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# GROWING A BETTER, HEALTHIER FUTURE

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ZESPRI AND SUSTAINABILITY  
JUNE 2016





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**ZESPRI IS COMMITTED TO  
DELIVERING HEALTHY  
AND NUTRITIOUS KIWIFRUIT  
OF THE HIGHEST QUALITY  
TO CONSUMERS AROUND  
THE WORLD.**

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We believe that the quality of our natural environment, the efficiency of our business, and the skills and commitment of our people are vital ingredients in how we grow and deliver kiwifruit worldwide.

At the same time, we understand that the way food is produced and supplied can have harmful environmental and social impacts.

This is why sustainability is so important to us – in the way we grow our kiwifruit and right across our supply chain.

We also believe in communicating our performance to our stakeholders, including areas in which we can improve. This brochure provides a snapshot of Zespri's focus on sustainability, including the progress made in our industry and the areas of continuing attention.



Our soils can store  
**2.4 TONNES**  
 of carbon dioxide-equivalent  
 per hectare, PER YEAR  
 more than the carbon gas  
 emissions from the energy  
 normally used on the orchard

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## SOIL AND WATER

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The deep roots of kiwifruit vines are effective in seeking out water, and there is relatively little need for irrigation in the industry. However, additional supply is sometimes needed in dry periods of the summer or for frost protection in winter.

All the water used in the New Zealand kiwifruit industry is from naturally replenished sources, including rainfall and underground aquifers.

As well as availability, freshwater quality is an area of potential impact in our industry, so Zespri is investigating this issue.

Specifically, Zespri is funding a project in 2016 to measure nitrogen losses from kiwifruit orchards and identify ways to minimise impact. We are also supporting research in 2016 to optimise 'nutrient use efficiency' in kiwifruit. This is a measure of how well plants use the mineral nutrients available in soil and water and is essential for sustainable agricultural production. With increasing world demands for food and energy, this is set to become an ever-increasing priority.

### **Pest and disease management**

Another important area of environmental research Zespri is supporting is into minimising agrichemical use and finding alternatives for controlling pests and diseases. For example, one current project is trialling methods using mulch, traps and mechanical host plant removal to control insect pests like cicadas and passion vine hoppers. Natural biological controls for diseases are also being tested.

Zespri has internationally recognized food safety systems in place across the industry to ensure that it meets all market requirements. This includes GFSI (Global Food Safety Initiative) recognised systems, GLOBAL G.A.P. and BRC (British Retail Consortium). Zespri has an integrated pest management programme and residue test 100% of all product prior to export.



# WASTE MANAGEMENT AND REDUCTION

According to the Food and Agriculture Organisation of the United Nations, fruit and vegetables have the highest waste rates of any food products. Almost half of all the fruit and vegetables produced is wasted.

Reducing fruit waste is an integral aspect of Zespri's production system – for both environmental and cost reasons. Our industry has invested in information systems to improve inventory management, introduced lean manufacturing concepts, and improved fruit temperature monitoring – all helping to cut down on the amount of fruit that is wasted. Our fruit loss rates are typically less than four percent.

Zespri is also focused on reducing waste further down the supply chain. All our packaging is 100 percent recyclable, and

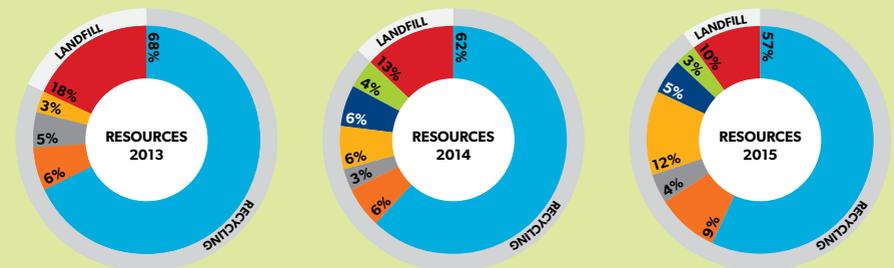
our cardboard cartons are produced from renewable raw materials from plantation-grown forests in New Zealand and Europe. We have services in place to collect waste paper from manufacturing plants, pack houses and operational hubs around the world.

We want to improve further. In 2013, Zespri was the first fresh produce organisation in the world to develop a compostable fruit label which continues to be used on our Organic Green Kiwifruit range. Zespri currently uses polyethylene plastic bags to reduce dehydration of the fruit inside packs during storage, as well as in trays. These are 100 percent recyclable. We are continuing to monitor the development of biodegradable materials, such as bio-plastic, as a possible long-term alternative.

## Case study: A systematic approach to waste reduction at Trevelyan's

Trevelyan's is the biggest single site in New Zealand with four pack houses and 32 cool stores. Their sustainability framework was introduced in 2011 driving innovation and improvements across all areas of the business. Their company sustainability vision is "our world ... work smart, respect our people, tread lightly."

When considering waste reductions, Trevelyan's focus is to do more with less. They have worked hard to reduce waste to landfill using several strategies: composting, co-mingled general recycling, installation of a compactor for general waste, production waste streams (cardboard, plastic and timber) and collaboration with suppliers and on-site contractors. These strategies have resulted in significant financial savings since 2010 that will accumulate over years to come.



### RESOURCES

● Cardboard ● Plastic wrap ● Strapping bales ● Plix ● Paper tailings ● Mixed recycle ● Waste to Landfill

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## MANAGING CARBON AND GREENHOUSE GAS EMISSIONS

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The New Zealand Kiwifruit Industry has a relatively small footprint on the land and between 2000 and 2010 the industry doubled production with only a 25% increase in land use.

Soil is a global resource for sequestering carbon from the atmosphere. Moreover, kiwifruit vines actively build soil carbon at a rate of three tonnes a year per hectare, while soil carbon is depleted by most other crops. Through the seasonal growth cycle the roots continuously incorporate organic material deep into the soil. This finding comes from a three-year study funded by the New Zealand Ministry of Agriculture and Forestry's Sustainable Farming Fund that analysed soil down to nine metres.

Going further, Zespri has been involved in a pioneering study, in collaboration with the New Zealand Ministry for Primary Industries, to create a comprehensive carbon footprint across our supply chain, from orchard to consumer. The findings will help in prioritising emission reduction initiatives.

Another area of impact is transportation. Zespri's supply chain uses highly efficient direct shipping to bring our product to consumers around the world. Specialised reefer vessels are around 27 percent more energy efficient than container shipping. To increase the efficiency of each voyage we use deck space on the vessel to stow containers – shipping more fruit with fewer ships. Chartered reefer vessels are also instructed to steam at the most efficient speed and Zespri's container shipping partners use slow steaming. A 10 percent reduction in vessel speed can lower fuel consumption by 17 percent.

Looking ahead, Zespri will partner with Seatrade to use the latest generation of reefer container ships that incorporate new fuel technologies to generate more fuel savings. Modern engines are also being designed and trialled with modified fuels and biofuels to achieve greater emissions reductions.

Also, with Zespri growing fruit in the northern hemisphere, distance to market is reduced dramatically lessening our carbon footprint.



Specialised reefer vessels are around **27 percent more energy** efficient than container shipping

### Case Study: Reducing carbon emissions through Kerifresh's investment in cooling systems

Kerifresh is New Zealand's largest grower of citrus fruit varieties producing over half of the crop and also growing and packing kiwifruit.

The replacement of the refrigerant gas R22 with a natural refrigerant at the Kerifresh packhouse has seen a 36 percent reduction in energy costs while cooling 28 percent more product. It has reduced annual emissions of carbon by 225 tonnes.

Kerifresh is not only operating in a more sustainable way and reducing its environmental impact; it also has a system that is easier to use and manage. The EcoChill system is built on the same land footprint but is more cost effective and has lower ongoing service and maintenance costs. With better outcomes for the business, the environment and their people this really is a triple bottom line solution for sustainability.



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## SUPPORTING EMPLOYMENT AND BACKING WORKER WELFARE

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The New Zealand kiwifruit industry employs around 10,000 people permanently and another 8,000 seasonal workers at the peak of harvest. Over a thousand people come to New Zealand each year under the 'Recognised Seasonal Employer' (RSE) scheme to work in kiwifruit orchards and packhouses.

The RSE scheme was set up by the New Zealand government to help meet labour shortages in horticulture and viticulture, with visitors typically coming from Vanuatu, Tonga, Samoa, Fiji and other Pacific islands. As well as supporting New Zealand's horticultural sector, the scheme provides valuable employment opportunities for seasonal workers. Since 2011, the New Zealand government has funded technical assistance for country partners in the RSE scheme, leveraging skills gained by RSE workers to expand skills training in Pacific states.

New Zealand has some of the most stringent labour laws in the world, supported by audits to ensure employers comply with employment laws. This includes requirements that growers and contractors provide safe working conditions and keep proper records. The kiwifruit growers organisation, New Zealand Kiwifruit Growers Incorporated, is committed to promoting the highest standards of compliance in the industry. This is done through an ongoing programme of grower communication and education on labour standards, supported by a dedicated employment development manager.



### **Case study: Commitment to people and community and passion in the East Coast**

Roughly one in every 10 hectares of kiwifruit is owned by Maori, the indigenous people of New Zealand. Maori are key players in industry ownership and management, and there are continuing initiatives to strengthen participation.

A great example is the work of the Maori trust Te Kaha 14B2 which has created a kiwifruit orchard joint venture to bring employment and renewed confidence to a local community in the East Coast of the Bay of Plenty. In 1999 the Trust had land suitable for horticulture but no resources to develop it. At that time they started a 20-year joint venture with independent investors to bring financial resources and expertise. Today, up to 30 people, mostly locals, work in the Te Kaha orchard and are gaining new skills and qualifications through their work. There are now over 130 hectares of kiwifruit orchards in the area, and others in the region are benefitting too with the creation of contracting opportunities to support the industry.



## INVESTING IN COMMUNITIES AND BUILDING CAPABILITY



Left to Right: Supporting schools in China, leadership training with Kellogg, backing surf life savers.

One of the ways in which Zespri aims to support a sustainable kiwifruit industry is through its community investment work. In New Zealand, we are investing to support strong and healthy local communities, to develop a skilled and innovative industry, and to promote a sustainable environment.

In 2016, we announced a new partnership to support surf lifesaving throughout the Bay of Plenty, the Coromandel, East Cape and Gisborne. There are 1,200 lifeguards from the 19 clubs in this region, many of whom volunteer to provide a vital service to the community. Our support will provide the essential training that lifeguards need to provide a safe environment on our beaches and respond to emergencies.

Investing in education is an important focus, particularly where it relates to encouraging young people into our industry. One long-standing commitment is our support for the Kellogg Rural Leadership Development Programme, which provides six-month

courses of experiential learning, strategic insight and personal development for emerging leaders in New Zealand's primary industries. In 2015, we launched a horticultural scholarship scheme for outstanding students to support their three-year Bachelor studies in science, management and marketing.

Making a contribution to the local community is also a focus in our major markets. During 2015, Zespri supported the New Life Medical and Education Trust in Mumbai, India, helping them in providing education for underprivileged children. So many of the children they support have inadequate nutrition and we have been supplying kiwifruit to children in one Mumbai school every week. In China, Zespri has been working with the Next Generation Growth and Health Foundation for five years in providing financial support, books and stationery for schools in five provinces. We also sponsored the building of an art classroom for a school in Guizhou.

### Case Study: Recognising leaders in sustainability

Zespri supports a number of initiatives to promote best practice in the local business community. One long-standing programme is the Ballance Farm Environment Awards that promotes sustainable land management by showcasing the work of people farming in a way that is environmentally, economically and socially sustainable.

Two recent winners are kiwifruit growers Stephen Kenna and Phillipa Wright who entered the competition to benchmark their operation against a wide range of agricultural enterprises. Stephen and Phillipa run a 15-hectare orchard and have been focused on measuring and quantifying what is happening in the soil, maximising production from their orchard while minimising environmental impact.

Another recent recipient of the Ballance Farm Environment Awards is BayGold, an orchard company with over 100 hectares of kiwifruit in the Bay of Plenty, the major growing region of kiwifruit on the East coast of the North Island of New Zealand. BayGold is Global GAP certified but goes beyond certification in its management practices.

For example, in soil management BayGold has been taking a biological approach to its fertilizer programme, incorporating fungi-rich composts plus fish and seaweed-based products. These inputs are designed to address low organic matter, strengthen plant health and develop plant resilience.



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## CONTINUING THE SUSTAINABILITY JOURNEY

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Zespri is committed to understanding our impacts on the environment and developing new tools to enhance our business. We are taking part in a six-year initiative with the New Zealand government, called the NZ Sustainability Dashboard Project. This aims to help the kiwifruit industry prioritise its sustainability efforts as well as undertake effective sustainability assessment and reporting so that it can improve its performance.

The project has been running since 2013 and aims to help lift performance through new tools. These include a calculator for post-harvest companies to measure the carbon footprint of their operations, and a tool for kiwifruit growers to instantly benchmark key areas like production, fertiliser inputs and environmental conditions such as soil quality.

Looking ahead, Zespri will work to ensure sustainability is at the heart of how we grow and deliver kiwifruit to our consumers around the world. We will do this through further developing the Zespri

System – our integrated production and distribution system that incorporates Good Agricultural Practice, supply chain management standards and market assurance.

Zespri will continue its world-class R&D programme to support our sustainability performance. We invest around \$20 million a year in research, including into on-orchard productivity, crop protection, sustainable delivery of fruit to market, and value addition and creation.

Zespri has a long history of innovation and continuous improvement across the lifecycle of its products and we are determined to continue marketing the highest quality kiwifruit while protecting the natural environment for future generations.



[www.zespri.com](http://www.zespri.com)