy exports.



1940

Shelf life of Anhydrous Milk Fat (AMF) is extended, allowing cream-based food to be shipped to troops during World War II.



2001

Formation of Fonterra.



Dairy for life

**We are Fonterra.
We are of the land.**

We were born from a heritage of staunchly independent farmers who knew we had to stand together as one co-operative for us all to be successful.

We honour the legacy of past dairy men and women who went out and created markets in far flung places for our New Zealand milk.

We will be fiercely loyal to our roots and always remember that we exist to secure the prosperity of future generations of New Zealand farmers by bringing the goodness of dairy to the world.

From those seeds, we now source milk from around the world and create new products and services.

We can do this because we know milk better than anyone else and can unlock its natural goodness in ways that add real value to customers and consumers throughout their lives.

**2004**

'Every farm, every year' independent assessments launched, including Clean Streams Accord targets.

**2009**

Launch of KickStart Breakfast.

LIVING WATER

Fonterra Dairy for life
Department of Conservation
WORKING TOGETHER TO CARE FOR FIVE KEY CATCHMENTS

2013

Launch of Living Water partnership with Department of Conservation.

ISO 26000
SOCIAL RESPONSIBILITY**2015**

Social responsibility plan (based on ISO26000 guidance) is approved by Fonterra Board.

**2017**

Publication of first stand-alone sustainability report.

2003

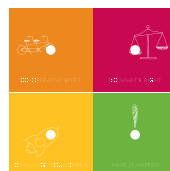
Launch of Fonterra's code of business conduct, The Way We Work.

**2008**

Global Dairy Trade established to transparently discover reference prices for dairy.

**2010**

Launch of Fonterra's values.

**2014**

National roll-out of Fonterra Milk for Schools is completed.

**2017**

Fonterra Food and Nutrition Guidelines are endorsed by New Zealand Nutrition Foundation.



We will succeed through the generations because we are committed to sustainable dairying and to the communities where we live and work.

This starts with our own people. Their richness of difference – countries, cultures, experiences – and the shared passion they bring,

make us successful.

We listen to our customers and partners, speak forthrightly and do what we say we'll do.

We stand for naturalness, health and uncompromising standards of quality, safety and integrity.

We aim high, always work to deliver exceptional results and find ways to make it happen, even when the going gets tough.

We will do things tomorrow that we can only dream of today.

We are Fonterra.
We are dairy for life.

About Fonterra

Fonterra is a dairy co-operative owned by 10,000 farmer shareholders in New Zealand. Pasture-fed dairying has a long history in New Zealand with our farmers closely connected to the natural environment and their rural communities. As New Zealand's largest business, and the world's largest processor and exporter of dairy products, our high-quality dairy ingredients and branded dairy products are consumed in over 100 countries around the globe.



UNITED STATES

\$1.25 BILLION
REVENUE

\$1.25B

GLOBAL

22,269
EMPLOYEES

\$19.2 BILLION
REVENUE

22.9 BILLION
LME¹

51
MANUFACTURING SITES²

11%
RETURN ON CAPITAL

22,269
\$19.2B

Global revenue from sale of goods: \$19.2 billion

Economic value distributed	\$ million
Payment to suppliers (farmers) for NZ-sourced milk	9,471
Payment to suppliers (farmers) for non-NZ sourced milk	932
Tax expense ³	20
Profit after tax attributable to shareholders	734 (earnings of \$0.46 per share)
Dividend payment to equity holders of the Co-operative	642 (dividend of \$0.40 per share)

For our full financial results, please refer to our Annual Review 2017:

➔ www.fonterra.com/annualreview2017

- 1 LME is a standard measure of the litres of milk allocated to each product based on the amount of fat and protein in the product relative to standardised raw milk.
- 2 This is the number of manufacturing sites under Fonterra management control.
- 3 See page 90 for details on our approach to tax.

4,325
\$2.16B



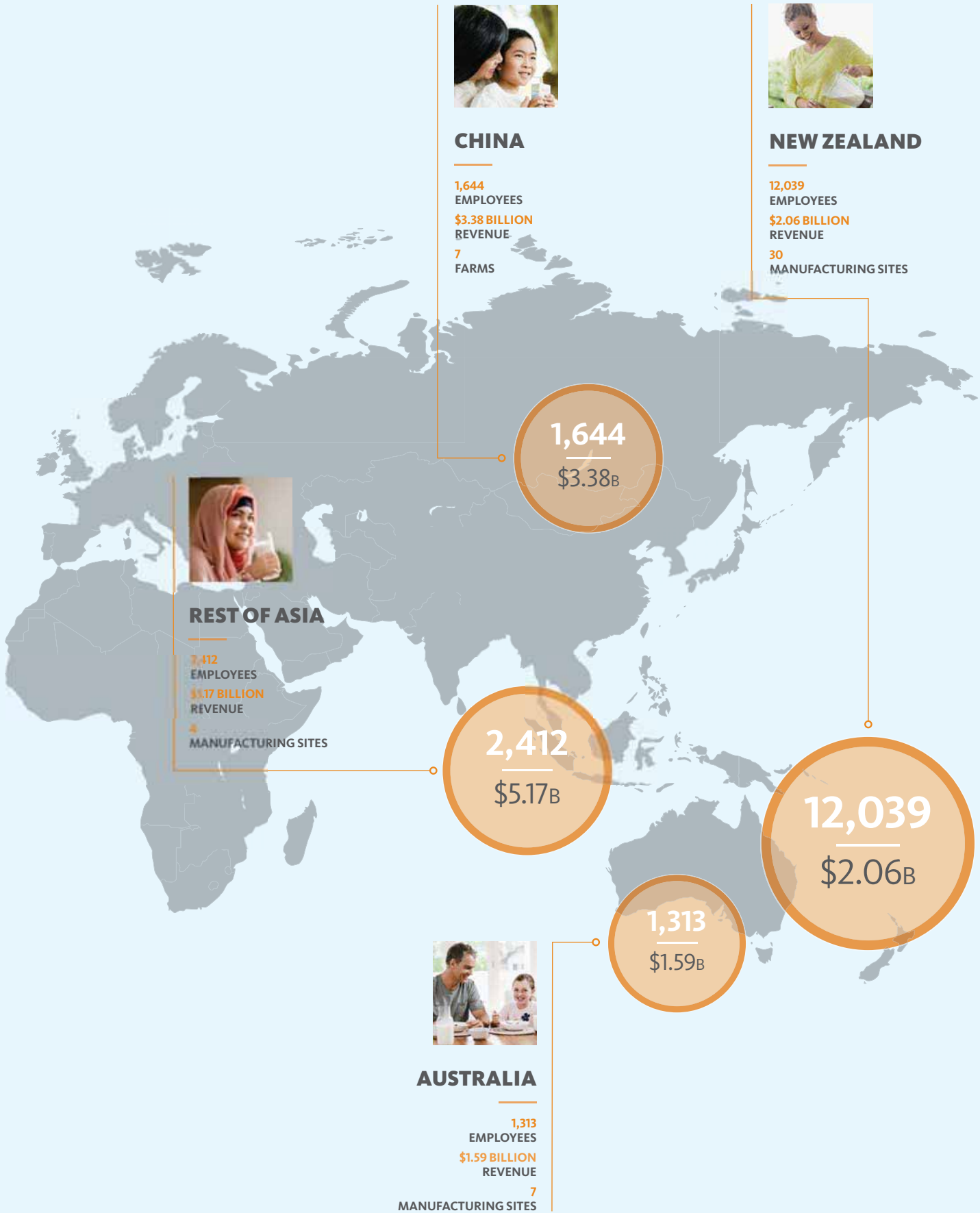
LATIN AMERICA

(CHILE, BRAZIL,
VENEZUELA)

4,325
EMPLOYEES

\$2.16 BILLION
REVENUE

7
MANUFACTURING SITES



The Global Context

Food is at the centre of many sustainability challenges facing the world.

The global transformation required to meet these challenges will shape the future of food production.

40%

Water scarcity

By 2030 it is projected that 40 per cent of water demand in the world won't be met.

Water quality

Intensification of agriculture has contributed to declining water quality around the world, caused by run-off of nutrients from the land.

Limiting and adapting to climate change

The world's food production systems must address emissions from agriculture. It is also likely that agricultural production will face significant disruption from changes to climates and increased variability in weather patterns.

2°C

Global Agreement

Paris Agreement to keep global temperature rise this century to well below 2°C.



Limited new land for further agricultural growth

Even with today's agricultural practices, there is not enough additional agricultural land to meet the growing demand for food.

Threatened biodiversity

Around the world the variety of plants, animals and micro-organisms, and the ecosystems they form, has decreased.

9.7B

Feeding a growing population

By 2050 the world's population is projected to increase to 9.7 billion. This is expected to drive a 50 per cent increase in the demand for food.

792M

Access to nutrition

Many people don't have access to adequate nutrition. Around 792 million people are undernourished around the world.



1.9B

A public health crisis

The leading cause of death in most countries today is poor diets and lifestyles. About 1.9 billion adults are overweight or obese.

%

Improvements in global land productivity have slowed down

Over the past century innovation has significantly increased productivity per hectare of land. However, these gains are slowing. Productivity growth per hectare is now less than one per cent each year.

The Dairy Context

Food is at the centre of many sustainability challenges facing the world. There is growing concern regarding global food security and nutrition with malnutrition impacting people in three different ways:

- Hunger, where insufficient food intake is estimated to affect 792 million people worldwide
- Micronutrient deficiency or 'hidden hunger', where insufficient intake of key micronutrients such as iron, iodine and vitamins is estimated to affect two billion people
- Over-nutrition, with an estimated 600 million adults considered obese in 2014.¹

The growing, making and distribution of food across the world has a massive global economic, environmental and social footprint. It represents 40 per cent of employment, 10 per cent of consumer spending, 30 per cent of GHG emissions and relies on crucial natural resources such as land, water and biodiversity. Currently, serious land degradation affects 20 per cent of the world's arable land, climate change is working against food production and it is estimated that, by 2030, 40 per cent of water demand is unlikely to be met. In addition, competition for scarce resources, such as water, is likely to significantly increase the global political unrest we are already experiencing.

We believe, like many, that the worldwide food system must shift from being part of the problem to becoming a greater part of the solution. Making this transformational change a reality will involve innovation, collaboration, productivity gains and a willingness to share insights and technology advances to achieve the net positive global outcomes needed.

¹ HLPE. 2016. Sustainable agricultural development for food security and nutrition: what roles for livestock? A report by the High Level Panel of Experts (HLPE) on Food Security and Nutrition of the Committee on World Food Security, Rome. www.fao.org/cfs/hlpe/P15



Global call to action

Like all major transformations, change cannot occur without clear objectives, pathways to achieve them and a collective intention to implement what is needed.

Clear objectives have been set through the United Nations' 17 Sustainable Development Goals (SDGs) adopted by member countries in 2015. These were strengthened last year with 169 targets set across the five P's – People, Planet, Prosperity, Peace and Partnership.

For more information, see:

→ www.un.org/sustainabledevelopment

Achieving the SDGs requires the partnership of governments, private sector, civil society and citizens to ensure a better planet for future generations. Fonterra recognises the strong need for business-led action, we support the SDGs and are committed to playing our part in achieving them by working collaboratively to deliver change at scale. While important to consider all 17 goals because of their interconnectedness, we have assessed our potential contribution to each goal and prioritised 10 goals where we can make the most material difference.



² Future of Food: Shaping the Global Food System to Deliver Improved Nutrition and Health, April 2016, World Bank Group.



The role of dairy

Dairy's contribution to the Sustainable Development Goals is recognised in the 2016 Dairy Declaration of Rotterdam, a joint declaration of the Food and Agriculture Organization (FAO) and the International Dairy Federation (IDF), to which Fonterra belongs. The declaration recognises the SDGs as the overarching framework for achieving sustainable development to 2030 and the critical contribution the dairy sector will play in delivering that.

For more information, see:

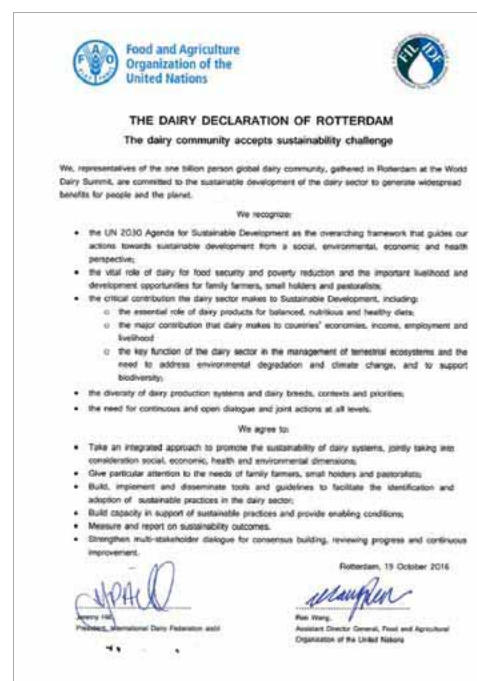
➔ www.dairydeclaration.org

Dairy has an essential nutritional role to play in balanced and healthy diets globally. It makes a major contribution to economies, income and employment, supporting the livelihoods for an estimated one billion people. The sector also has a key role to play in improving the management of terrestrial ecosystems to address environmental degradation and climate change, and to support biodiversity.

The dairy sector's global approach to sustainable development is represented by the Dairy Sustainability Framework (DSF), a pre-competitive and internationally recognised initiative that helps the dairy supply chain align and report its sustainability activities on a global basis. Fonterra is a founding and implementing member of the DSF.

For more information, see:

➔ www.dairysustainabilityframework.org



Sustainable agricultural development¹

This is agricultural development that contributes to improving resource efficiency, strengthening resilience and securing social equity/responsibility of agriculture and food systems in order to ensure food security and nutrition for all, now and in the future.¹

¹ HLPE. 2016. Sustainable agricultural development for food security and nutrition: what roles for livestock? A report by the High Level Panel of Experts (HLPE) on Food Security and Nutrition of the Committee on World Food Security, Rome. www.fao.org/cfs/hlpe P29

Our Opportunity

Connection with farmers

Dairy farming has been a part of the New Zealand way of life since the first Shorthorns cows were introduced in 1814 by the missionary Samuel Marsden. Most settlements had farms with some dairy cattle by the 1840s and the first dairy co-operative was established on the Otago Peninsula in 1871.

Fonterra is a co-operative, owned by 10,000 supplying farmers in New Zealand who have a long history in dairy and are closely connected to the natural environment and their rural communities. Farmers are strongly represented in our governance and have a vested interest in ensuring the Co-operative is able to generate long-term value for all stakeholders in the widest sense. Being traditionally inter-generational, many of our farmers know first-hand of, and accept the responsibility for, a sustainable future so they can pass on their farming operation to the next generation.



90 YEARS

Dairy Research Institute of New Zealand was created in 1927. 90 years later it is now the Fonterra Research and Development Centre.



\$1B

Fonterra has invested more than a billion dollars over the past decade in research and development.

Innovative heritage and culture

Reliant on selling their product to markets on the other side of the world, pasture-based New Zealand farmers have a history of innovation, finding ways to protect the goodness of milk and provide valuable nutrient-dense food through a growing range of product categories. Huge productivity gains achieved through generations of innovation have ensured New Zealand dairy farmers are among the most efficient in the world. They have remained cost-competitive and are able to deliver products across the world that are still among the most emissions efficient available. To achieve this has required constant innovation and flexibility, including the creation and adoption of new technologies.

Fonterra has continued to encourage this 'can-do' culture, investing more than a billion dollars over the past decade in research and development (R&D) through our R&D teams based in New Zealand and abroad. From grass to glass, this innovative heritage and culture will be essential to achieve sustainable development.

In fact, we believe the pace of change requires innovation and adoption of new technologies at an even faster pace. To achieve this, Fonterra is collaborating with numerous technology leaders internationally while also involving staff and our wider network. We introduced Disrupt in FY16, our new internal innovation engine, and Fonterra Ventures in FY17 to partner with others, and we are seeking further ways to facilitate the ingenuity and intellectual curiosity of our people and partners.



End-to-end integrated value chain

As the world grapples with issues of water quality, arable land and a growing population, the value of our pasture-fed New Zealand dairy products continues to grow in importance and customer demand. We recognised this with the launch of our Trusted Goodness™ quality seal this year.

Protecting that brand value is important through every stage of the grass-to-glass process. Unlike many global food businesses we have an end-to-end integrated value chain—from the farms which produce and supply us with raw milk, through the milk collection, manufacturing and distribution networks which deliver products to our customers or consumers. This means we take care at every step to protect the natural goodness of dairy and influence the overall sustainability of the products we deliver.

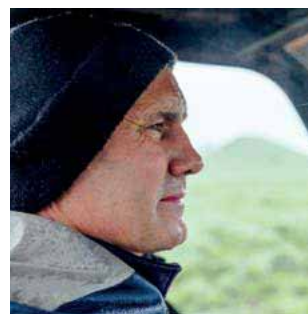
Scale

Fonterra is the largest business in New Zealand and is heavily reliant on New Zealand's natural resources. As one of the world's largest global dairy businesses and the largest exporter of dairy products, we deliver products to more than 100 countries and are actively involved in a wide range of international forums.

Fonterra's farmers are at the forefront of sustainable farming (for example, low greenhouse gas emissions per litre of milk collected) but that is not enough for ourselves or our New Zealand stakeholders. New Zealanders value their natural environment highly and they expect Fonterra and our farmer shareholders to continue to strive towards the highest standards of sustainability. We aim to be a true global leader in sustainable dairy nutrition and this will require us to produce high-quality dairy nutrition within an environment that meets the expectations of New Zealand communities. In doing so, we can also influence change across the wider agricultural and food industry.

Our ambition

Our ambition is to make a difference in the lives of two billion people by 2025 and we believe we have the opportunity to create the scale of change to help achieve this. We know there are challenges and we do not currently have all the solutions – but, with increased agility, innovation and collaborative working, we are optimistic about what we can achieve and contribute toward a sustainable future.



100+

As one of the world's largest global dairy businesses and the largest exporter of dairy products, we deliver products to more than 100 countries.

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

To summarise our approach we have organised our priorities into three main 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.

While our approach is organised around these three pillars, the main sections of this report reflect our value chain, see [page 22](#).



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 one new affordable product
- Continue to reformulate products to nutritional guidelines

Medium-term targets

- 2019: 100% sites certified to leading Food Service Quality (FSQ) level
- 2020: 75% product portfolio meeting endorsed nutrition guidelines
- 2025: 100% product portfolio meeting endorsed nutrition guidelines

Long-term contribution





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

Medium-term targets

- 2025: All farms have FEPs
- 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



Community



- ✓ Support healthy sustainable livelihoods for our farmers by returning the most value from every drop of milk by driving volume 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 serves of dairy nutrition for NZ children

Medium-term targets

- Continue to invest in community programmes in key markets
- World-class TRIFR
- Word-class engagement
- 2025: \$35 billion turnover

Long-term contribution



Nutrition

Dairy's role in providing nutrition

Dairy products can play a valuable role in addressing deficiencies in diets and improving health and wellbeing for people around the world.

Globally, government health organisations include dairy in their dietary guidelines. The Food and Agriculture Organization (FAO) reports that most countries recommend at least one serve of milk or dairy products per day and many recommend up to three serves per day.¹

As people's diets evolve, dairy will continue to have a valuable role due to its many nutritional benefits. To meet the global challenge of feeding a growing population while operating within environment limits, it is likely that people will increasingly look to plant-based sources of protein, such as soy, rice and nut-based products. For those consuming plant-based proteins, dairy products offer multiple essential nutrients which otherwise are not readily available in people's diets.



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

- **Food and Nutrition Guidelines:** We received independent endorsement of our approach to nutrition – see [page 62](#)
- **Affordable products:** Through our Anchor™ Fortified Milk Drink, we are providing affordable dairy-based nutrition to families in Ethiopia – see [page 65](#)
- **Reduction in added sugars:** In FY16, we reduced added sugars in Anchor Uno, a children's yoghurt available in New Zealand – see [page 65](#)
- **Advanced nutrition:** Anlene Heart-Plus™ is helping to combat high cholesterol and diabetes – see [page 65](#)

¹ FAO, 2013, *Milk and dairy products in human nutrition*, p162

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.

Calcium
which makes teeth
and bones strong.



Phosphorus
which supports the
generation of energy
from nutrients.



Potassium
which helps
maintain a healthy
blood pressure.



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
well-being of mothers and
infants (3.1 and 3.2)¹

Promote healthy and
informed consumer
choices (3.6)

Continue to improve the
nutritional profile of our
products (3.6)

¹ See page 67 for our position on responsible promotion of breast-milk substitutes.

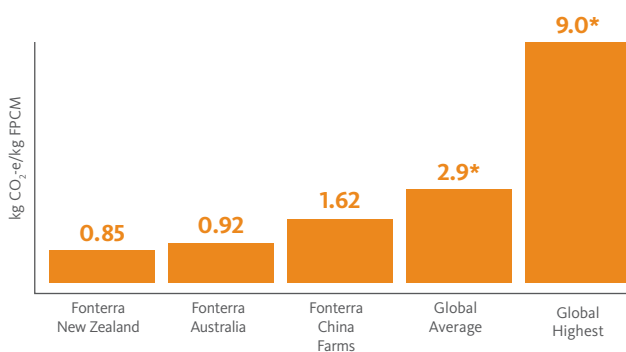
Environment

Dairy's role in meeting nutrition needs within environmental limits

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 which will be relevant as the world shifts to more efficiently produced diets. However, the dairy industry also needs to find more efficiencies in the way it operates and reduce its impact on the environment.

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. For example, around a quarter of New Zealand's greenhouse gas emissions are from dairy farming.

On-farm relative emissions efficiency



*FAO Report 2013, Greenhouse gas emissions from ruminant supply chains



How Fonterra is making this happen

Our focus is 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 emissions from our supply chain
- ✓ Meet the growing nutritional demand through improvements in productivity and minimising waste from farm to consumer.

KEY HIGHLIGHTS

- **Protecting the New Zealand environment:** We have set out six commitments to help improve water quality in New Zealand – see [page 34](#)
- **Investing resource-efficient manufacturing:** Lichfield site investment to deliver almost 80 per cent more production for under 20 per cent more water – see [page 55](#)
- **On-farm emissions:** Dairy Action for Climate Change plan launched at National Field Days – see [page 40](#)

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)



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 eco-systems (15.1)



- 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)

BREAKDOWN:

1%

Distribution

9%

Manufacturing

90%

On Farm

22.2M

Total emissions =
22.2 million tonnes
CO₂-e.



95%

95% of supplying farms in New Zealand are participating in nutrient management reporting and benchmarking.

50

New ambition for 50 water catchments in New Zealand.

Community

Dairy's role in enriching communities

The production of milk and dairy products touches the lives of up to a billion people¹, from family-run farms to international businesses. The dairy industry makes a significant contribution to regional New Zealand and to the national economy. In New Zealand and around the world our industry plays an important role in supporting rural livelihoods and community development.

In developing countries, dairy cows provide a daily source of food and cash, unlike other crops or meat. Cows also generate manure, which is valuable as a fertiliser, fuel and construction material, offering other sources of income. Farm animals are also a popular asset among rural women, and often provide the first stepping-stone for rural women to start creating a better place for themselves in their communities.

Fonterra's unique position in contributing to New Zealand's economy

As a co-operative, we are owned by 10,000 farmer shareholders in New Zealand. The money we earn through exporting dairy products around the world is returned to our farmer shareholders in the regions. Last year we returned \$10 billion to our New Zealand farmer suppliers.

We provide employment opportunities throughout rural New Zealand. A recent study by the New Zealand Institute of Economic Research (NZIER) for DCANZ² showed New Zealand's dairy industry employs over 40,000 people – 27,500 worked on farms and 13,000 were involved in dairy processing. These workers are paid higher wages than comparable jobs in other industries.



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 driving volume 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:** \$19.2 billion revenue, \$10 billion to New Zealand farmers – see our Annual Review 2017 for more information:
➔ www.fonterra.com/annualreview2017
- **Engaged employees:** Strong improvements in employee engagement, highest recorded level since we began surveying in 2010 – see [page 78](#)
- **Fonterra Milk for Schools:** Every school day, 140,000 Kiwi children are drinking milk our farmers provide, for free – see [page 68](#)
- **Dairy Development programme:** Sharing our dairy expertise with farmers in Sri Lanka and Indonesia – see [page 38](#)

¹ FAO Global Facts: www.dairydeclaration.org/Facts-and-Resources

² Dairy Company Association of New Zealand (DCANZ). NZIER Report: Dairy trade's economic contribution to New Zealand: <https://nzier.org.nz/publication/>

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)

12,000

Over 12,000 farmers supplying milk to Fonterra around the world.

11%

The New Zealand shareholder farmers who own the Co-operative received an 11% return on capital.



19%

reduction in total recordable injury frequency rate, taking us to 5.2 per million hours worked.

432

432 community projects supported through our Fonterra Grass Roots fund.

Our Global Value Chain

To make this report easier to navigate we have structured it around our value chain. Topics are grouped together by where they occur and how we manage them.

The topics included in the report are shaped by our materiality process, which takes into account our stakeholders' views on the importance of topics, and the importance of topics to our Co-operative.

See page **98** for more information.



More than
12,000 farmers
supplying us in New
Zealand and around
the world.



More than
4 million
cows.



SUSTAINABLE DAIRYING

24

98.4%

98.4% stock exclusion
from NZ waterways.

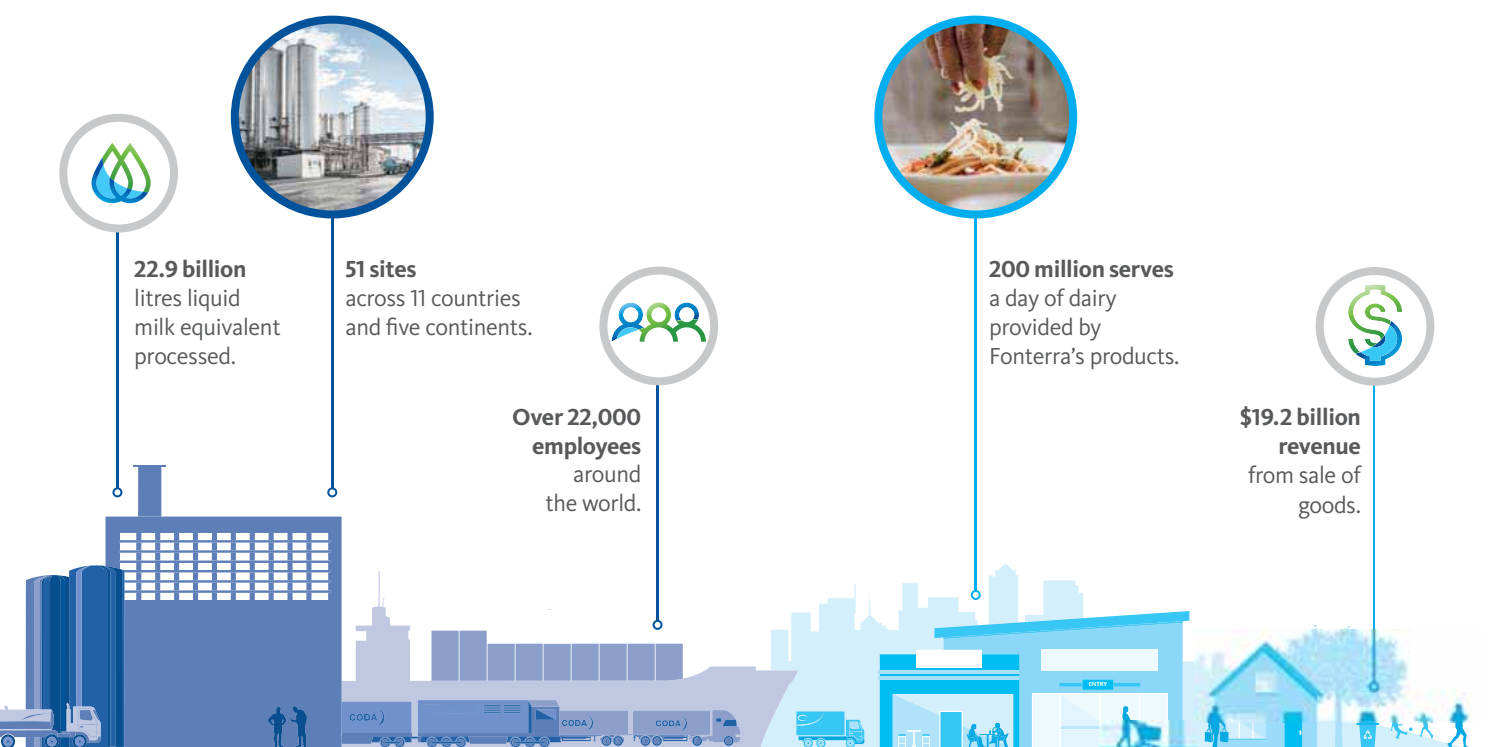
19.9M

19.9 million tonnes
CO₂-e from farms.

Dairying in New Zealand	28
Dairying in other countries	36
On-farm GHG emissions	40
On-farm labour	44
Animal health and welfare	42
Sourcing palm products (PKE)	45
Dairy development	38

SUSTAINABLE FOUNDATIONS

Health, safety and wellbeing	80
Human rights	89
Non-milk supply chain	95

**SUSTAINABLE OPERATIONS****46****52.5M****52.5 million m³ water** withdrawn by our sites.**2.1M****2.1 million tonnes CO₂-e** from sites.

Where we make products	48
Energy and emissions	50
Our GHG emissions target	51
Coal	50
Water	54
Solid waste	56
Logistics	58

SUSTAINABLE CONSUMPTION**60****40%****40% Fonterra consumer** and foodservice products.**60%****60% ingredients sold to** other companies.

Where our products go	63
Nutrition guidelines	62
Product strategy	64
Marketing breast-milk substitutes	67
Food safety and quality	70
Customer complaints handling	72
Packaging	74

76

Diversity and inclusion	84
Gender pay	86
Employee engagement	78

Investing in communities	92
Ethics	90
Governance and stakeholder engagement	96

While this report is organised by our value chain, our approach is summarised by the three pillars of Nutrition, Environment and Community, see [page 14](#)

Sustainable Dairying

Sustainable dairying requires working within the environmental constraints of the land to harness its productive value, creating sustainable livelihoods while meeting the social and environmental expectations of communities and customers to deliver high quality products.

The natural nutritional value of milk and the ability to produce high quality, safe products starts on the farm. This means caring for the environment, and caring for the health and wellbeing of dairy cows.

The challenge to produce more food for a growing global population requires an increase in productivity from the land, and using our natural resources more efficiently. Increased productivity must also be combined with a reduction in waste, and through finding new ways to reduce the environmental footprint of food production.

Fonterra's role in helping achieve this is to work with our farmers, in New Zealand and around the world, to support their livelihoods, drive innovation and encourage good farming practices so they are able to deal with future challenges.



98.4%

Fencing statistics

98.4 per cent of waterways on supplying farms in New Zealand are fenced to keep cows out of waterways.

See page **30**

50

New ambition for 50 water catchments in New Zealand.

See page **34**

¹ kg CO₂-e/kg FPCM: kilograms of carbon dioxide equivalent per kilogram of fat-and-protein-corrected milk.

**On-farm emissions**

19.9 million tonnes CO₂-e emitted from supplying farms around the world.

Emissions intensity per kilogram¹

New Zealand	0.85
Australia	0.92
China	1.62

See pages **40**

22%

22 per cent reduction in New Zealand somatic cell count since 2009, a key indicator of animal health.

See page **43**

**Farmer training**

More than 2,600 farmers in Sri Lanka received training.

See page **38**



4%

Riparian management plans

4 per cent of supplying farms in New Zealand have documented riparian management plans.

See page **30**

95%

95 per cent of supplying farms in New Zealand are participating in nutrient management reporting and benchmarking.

See page **30**

How we Work With Farmers

Where does our milk come from?

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

We source the majority of our raw milk from Fonterra farmers in New Zealand – the owners of the Co-operative. We also source milk in other countries around the world.

We directly own and operate a small number of farms in New Zealand. These farms neighbour our manufacturing sites, where we use the wastewater from our sites to recycle excess nutrients from the manufacturing process back into the land.

In China, we operate a number of farms which sell raw milk to our customers and our Consumer and Foodservice business for use in products. This complements the dairy products we export to China from New Zealand and Australia.

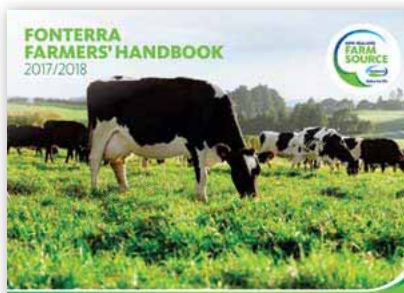


How we work with farmers

We work with farmers through a partnership approach. 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. These include our Co-operative's 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 quality for the raw milk that all farmers must meet. And it is the same standard across all markets we source milk from.

Within each country we operate, we have farmer engagement and support programmes. These allow us to build relationships with farmers, communicate our requirements with them, and to support them to improve their farming systems.

We tailor these programmes so they address each country's specific farming issues which we also prioritise based on a number of factors, including community expectations and concerns.



Farmers' Handbooks

Detailed information and expectations are provided in our *Farmers' Handbooks*

Sources of raw milk
by quantity



Sustainable Dairying in New Zealand

Tiaki – supporting sustainable dairy farming in New Zealand

We have a long-standing sustainable dairying programme, which took a world-leading position in 2004 when it introduced independent assessments for every farm each year. This year we launched the Tiaki Sustainable Dairying Programme.

Tiaki means to look after, to guard, to care for, keep and nurture. To accompany the name, we have crafted a whakataukī (proverb): 'Tiakina te whenua i tēnei rā, kia whai oranga tangata mō ngā rā e heke mai nei'. It means 'Caring for the land today, so that the land cares for us tomorrow.' This gets to the heart of what we are striving to do when it comes to our land and natural resources.

The programme builds on our work from the past 13 years. It also recognises that each region and farm has individual requirements. Through Tiaki our farmers can tap into specialised regional expertise and services to support best-practice farm management, proactively staying ahead of regulatory requirements, and future-proofing their farm so that we can satisfy evolving consumer and market expectations.

Our farmers have delivered substantial progress on the food safety and quality requirements that relate to their farms, animal health and welfare, and managing their impact on the environment.

Evaluating farm performance—farm dairy assessments

In New Zealand, every supplying farm is visited each year by an independent party to complete an assessment against a detailed protocol covering minimum requirements and some future-looking items. The assessment protocol changes gradually over time with new criteria introduced initially as observations only.

FARM DAIRY ASSESSMENTS IN 2016-17

9,891

9,891 farms were independently assessed this year.

3.2%↓

Percentage of farms referred to SDAs with major or critical non-compliances.

The current assessment covers food safety and quality, animal health and welfare, and environmental topics including effluent management systems, stock exclusion from waterways, and riparian, nitrogen and water management processes. Information on these assessments, and other detailed farm requirements, is contained within our Farmers' Handbook:

➔ www.fonterra.com/farmerhandbook2017

On all farms where it is identified that requirements are not being met, our Sustainable Dairying Advisors (SDAs) 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.

Over the past season 9,891 farms were assessed. Of these, major or critical hazards were identified on 318 farms – 3.2 per cent of assessed farms. Major or critical hazards are identified where there is a significant risk of environmental damage, or where actual damage is found to be occurring.

The three most frequent issues identified through the assessments were ponding and run-off from irrigation, improper cleaning of sand traps and effluent not being captured correctly into the management system. In the past season we suspended the collection of milk from 78 farms, all owing to non-completion of fencing to exclude stock from waterways.

Farm dairy assessments

	2014/15	2015/16	2016/17
Percentage of farms with effluent infrastructure capable of 365-day compliance	78%	75%	82%
Percentage of farms referred to SDAs with major or critical non-compliances	4.2%	3.4%	3.2%



CASE STUDY

New Zealand Farm:

Garry Reymer – Farm Environment Plans

When Garry Reymer took over an 80-hectare Cambridge dairy farm, little to no environmental work had been done. But it didn't take long to get stuck in.

In two short years, Garry had fenced off waterways, started riparian planting, fenced the drains, sorted the effluent, and dealt with the underpass. The bulk of the work was done, but he knew there would still be areas to address.

When Garry was invited to take part in a Farm Environment Plan (FEP) pilot programme, he recognised it as an ideal opportunity to keep the ball rolling. The FEP pilot programme was set up by Fonterra and Waikato Federated Farmers, with a view to helping farmers prepare for the Proposed Waikato Regional Plan Change.

The results provided instant feedback of just how far he had taken the farm. Just as importantly, it confirmed a clear way forward for future work, too.

To get his FEP set up, Fonterra SDA Anna-Lena Wright walked with Garry across his farm. Together they looked at the farm's terrain, waterways, the size and complexity of the operation, underpasses, effluent management, stocking rates, cropping regimes, nitrogen management, water use and more. The SDA then recommended what areas could be improved in a comprehensive report.

Garry's FEP helps him better manage his farm's impact on the environment and meet the regulatory requirements in the Waikato. There is no one size fits all and this is the secret to its success, says Garry.



"It needs to be individually tailored so you can get a real advantage from it. It also makes it easy for each farmer to understand because it's specifically about their farm."

– Garry Reymer



Sustainable Dairying in New Zealand

CONTINUED

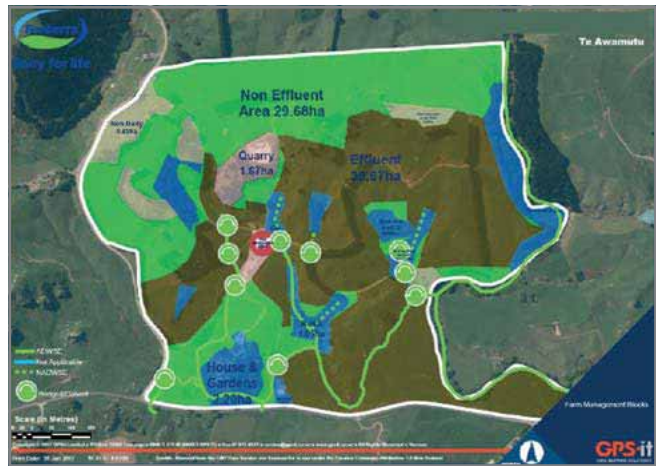


Riparian management

Riparian management is a key activity to improve water quality, enhance ecosystem health and improve biodiversity. Fencing defined waterways prevents cows excreting directly into waterways and protects river and stream banks from cows grazing on them, which helps limit erosion. Planting along river and stream banks also helps with erosion by filtering sediment. It also filters nutrient run-off, provides shade for the water for cooling and encourages increased land and water-based biodiversity.

At the end of May 2017, our farmers have essentially delivered on the targets to keep stock out of all permanent waterways on their dairy farms, through fencing 98.4 per cent of the entire length of these waterways and installing bridges or culverts for 99.8 per cent of all crossings. This work is independently inspected and verified. A specific process is now being followed with the few remaining farmers who have work outstanding.

We are working with our farmers to have documented riparian management plans in place for 100 per cent of farms by the end of the 2019-20 season. Within the plan key activities are identified specific to each farm's location and waterways and include planting decisions and the approach for ongoing protection and maintenance of the plants to deliver long-term benefits for waterways. We have not made as much progress in this area as originally planned – at the end of FY17 four per cent of our farmers had a documented plan in place. However, through the additional SDAs and the services they will be offering, including Farm Environment Plans, we expect accelerated progress over the next three years.



Nutrient budgets and nitrogen reporting

Most of our Sustainable Dairying Advisors are Certified Nutrient Management Advisors who can help our farmers review their nutrient budgets and identify changes on farms that can help reduce nutrient loss and improve profitability.

By combining the detailed information our farmers collect on their farming activities with standard modelling tools and our own information, we can provide them with detailed reports. These include estimates of their farm nitrogen losses and efficiency, their nitrous oxide emissions and their performance relative to other local farmers.

This year, 95 per cent of our suppliers submitted their nutrient budgets and received a nitrogen report. Our focus now is on helping our farmers make use of the information to achieve year-on-year improvements.



95%

This year 95% of our suppliers submitted their nutrient budgets and received a nitrogen report.



Soil health

Soil is vital for food production and underpins the success of the dairy industry. Globally, soils are under pressure from increases in population, higher demands for food and competing land uses. Already approximately 33 per cent of global soils are degraded¹ and significant global effort is required to address this issue.

Soil faces different challenges in different countries and regions. In New Zealand, compaction, erosion and changes in soil carbon are the key challenges. Given the complex interaction between soil and the whole farm system, we need to take an integrated approach to improving soil health. Our current work to support farmers with nutrient and riparian management, to reduce our impact on water quality, is also how we will make the biggest difference to soil health and reduce erosion. Through work with industry partners, we are also helping to increase the adoption of farm practices which reduce soil compaction. Most of this effort focuses on restricted grazing practices and appropriate stand-off infrastructure during periods of soil saturation, for example grazing in winter.²



Shifting farming systems: Farm Environment Plans

Over the past five years our farmers have made significant investments in environmental improvements on their farms. This reflects their recognition of the cumulative effects of some farming practices on our waterways. These investments have come ahead of regional councils setting environmental limits for water on behalf of their communities and, in some places, before the land and water science for specific catchments was clear.

Now that limit-setting processes are under way in some regions, new land and water science is becoming available and farmers are getting certainty around what standards have to be met to achieve healthy freshwater, and under what time frames.

Farm Environment Plans (FEPs) help farmers meet these new limits. This year we piloted a new FEP service in collaboration with Waikato Federated Farmers to help farmers prepare for the proposed Waikato Regional Plan Change.

A farmer's FEP is unique to their farm. It includes a farm map and photographs of critical locations around the farm. FEPs identify areas of existing strength and priority areas for action; for example, specific changes to reduce sediment, bacteria or nutrients from entering waterways, including groundwater.

**In the year ending 31 July 2018
our target is to complete**

1,000 FEPs

¹ FAO, 2016 www.fao.org/global-soil-partnership/overview/why-the-partnership/en/

² www.dairynz.co.nz/feed/seasonal-management/winter-management

Sustainable Dairying in New Zealand

CONTINUED



Innovation for sustainable dairy farming

Through Tiaki we offer our farmers resources, such as our digital farm management tools and support services provided by our team of SDAs, which help them improve the sustainability of their farms. In 2018 we intend to expand our investment in farmer support, increasing the number of SDAs to 30.

We recognise the importance of technology and innovation in enabling sustainable farming solutions. Many of our farmers are starting to embrace the precision farming future, using sensing and monitoring technology to measure and track farm inputs and outputs to maximise productivity and minimise environmental impacts.

To support our farmers and the services our SDAs provide to them, we have developed a software system using GPS mapping technology. Initially this focused on mapping the land used for dairy farming and recording all permanent waterways including their crossing points. It was extended to include details on underlying soil types and the different uses of management blocks on the farm to support nutrient management modelling. For riparian management and critical source identification, it now covers the ability to plan and track progress on riparian management. This includes the storage of photographs tagged to specific locations showing changes over time.

Another example of new technology is the launch this year of Agrigate, an online tool jointly developed by Farm Source, Fonterra's farmer-facing business unit, and the New Zealand Livestock Improvement Corporation. This tool aggregates data from across a farmer's business into a single view, providing an online dashboard to enable smarter and faster decisions. The dashboard provides insights into the interactions between different aspects of the farming system, including weather conditions, animal health, milk production, pasture cover, fertiliser use and financials.

Fonterra Farm Source™ stores

Fonterra operates a network of over 70 Farm Source stores throughout New Zealand. These stores offer services and support to our farmers, and operate as retail farm supply stores for our farmers and the wider public. Farm Source is a fully-owned subsidiary, and is covered by the same management systems and policies as our other operations.



A NATIONWIDE
NETWORK

71

Fonterra operates a network of 71 Farm Source stores throughout New Zealand.



Fonterra's New Zealand targets			
Indicator	Target	Performance	Commentary
Length of defined waterways with dairy cattle permanently excluded	100% by 31 May 2017	98.4%	Essentially completed to plan and a focused effort now under way for the remaining small number of farmers. ●
Regular crossing points on farm have bridge or culvert	100% by 31 May 2018	99.8%	Essentially completed one year ahead of plan. ●
Farms with waterways have documented riparian management plan	100% by 31 May 2020	4%	Progress is better than can be reported because not all data is currently available; however, progress is slower than planned. Effort has been prioritised elsewhere. New tools and services like Farm Environment Plans will accelerate progress from now. ●
Farms with water meters on significant water intakes	85% by 2020	51%	On track. ●
Farms participating in nutrient management reporting and benchmarking	100% by 30 Nov 2015	95%	The effort required to achieve this was initially under-estimated but adoption has grown rapidly and is now approaching target. ●
Farm Environment Plan	100% by end 2025	NEW FY18	This is a new initiative and starts with a target for 1,000 during FY18.

New Zealand's Waterways

Opening up on water

The impact of the dairy industry on the environment 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.

We recently published *Opening up on Water*. This book is a summary of the current state of New Zealand's waterways, what actions have been undertaken by Fonterra's farmers to care for them, and what our commitments are for the future – on farms, at our manufacturing sites and within our local communities:

➔ www.fonterra.com/water

Sustainable Dairying: Water Accord

Fonterra is an accountable partner of the Sustainable Dairying: Water Accord (SDWA), which was launched in 2013. Our own targets and reporting align with the measures and targets of the SDWA. Our performance data is included in annual industry-wide reporting, which also includes data supplied by regional councils and unitary authorities on significant non-compliance incidents found through annual regional monitoring.

In the 2015-16 season the national industry-wide rate of significant non-compliance on monitored farms was 5.2 per cent, a drop from 5.8 per cent from the previous season.

The report for the 2015-16 season was published in May 2017:

➔ www.dairynz.co.nz



Our six commitments

1. Farm within regional environmental limits:

We work with farmers, councils and local communities to establish environmental limits for water and help farmers achieve them.

2. Encourage strong environmental farming practices:

We support all the farmers in our Co-operative to use the best environmental farming practices available.

3. Reduce water use and improve wastewater quality at our manufacturing sites:

We will improve the way we manage the water within our manufacturing sites and invest in resource efficiency.

4. Work together on water health:

We will work with our communities to help rebuild the health of our waterways.

5. Invest in science and innovation to find new solutions:

Digital disruption and new technologies are redefining the world we live in. We will invest in research and innovation to accelerate new solutions for sustainable farming and healthy waterways.

6. Make the products people value most:

The future of food relies on a healthy planet and a healthy living for farmers. We will make the high-quality products that people need the most, and in a way they value so we can create sustainable value for our Co-operative.

To see our progress on water efficiency and water quality within our manufacturing sites, see [page 54](#)

Living Water partnership

Living Water is our 10-year partnership with the New Zealand Department of Conservation (DOC). The partnership was founded on a common vision of a sustainable dairy industry being part of healthy functioning ecosystems that together enrich the lives of all New Zealanders.



The purpose of Living Water is to implement game-changing and scalable solutions that demonstrate sustainable dairying in five significant catchments. In these catchments we work with farmers, local Māori, councils, community groups and key stakeholders to restore freshwater ecosystems, build ecological resilience and to trial solutions that can accelerate sustainable farming practices.

- 1** In the Kaipara Harbour, we are working in the Wairua Catchment on reducing sediment loads using solutions that both improve hydrologic functioning and build ecological resilience. This catchment covers an area of 75,000 hectares.
- 2** In the Tīkapa Moana, Firth of Thames we are working in the Pūkoro-koro-Miranda Catchment on protecting shorebird habitat, international flyways and farming on the coast. This catchment covers an area of 6,000 hectares.
- 3** In the Waikato Peat Lakes we are working at lakes Areare, Ruatuna and Rotomānuka on restoring the unique peat ecosystems. The three catchments cover an area of 1,000 hectares.
- 4** In Te Waihora/Lake Ellesmere we are working in the Ararira/LII Catchment on transforming the drain and water network into a healthy freshwater ecosystem within a productive agricultural landscape. This catchment covers an area of 6,600 hectares.
- 5** In Awarua-Waituna, we are working in the Waituna Catchment on designing and implementing a catchment-wide approach to nutrient and sediment management using solutions that build ecological resilience. This catchment covers an area of 20,423 hectares.

For more information, see:

➔ www.livingwater.net.nz

Dairying Around the World

Australia

In Australia, our farmer sustainability programme is called SupportCrew™. It includes initiatives which farmers can choose to be a part of that help improve their profitability and environmental performance. Through SupportCrew we provide our farmers with access to incentives and experts to work with on projects that lift profits by improving the efficient use of farm inputs such as energy, nutrients and water. Project designs are peer-reviewed by other farmers and help provide solutions that can be used more widely. In the past year, 20 project milestones were completed by our farmers.

One of the most material issues in Australia's dairy industry is water scarcity and maximising effluent recovery is an effective solution. Such initiatives are largely funded by investment from farmers, with targeted support by the Australian Government and Fonterra incentives. Partnering with us is often attractive to government agencies as we have field teams who can rapidly identify farmers for target projects.

This year we launched the Anchor™ Dairy Fund, a new incentive scheme to provide seed funding to Australian suppliers for trialling innovations and on-farm sustainability improvements. We put five cents from the sale of every bottle of Anchor fresh milk in Australia into the Fund. Monies raised have contributed towards trialling innovations such as soil sensors to help save water as well as introducing robotic manure scrapers, dung beetles and shared infrastructure for effluent recovery.

Australian farmer suppliers are visited multiple times each year by Fonterra Milk Supply Group representatives. Independent auditors, either contractors or regulators, are also scheduled to visit each farm based on location and previous compliance levels. As non-conformances are noted the audit frequency generally increases. Audit requirements are based on regulatory needs and additional Fonterra specifications.



Latin America

In Latin America, we collect milk from farmers in Chile, Brazil and Venezuela. Our farmer relations team in each country provides support to the farmers including technical advice regarding quality, animal health and welfare, nutrition and the environment. In a similar way to New Zealand, each farm directly supplying us is assessed each year against our raw milk harvesting standard. These assessments are carried out by a combination of independent third parties and our own staff. In addition, our New Zealand team audits a random selection of farms on an annual basis. We also source some milk via third parties in this region and for these our New Zealand team audits both the provider and a random selection of their farms on a yearly basis.

In Chile, 87 per cent of farms supplying raw milk to Soprole have signed a clean production agreement. This promotes different actions to improve sustainability such as decreased water consumption, reduced wastewater and use of LED illumination.



We are members and supporters of the Dairy Sustainability Framework (DSF). The DSF is a framework that allows members of the dairy sector to align their sustainability activities on a global basis. As members of the DSF, Fonterra is required to demonstrate alignment with the framework and provide annual reporting of our progress.

For more information, see: ➔ www.dairysustainabilityframework.org



China Farms

We directly operate seven farms in China. These are based around two farming 'hubs' – Yutian and Ying.¹ These farms are part of our strong presence in China as the world's most populous country and our largest export market.

Our China Farms operations differ from the pasture-based farming systems found in New Zealand and other markets which supply us milk. Across the seven farms 34,900 milking cows are housed indoors and are fed a combination of feed which is grown on site or bought-in from other supplying farms. We source about 85 per cent of feed locally, providing income and development opportunities for the wider industry. These animals are cared for by a team on each farm that includes dedicated animal health and welfare staff.

The focus of our Chinese farms is on building local capacity for producing safe, high-quality milk. The farms operate under the same global policies as other farms which supply us milk, including standards for environmental issues, food safety and quality, and animal welfare. This year these farms achieved independent certification to benchmark² standards for food safety and quality.

As the farms are directly operated by Fonterra, farm employees are covered by Fonterra's group-wide labour and health and safety requirements.

Water is an important issue for our Chinese farms given national water constraints. Water usage on farms is closely monitored and we have established on-site wastewater treatment systems, including biodigesters to manage effluent. These ensure water meets quality standards before being discharged, primarily for irrigation on-farm to reduce water use.

Fonterra is also working on research with Chinese ministries on an opportunity to provide semi-treated effluent as a natural fertiliser to restore soil health in key Chinese agricultural regions. This work is part of a New Zealand–China Environment Co-operation Project between the New Zealand and Chinese governments, with support from government agencies and Fonterra. In June 2017 a symposium was held on this topic with representatives from Chinese and New Zealand government authorities and research institutes. There was strong alignment on the value of increasing usage of the treated effluent as a restorative fertiliser and developing a circular economy.

34,900

Across the seven farms in China, 34,900 milking cows are fed a combination of feed with 85 per cent sourced locally.

¹ We are also establishing a third hub as a joint venture with Abbott but this is not covered in this report.

² Certified to standard recognised by Global Food Safety Initiative.

Dairy Development

Dairy development

As a farmer-owned co-operative, Fonterra's role is to export our farmers' milk to the world. Our global success is built upon the home-grown dairy expertise we have developed. This is recognised in many countries where we have a presence, where our dairy expertise is valued and recognised as being able to develop local dairy industries.

Through our dairy development activities, we support local farmers to sustainably increase dairy production, helping improve livelihoods and create thriving communities by generating sustainable employment.

This work is delivered in partnership with others who recognise the value of a productive dairy industry. To guide us on implementation we work closely with key external stakeholders including local government agencies, universities and New Zealand industry experts to tailor our approach to the specific needs of particular farming communities.

Sri Lanka

In Sri Lanka the focus of our dairy development initiative is to develop the capability of local dairy farmers. This is supported by investment in infrastructure to collect and process the milk, and work to increase the demand for the fresh products that will generate a sustainable income for local farmers.

When we opened our demonstration and training farm at Pannala in 2016, our goal was to provide training for 2,500 farmers every year. We exceeded this target in the first full year of operation, with 121 training days providing more than 2,600 farmers with tuition through a combination of classroom and on-farm training facilities. Ongoing support is provided through our network of 21 supplier relationship officers who personally visit the local farmers on their farms.



As the programme has expanded, we have established seven milk collection centres in the regions and trained staff to collect, test and rapidly cool the milk before it is transferred to food production facilities.

To track outcomes of the work, we have introduced performance indicators monitored across a sample of farmers. Since 2015 we have seen more than a 50 per cent improvement in animal productivity and farmer profit.¹

China

Encouraging the development of young Chinese talent in agriculture is an important aspect of our dairy development work. On our own farms more than 90 per cent of staff are locally recruited and trained.

In 2010 we established the Fonterra Scholarship and so far almost 900 students from 11 universities have received awards to help Chinese students studying farming or food science. In association with the Chinese Ministry of Industry and Information Technology, we also support manufacturing training with about 20 Chinese dairy practitioners invited to New Zealand each year.

We train farmers on animal health and modern farm management practices and have developed the skills of 4,100 local farmers since 2012. We provide this training in partnership with the Chinese Ministry of Agriculture, Dairy Association of China and the National Dairy Industry Technology System.

Established in 2014 and funded by Fonterra Greater China, the China–New Zealand Dairy Forum has been a platform of knowledge and experience sharing between government officials, experts and enterprise in the dairy sector. Based on the number of attendees, now more than 300 in total, and the feedback we have received, this year's event was the most successful to date.

¹ Based on IFCN Industry data for 2015 and results from 185 farmers monitored in Sri Lanka.



In Sumatra, one of our scholarship alumni uses a human food analogy to teach the importance of good feed for dairy cattle.

Indonesia

Our Fonterra Dairy Scholarship is run in partnership with the Indonesian Government. Its goal is to improve the livelihoods of small farmers and farming communities by increasing productivity, milk quality and profitability. Now in its fifth year, the scholarship was named Indonesia's Best Corporate Social Initiative and has expanded from 12 to 16 participants per year.

The local dairy farmers and extension staff receive classroom and practical training, on-farm reviews and undertake a study tour to New Zealand. The extension training includes all aspects of farm management, animal husbandry, hygiene and quality, feed management, health and safety, and caring for the environment. Alumni support then helps build local farmer learning groups to continue and share the development learning with the broader farming community as the farmers apply the learning on their own farms.

Fonterra does not collect milk from these farmers; therefore, a baseline report is created for each farmer participating in the scholarship programme and a follow-up review is conducted to identify learnings they have gained and what benefits the changes have delivered.

In Sumatra, three of our female alumni wanted to share their learning and support with other local farming women, so we helped by providing additional guidance on communication skills and preparing specific technical training material for their use. They have grown in confidence and now their support group comprises 15 female farmers and they are expanding our impact by further sharing with other local farming groups.

Elsewhere around the world

Since 2014, we have been supporting Japan's dairy industry in Hokkaido to assess the potential future of profitable pasture-based farming and to help ensure local consumers have access to affordable dairy nutrition. Findings from the initial phases of study are positive and the initiative was extended this year to investigate implementation strategies on farms.

We have a new exchange scheme this year for young Chilean farmers. The first cohort of 11 arrived in New Zealand in June for a year of paid hands-on work experience at participating farms. We also facilitated a number of study tours including a visit by Myanmar government and industry representatives to our demonstration and training farm in Sri Lanka.



NEW EXCHANGE SCHEME FOR CHILEAN FARMERS

11

Eleven Chilean farmers arrived in New Zealand in June for a year of paid hands-on work experience at participating farms.

On-farm Emissions

On-farm greenhouse gas emissions

The main contributor to our overall carbon footprint is the greenhouse gas (GHG) emissions from dairy farm production systems, primarily from cows. As ruminant animals, dairy cows produce methane during digestion, emitted mainly through burping. Nitrous oxide is emitted from dairy pasture too, as the urine and faeces produced by the cows and the fertilisers applied are broken down. Both methane and nitrous oxide are significant GHGs, making up the majority of the emissions in the production of dairy products.

Other sources of on-farm emissions include use of energy and electricity in farm operations and milk cooling, and emissions relating to farm inputs such as feed and fertiliser.

Our progress

The long-term trend for New Zealand shows a 20 per cent decrease in biological emissions per unit of production (kilogram of milk solid) since 1990, calculated on an inventory basis.

Fonterra has commissioned regular independent analysis of our New Zealand milk supply for the full on-farm carbon life cycle. Over the past five years, this has shown a downwards trend and it is now at 0.85 kilograms of carbon dioxide equivalent per kilogram of fat-and-protein-corrected milk (kg CO₂-e/ kg FPCM). This year we have extended this analysis to also consider our Australian and China footprints using the same methodology. Australia is 0.92 kg CO₂-e/kg FPCM and our seven Chinese farms average 1.62 kg CO₂-e/kg FPCM. Our milk is among the most climate-efficient in the world, with most of our raw milk supply at less than half of the global estimated average.



Our commitments

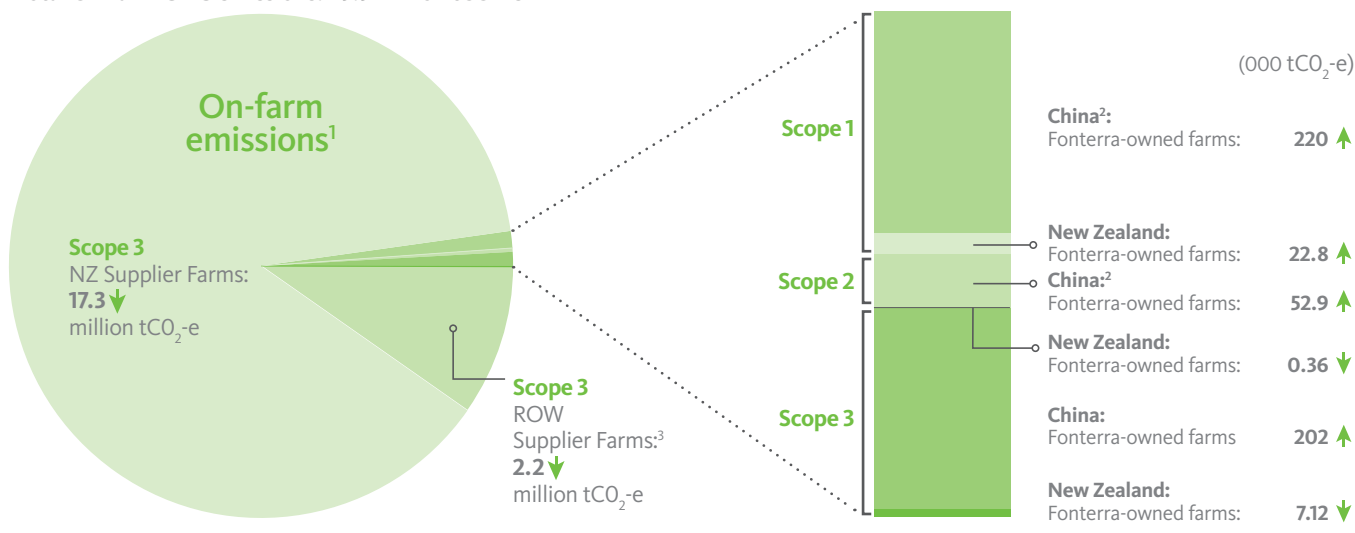
We have been working towards a target of reducing on-farm GHG emissions intensity in New Zealand by 15 per cent by 2030 from a 2008 baseline. Despite a downward trend in emissions intensity here over the past five years, emissions intensity had increased in the previous four seasons. This brings us back to a similar level as that for the 2007-08 season. This is now heading in the correct direction but we believe we need to increase our focus in this area. We have therefore lifted our ambition in this area, setting a new target for climate-neutral growth to 2030 for pre-farmgate emissions in New Zealand, from a 2015 base year. We expect milk volumes to continue to increase to 2030 so our existing emissions intensity target will not be enough to ensure the total emissions from on-farm activities will be no higher than they were in 2015. However, we believe this can be achieved through a combination of mitigations with some use of offsetting if needed. We also aspire to have a positive impact on global emissions by enabling agricultural mitigation solutions.

Climate change mitigation options available to farmers

Improved productivity

Continuing to improve on-farm productivity remains the best area to focus on. Examples include:

- Caring for animals throughout their lives not only improves the quality of the milk they produce it also sees each cow produce more milk over a longer life.
- Improving nutrient management not only reduces the risk of nutrients entering waterways, it also decreases the amount of bought-in fertiliser needed to achieve the same level of production; as a result, this reduces the production of nitrous oxide.

Total On-farm GHG emissions: 19.9 million tCO₂-e**Less deforestation**

Change of land use that results in deforestation to support dairying contributes to our GHG emissions and is included in our estimates. This can arise from new conversions to dairy or as a consequence of growing supplementary feeds. Farmers are able to make a difference by:

- Making use of existing pasture land, rather than converting it from forestry
- Reducing their use of supplementary feeds which are associated with deforestation or ensuring it is only purchased from sustainable sources
- Increasing planting on marginal land not suitable for dairy farming to reverse prior deforestation.

Breakthrough technologies

We continue to invest in research and development, primarily through the Pastoral Greenhouse Gas Research Consortium (PGgRC), to identify breakthrough technologies which can provide a step reduction in the biological emissions produced by dairy cows. Some examples being investigated include:

- Breeding of cows that produce less GHG emissions
- Vaccines that can be given to cows to reduce their GHG emissions
- Inhibitors which can be administered through supplemental feeds to reduce their GHG emissions.

New Zealand Dairy Action for Climate Change

The New Zealand Dairy Action for Climate Change Plan was launched in June 2017, by DairyNZ, the industry-good organisation representing New Zealand dairy farmers, in partnership with Fonterra and supported by the Ministry for the Environment and Ministry for Primary Industries. The Dairy Action for Climate Change Plan is the industry's phased plan to contribute to the New Zealand Paris Agreement target. This first phase focuses on establishing the foundation for the dairy sector – farmers, scientists, rural professionals, and others – to work together to raise awareness and mitigate biological emissions so as to make a valuable contribution to the overall reduction New Zealand has pledged to achieve by 2030.

We have committed to undertake an on-farm recording pilot involving up to 100 Fonterra farmers, measuring GHG emissions and providing farmers with individual emissions data. We will share the findings from the pilot with the Plan supporters, Ministry for the Environment and Ministry for Primary Industries.

Emissions reductions in Chile

Our supplying farmers in Chile are leading innovation in energy and emissions capture. Prolesur is working with government research agencies to investigate the use of biodigesters as on-farm energy sources capturing energy from farm waste.

At present, in Soprole, approximately 40 per cent of the milk we purchase comes from farms that produce electricity through biodigesters, and 30 per cent is from farms with heat recovery systems to generate warm water using the milk cooling process.

¹ The reporting of on-farm greenhouse gas emissions is one season behind financial year to allow completion of a life-cycle analysis.

² Emissions for the 2014-15 season in China are derived from 2014-15 production volumes and the 2015-16 on-farm carbon life-cycle analysis.

³ Rest-of-the-world farms includes those in Australia and Latin America. No specific life-cycle analysis has been completed for Latin America, so this has been estimated using the Australian emissions intensity and the actual production.

For detailed information on the scope, methodology and assumptions used in reporting these emissions see Fonterra Sustainability Report 2017 – Environmental Data Reporting Notes.

Animal Welfare

Animal health and welfare

Healthy, well-cared-for animals are vital to producing safe, high-quality milk.

Cows are the heart of every dairy farm, and their health and welfare is of paramount importance to us. The way animals are treated is also an increasing focus of consumers and other stakeholders.

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:

- Freedom from hunger and thirst by ready access to fresh water and a diet to maintain full health and vigour
- Freedom from discomfort by providing an appropriate environment including shelter and a comfortable resting area
- Freedom from pain, injury and disease by ensuring rapid diagnosis and treatment
- Freedom to express normal behaviour by providing sufficient space, proper facilities and the company of the animal's own kind
- Freedom from fear and distress by ensuring conditions and treatment which avoid physical and mental suffering.

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 adopt good management practices to continuously improve animal health and welfare outcomes, keeping our farmers up to date with the latest animal welfare practices and requirements. We work with industry-good 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.

The responsibility for the development of strategy, policy and standards for management of farm animal welfare across Fonterra on a global basis is assigned to Fonterra's General Manager – Veterinary, Technical and Risk Management. Management and implementation of Fonterra's animal welfare policies and strategies are undertaken by the business units sourcing raw milk, supported by an in-house veterinary team nationally and internationally.

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.

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 usage of rBST but we are actively working with farmers to phase out its use. Globally, regulations also prohibit the use of ruminant protein as a feed for ruminants including milking cows.

Somatic cell counts by location

	2014/15	2015/16	2016/17
	Average (mean) 000 cells/ml	Average (mean) 000 cells/ml	Average (mean) 000 cells/ml
New Zealand	171	176	173
Australia	198	188	190
China	180	148	165
Chile – Soprole	236	232	262
Chile – Prolesur	238	234	286
European Union import/export standard	400	400	400

Somatic cell counts

Somatic cell count (SCC) is a measure of white blood cells in milk, which is not only an indicator of milk quality but also of good animal husbandry. The lower the SCC, the lower the incidence of mastitis infection in our animals and the better they are being cared for. We have seen a significant downward trend for SCCs in New Zealand since 2009, from 223,000 to 173,000 cells/ml achieved in the past year. SCCs outside of New Zealand are considered within normal ranges for the farming systems being utilised and fluctuation is within normal ranges. Results in all regions are well below the European Union standard, a widely quoted standard, which requires fewer than 400,000 cells/ml for imports and exports. Although we have delivered excellent results in this area, we will continue to monitor and work to achieve lower counts.

Lifespan

Cows in New Zealand have one of the world's lowest annual replacement rates, indicating they have long and productive lives. The average replacement rate is 22 per cent with cows averaging 4.5 lactations (6.5 to 7 years) with a calving interval of 368.4 days.¹ These measures jointly reflect high reproductive performance, which can only be achieved under conditions of good animal management.



Antimicrobial resistance

Increasing levels of antimicrobial resistance 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. The risk of development of resistance can be minimised in animals by ensuring that the use of antimicrobials is minimised and, where required they are used specifically for the treatment of known infections. The prudent use of antimicrobials, particularly those identified as of critical importance for treatment of human disease, will help to make sure that antibiotics remain effective for the treatment of disease in the future.

New Zealand is free from many diseases such as brucella abortus, brucella melitensis, infectious pleuropneumonia, sheep and goat pox, and foot and mouth disease. Pasture-based farmers are able to use low levels of antibiotics in animals as our cows have low levels of mastitis and other diseases. New Zealand has been ranked as the third-lowest user of antibiotics in animals in the world.²

Improving regulations

In response to isolated incidents identified in FY16, new improved young calf regulations have been introduced and we have provided support for our farmers to ensure they meet these. In addition, new regulations regarding painful procedures are in the process of being implemented to ensure freedom from pain.

¹ Dairy New Zealand Dairy Statistics, 2015-16

² The Review on Antimicrobial Resistance 2015.

On-farm Labour Practices

Labour practices on-farm

In New Zealand, Fonterra is a supporter of the Sustainable Dairying: Workplace Action Plan, an industry action plan developed by DairyNZ and Federated Farmers to assist dairy farming businesses to adopt good workplace management practices.

This plan describes what a quality work environment in the dairy industry looks like and sets out the co-ordinated actions and commitments of the industry. It also provides practical advice and support to employers and employees.

To assess potential human rights issues around the world, we recently completed a targeted global due diligence process. This process included identification of potential issues in Fonterra's direct operations and in first-tier suppliers, including farmer suppliers. See the Human Rights section on *page 89* for more information.



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 milk collection activities. Our evaluations of farms include health and safety to confirm that relevant areas of the farm are free from risks and hazards and allow safe access, with specific detailed consideration of the tanker access included in the supplier handbook for New Zealand farmers.

In New Zealand, more people are killed working in agriculture than in any other sector, with 18 fatalities reported during 2016.¹ To help improve this, we are working with an agriculture working group, including WorkSafe New Zealand and DairyNZ, to identify ways to reduce injuries and implement new standards.

This year we applied our Safe Home Audit approach to six of the nutrient management farms that we own and operate with our own staff. All received a vulnerable rating so we have implemented an action plan and intend to share the lessons learnt. Through our network of Farm Source stores, we already make safety information pamphlets available to all our customers, many of whom are farmers.

¹ Source: WorkSafe NZ Workplace fatalities by industry www.worksafe.govt.nz/worksafe/research/health-and-safety-data/workplace-fatalities/workplace-fatalities-by-industry.

Sustainable Palm Products

Palm products

Palm products in Fonterra's supply chain includes palm oil used as an ingredient in a limited number of our products and Palm Kernel Expeller (PKE), which is used as a supplementary feed for dairy cattle. PKE is a by-product of the palm kernel crushing process. Approximately 30 per cent of PKE imports into New Zealand are procured through International Nutritionals Ltd (INL), our joint venture with Wilmar International Limited. PKE is sold through our Farm Source retail stores.

We recognise that the production of some palm products is linked to unsustainable practices, including deforestation, habitat destruction, and poor labour and human rights practices. We are committed to responsible sourcing of palm products, and working with stakeholders to ensure the fair and ethical treatment of suppliers, to avoiding deforestation, and to protecting conservation values in the palm products supply chain.

Fonterra has been a member of the Roundtable on Sustainable Palm Oil (RSPO) since 2010. In 2015 we achieved our target to use Green Palm™ certificates for 100 per cent of palm oil purchases, which supports the production of certified sustainable palm oil.

In August 2016, we released the Fonterra Palm Product Standard which commits Fonterra to a higher standard of sustainability and more proactive and transparent monitoring of the palm products that we source globally. This standard was shaped in consultation with our stakeholders:

➔ www.fonterra.com/palmproductsstandard

The standard requires that:

- Fonterra will move towards sourcing segregated supply palm oil from credible organisations with an aim of 100 per cent segregated supply by 2018.¹



- All vendors of palm products within Fonterra's supply chain must publicly be committed to policies that give equivalent effect to "No Deforestation, No Peatland Development, and No Exploitation" and have business processes in place to enact these commitments.
- Fonterra has traceability to mill, with time-bound plans to achieve traceability to plantation.
- Fonterra will disclose use of palm products and performance of palm products suppliers in relation to this standard.

We have been working with The Forest Trust (TFT) to evaluate the performance of our palm products supply chain and compliance with our standard. Since the end of the financial year we have strengthened this relationship, by becoming a TFT member.

Working with our vendors, we have confirmed 96.7 per cent traceability to mill, and 17.7 per cent traceability to plantation for PKE purchased through INL for the year to June 2017.

In 2016 Fonterra procured 15,135 metric tonnes of palm oil ingredients, all of which were from RSPO-certified sources²:

- 2.7 per cent was from segregated sources, where it is kept separate from ordinary palm oil throughout the supply chain
- 57.0 per cent was from 'mass balance' sources which are mixed with ordinary palm oil throughout the supply chain
- 40.3 per cent was from 'book and claim' sources, where the supply chain is not monitored but credits are purchased from RSPO-certified growers.

In Australia two of our sites also have independent supply chain certification (SSC RSPO), which allows any products we make there containing palm oil to be fully certified.

¹ Some palm derivatives for use in specialised products may require additional time to transition.

² www.rspo.org/certification/supply-chains.

Sustainable Operations

Sustainable operations means taking care to preserve every drop of natural goodness from the milk we collect. It means operating efficiently, minimising our manufacturing sites' energy use and emissions and investing in new technologies and equipment to meet our long-term climate change ambitions.

This includes optimising the movement of our raw materials and finished products, to take our dairy products from the farm to the end consumer in the most efficient way and being conscious of the distances many of our products have to travel to market.

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

This section covers our performance and management of issues related to our manufacturing sites and logistics, from the point of collection of milk at the farm through to delivery to our customers and consumers.

¹ LME is a standard measure of the litres of milk allocated to each product based on the amount of fat and protein in the product relative to standardised raw milk

22.9B



22.9 billion LME¹ processed – down 3% from last year.



29.4 PJ

29.4 PJ energy used. Essentially the same as last year.

See page **53**



2.1M

2.1 million tonnes
CO₂-e emitted from
manufacturing – down
1.2% from last year.

See page **53**



4.18M

4.18 million tonnes of
Group volume – down
3.1% from last year.



0.17M

0.17 million tonnes
CO₂-e emitted
from logistics.

See page **59**



CODA

CODA

CODA

CODA

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CODA



52.5M

52.5 million cubic
metres of water
withdrawn – down
2.1% from last year.

See page **54**



NET-ZERO

New target set to achieve
net zero emissions for
operations by 2050.

See page **51**

Global Operations Management

Our global operations sites

The majority of our manufacturing activity is in New Zealand and Australia, representing more than 95 per cent of our processing by raw milk supply. We operate a number of other sites around the world. Performance data in this section is for all Fonterra-operated manufacturing sites unless otherwise stated.

We also share some manufacturing sites which are operated by our 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. Our policy is to ensure the joint venture adopts policies at least as rigorous as those set out in equivalent Fonterra Group standards, or to a higher standard if required by local law.

To ensure all manufacturing sites operate to consistent standards, we use a global operating framework. At the heart of the framework are our Global Group policies and standards which prescribe operational practices. Global Group policies may be supported by local operational standards, which provide guidance on how to apply policy within local regulatory contexts. Our Fonterra Group Environmental Policy is available online:

→ www.fonterra.com/environmentalpolicy

This policy defines Fonterra's commitment to safeguarding natural resources through reducing environmental impacts across our global value chain, including our precautionary approach where serious threats may exist.

Each site has a site manager with overall accountability for site performance and compliance with Fonterra's operating framework, alongside any other site-specific requirements such as resource consent conditions.

All sites have a manager specifically responsible for environmental compliance. At most sites this is a dedicated environmental manager, 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. We are a member of Sedex. Regular independent audits of site performance against the Sedex Member Ethical Trade Audit (SMETA) standard for labour practices, environment, health and safety, and business practices are used to demonstrate our performance to our customers.

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 provides third-party evaluation of the performance of our management system across site environmental issues. Our sites are currently in the process of transitioning to the updated ISO14001:2015 standard, which expands certification to consider the broader influence organisations may exert over their value chains.

We recognise that independent environmental certification is not in place at all of our sites. This is particularly true outside New Zealand and Australia. We are working towards achieving certification to ISO14001:2015 or equivalent across our global manufacturing footprint. As of the end of FY17, more than 60 per cent of our sites had achieved such certification.



ISO14001:2015

We are working towards achieving certification to ISO14001:2015 or equivalent across our global manufacturing footprint.

Our manufacturing operations

51

GLOBAL
51 SITES
IN 11 COUNTRIES
WORLDWIDE



Energy and Emissions

Climate and energy

The majority of Fonterra's operational greenhouse gas (GHG) emissions are a result of our energy use. Most of this is from the combustion of fuels to create heat used to pasteurise products for food safety and to dry them for long life and efficiency of transportation around the world. As the world's largest processor of dairy products any improvements in our performance have a significant impact.

Our emissions and energy efficiency track record

Fonterra has a long-standing strategy focused on improving energy efficiency across our sites. Our largest programme focuses on our New Zealand sites. Since the programme was launched in 2003 we have achieved 17.6 per cent reduction in energy intensity. Today, this is equivalent to saving enough energy each year to meet the electricity usage of more than 200,000 New Zealand households.

Over the past year, energy use per tonne of production across our global operations has increased by 1.8 per cent to 7.55 GJ/tonne. With milk volumes down over the season, running our manufacturing factories as efficiently as in previous years has proved challenging and this has contributed to a flattening in our progress.

In the past year, the GHG emission intensity from our manufacturing activities remains the same at 0.53 tonnes of carbon dioxide equivalent per tonne of production. While there has been a shift in fuel mix quantities, in particular a lower proportion of coal, the improvements have been outweighed by the decreased energy efficiency.

Transitioning to cleaner sources of energy

Finding viable alternatives to coal is the first priority in our transition to cleaner sources of energy. Natural gas is preferred as a more emissions-efficient source of energy. However, we recognise that we ultimately need to transition all production to renewable sources of energy to meet our net zero emission ambition.

In Australia, all of our sites have been transitioned away from coal to natural gas. This transition was completed in 2013. Coal is still used by a third of our sites in New Zealand, primarily in the South Island where natural gas is not available.

We are seeking ways to transition away from this coal use but there is a small short-term risk that we may need to install additional coil boiler technology to meet our DIRA obligations (see below). However, as demonstrated in the consent for our proposed expansion at the Studholme site, if a new coal boiler is required, we are committed to co-fire the coal with up to 20 per cent wood biomass to minimise the amount of coal used.

Regardless of any increase in capacity, we will work towards our target of achieving a 30 per cent emissions reduction target by 2030.

IMPLICATIONS OF MARKET REGULATION – DIRA

The Dairy Industry Restructuring Act (2001) (DIRA) in New Zealand places legal obligations on Fonterra, including a requirement to collect all milk under certain conditions. This 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. While we do not intend to install any new coal boilers from now, this means increased demand in certain locations may require this in the short term where there are no alternatives available. From 2030 we are confident that any new capacity will use more emissions-efficient energy sources than coal.

Our emissions reduction targets

Our existing efficiency-based targets committed us to reductions in emissions for each unit of production. This year we have set new targets.

For our global manufacturing and milk collection operations our target is an absolute emissions reduction of 30 per cent by 2030 against a FY15 baseline, and net zero by 2050.

20%

Reduction in energy intensity by 2020.

30%

Reduction in manufacturing emissions by 2030.

NET ZERO

Manufacturing emissions by 2050.

Energy and Emissions

CONTINUED



Fonterra's investment in coal

Fonterra has direct investment in coalmining operations through Glencoal Energy Limited, which is a wholly-owned subsidiary. With our raised ambition in climate change, we have committed to divesting any coal mining interest by 2025.

Glencoal has mining operations in the Waikato region of New Zealand, which historically has provided coal for local Fonterra manufacturing sites. Glencoal's last mine, Kopako 3, finished producing coal for our sites last season, and is now in the process of rehabilitating the mine site.

A new site at Mangatangi, close to the existing mine, was granted resource consent in 2013 following a process of public notification and hearings which involved members of the community and representatives of local iwi representing local Māori interests. Most of this site has been owned by Fonterra for many years and is currently used for dairy farming.

Both sites have biodiversity management plans in place, to protect the local environment during operations and to rehabilitate them when operations are complete. After the mining ceases most of the land will be returned to pastoral farming.

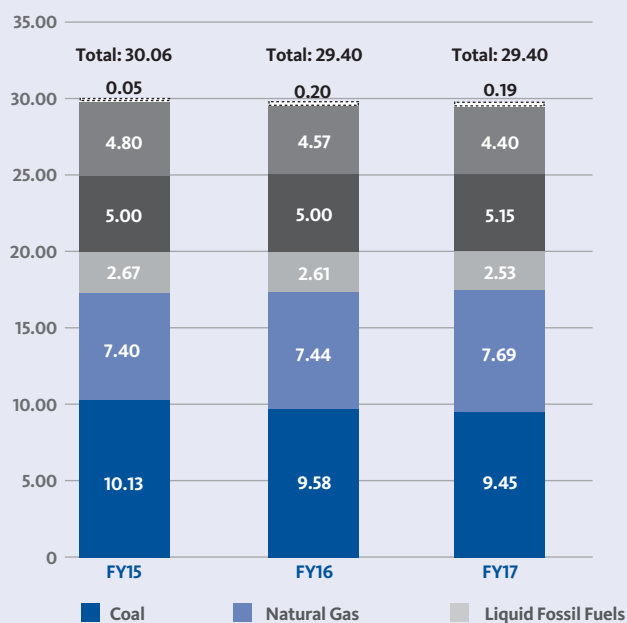
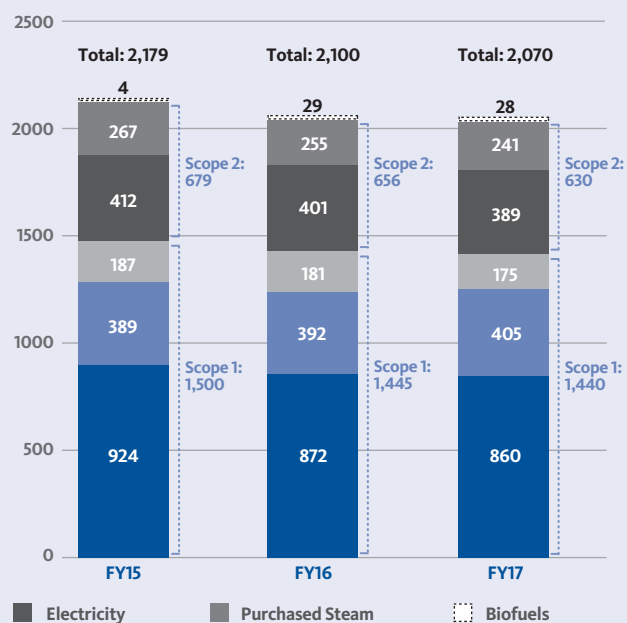
Investment in alternative energy sources

In New Zealand, over 80 per cent of electricity is generated from renewable sources. We are working with government and the electricity industry to explore options for using this renewable energy source to electrify our current processes, rather than relying upon heat generated from fossil-fuel boilers. While the technology looks promising, the existing transmission line infrastructure and pricing protocols make this challenging.

Wood biomass offers another sustainable energy opportunity. In New Zealand, there is a possibility of using wood waste which is a by-product of New Zealand plantation forestry. We have committed to the installation of dual-fuel boilers capable of being fuelled by a mixture of coal and wood biomass at the proposed Studholme expansion. In the past year, we have trialled co-firing wood biomass in a coal boiler at our Brightwater plant in the South Island. This trial successfully tested co-firing wood biomass with coal, with a 40 per cent mix by mass, and a 25 per cent by energy, and plans to develop this are being progressed.

A challenge with adopting biomass in New Zealand and Australia is the security of supply and the availability of fuels in the required volumes to displace coal use fully. In other countries biomass is a well-established energy source, for example in our Los Lagos site, which is operated by Prolesur in Chile. We also use biogas from our wastewater treatment plant at the Tirau factory in Waikato, New Zealand.

Performance targets			
Indicator	Target	Performance	Commentary
Reduction in manufacturing emissions intensity (emissions per tonne of production)	30% reduction by 2030 from 2010 baseline (NZ and Australia)	7.8% reduction cumulative to FY17	This represents 26% progress over 35% of time period. ●
Reduction in absolute manufacturing emissions	30% reduction in absolute emissions by 2030 from FY15 baseline (Global)	5.0% reduction cumulative to FY17	This represents 16% progress over 13% of time period. ●
Reduction in manufacturing energy intensity (energy per tonne of production)	20% reduction by 2020 from FY03 baseline (NZ)	17.6% reduction cumulative to FY17	This represents 88% progress over 82% of time period. ●

Energy use by fuel type (PJ= 10¹⁵ Joules)GHG emissions by fuel type (000, tCO₂-e)

For detailed information on the scope, methodology and assumptions used in reporting these emissions, see Fonterra Sustainability Report 2017 – Environmental Data Reporting Notes.

Water Use and Discharge

Impacts on water quality

Through our manufacturing processes, our sites produce wastewater. Depending on each site's location and manufacturing systems employed, water is either discharged to local waterways, discharged to sea, sent into municipal wastewater treatment plants or recycled through irrigation on neighbouring farms.

The main potential environmental impact from our water discharge is through nutrients included in discharge, which can impact ecosystems. Other impacts may be from accidental spills of materials, including milk or chemicals used in manufacturing or cleaning processes.

All of our sites must comply with local resource consent conditions, which place specific environmental requirements on each site. The majority of our sites have on-site treatment plants which treat wastewater prior to discharge. As part of water treatment many of our sites capture nutrients in wastewater which can be recycled as a fertiliser. This is the case in many sites across New Zealand, where Fonterra owns and operates neighbouring farms where nutrients are naturally recycled.

Above and beyond legal compliance, in 2015 we launched a commitment for all manufacturing sites around the world to treat wastewater to leading industry standards. To date, more than 25 per cent of our sites meet such standards. An investment programme is in place to bring all sites to this level by 2026.

Water discharge FY17		
	Volume (000 m ³)	Quality (COD ¹ mg/L)
Discharged to irrigation	14,815	1,440
Discharged to river	25,081	66 ²
Discharged to ocean	14,709	2,194
Discharged to municipal	5,248	2,148
Discharged to other	0	0
Grand Total	59,853	

Efficient use of water

In most of our operating locations water is not a scarce resource. Many of our manufacturing sites produce an excess of water, as water is removed from the raw milk supplied. In all circumstances our policy is to use water responsibly. Where constrained supply exists, we prioritise investment to reduce water consumption by working towards greater efficiency and self-sufficiency.

Over recent years, our water efficiency has remained largely static, with performance improvements through investment in new resource-efficient plants (see Lichfield – Case Study) countered by inefficiencies which occur when milk volumes are lower. For example, when not running at full capacity there is opportunity to change products more frequently, introducing more cleaning operations.

We believe we can make further progress in this area. So, to focus our efforts, our New Zealand operations sites have set a new 2020 target to reduce water use by 20 per cent per cubic metre of milk processed, against a FY15 baseline.

Water withdrawn by source FY17		
	Volume (000 m ³)	Percentage
Surface water (including water from wetlands, rivers, lakes and oceans)	26,686	51%
Groundwater	17,621	34%
Municipal water supplies or other public or private water utilities	8,147	16%
Other (e.g. rainwater collection)	0	0%
Total	52,454	100%

¹ Chemical Oxygen Demand – an indicator of water quality measuring chemicals in water that can be oxidised.

² A single site, Edgumbe, results in this high result. Infrastructure is being upgraded in FY18



Robert Spurway,
Chief Operating Officer
Global Operations
at the Lichfield site.

CASE STUDY

Lichfield: Investing in new technologies

As we build new capacity, we use this opportunity to invest in improving the resource efficiency of our sites. Last year we invested in the expansion of our Lichfield site with a new milk powder dryer, distribution centre and wastewater treatment plant.

The new 30 tonne-an-hour dryer is fuelled by natural gas. It is Fonterra's most efficient milk dryer to date.

The dryer is capable of processing 4.4 million litres of milk each day, making it the largest milk powder dryer in the world alongside the dryer at Fonterra's site at Darfield in Canterbury, New Zealand.

As the milk is heated and dried, water is evaporated from it. Rather than allow this to escape as steam, the site collects and condenses it back into water which is then filtered and reused in other processes. This means the site needs less water in, and produces less wastewater out. Because of this, the site produces more water than it takes in.

The site expansion also included investment in a new biological wastewater treatment plant. This uses natural processes to reduce the nutrient levels in wastewater. This brings the site up to the leading industry standards we have committed to bringing all sites inline with by 2026.

Wastewater is irrigated to neighbouring 'nutrient management' farms, which are owned and managed by Fonterra. The wastewater plant can store 100 million litres of water if for some reason irrigation is not feasible.

Investment was also made in logistics efficiency, to cope with additional manufacturing volumes. The new distribution centre has the capacity to store 40,000 metric tonnes of whole milk powder which is then loaded into containers and shipped directly to port via an in-built rail siding. This removes up to 40 truck movements from the site every day, which eliminates traffic from local roads and reduces transport emissions.

Performance targets

Indicator	Target	Performance	Commentary
Improvement in water efficiency (water used per cubic metre of milk processed)	20% reduction by 2020 from FY15 baseline for NZ	5.1% increase cumulative to FY17	New target to focus on declining water efficiency.
Site treating wastewater to leading industry standards	100% of sites by 2026 (global target)	25%	Long-term target, but on track to achieve as investments are made in site development.

For detailed information on the scope, methodology and assumptions used in reporting see Fonterra Sustainability Report 2017 – Environmental Data Reporting Notes.

Solid Waste

Waste minimisation

Raw milk from our supplying farmers is our largest input material. To maximise the nutritional value we deliver to our customers and consumers, we focus on minimising food loss across our supply chain. This also helps us deliver the maximum return to our supplying farmers and minimise our impact on the environment.

In our manufacturing operations our food safety and quality standards aim to deliver products right-first-time and our processing steps seek to capture by-products that were previously considered waste, such as whey, and make them into new valuable products.

The majority of our solid waste is a by-product of manufacturing practices; for example, packaging, damaged product and personal protective equipment that cannot be reused or recycled.

REDUCTION TARGET BY 2020

20%

Reduction in solid waste to landfill in New Zealand by 2020 from FY15 baseline.



Solid waste to landfill

Minimising our solid waste to landfill is part of our long-standing environmental efficiency programme across our New Zealand manufacturing sites. We achieved our previous target of 90 per cent of solid waste diverted from landfill several years ago. This was an important achievement, but we can do more; so, therefore we have set a new target for a 20 per cent reduction in solid waste to landfill by 2020 from a FY15 baseline.

Solid waste to landfill

FY15 New Zealand Waste to Landfill	FY17 New Zealand Waste to Landfill	FY17 Global Waste to Landfill
4,969 tonnes	4,598 tonnes	14,382 tonnes

This target applies to our New Zealand sites only at this stage, but the aspiration behind it extends to all of our operating markets. Our waste performance data is incomplete for many operating markets over past years. We collected and reported our global combined waste to landfill for the first time in FY17. We intend to use this information to set a robust baseline in order to build a global reduction target.

Performance targets

Indicator	Target	Performance	Commentary
Solid waste sent to landfill	20% reduction by 2020 from FY15 baseline (NZ)	7.5% reduction cumulative to FY17	This represents 37% progress in 40% of time span.

Site Compliance

Environmental non-compliance

In the past year we had two incidents of non-compliance with environmental regulations which resulted in fines or non-monetary sanctions, both in New Zealand. We were fined \$750 for an incident at a Kapuni nutrient management farm of dairy farm solids run-off to surface water. We received another fine of \$750 and a non-compliance notice for a milk tanker spill in Rahotu, coastal Taranaki, which resulted in a discharge of milk to surface water.

Over the past three years our most significant fine was in 2015 for \$192,000 related to the discharge of buttermilk in a South Taranaki treatment pond. In 2015 we were also fined \$174,150 for discharging wastewater from our Edgecumbe plant into Bay of Plenty waterways. The Bay of Plenty Regional Council prosecuted Fonterra over four failures of our whey irrigation system and two overflows of wastewater in September 2014 and April 2015.

Our joint venture in Brazil, DPAB, leases a manufacturing site in Garanhuns where we have identified some environmental issues. DPAB has already started to address these through actions plans. In addition, DPAB has introduced more controls to prevent environmental issues, and has plans in the near future for more investments to further improve the controls.

In addition to the listed non-compliances above, there were some minor non-compliances which have not resulted in any monetary or non-monetary sanctions.



Significant spills

In the past year a number of our sites reported spills or incidents which resulted in us not meeting our environmental consent conditions. Unseasonably high rainfall at Cobden in Australia resulted in the overflow of the site's wastewater storage lagoons. The incident resulted in a controlled discharge of 84 million litres of wastewater into the Curdies River. Cobden treats wastewater to a high level and field monitoring confirmed the wastewater release had no lasting impact on the environment.

Four spills were also recorded from milk tanker incidents in New Zealand. As reported in our environmental non-compliance section opposite, a spill of milk from a tanker in Rahotu, coastal Taranaki, resulted in approximately 2,000 litres of milk spilled to ground. Temporary containment was used to reduce risks to waterways. Tanker accidents near Waitoa and Murchison also caused spills of milk, and an opened valve resulted in discharge of milk from a tanker collecting for our Kauri site.

In addition we also had an incident at our Edendale site in the past year, with a spill of approximately 5,000 litres each of nitric acid and caustic alkali – chemicals used in cleaning processes. Both chemicals were contained within safety catchment areas and there was no release to the environment or harm to our people.

Logistics

Logistics efficiency

Greenhouse gas (GHG) emissions are generated from the transportation of raw milk from our farms to factory and from the distribution of our finished products to our customers and consumers. Although these emissions account for only about one per cent of our total GHG emissions, it is still an important area where we continue to deliver efficiency gains, not only reducing our carbon footprint, but also saving costs.

Efficiency in this area needs to include care for the product as well. By protecting our finished goods from damage we minimise waste. The design of our packaging, the way we stack products on pallets and the way we pack containers all help achieve this.



Milk collection

Optimising milk collection from farms would appear a simple activity. However, it quickly becomes a difficult problem to solve when you are trying to minimise the time and fuel used to complete this task every day, 365 days per year.

In New Zealand, all milk is collected from farms by milk tankers. The design of these tankers has evolved over time to increase the volume that can be carried legally, while also seeking ways to improve the safety of the vehicles for sometimes challenging road conditions. Tankers and drivers do more than just collect milk – they are also an important step in our integrated food safety and quality systems. Representative samples are taken from each supplying farm at collection, allowing the quality of milk to be assured; any issues can be traced back to individual farms.

Our fleet of tankers is regularly upgraded to use the latest technology and innovations. For example, all of our tankers are already at Euro V level, with semi-automatic gearboxes. The newer engines and regular maintenance, combined with driver training that is guided by in-cab sensors to improve driving efficiency and safety, have resulted in improved fuel efficiency.

A sophisticated computer system also helps us plan and manage the tanker journeys each shift so that we can collect all the milk from our farmers in the required time window, and deliver the right amounts of milk to our different factories at the correct rate. The system does this while ensuring legal compliance and minimising the total time and distance required to complete the work, saving emissions, money and reducing traffic on the roads.



Export from New Zealand

As the majority of our products are exported from New Zealand, the efficiency of transportation from factory to port and shipping to destinations is important. By manufacturing milk powders, we create a very efficient product for export, removing excess weight and bulk, and creating a long-lasting product which does not require refrigeration.

Although our products have to travel a long distance to many of our customers and consumers, the efficiency of our distribution network, together with the pasture-based efficiency of our New Zealand production, means that our products are still competitive on a GHG emissions efficiency basis.

In FY17 we continued to shift product movements from road to rail. With rail infrastructure built into many of our manufacturing sites and distribution centres, and maximising the use of these locations we can increase rail usage. Coda, our land transport logistics partner, also opened a new intermodal freight hub at Savill Drive in Auckland, one of the largest in New Zealand.

By collaborating across import, export and domestic freight supply chains, Coda's intermodal freight strategy allows the consolidation of freight to reduce wasted space from the North Island's freight network. By filling trucks and trains, for both the outward and return journeys, Coda's innovative approach saves fuel, reduces carbon emissions and decreases truck trips on congested roads.

Compared to FY16, this year we increased our proportional use of rail compared to road, on a tonne-kilometre basis, by 10 per cent. This has resulted in a 15 per cent reduction in corresponding carbon emissions, despite a slight increase in the movements of goods.

Innovative fully intermodal 25-foot curtain-sided containers have been created to support this strategy. These containers can be used on road and rail, and are specifically designed with extra internal height to allow the double stacking of dairy products while having external dimensions minimised to fit through the rail tunnels near some of Fonterra's sites in the lower North Island.

Thermally insulated, curtain sides support efficient loading for fast-moving consumer goods in the domestic market. Special features such as rivet-free internal surfaces help protect products from damage and reusable dunnage bags secure the cargo while minimising waste.

Kotahi is our ocean freight partner. Through their collaboration with exporters Maersk Line and Port of Tauranga, a new generation of larger, more-efficient ships now visit New Zealand on a regular basis. These container ships, capable of carrying 9,500 20-foot equivalent units (TEU) containers, are more fuel-efficient on a per-container basis and will reduce the carbon footprint of the ocean freight component of exports on these services by a minimum of 22 per cent per container unit compared to the existing New Zealand industry average. These larger vessels enable all New Zealand exporters to better compete with export nations which already have this generation of vessels on their main trade routes.

Logistics emissions

GHG Emissions Source		FY16 (tCO ₂ -e)	FY17 (tCO ₂ -e)
Scope 1	NZ Milk Tanker Collection ¹	133,093	133,371
Scope 3	NZ Road and Rail Transport	23,590	20,070
	Ocean Shipping	141,733	138,622
	Air Travel	9,049	9,606
	Total	174,372	168,298

For detailed information on the scope, methodology and assumptions used in reporting these emissions, see Fonterra Sustainability Report 2017 – Environmental Data Reporting Notes.

¹ GHG emissions from milk collection are included in the total for manufacturing on page 53.

Sustainable Consumption

Fonterra is a global company, exporting products to more than 100 countries. As the world's largest exporter of dairy products, we have significant influence over the impact of dairy products around the world.

Beyond sustainable farming and manufacturing, we want our products to have a positive impact on the people who consume them and the places where they are consumed. The primary impact of our products is on the health and wellbeing of our consumers. Our role is to harness dairy's natural goodness, leveraging our technical expertise to deliver safe and nutritious products that are part of sustainable diets.

In addition to the composition of our products, we also carefully consider our role in promoting healthy lifestyles and sustainable consumption choices. This includes the packaging of our products and the supporting information we provide.

3.02M

3.02 million tonnes of global ingredients products.

See page [63](#)

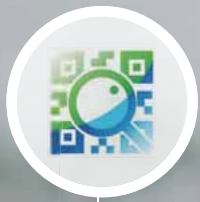


1.78M

1.78 million tonnes of consumer and foodservice products.

See page [63](#)





Annum

Annum™ QR Codes launched in New Zealand.

See page **72**



Anlene

Launch of Anlene Heart-Plus™.

See page **65**



17%

Fonterra Milk for Schools delivered a 17% increase in the number of New Zealand children meeting nutrition guidelines.

See page **68**

Independent endorsement

Independent endorsement of nutrition guidelines by the New Zealand Nutrition Foundation.

See page **62**



Nutrition

Fonterra's food and nutrition guidelines

The Fonterra Group Nutrition Policy sets out our high-level nutritional commitments to deliver highly nutritious dairy products to the world. In the past year, we launched the detailed Fonterra Food and Nutrition Guidelines. The guidelines set the nutrition criteria for our product composition and inform our marketing practices across all branded consumer products and ingredients that Fonterra manufactures. The guidelines complement 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.

Adding further credibility to these guidelines, the New Zealand Nutrition Foundation has independently reviewed and endorsed them as evidence-based guidelines founded in robust nutritional science and reflecting international directives on nutrition and health. In creating the guidelines, we have also established new targets for responsible product development to support balanced diets as part of a healthy lifestyle. See [page 66](#)



Over 50 countries

Fonterra supplies foodservice products to customers in over 50 countries.



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 Anmum™.

Foodservice

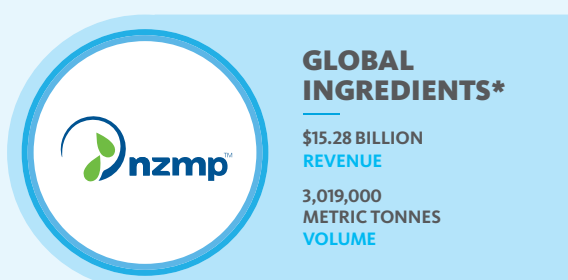
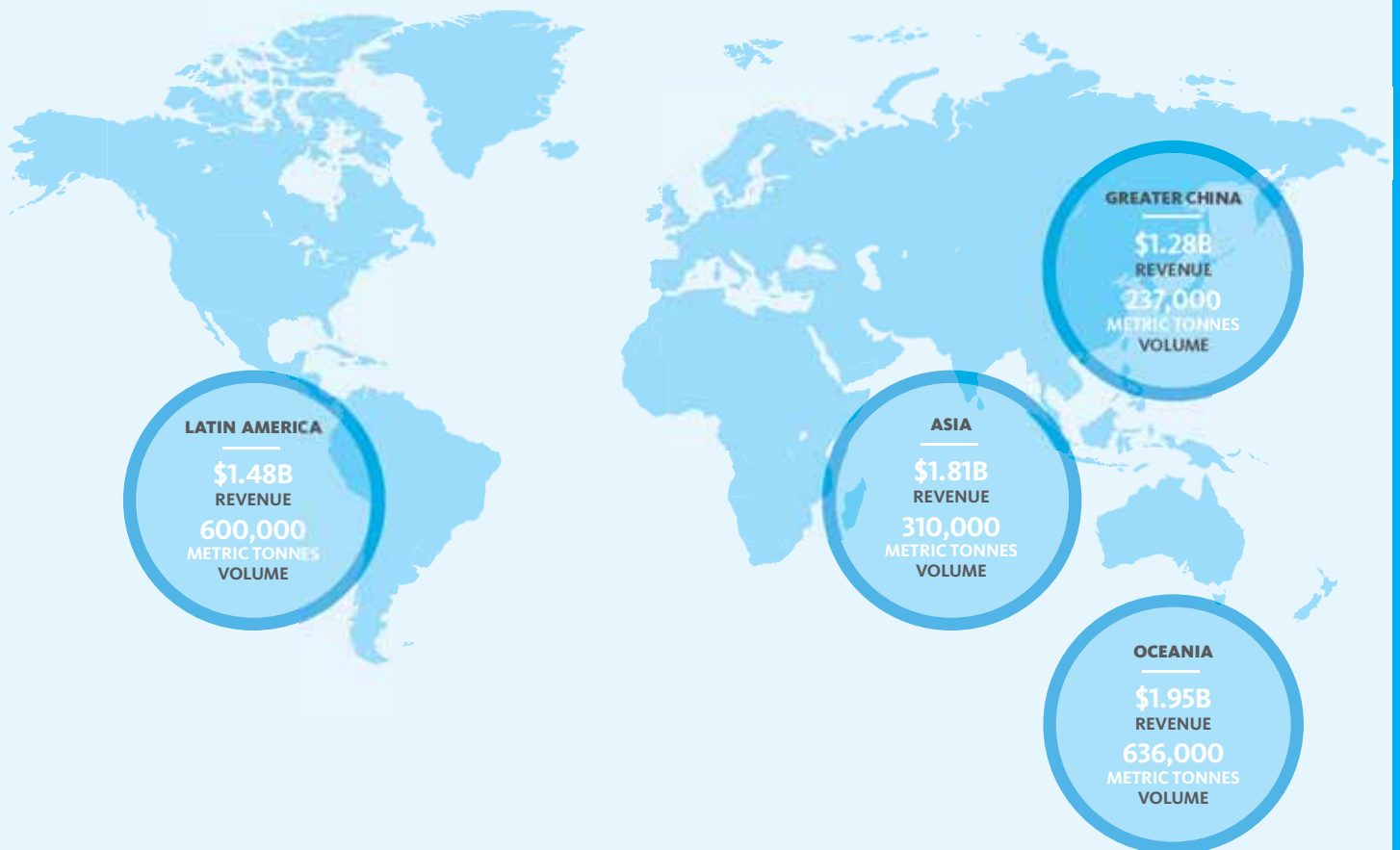
Fonterra supplies foodservice products to customers in over 50 countries. Foodservice is one of the largest industries in the world and encompasses food and beverages that are consumed out of the home such as in restaurants, cafés and bakeries.

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.

Products consumed in more than 100 countries



* Excludes China Farms revenue of \$0.3 billion and 26,000 metric tonnes

*Revenues and volumes reported above include internal sales of \$2.84 billion and 684,000 metric tonnes.

Our Consumer Product Strategy

1 Advanced nutrition:

- Daily dairy nutrition with targeted nutritional fortification based on sound science
- Promoting specific health benefits based on robust evidence



2 Everyday nutrition:

- Daily serves of dairy nutrition
- Promoted in the context of healthy, balanced diets



3 Affordable nutrition:

- Formulation and fortification based on sound science to address nutritional needs
- Maintaining most of the protein content of pure dairy products
- Promoted with honest and clear product claims



4 Occasional and indulgent dairy products:

- Promoted as occasional products to be enjoyed in moderation as part of healthy, balanced diets
- Minimising use of unnecessary additives and preservatives





1

Advanced nutrition:

Anlene Heart-Plus™ in Malaysia

This year we have launched Anlene Heart-Plus in Malaysia – a new formulation to help combat nutrition-related health issues such as high cholesterol and diabetes. Anlene Heart-Plus was awarded the Healthier Choice logo by the Malaysian Ministry of Health, a trust mark highlighting the healthiest choices in product categories.



2

Everyday nutrition:

Reformulation of Anchor Uno yoghurt in New Zealand

We reformulated our range of Anchor Uno children's yoghurts in FY16, with a focus on reducing sugar content. Across the four flavours, all products experienced a minimum 40 per cent reduction in sugar compared to the original product. This is equivalent to one-and-a-half teaspoons less sugar per 100 grams. This made Anchor Uno the lowest-sugar children's yoghurt brand in New Zealand.



3

Affordable nutrition:

Anchor Fortified milk Drink in Ethiopia

Ethiopia is the second most populous country in Africa with close to 100 million people. Despite its status as the fastest-growing economy in the world, more than 40 per cent of Ethiopia's population are malnourished and lack access to affordable nutrition.

Anchor Fortified Milk Drink is a milk powder blended with other ingredients and specifically formulated to provide families with access to affordable dairy-based nutrition. In FY16, Fonterra worked with the Food and Nutrition Society of Ethiopia to ensure it provides children with the essential nutrients they may be missing from their daily diet.



4

Occasional and indulgent dairy products:

Tip Top is an iconic New Zealand ice-cream and ice block brand

Research showed that New Zealanders valued the use of natural ingredients over artificial ones. In response Tip Top replaced all artificial colours and flavours with natural alternatives, while retaining the same quality and taste.

The rollout started in 2013 and since the end of 2014, all Tip Top branded ice cream and ice blocks use only natural colours and flavours, and include an 'only natural colours and flavours' logo on packs.

Tip Top has also removed palm oil from all of its ice creams and ice blocks. This was achieved by working with suppliers to identify alternative ingredients and innovative processes to deliver the same consistent product quality demanded by customers.

Nutrition

CONTINUED



Improving the nutritional profile of our products

We are focused on continuing to improve the nutritional benefits of our products and minimising non-dairy ingredients such as added sugars and refined carbohydrates. Our dairy nutrition criteria define minimums for dairy protein, calcium, riboflavin, niacin, vitamin B12, phosphorus and potassium content. Our guideline for added sugars and refined carbohydrates is intended to help consumers achieve the World Health Organization's (WHO) recommended guidelines for limiting daily added sugar intake.

For our everyday and advanced nutrition products, we have set a target for all of our portfolio to meet these criteria by 2025, with an interim target of 75 per cent by 2020.

Reducing the addition of non-dairy ingredients

- **Limit added sugars and refined carbohydrates** to less than two per cent of total daily energy requirements per serve. Added sugars and refined carbohydrates contribute calories but offer little nutritional benefit to a food.
- **Minimise added sweeteners** (natural or artificial), aiming for no more than required for product technical performance and/or palatability when reducing added sugars content. With a focus on reducing added sugars, it is important that sweetness is managed responsibly in products that are positioned for nutrition and health.
- **Limit sodium** in products positioned for nutrition and health to less than 0.7grams per 100g. Reducing salt (sodium) intake is linked with improved blood pressure, which may help reduce the risk of cardiovascular disease. This target is in line with the WHO's recommendation on daily sodium consumption for adults of a maximum of 2g sodium per day.



- **Limit total fat content** and composition to the upper range naturally present in dairy. Minimise the use of added non-dairy fats but, when necessary, the total fat content should not exceed the natural total fat level in milk and avoid the addition of industrial of trans fats.¹

Investment in innovation

The Fonterra Research and Development Centre (FRDC) is one of the largest of its kind in the world, with around 250 scientific and technical staff. Founded in 1927 as the New Zealand Dairy Research Institute, the centre has driven many innovations in the global dairy industry, including developing the world's first spreadable butter.

The centre represents a significant investment in innovation, driving scientifically supported benefits from dairy to meet nutritional needs. An example of this innovation is our high-quality milk protein concentrates, which are used in formulations both in New Zealand and overseas to help people recovering from surgery and serious accidents. We have also demonstrated the benefits of our milk protein ingredients for supporting muscle health – a benefit that can be leveraged in applications for ageing, sports and medical nutrition.

Right now we are conducting extensive research to investigate the brain development benefits of our complex milk lipid ingredients. The research programme has won several innovation awards in the past year.

We also continue to improve our evidence behind two proprietary probiotics strains. We have demonstrated the benefits for one strain in protecting against colds and infections in young children, while the other shows promise for helping to reduce the risk of eczema, gestational diabetes and post-natal depression.

¹ Trans fats, or Trans Fatty Acids (TFA), are a form of unsaturated fatty acids. Industrial trans fatty acids are produced by processing vegetable oils.



Responsible marketing of breast-milk substitutes

We support the World Health Organization (WHO) recommendation that breastfeeding should be exclusive for the first six months of an infant's life, and that infants receive safe and appropriate complementary foods with continued breastfeeding up to two years of age and beyond. However, we also believe that if mothers are unable to breastfeed, for medical or other reasons, then they should have access to a safe and nutritious alternative.

The WHO recognises that infant formula has a legitimate role to play in such circumstances. It is the only recognised alternative which can allow mothers to provide vital nutrition that supports the rapid mental and physical development that occurs during their children's early years.

The WHO Code for the Marketing of Breast Milk Substitutes (WHO Code) aims to contribute to the provision of safe and adequate nutrition for infants by protecting and promoting breastfeeding, ensuring the proper use of breast-milk substitutes if necessary. Fonterra supports the aim and intent of the WHO Code and also complies with any relevant country industry codes and legislation in all countries where our products targeting infants and young children are sold.

Compliance with regulation

In the past year Fonterra incurred a small number of product or nutrition-related fines or sanctions. A fine of RMB 100,000 (\$19,800) was imposed by Chinese authorities in relation to marketing materials on our Anmum™ website. We did not consider this to be a serious breach, but rather a technical error which has now been corrected. Fonterra has incurred minor nutrition-related fines in Sri Lanka for technical breaches of the food labelling regulations, in each case not exceeding LKR 10,000 (NZ\$95). During FY17 we have also worked with the New Zealand Ministry for Primary Industries to correct a regulatory issue with our Anchor Uno yoghurt packaging.



Genetically Modified Organisms

We strongly support science and innovation. We are not anti-genetic modification (GM) and see genuine value in maintaining optionality in the use of technology, and the possibilities offered by new and emerging life science technologies such as gene editing. Such advances could 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 GM status, as supported by the current New Zealand regulatory framework. New Zealand is known for its pasture-based farming practices and regulatory control of Genetically Modified Organisms (GMOs). To date, no genetically modified plants or animals (including cows) have been released in New Zealand, and the use of recombinant growth hormones on dairy cows is prohibited in New Zealand. Our products do not contain GMOs and we have not released or commercialised any GMOs.

During FY17 we have achieved Non-GMO Project Standard verification for a range of New Zealand-sourced dairy ingredients, sold by Fonterra's global dairy ingredients brand, NZMP. These ingredients are available to North American food and beverage manufacturers to address consumer demand for information about where their food comes from, and food without the use of genetically modified ingredients.

Nutrition

CONTINUED



IMPROVING DIET

17%

A 17% increase in students meeting the dairy consumption nutrition guidelines, up to 84% of students.



Supporting healthy children in New Zealand

In the past year Fonterra committed our support for the newly launched Healthy Kids Industry Pledge. This is an industry-wide initiative, co-ordinated by the New Zealand Ministry of Health, to identify and contribute solutions that will reduce rates of obesity among children in New Zealand:

→ www.fonterra.com/healthykidsindustrypledge

We are rolling out the Health Star Rating on our everyday products in New Zealand. We will be adding the rating to products whenever possible as we refresh our packaging, to provide useful information to support healthy choices. At the end of FY17 the rating was on almost half of our applicable products. By the end of the 2018 calendar year information on the Health Star Rating will be on our websites for all New Zealand everyday products.



"Children embrace it, they love it. It helps us, as educators, deliver a better quality understanding of what nutrition and health is, and what it looks like"

– Sonya Hockley,
Principal at Auckland
Point School, Nelson,
New Zealand.

Fonterra Milk for Schools

Fonterra Milk for Schools is a significant investment to help New Zealand children reach their potential. Working in partnership with schools, the programme offers a daily 200 ml serving of lite (reduced fat) milk to every primary-aged (5 to 11-year-old) child in the country. More than 140,000 children enjoy a drink of milk each day. This initiative is funded by Fonterra's farmers and is open to all New Zealand schools with primary-aged students.

The programme was introduced in the context of declining milk consumption among New Zealand children, with fewer consuming the daily serves of dairy recommended by national dietary guidelines. To evaluate the impact of the programme, we worked with the University of Auckland, which conducted a study of schools participating in the programme. The study, commenced in 2014, showed that 72 per cent of children were consuming the recommended minimum of two daily serves of dairy at the start of the scheme. Two years later the results showed a significant impact, with a 17 per cent change in students meeting the dairy consumption nutrition guidelines, up to 84 per cent of students.

Massey University has also studied the impact of the programme on children's bone health. The study, published in 2017, compared children at schools participating in the programme with children at schools that have opted to not participate. The study found that participating children grew (height and weight) at the same rate as the control group, but that they had significantly improved bone health. This demonstrated the value of the programme and the importance of milk and dairy for growth and development.



CASE STUDY

KickStart Breakfast programme

The KickStart Breakfast programme is a partnership between Fonterra, Sanitarium and the New Zealand Government. KickStart is a national initiative providing nutritious breakfasts of Weet-Bix and Anchor Milk to school breakfast clubs supporting those students who need it most.

The programme was founded in 2009 by Fonterra and Sanitarium. Research had shown that 20 per cent of New Zealand children did not regularly eat or drink at home before leaving for school, and that 55,000 children were frequently missing breakfast at home each week. The New Zealand Government joined as a supporter in 2013, enabling the programme to be extended from two days to five and it was opened up to all school deciles nationwide.

Around 125,000 breakfasts are now served each school week in over 900 school KickStart Breakfast clubs.

The programme is supported by school communities, who provide bowls, spoons, a central location, food storage facilities and volunteers to run the breakfast club. 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.



"It's unbelievable the difference it makes in the behaviour and concentration of the students. By morning tea they lose focus if they have not had a good breakfast."

– Ohura Valley Primary



Food Safety and Quality

Working together to look after our customers and consumers

At Fonterra, food safety and quality is everyone's responsibility, from our farms all the way to our customers and consumers around the world. Our Food Safety and Quality System ensures that, wherever we are located 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:

1. Our Food Safety Policy
2. Our Business Unit Requirements
3. Our Partner Requirements
4. Our Food Safety and Quality Behaviours

Established in 2014, the Group Food Safety, Quality and Regulatory (FSQR) organisation and operating model, including the Food Safety and Quality Council, is now embedded across Fonterra. In 2013 Fonterra initiated a precautionary global recall of three batches of product due to a potential food safety risk. Subsequently it was confirmed that consumers were never in danger. Following this recall, independent evaluations recommended a number of improvements to our systems and processes, which we have put in place. These improvements have been supported by a renewed focus on our food safety and quality culture, which is at the heart of our purpose to be the world's most trusted source of dairy nutrition.

Thinking and living food safety and quality

To ensure we deliver on our promise, we have been focusing on strengthening our food safety and quality behaviours and decisions.

Independent research in FY17 showed the success of these efforts, with our culture moving up two levels on a four-level maturity model. Importantly, it also demonstrated that Fonterra's employees better understand their individual responsibilities as part of a food company, and are empowered, encouraged and enabled to make interventions to protect food safety and quality.

New and innovative thinking around food safety and quality has included turning procedural training activities into an interactive board game, customised to build engagement with its audience. The game has positively impacted food safety behaviours, and it won the New Zealand Association of Training and Documentation Learning Innovation of the Year 2016.

Achieving benchmark standards

Our Food Safety and Quality System is subject to regular scrutiny from third-party audits by regulators, key account customers and certification bodies. We are working towards a target of having all our global manufacturing facilities independently certified to the benchmark quality standards¹ by 2019. At the end of FY17, 81 per cent of all global sites had achieved this level. In addition, our own farming operations in China also achieved this benchmark this year, demonstrating the robust Food Safety Management Systems in place.

¹ A standard recognised by the Global Food Safety Initiative, currently FSSC 22000, BRC or SQF



Achieving benchmark standards

Our target is for all our global manufacturing facilities to be independently certified to the benchmark quality standards by 2019. At the end of FY17, 81% of all global sites had achieved this level.

81%

Food Safety and Quality

CONTINUED



Helping to set global standards

Global food standards help facilitate global dairy trade, reducing the risk of trade disputes and safeguarding the integrity of dairy products for the benefit of all stakeholders. Through our active participation in organisations such as the International Dairy Federation (IDF) and International Organization for Standardization (ISO), we continue to contribute to the international harmonisation of standards and guidelines and help develop international test methods for milk and milk products.

In recognition of our thought leadership and positive contributions in the area of food safety culture, we were selected by the Global Food Safety Initiative Board as one of 25 companies to form the Food Safety Culture Technical Working Group, charged with developing audit tools for food safety culture.

Product traceability

We continue to deliver on our food traceability strategy, improving our capability to track all batches of product and the ingredients that went into them – from raw milk right through to the consumer. Our new external traceability service enables consumers to check that the product they are purchasing is authentic. This initiative was launched in FY17 across our Anmum™ paediatric and maternal products in New Zealand.

Each Anmum can has a unique QR code. Consumers can use their mobile phone to scan this QR code which immediately connects the consumer to information that verifies the authenticity of the product and provides additional details about it. Consumers can also scan the can at any stage after they have bought it and get up-to-date status information about their product. The QR codes are part of a programme that will allow fully electronic traceability of all Fonterra products, from the raw milk source right through to retailers who sell the product to consumers.

Customer complaints handling

Over the past three years we have seen a significant increase in the level of customer satisfaction for the way complaints are handled. Getting it right first time remains our focus but, when something is not quite right, we know our customers value a timely and professional resolution. To assess our performance, we use an annual satisfaction survey with our business-to-business customers.

In FY17 our customers' perceptions of our technical knowledge and support improved from 8.2 to 8.4 on a 10-point scale. Our customer service team's overall performance remains at a 'best in class' level, also up from 8.2 to 8.4.

During the year, there were no consumer recalls of product for safety reasons. There was a voluntary withdrawal of product following a reported taste issue impacting fresh milk. This posed no risk to product safety, and was attributed to a feed-related issue on a small group of farms, near our Palmerston North factory in New Zealand.

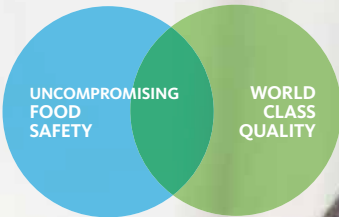
Performance targets

Indicator	Target	Performance	Commentary
Number of manufacturing sites certified by an independent third party to leading food safety management system (e.g. FSSC22000)	100% by 2019	81%	On track to achieve
Total electronic traceability from finished product back to milk supply	All Fonterra products by end 2020	62%	On track to achieve

Trust in source

Delivering what matters most to our customers and consumers.

Demonstrated through every aspect of our grass-to-glass supply chain. Keeping our promises and showing we stand for:



Packaging

Our packaging

Packaging is a vital element of delivering safe and quality nutrition to our customers and consumers. The primary job of our packaging is to protect the nutritional value of the natural and perishable product contained within. It must also be practical and appealing for the customer or consumer and provide key information to them.

When we are developing new packaging design, a priority for us is resource efficiency. We seek to reduce the amount of materials used to an optimal level. This is a delicate balance. Decreasing the raw materials used has the potential to increase the efficiency of shipping our products around the world and usually saves costs. However, we need to also make sure that packaging is robust enough to avoid any damage to our products which would result in wasting food.

The sustainability of our source materials is another consideration. We seek to use renewably sourced input materials such as fibre from sustainable forests. As a result of food safety impacts, we have found there are limited opportunities to use recycled materials in our product packaging but it is an area we continue to consider carefully.

We also consider the full life cycle of our packaging, to promote packaging that can be recycled or reused after the product has been consumed.



Fonterra Milk for Schools pack

Our Fonterra Milk for Schools milk uses a 200ml Tetra Pak package, manufactured from sources certified by the Forestry Stewardship Council.

The programme provides all schools with recycling bins, liners and training material. Competitions like the fastest folder have helped make this fun for the children and support learning on recycling and the environment.

The schools recycle all used packaging, which we collect with each new milk delivery. As the packaging is currently not recyclable in New Zealand we ship it overseas where it is recycled into products such as school books and roofing tiles.

The recycling programme has proved successful, achieving official product stewardship accreditation from the New Zealand Ministry for the Environment. We are currently working with partners to explore options that will enable the recycling of these packages in New Zealand.



CASE STUDY

25kg Milk Powder Bag

The 25kg bag of milk powder is the cornerstone of our commodity export business. It enables us to overcome the challenges of New Zealand's geographic isolation to export our products efficiently to provide high-quality, safe and nutritious dairy ingredients used in consumer products around the world.

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, reducing waste and making it very efficient for export.

As a result, across our supply chain less than one per cent of our greenhouse gas emissions are from the transportation of our products. Combined with the emissions efficiency of our pasture-fed milk production, this means we can deliver finished products to overseas consumers with lower carbon footprints than locally sourced alternatives. When they reach their destination, our milk powders are used by our customers to create high-quality products for their consumers.

This can include blending or rehydrating the ingredients for finished goods, or repackaging into consumer milk-powder products where consumers can rehydrate the products themselves.

The 25kg milk powder bag is the most used packaging in our supply chain. To protect the contents, the bags have a plastic layer sandwiched between multiple layers of paper sourced from sustainably-managed New Zealand forests.

Originally wooden boxes were used for this purpose. In 1986 the standard comprised four layers of paper with total paper weight 367 grams per square metre. Since 2004 we have been using two layers totalling 240g/m².

At our customers' facilities, the paper outer is generally removed for hygiene purposes before transferring the plastic inner with the product into the food production area. This allows both the paper and the plastic to be recycled.



Sustainable Foundations

To be a sustainable co-operative our value chain must be underpinned by responsible business practices. This extends across our sphere of influence over our suppliers, employees and our customers, and to the impacts and investments we make within our communities.

Responsible business practices also create a strong and stable platform for long-term value creation. Our organisation is supported by a diverse, inclusive and engaged workforce, through strong relationships with our stakeholders, and via robust processes for identifying and responding to our sustainability risks and opportunities.



\$20M

Living Water

10-year partnership with the New Zealand Department of Conservation.

See page 35





5.2

TRIFR¹ health and safety rate, improved 19% on the previous year.

See page **81**

0.96

The ratio of female/male base salaries in New Zealand is 0.96. This is our largest employment market.

See page **86**



24.6M

Serves of in-school milk to New Zealand children through the Fonterra Milk for Schools and KickStart Breakfast programmes.

See page **92**

3.85

Highest staff engagement since 2010.

See page **78**

1.09

Ratio of female/male base salaries across five largest operating locations.

See page **86**

\$750k

Distributed to 432 community programmes through the Fonterra Grass Roots Fund.

See page **92**



¹ Total Recordable Injury Frequency Rate (TRIFR) per million hours worked

Employee Management

How we manage our global workforce

We have a significant responsibility for and influence on the wellbeing of more than 22,000 people we employ around the world. Beyond the protection of employees' rights and wellbeing, a diverse, engaged and effective workforce is vital for us to build a successful and sustainable co-operative.

The majority of our people are employed in processing and distribution. They are supported by a considerable number of salaried employees in corporate roles, such as in sales, marketing, finance and human resources.

The scope of our reporting includes people directly employed by Fonterra or Fonterra-controlled joint ventures. This section therefore covers all employees working in Fonterra's owned and controlled sites and offices.

Our management approach

Fonterra has a set of global policies which govern our management of people. In many geographies these are supported by local standards, which provide more-detailed requirements on how to implement policy in line with local regulations and norms. Human Resources staff are embedded into business units and geographies. These employees are supported by central group functions, reporting to the Managing Director, People and Culture.



Employee engagement

Employee engagement is a measure of Fonterra's performance as an organisation and as an employer. An engaged workforce is central to our success and effectiveness.

We measure our engagement performance through Fonterra's employee 'MySay' survey. Our latest survey results were published in May 2017, based on a survey conducted in March 2017. Almost 17,000 Fonterra employees participated in this research, a 77 per cent participation rate.

The results showed strong improvements over the past year in employee engagement, with our engagement score of 3.85 the highest recorded since we began surveying employees in 2010, and up from 3.65 in the 2016 survey. These improvements have been achieved through a focus on team-level action plans to address issues raised.

We also measure our performance using the McKinsey organisational health improvement (OHI) system. Last year our OHI score showed a significant improvement of 11 points, to 66. OHI is an organisation measure that focuses on how effective the organisation is and what the underlying management practices are that drive this.

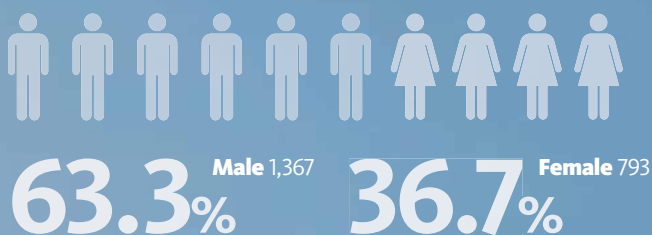


3.85

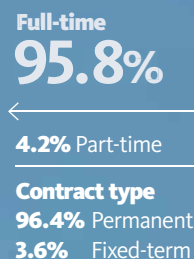
STAFF ENGAGEMENT THROUGH MYSAY SURVEY

Almost 17,000 Fonterra employees participated in our latest survey, which yielded 3.85, the highest engagement score ever recorded.

NEW HIRES



EMPLOYMENT TYPE BY GENDER



TOTAL GLOBAL FULL-TIME EQUIVALENT EMPLOYEES FY17



22,269

FY15 22,761

FY16 22,074

BY REGION

New Zealand
12,039

Australia
1,313

Asia MEA (inc.China)
4,394

Latin America
4,325

Rest of World
198

TURNOVER

Voluntary
(as a percentage of total workforce)

8.9%

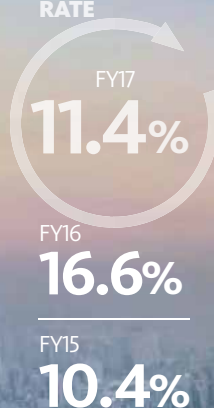
Involuntary

1.6%

Other
(contract end, legal retirement, or deceased)

1.0%

TOTAL TURNOVER RATE



DIVERSITY OF AGE*

All employees

30-50 56%

>50 24%

<30 16%

UNKNOWN 5%

Fonterra Management Team (FMT)

30-50 71%

>50 29%

<30 0%

UNKNOWN 0%

*Our employee data is drawn from our SAP-based employee data systems, and covers our global workforce. The gender, age and turnover data excludes the employees in our Latin America joint venture operations, as further data integration is required for our joint ventures in Latin America. Numbers are reported for all fixed-term and permanent employees on an FTE basis with the exception of turnover and new hires reporting which excludes fixed-term employees and is based on headcount.

Health, Safety and Wellbeing

Right across the globe we want all Fonterra people to be healthy, to live a balanced life and to go home from work safely every day.

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

Fonterra extends a duty of care seeking to ensure no harm comes to anyone who is affected by our operations, and with continuous improvement an integral part of how we operate. The key areas of focus and goals for Fonterra's health, safety and wellbeing programme are:

- **People** – Create the culture where our people believe and demonstrate that zero harm is possible. Fonterra will support our people and develop an environment where they are healthy, well and safe.
- **Process** – Develop core policies, processes and procedures and work to eliminate harm through proactive management of events and exposure to risk.
- **Plant and Equipment** – Ensure a healthy and safe work environment, through procurement, design, management, maintenance and process safety, and a focus on critical risk.

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



Our health, safety and wellbeing performance

Our Safe Home System standards are aligned as a minimum with AS/NZS 4801:2001 (Occupational Health and Safety Management Systems). This year, in addition to 69 self-assessment audits, we completed comprehensive Safe Home Assurance Audits on 15 of our sites.

We measure our global health and safety performance by tracking our number of fatalities, serious harm injuries, and the total injury frequency rate for our employees and sites per million hours worked.

Performance improved across all measures over the past year. There were no fatalities on any of our sites and serious harm injuries¹ have continued to decrease to 17, our lowest-ever recorded level.

Our global target is to reduce our Total Recordable Injury Frequency Rate (TRIFR) to below 5 per million hours worked. This year we achieved a TRIFR of 5.2, a 19 per cent reduction on FY16 and a total reduction of more than 70 per cent since 2010. While we are pleased with this progress, we continue to seek further improvement by analysing events and sharing corrective actions because last year 241 of our employees still required medical treatment, restricted work duties or time away from work as a result of an injury.



70%

REDUCTION IN TRIFR SINCE 2010

We have achieved a total reduction in TRIFR of more than 70 per cent since 2010.

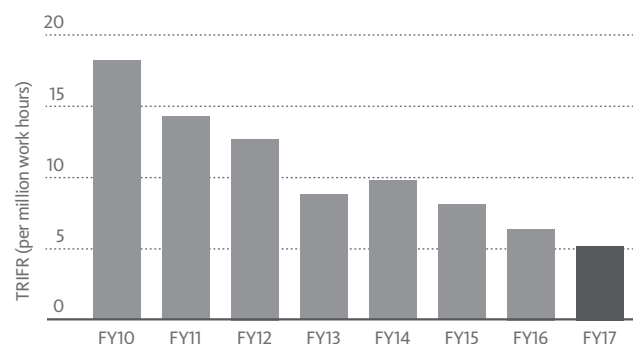
¹ Serious harm injuries are injuries that cause temporary or permanent loss of body function and include those to/involving both employees and contractors.



This year we launched an engaging programme via gamification to help increase health, safety and wellbeing capability worldwide. We also partnered with WellSouth New Zealand to deliver GoodYarn workshops for our tanker drivers, regional managers and employees at manufacturing sites. The GoodYarn programme helps participants to recognise and respond openly to mental wellbeing in the community.

For the second year, through our global wellbeing challenge, 'Eat, Move, Sleep', we encouraged staff to eat five servings of fruit and vegetables, move for more than 30 minutes a day and sleep for at least seven hours daily. Staff participation in the challenge remained stable with almost 20 per cent of all global staff taking part. Staff were surveyed after the challenge and 85 per cent felt it had had a positive impact on their health and 90 per cent felt they would keep going.

Total Recordable Injury Frequency Rate



Fonterra's targets					
Indicator	Target	Performance			Commentary
		FY15	FY16	FY17	
Work-related fatalities (attributable to Fonterra-staff, contractors, on-site public)	Zero harm	2	1	0	No fatalities in FY17
Number of serious harm injuries	Zero harm	38	21	17	Serious harm injuries halved over past two years
Total recordable injury frequency rate (TRIFR) per million work hours	<5	8.1	6.4	5.2	Injury frequency rate continues to track downwards
Percentage of staff participation in at least one health and wellness programme per year	Measure and report only	N/A	19%	18%	

Learning and Development

Employee learning and development

A skilled and engaged workforce is essential to building a sustainable co-operative. Fonterra's Group Learning Standard outlines our approach to creating an organisational learning culture that supports the delivery of our ambition.

As part of the annual review process, all our salaried employees are expected to agree individual development plans with their managers. In other cases, managers and our Human Resources team are responsible for establishing minimum development standards alongside working on individual development opportunities.

Fonterra provides potential for development in a number of ways, including:

- Operational and compliance training for employees
- Technical advancement training, to develop staff in particular fields
- Early career development—such as the Graduate Programme
- Leadership development for employees.

Some examples of these programmes are provided on the opposite page.



Employee Assistance Programme

A global Employee Assistance Programme (EAP) is available to all staff. This is a free and confidential service provided to employees experiencing personal or work-related difficulties. It offers professional support to address issues such as anxiety, grief and work-related stress. Targeted support is also available to assist employees dealing with workplace change, restructuring and redundancy.

E-LEARNING MODULES



2,000

2,000 staff around the world completed 12 essential e-learning modules in their preferred language, choosing from English, Spanish, Portuguese and simplified Chinese.



Operational training: Health and safety

Continuous improvement in health and safety requires engaging training for our operational staff. This year we launched a learning tool where employees from the shop floor learn and coach each other on key health and safety messages by playing a board game. The game is tailored with different questions for different business units to increase relevancy and engagement, but also to ensure our teams are learning more about Fonterra globally at the same time.



Technical advancement: DAIRYCRAFT

An example of industry-specific training is DAIRYCRAFT, which is part of our tiered development programme for operators in our manufacturing sites, offering them pathways to recognised¹ qualifications. DAIRYCRAFT is our entry-level programme currently available to employees who produce and pack products in our New Zealand sites that make milk powder, cream and cheese. It is delivered through a partnership with the Primary Industry Training Organisation. To date, 146 employees have completed the programme to earn a New Zealand Certificate in Dairy Processing, and another 259 are in progress.



Early career development: Graduate programme

Sourcing the best graduate talent to accelerate their development is the goal of our graduate and early career programmes. More than 800 people have participated in our graduate programmes since their inception, and more than 40 per cent are still with the Co-operative, including Kelvin Wickham, a member of the Fonterra Management Team. These programmes have been operating in New Zealand for more than 40 years and were extended to China in 2012. Our early career programmes facilitate cross-functional, position and regional experiences with ongoing development, coaching and mentoring. In addition we run a New Zealand internship programme which brings young talent into targeted functions.



E-learning platform

This year we have also launched our new MY FONTERRA learning platform to give us increased ability to plan and record learning and development activities. As part of our annual policy compliance assessment, this has enabled almost 2,000 staff around the world to complete 12 essential e-learning modules in their preferred language, choosing from English, Spanish, Portuguese and simplified Chinese.

¹ Recognised by New Zealand Qualifications Agency at level 3 and/or 4.

Diversity and Inclusion

Our commitments and beliefs

We believe having diverse and inclusive teams is important to both our long-term success and to our communities. Embracing different perspectives can assist organisations to be more innovative, make better decisions and improve performance. Respecting, embracing and harnessing the unique skills and diverse perspectives of our people is consistent with what we stand for to all our stakeholders, and reflects a core Fonterra value to 'Do What's Right'.

We are stepping up our focus in this area and have created a new Diversity and Inclusion Policy, which sets out what people who work for and with Fonterra can expect around diversity and inclusion.

For more information, see:

➔ www.fonterra.com/diversityandinclusionpolicy

This builds upon our existing Code of Business Conduct, which means we will not tolerate any discrimination of people due to age, race, ethnicity, religious affiliation, gender, or sexual orientation, whether they are an employee, farmer shareholder, stakeholder, supplier or customer. In addition, Fonterra's existing People Management Policy requires that all policies, standards and guidelines support the intent of diversity and inclusion.

Driving change

While we have made progress, we recognise there is more we can do to embed diversity and inclusion into our culture. A focus for the year ahead is to embed diversity and inclusion into our existing people practices, such as recruitment, talent development and promoting high-performing teams. This includes highlighting the role of diversity to drive innovation. With diverse groups, we can think differently about how to do things better, smarter, faster.



Research shows that companies committed to greater gender balance, cultural representation, inclusive Lesbian, Gay, Bisexual, Transgender and Intersex (LGBTI) and disability policies achieve better business and financial results.

This change is being led from the top, with our CEO Theo Spierings representing Fonterra on the New Zealand Champions for Change initiative. This initiative aims to achieve a truly diverse leadership in New Zealand by 2020 and will connect and collaborate with other organisations enabling ethnic and cultural diversity.

Working with others

In New Zealand, we also partner with several organisations to enhance diversity and inclusion.

For more than 10 years we have supported First Foundation, offering scholarships and work experience to give young people a 'hand up' – an opportunity to achieve, irrespective of socio-economic status.

Through the Whakaterehia Māori Leadership Programme, a partnership with ASB, we are developing Māori leaders for the future. We also are in a partnership with Ngāti Whātua Ōrākei to focus on leadership development which looks at what the Māori culture means for the Co-operative.

In addition, we have been a major partner with Global Women for eight years, with more than 35 of our female leaders taking part in their development programmes.

In Saudi Arabia, we have increased the number of women in our manufacturing team from zero in 2015 to now making up eight per cent of the workplace. This has required working with the local government and developing our site facilities to meet the country's cultural requirements.



disrupt

Fonterra CEO
Theo Spierings
at the Disrupt event.

CASE STUDY The Disrupt Programme

'Disrupt' is a programme to harness the diversity, ingenuity and talent of our people to create and implement innovative business models that meet the needs of future customers and consumers. It provides a platform for employees from across our markets to put forward potential disruptive business models.

Disrupt gives all employees the opportunity to submit ideas to be selected in our global 'hackathon', bringing people together in an international location providing exposure to new and diverse consumer groups. The first hackathon was hosted in Shanghai in 2016, and moved to Kuala Lumpur for the 2017 event. We received submissions from 16 different countries across the Americas, Middle East, China, North Asia, Sri Lanka, South East Asia and Oceania, and participants from 21 to 60 years.

One of Disrupt's benefits is allowing employees the opportunity to work collaboratively with colleagues to innovate and accelerate growth within Fonterra. It has helped our people with new ways of thinking and on working cross-functionally across new markets.

Of this year's 79 submissions, six successful initiatives have been incubated across five markets.

As well as encouraging diversity of thinking in our business, Disrupt also enables commercial growth. The two ventures from the 2016 event are already generating positive returns.



"It's a wonderful experience for you to get out of your day-to-day routine and come up with out-of-the-box ideas to create more value for our farmers. Learning about the lean start-up mind-set and the build-measure-learn way of working has been very helpful."

— Kefei Bu
Project lead for Anchor Online



Diversity and Inclusion

CONTINUED



Gender pay

In developing our Diversity and Inclusion Strategy, and publishing our first stand-alone sustainability report, we are measuring and reporting on our gender pay ratio for the first time. We have reported this broken down by significant locations of operation (countries where five per cent or more of our employees are based) and by employee category.

Across our global workforce our focus is on ensuring diversity and inclusion at all employee levels, with equal opportunities for all. Our approach is that no unexplainable pay gap exists across male and female employees for the same job role. Pay gaps within job roles may be explained by factors such as tenure, qualification levels and experience.

We internally monitor population for any pay gaps that may emerge. 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 our other employees Fonterra uses a range of independent external pay market data. This data is used to benchmark our competitive pay position relative to the market, 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.

For our senior leaders and executive employees, we again use a range of independent and external third-party pay market data. We disclose our pay data externally to stakeholders as required by the various authorities in the jurisdictions in which we operate. In New Zealand, we disclose as required by the NZX reporting requirements and other agencies.

Across our five largest operating locations the ratio of the female to male base salary is 1.09 – meaning that on average female base salaries are higher. Not shown in the table but, breaking roles down by employment category shows that 67 per cent of the men

working in our five largest operating locations work as operators, technicians, drivers and farm workers – roles which typically have lower base salaries than the other categories. Only 39 per cent of women work in these roles, with a greater proportion of women working in more senior roles.

In the breakdown of pay ratio by country, the pay ratio is most skewed towards women in the countries with the highest proportion of men in operators, technicians, drivers and farm worker roles, and the highest proportion of women in more senior roles.

In New Zealand, where the largest number of employees are based, the ratio of the female to male base salary is 0.96 – meaning that, on average, female base salaries are lower. This compares well with the national average of 0.88 per cent, but still leaves room for improvement. Across all of our global businesses our focus is on ensuring equal opportunities and working to increase the proportion of women in senior leadership roles.

Hiring from local communities

An understanding of and connection with local markets is vital to our success around the world. By hiring and developing local talent, we contribute towards the shared success of our Co-operative and to the countries where we operate.

In all of our significant locations of operation, 'locals' comprise a minimum of two-thirds of the senior management team—with the most senior employee and the senior managers reporting to them. 'Locals' are defined as either citizens, by birth or acquired, or permanent residents of the country.



1.09

PAY RATIO

Ratio of female/male base salaries across our five largest operating locations.

DIVERSITY OF GOVERNANCE BODIES

FY17: Gender composition of board



75% Male

25% Female

FY16: Two female Directors of 13 Directors (15.4%)

FY17: Officers directly reporting to CEO



75% Male

25% Female

FY16: Three female officers of eight officers (37.5%)

GENDER PAY		Pay Ratio Female:Male	1.09	Male	72.9%
		% of total staff	100%	Female	27.1%
By employee category				Gender %	
Senior leaders	Pay Ratio Female:Male	0.90 ¹	Male	69.5%	
	% of total staff	1.6%	Female	30.5%	
Managers	Pay Ratio Female:Male	0.96	Male	63.4%	
	% of total staff	11.6%	Female	36.6%	
Supervisory & Professionals	Pay Ratio Female:Male	1.23 ²	Male	56.7%	
	% of total staff	27.5%	Female	43.3%	
Operators, Techs, Drivers, Farm Workers	Pay Ratio Female:Male	0.90	Male	82.3%	
	% of total staff	59.3%	Female	17.7%	
By significant locations of operation				Gender %	
New Zealand	Pay Ratio Female:Male	0.96	Male	69.7%	
	% of total staff	66.0%	Female	30.3%	
Australia	Pay Ratio Female:Male	0.90	Male	73.2%	
	% of total staff	6.3%	Female	26.8%	
Greater China	Pay Ratio Female:Male	1.89	Male	70.1%	
	% of total staff	9.6%	Female	29.9%	
Brazil	Pay Ratio Female:Male	1.41	Male	85.1%	
	% of total staff	8.0%	Female	14.9%	
Chile	Pay Ratio Female:Male	1.29	Male	86.6%	
	% of total staff	10.1%	Female	13.4%	

HIRING FROM LOCAL COMMUNITIES

	New Zealand	Chile	China	Brazil	Australia
Percentage of senior managers citizens or permanent residents	88%	100%	67%	100%	75%

¹ Ratio of 0.90 is primarily due to lower proportion of women in senior roles

² Ratio of 1.23 is primarily due to higher proportion of women in supervisory positions

Labour Rights

Our commitments and beliefs

Our commitment to labour issues around the world is formalised through an agreement between Fonterra, the International Union of Food (IUF) and the New Zealand Dairy Workers Union.

The IUF is an international federation of trade unions representing workers in industries including agriculture and plantations, and the preparation and manufacture of food and beverages.

The agreement, signed shortly after Fonterra's creation in 2002, recognises our commitment to the fundamental Conventions of the International Labour Organization (ILO) for all Fonterra staff.

Union agreements and relationships are in place in many markets; for example: in New Zealand, with major unions including the Dairy Workers' Union (DWU) and E tū, in Australia with the National Union of Workers, and in Malaysia with the Malaysian Food Workers Union. For New Zealand, our largest employment market, 61 per cent of all Fonterra employees are covered by collective bargaining agreements on a Full-Time-Equivalent (FTE) basis.



As part of our global agreement, we hold an annual meeting with the IUF to review our compliance with the agreement and discuss any potential issues. In the past year we also surveyed our Employment Relations Managers around the world on labour rights issues. Most of our markets reported no time lost due to industrial action during FY17. However, Australia and Venezuela reported minor (one per cent or less) incidences of industrial action. Internationally, notice periods for operational change reflect local regulations, collective agreements and employment practices.

We investigated two reported incidents of discrimination over the past year. These incidents were reported through formal internal channels, or confidentially via The Way We Work Hotline, see [page 91](#). Both issues were investigated. One matter is no longer subject to action; the other is still under investigation.



UNION AGREEMENTS

61%

For New Zealand, 61 per cent of all Fonterra employees are covered by collective bargaining agreements on a Full-Time-Equivalent (FTE) basis.

Human Rights

Our management of human rights

Historically, our approach to human rights has prioritised the rights and protections of our employees around the world. In 2014 we adopted ISO26000. This guidance standard for a socially responsible organisation has widened our focus, providing an emphasis on due diligence to consider our broader impacts on human rights.

We are applying the United Nations Guiding Principles on Business and Human Rights. These require that businesses should avoid causing or contributing to adverse human rights impacts through their business activities, and address such impacts should they occur. Organisations should seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.



DUE DILIGENCE ON HUMAN RIGHTS

244

244 people across four countries completed the due diligence survey in 2017.



Human rights due diligence

In the past year we completed a targeted due diligence process on human rights. This process was designed using a best-practice approach and has built our understanding of our potential impacts so that we can now implement policies or actions to address them. We intend to include a more detailed disclosure on human rights in our next sustainability report.

Our due diligence process focused on those countries where we have a large operational footprint. Key employees in New Zealand, Australia, Brazil and Chile were surveyed and asked questions relating to how our own operations and our suppliers could affect people from a human rights risk perspective. The survey was completed by 244 people across the four countries. These four markets represent approximately three-quarters of our employees, and over 95 per cent of raw milk collection.

In 2018 we will extend this due diligence process to those countries where we have smaller operational footprints and where the local protection of human rights may not be as strong.

Addressing family violence in New Zealand

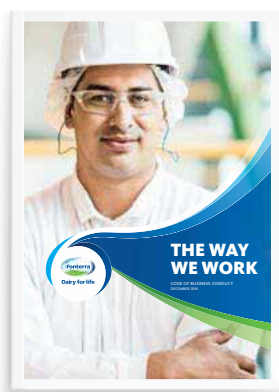
New Zealand has the highest reported rate of family violence in the developed world. This year we have been investigating ways in which we may be able to play our part and provide support services for our staff. In FY18, we intend to launch a support initiative for our New Zealand employees.

Ethics and Compliance

Our Code of Conduct

A culture of honesty and integrity is vital to Fonterra's commitment to become the world's most trusted source of dairy nutrition. The Way We Work is Fonterra's business code of conduct. It is underpinned by our set of Group Policies, in particular our Ethical Behaviour Group Policy which defines Fonterra's expectations in regard to conflict of interest situations, corruption, business gifts and entertainment. Together with our Board Charter, these three documents comprise Fonterra's code of ethics. All three documents are required to be reviewed and approved annually.

Fonterra does not allow corporate contributions of any kind to a candidate or political party in connection with political elections. No political contributions were made in the past year. We do not offer money or anything of material value to government officials, parties or candidates for the purposes of influencing the acts or decisions of officials.



The Way We Work

The Way We Work is Fonterra's Code of Conduct.

For more information, see:

➔ www.fonterra.com/codeofbusinessconduct



Awareness and training

The Way We Work is included in employee induction programmes, and is made available in multiple languages. An online Ethics Portal supports employees to be aware of all potential conflicts of interest and, where these exist, put in place steps to manage conflicts appropriately. A Conflict of Interest e-learning module is also available on this portal. This e-learning module explains how to 'Do What's Right' to maintain our culture of honesty and integrity.

We operate an annual process to ensure managers are familiar with requirements around ethics, compliance and corruption. This is completed through online training and evaluation, with participants required to pass an online test to ensure they have read and understood what is required by the policy.

These policies, in combination with the Board Charter, also set the expectation for Fonterra's Board of Directors. Directors are expected to keep themselves abreast of trends in the economic, political, social and legal climate. As a group, the Board holds several workshops on relevant subjects each year, and Directors are also expected to keep up to date with governance issues.

Our approach to tax

Fonterra has a clear set of principles which guide how we manage our tax obligations in New Zealand and around the world.

For more information, see: ➔ www.fonterra.com/taxprinciples

We pay our fair share of tax in all jurisdictions, and do not use tax havens to avoid our tax responsibilities. We are transparent and work with tax authorities to ensure we continue to act responsibly.

In New Zealand, co-operatives and corporates are treated differently in tax law. Rather than being taxed directly, Fonterra passes our income on to our farmer shareholders, who pay the tax at their level.



Legal compliance

Our Group Legal Policy requires all Fonterra's business units to assign clear accountabilities to ensure compliance with all laws and regulations applying to our operations. It also stipulates that business units develop and implement effective processes, including training, to ensure our employees are familiar with, and comply with, appropriate laws.

We have not identified any incidents of non-compliance with laws and regulations in the social and economic area in the past year. There were also no fines or non-financial sanctions related to anti-competitive behaviour, anti-trust, and monopoly practices during this period. We are, however, involved in an ongoing case in the New Zealand Courts relating to supply terms for a small group of farmers, where one of the claims is that Fonterra discriminated against those farmers under section 106 of the Dairy Industry Restructuring Act 2001.

Compliance related to our operating sites, including environmental non-compliance, is reported in our Sustainable Operations section on *page 57*.

Compliance related to our products and nutrition is reported in our Sustainable Consumption section on *page 67*.

The Way We Work Hotline

It is important to provide employees with a safe and confidential channel to seek advice and raise concerns related to ethical and lawful behaviour. Fonterra provides an independent service, facilitated by Deloitte, available to all our employees around the world. The Hotline is promoted through communications to employees, and is displayed on staff notice boards at operational sites.



IN THE 2017 FINANCIAL YEAR

35

35 disclosures were made globally to The Way We Work Hotline. All were fully investigated and appropriate action was taken.

Community

Investing in our communities

We understand that to be a sustainable co-operative we must be supported by strong and resilient communities. In many regions Fonterra is a significant part of the local community and economy.

Our approach is to share our expertise and invest in the health and wellbeing of our communities through programmes aligned with our organisational strengths.

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.

Greater China

In Greater China, our community care focusses on vulnerable or disadvantaged groups, both in the rural villages where we have farming operations and in some major cities.

This year 190 agriculture and food science students benefited from the Fonterra Scholarship programme. Since it was launched in 2010, nearly 900 students have received scholarships to build capability in the local food industry. This year some of the scholarship students from Shanxi Agricultural University helped us introduce a new summer holiday education programme for children near our farming hub, in Ying County. The scholarship recipients volunteered their time to provide extra tuition to around 70 children each day.

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



Latin America

An estimated 1.5 million of people benefit from Soprole's long-standing support of school sports in Latin America each year. This support encourages healthy outdoor exercise and instils important values such as hard work, perseverance and solidarity. Every year, we also grant scholarships to the best participant in each discipline, to cover tuition fees for the following year if the student graduates from high school.

In addition to supporting school sports, Soprole has backed the national Teletón since it started in 1978. Teletón is a charitable foundation committed to the rehabilitation and inclusion of physically and mentally challenged children in society. After almost 40 years, the annual Teletón event has become a flagship for national unity and collective community support for the development of these children and their families.

Food banks

Joining forces in 2007, our Australian business supports Foodbank, Australia's largest hunger relief organisation, who provide meals to charities and schools around Australia. To celebrate 10 years of partnership, the relationship will now see Fonterra become the exclusive supplier of fresh milk for Foodbank's Milk Program in Victoria.

This programme distributes fresh milk to Australian families and individuals who need access to food. In the 2016 calendar year Fonterra Australia donated fresh milk and other dairy foods equivalent to almost 350,000 meals.

We also support other similar food bank initiatives throughout the world, including five food banks in the Auckland region, such as The Salvation Army and Auckland City Mission; and also further afield with Red Alimentos in Chile.



Delivering
\$7.6M | 24.6M

million
serves of
dairy to
Kiwi kids.

New Zealand in-school nutrition
programmes: Fonterra Milk for Schools
and KickStart Breakfast.

FY16 \$7.9M | Delivering 25.3M serves of dairy to Kiwi kids.

See page 68

FONTERRA
GRASS ROOTS
FUND

In New Zealand in addition to
grants, the Fonterra Grass Roots
Fund has directly provided more
than 10,000 high-visibility vests
to schools and community groups.

\$750k

Distributed to 432 community programmes
in New Zealand, Australia and Sri Lanka.

LIVING
WATER

Fonterra
Dairy for Life
Department of
Conservation
Te Papa Ihaka
WORKING TOGETHER TO CARE
FOR FIVE KEY CATCHMENTS

Fonterra Living
Water partnership
with New Zealand
Department
of Conservation.

\$20M over
10 years

See page 35 In Sustainable Dairying section.



In Sri Lanka, funding and volunteer
time from staff has seen improved
water sanitation facilities in schools
across our dairying regions.

In Australia, we
helped three
preschools to
establish garden
beds to grow fruit
and vegetables
to learn about
healthy eating and
sustainability.



SUSTAINABLE FOUNDATIONS | 93

Māori strategy

In New Zealand, Fonterra recognises Māori as the tangata whenua – the people of the land. We value New Zealand's Māori heritage and recognise the potential of Māori business in the global economy.

We have created a strategy to address the way we work, both within the Co-operative with our Māori shareholders and with other Māori stakeholders around New Zealand. This is to build strong and meaningful relationships, and partnering with Māori in growing prosperous, healthy and sustainable communities across our nation.

To drive this strategy we have recently created a senior position of General Manager, Māori Strategy. This complements four new Business Relationship Management roles, created in 2016, to lead engagement with Māori shareholders.

Māori shareholders have over \$180 million invested in the Co-operative and produce around 30 million kg of milk solids each year. Many of these shareholdings differ from typical dairy farming businesses, as they are collectively owned and controlled through entities such as trusts, incorporations, hapū or iwi-owned entities.

We aim to create opportunities for new Māori corporations, trusts and landholders to build their dairying capability with Fonterra as a valued partner in Māori development, working in partnership to create opportunities for training, employment, enterprise and investment.



INVESTMENT IN THE CO-OPERATIVE

\$180M

Māori shareholders have over \$180 million invested in the Co-operative and produce around 30 million kg of milk solids each year.



Leveraging our New Zealand advantage

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

To meet this increasing consumer need, Fonterra launched the Trusted Goodness™ quality seal. Over the next few years, Trusted Goodness will be rolling out on Fonterra consumer brands around the world.



GRASS AND PASTURE-FED STANDARD

80%

A minimum annual average of 80 per cent grass-feeding in cows' diets.

New Zealand's natural, grass-fed advantage and non-GMO status are highly valued by our customers and consumers. To support a grass-fed claim, Fonterra has developed a Grass and Pasture-Fed Standard that will be third party verified. This standard outlines the requirements for our grass-fed dairy, with a minimum annual average of 80 per cent grass-feeding in cows' diets across the New Zealand milk pool, and a minimum 90 per cent time on pasture. These are amongst the highest rates in the world.

Non-milk Supply Chain

Our non-milk supply chain

Fonterra has significant influence through our purchasing from suppliers around the world. A sustainable co-operative needs a sustainable supply chain, and we have a responsibility to consider the social and environmental impacts of our purchasing decisions. As New Zealand's largest business, we also have considerable economic impact through our purchasing practices in our home market.

Approximately half of Fonterra's purchasing is spent on raw milk, collected directly from farmers. We manage our farmer suppliers through different systems to our other suppliers. For more information on how we work with our farmers see the Sustainable Dairying section, see *pages 24-45*.

For our non-milk supply chain the most significant categories include energy, packaging and non-milk ingredients such as fruit used in our products.

Our capital purchasing includes investments in vehicle fleet and plant equipment. In line with any large organisation, we also have supply relationships for items such as information technology, travel and professional services.



VENDOR RISK ASSESSMENT

37%

37% of responding vendors had achieved independent certification of their environmental management system.

Fonterra Supplier Sustainability Code of Practice

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

➔ www.fonterra.com/sustainabilitycop

When we first introduced our Supplier Code of Practice, it was an optional annex to our standard contracts with vendors but commonly incorporated into significant contracts managed by our procurement team. This year we have adjusted our standard contracts for New Zealand to include this in our main terms and linked to our online version of the document. This approach is now being rolled out for contract templates around the world.

Vendor risk assessment

As part of our regular assessment of vendors across a range of characteristics, this year we extended our analysis of social and environmental aspects. We identified 39 vendors across the categories of ingredients, chemicals, environmental services, packaging and transportation, where more detailed assessment and engagement is being pursued.

In addition, we surveyed our packaging and ingredients vendors for further information on sustainability topics. We received 95 responses to the survey, 38 from packaging vendors, 50 from ingredients vendors and seven from chemical vendors. The results showed that 48 per cent of responding vendors had achieved independent certification of policies and procedures for health and safety, fair labour conditions and non-discrimination. It also revealed that 37 per cent of responding vendors had achieved independent certification of their environmental management system.

Governance & Stakeholder engagement

Embedding sustainability

At Fonterra, the roots of our sustainability management system are in individual programmes which were established to tackle specific issues that had been identified. This meant that, through these programmes, we made good progress against many sustainability issues. However, this progress was not captured under one governance umbrella, and we had no process for identifying gaps in our performance or proactively recognising new or emerging topics.

In 2014 we launched a project to enhance governance of sustainability and social responsibility topics, to introduce processes for identifying new and emerging topics, and prioritising actions and assigning accountability. This project was aligned with ISO26000, an international standard for organisational social responsibility. This initiative shaped our internal accountability, materiality process, and sustainability stakeholder engagement.

Accountability for sustainability

Accountability for sustainability rests with the Fonterra Board, our CEO, and the Fonterra Management Team (FMT). Regular performance updates are provided at this governance level. Accountability for individual elements of sustainability performance cascades through the organisation and is integrated into individuals' Key Performance Indicators (KPIs) where relevant.

Sustainability requirements are integrated into Fonterra's set of group policies. All group policies are subject to regular review and each policy is owned by an individual member of the FMT.

A centralised Social Responsibility team sits within the global Corporate Affairs function, with a Social Responsibility Director reporting to the Managing Director, Corporate Affairs. The centralised Social Responsibility team is accountable for overarching sustainability governance and strategy, external reporting, and managing strategic and cross-functional sustainability topics.

Operational delivery of sustainability strategy, and accountability for performance against targets, is integrated into the organisation, with geographical business units responsible for performance in-country, and Group functions responsible for progressing performance on specific topics at the global level. Key teams include the Sustainable Dairying teams in New Zealand and Australia, the Global Operations sustainability function, and the Food Safety, Quality and Regulatory (FSQR) and Health, Safety and Wellbeing teams.



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.

Important topics raised by NGOs:

- Water and Waste and pollution (particularly New Zealand NGOs)
- Health and nutrition
- Stakeholder and community dialogue
- Human rights



We engage with our **New Zealand farmers** at farmer meetings and roadshows, and through the formal governance of our Co-operative such as voting and representation on the Shareholders' Council and Board of Directors. We also engage with farmers directly through our Farm Source team, including through Area Managers and Sustainable Dairying Advisors.

Important topics raised by our farmers:

- Employment and income creation – through sustainable financial returns for farmers
- Organisational governance – providing a sustainable Co-operative that supports its farmers



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

Important topics raised by national and regional governments:

- Employment and income creation
- Social investment and community development
- Protecting biodiversity and ecosystem services



We engage with our **communities** by being active members of the communities we live and work in, through formal site-level community engagement such as open days, and through our community investment activities such as Fonterra Milk for Schools and Fonterra Grass Roots Fund.

Important topics raised by communities:

- Water
- Employment and income creation
- Social investment and community development



We engage with **farmers around the world** through local supplier relationship officers and through our Dairy Development programme.

Important topics raised by farmers around the world:

- Employment and income creation – through sustainable returns for their milk
- Social investment and community development – building dairying capability through sharing our global expertise



We have many touchpoints with our stakeholders around the world.

These include a number of partnerships and collaborations where we work alongside our stakeholders to address sustainability issues.

The Co-operative Relations Committee of the Fonterra Board provides governance oversight of the management of Fonterra's relationships with key external stakeholders in New Zealand and all other key markets. This includes relationships with governments, NGOs and community relationships.



We engage with **consumers** through our consumer customer service teams (e.g. via 0800 number on products), through email and social media, and through consumer marketing and research.

Important topics raised by consumers and consumer groups:

- Food safety and quality
- Nutrition and health
- Responsible marketing



We engage with our **employees** through internal communication via our staff social media platform, through regular engagement surveys, through direct engagement with management, and via The Way We Work Hotline.

Important topics raised by employees:

- Employment rights and conditions
- Health and safety at work
- Learning and development



We engage with our **business-to-business customers** through dedicated account managers, performance review meetings for key accounts and by sharing sustainability performance through programmes such as EcoVadis / SEDEX and the Carbon Disclosure Project.

Important topics raised by our customers:

- Climate and energy
- Food safety and quality
- Responsible procurement

Materiality

Material topics

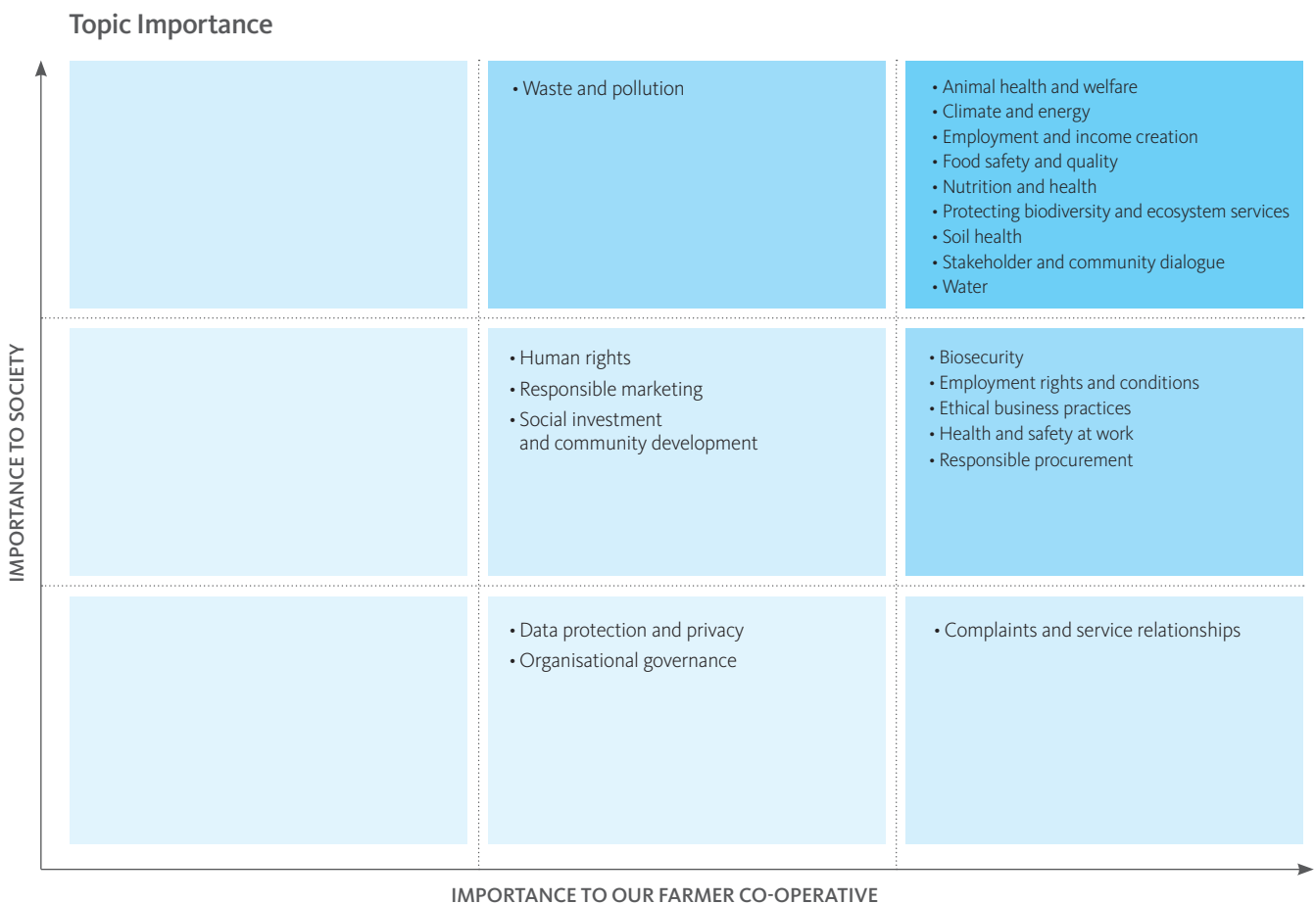
Our materiality matrix presents our most-material sustainability topics, reflecting the perspectives of our stakeholders.

To evaluate the importance of these topics to our stakeholders we have implemented a two-step process. The first step involves a desktop analysis of over 200 global stakeholders, identified and weighted using a number of criteria:

- Representation of individuals or communities impacted by Fonterra
- Organisations directly impacted by Fonterra
- Organisations with influence over Fonterra
- Organisations or individuals representing diverse perspectives on topics related to Fonterra.

The first step uses publicly available information and insights gathered through regular engagement activities to generate an initial assessment. At the second step this analysis is then reviewed through a small number of one-on-one stakeholder interviews, adjusting the topics where required, to provide the final overall result. We use this result to determine the significance of our economic, environmental and social impacts.

The importance of topics to Fonterra is determined via a combination of risk (including opportunity) rating in the Fonterra Risk Management System, and alignment with our strategic priorities. This takes into account the influence of the topics on stakeholders' assessments and decisions.



TOPIC DESCRIPTIONS		
TOPIC	DESCRIPTION	COVERAGE
Animal health and welfare	Protecting animal health and welfare within our supply chain	See page 42
Biosecurity	Addressing the risk of transmission of infectious diseases and pests to livestock and crops that impact animal, plant and human health	See page 43
Climate and energy	Mitigating our contribution to climate change and adapting to the impacts of a changing climate	See page 18, 40, 50, 59
Complaints and service relationships	Ensuring consumers and customers have the ability to complain and responding to complaints to maintain good service relationships	See page 72
Data protection and privacy	Protecting the data that we collect from people and other organisations to ensure privacy is maintained	www.fonterra.com/codeofbusinessconduct
Employment and income creation	Contributing to society through meaningful employment, prosperous farming and flow-on income generation	See page 20
Employment rights and conditions	Protecting the rights of our people and their working conditions, providing access to training and development opportunities	See page 88
Ethical business practices	Setting clear expectation and controls for anti-corruption, responsible political involvement and fair competition	See page 90
Food safety and quality	Ensuring the products we deliver are safe and of good quality for consumers	See page 70
Health and safety at work	Protecting the health and safety of people at work including consideration of their wellbeing	See page 80
Human rights	Protecting the human rights of individuals who are directly or indirectly impacted by our business activities	See page 89
Nutrition and health	Considering the public health contribution of the products we produce, access to good nutrition, and consumer behaviour and education	See page 16, 62
Organisational governance	Ensuring strong, sustainable governance and decision making to deliver long-term value to all stakeholders as a sustainable co-operative	See page 96
Protecting biodiversity and ecosystem services	Considering the impact of our supply chain on biodiversity and the underlying ecosystem services we rely upon	See page 34
Responsible marketing	Responsibly marketing and promoting our products to consumers, including marketing to children and parents, and responsible promotion of breast-milk substitutes	See page 67
Responsible procurement	Engaging along our supply chain to set expectations and manage the performance of our farmers, vendors and service providers	See page 26, 95
Soil health	Protecting soil health, which is central to sustainable agricultural food production	See page 31
Social investment and community development	Investing in our communities such as in-school nutrition programmes, financial grants, staff volunteering and promoting access to essential services, such as clean drinking water	See page 92
Stakeholder and community dialogue	Engaging with our stakeholders, including communities, on topics that may impact them	See page 97, 98
Waste and pollution	Minimising waste (hazardous and non-hazardous) and other environmental impacts such as noise and air pollution	See page 56
Water	Using water responsibly, including the impacts of our Co-operative on water quality and availability (linked to biodiversity)	See page 28-35, 54

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. We have selected these disclosures based on what the most important measures are, and which data is available to report. We have reported beyond 'Core' compliance in our most material areas.

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 internal materiality analysis.

For more information, see: www.globalreporting.org

REF	TOPIC/TITLE	REFERENCE	
102-1	Name of the organisation	Fonterra Co-operative Group Limited	●
102-2	Activities, brands, products, and services	About Fonterra. See page 6. Global Value Chain. See page 22	●
102-3	Location of headquarters	See page 104	●
102-4	Location of operations	Our Manufacturing Operations. See page 49	●
102-5	Ownership and legal form	About Fonterra. See page 6	●
102-6	Markets served	Products consumed in more than 100 countries. See page 63	●
102-7	Scale of the organisation	About Fonterra. See page 6	●
102-8	Information on employees and other workers	Employee Management. See page 78 ¹	●
102-9	Supply chain	Global Value Chain. See page 22	●
102-10	Significant changes to the organisation and its supply chain	No significant changes occurred in the reporting period FY17	●
102-11	Precautionary Principle or approach	Our Manufacturing Operations. See page 48	●
102-12	External initiatives	Associations, Endorsements and Memberships. See page 104	●
102-13	Membership of associations	Associations, Endorsements and Memberships. See page 104	●
102-14	Statement from senior decision-maker	Letter from the Chairman and Chief Executive. See page 1	●
102-16	Values, principles, standards, and norms of behaviour	Our Values. See page 3. Our Code of Conduct. See page 90	●
102-17	Mechanisms for advice and concerns about ethics	The Way We Work Hotline. See page 91	●
102-18	Governance structure	Accountability for sustainability. See page 96. A full list of Board Committees is published on page 70 of the Fonterra Annual Review 2017	●
102-20	Executive-level responsibility for economic, environmental, and social topics	Accountability for sustainability. See page 96	●
102-40	List of stakeholder groups	Materiality. See page 98	●
102-42	Identifying and selecting stakeholders	Governance and Stakeholder Engagement. See page 96	
102-43	Approach to stakeholder engagement		
102-44	Key topics and concerns raised		●
102-41	Collective bargaining agreements	Labour Rights. See page 88	●
102-45	Entities included in the consolidated financial statements	A list of entities is included on page 45-46 of Fonterra's FY17 Annual Financial Results	●
102-46	Defining report content and topic Boundaries	Materiality. See page 98. Global Reporting Initiative Standards. See page 100	●
102-47	List of material topics	Materiality. See page 98-99	●
102-48	Restatements of information	No restatements of previously-reported information have been made	●
102-49	Changes in reporting	Not applicable	●
102-50	Reporting period	About This Report. See Inside Front Cover (Period is 1 August 2016 – 31 July 2017)	●
102-51	Date of most recent report	Not applicable	●

102-52	Reporting cycle	About This Report. See Inside Front Cover (Annual reporting cycle)	●
102-53	Contact point for questions regarding the report	See page 104. (Email: sustainability@fonterra.com)	●
102-54	Claims of reporting in accordance with the GRI Standards	Global Reporting Initiative Standards. See page 100	●
102-55	GRI content index	Global Reporting Initiative Standards. See page 100	●
102-56	External assurance	Bureau Veritas Assurance Statement. See page 102	●
201-1	Direct economic value generated and distributed	About Fonterra. See page 6. Community. See page 93	●
202-2	Proportion of senior management hired from the local community	Hiring from local communities. See page 86-87	●
205-2	Communication and training about anti-corruption policies and procedures	Awareness and training. See page 90	
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Legal compliance. See page 91	
302-1	Energy consumption within the organisation	Energy use by fuel type. See page 53	●
302-3	Energy intensity	Our emissions and energy efficiency track record. See page 50 ²	●
303-1	Water withdrawal by source	Water withdrawn by source. See page 54	●
304-2	Significant impacts of activities, products, and services on biodiversity	New Zealand's Waterways. See page 34-55 Sustainable Dairying in New Zealand. See page 28-33 Also see <i>Our Commitment to New Zealand's Waterways</i> .	●
305-1	Direct (Scope 1) GHG emissions	On-farm Emissions. See page 40 ²	●
305-2	Energy indirect (Scope 2) GHG emissions	Operations GHG emissions. See page 53 ²	
305-3	Other indirect (Scope 3) GHG emissions	Logistics emissions. See page 59 ²	
305-4	GHG emissions intensity		
306-1	Water discharge by quality and destination	Water discharge. See page 54	●
307-1	Non-compliance with environmental laws and regulations	Environmental non-compliance. See page 57	
308-2	Negative environmental impacts in the supply chain and actions taken	Evaluating farm performance—farm dairy assessments. See page 28 (New Zealand disclosure)	●
401-1	New employee hires and employee turnover	Employee Management. See page 79 ¹	●
402-1	Minimum notice periods regarding operational changes	Labour Rights. See page 88	
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 80-81	
404-2	Programmes for upgrading employee skills and transition assistance programmes	Learning and Development. See page 82-83	
405-1	Diversity of governance bodies and employees	Diversity of Governance Bodies. See page 87	
405-2	Ratio of basic salary and remuneration of women to men	Gender pay. See page 86-87	●
406-1	Incidents of discrimination and corrective actions taken	Labour Rights. See page 88	
412-1	Operations that have been subject to human rights reviews or impact assessments	Human Rights. See page 89	
415-1	Political contributions	Our Code of Conduct. See page 90	
416-1	Assessment of the health and safety impacts of product and service categories	Improving the nutritional profile of our products. See page 66 Achieving benchmark standards. See page 70	
417-2	Incidents of non-compliance concerning product and service information and labelling	Compliance with regulation. See page 67	
417-3	Incidents of non-compliance concerning marketing communications	Compliance with regulation. See page 67	
419-1	Non-compliance with laws and regulations in the social and economic area	Legal compliance. See page 91	

1 For more information, see: ➔ www.fonterra.com/2017AdditionalEmployeeData

2 For more information, see: ➔ www.fonterra.com/2017EnvironmentalDataReportingNotes

● 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 2017 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 2017 Sustainability 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 first year in which we have provided limited assurance over the Fonterra Sustainability Report.

Scope of Assurance

The Report was prepared in accordance with the GRI Standards: Core Option. Fonterra requested Bureau Veritas to verify the accuracy of the data and information included in the Report and to assess compliance against the reporting requirements from selected GRI Standards' disclosures. 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 2016 to 31st July 2017.

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;
- 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;
- It is our opinion that Fonterra has established systems for the collection, aggregation and analysis of relevant information and quantitative data.



**BUREAU
VERITAS**

Move Forward with Confidence





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

Fonterra's 2017 Sustainability Report has been prepared in accordance with the GRI Standards: Core Option, including appropriate considerations of the reporting principles, general disclosures, management approach and topic-specific performance indicators.

Bureau Veritas' evaluation of Fonterra's 2017 Sustainability 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;
- 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 2017 Sustainability 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 180 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
04th December 2017

Andrew Mortimore
Head of Sustainability Services



Move Forward with Confidence



Associations, Endorsements and Memberships



REGISTERED OFFICE

Fonterra Co-operative Group Limited
Private Bag 92032
Auckland 1010
New Zealand

HEADQUARTERS

Fonterra Centre
109 Fanshawe Street
Auckland Central
Auckland 1010
New Zealand

Phone +64 9 374 9000
Fax +64 9 374 9001

Email: sustainability@fonterra.com

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.

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