



# Situation and Outlook for Primary Industries

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## 2016

The SOPI 2016 cover highlights innovation within New Zealand's primary industries. The image shows a detail of the Waitomo Glowworm Caves visitor centre roof. The roof is constructed from laminated veneer lumber (LVL) using New Zealand Radiata pine, which was weaved to create a timber net representing a hinaki, or Māori eel pot. The structure was designed by Architecture Workshop, engineered by Dunning Thornton, and constructed by Hawkins. The cover image was sourced from Patrick Reynolds Photography.

Annual figures are for the year ended June, unless otherwise noted  
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# Minister's Foreword

Hon Nathan Guy  
Minister for Primary Industries

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I am very pleased to release the latest Situation and Outlook for Primary Industries (SOPI). This report highlights the importance of the primary industries to New Zealand's economy, and the challenges and opportunities ahead of us.

As we all know it has been a challenging year for the dairy industry with continuing global price volatility. At the same time though, it has been a stellar year for other sectors – particularly beef and horticulture.

The dairy industry is now firmly focused on factors it can control, like reducing unnecessary costs and improving productivity. This work will have long term benefits for the sector when prices recover, as they inevitably do. The medium to long term outlook for dairy remains strong with population and income growth happening right on our doorstep in Asia.

MPI is supporting the dairy industry in a number of ways, including rural mental health initiatives and supporting farm system change. This work is helping us learn from the most successful and productive farmers and how this knowledge can be successfully transferred.

Horticulture continues to be a star performer and is well on track to achieve its goal of reaching \$10 billion in export earnings by 2020. The kiwifruit industry in particular has had a record year in terms of sales and exports.

The Government is continuing to support the primary sector through investing in irrigation and water storage, improving trade access, and research and development. The Primary Growth Partnership is now showing real benefits and helping create innovative new products, processes and markets.

All of this will help in our ambitious goal of doubling the value of primary sector exports.

At the same time, biosecurity continues to be my number one priority. Over the last year we have beefed up our borders with 90 new front-line staff, 24 new detector dog teams and six new x-ray machines. We've also introduced a Border Clearance Levy to sustainably fund these services and have signed a number of Government Industry Agreements (GIA) for biosecurity readiness and response.

As always, SOPI provides fascinating reading for its forecasting and analysis on our primary sector.

A handwritten signature in blue ink that reads "Nathan Guy". The signature is fluid and cursive, with a long horizontal flourish at the end.

Hon Nathan Guy

# Director-General's Introduction

Martyn Dunne  
Director-General  
Ministry for Primary Industries

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The Situation and Outlook for Primary industries is an annual publication that assesses the current state of New Zealand's primary industries and their prospects for growth over the next four years.

The report shows that overall exports have returned to growth this year, providing a clear signal of the strength of our primary industries. Recent years have provided challenges for a number of our sectors, and underlined the highly competitive and dynamic markets we trade in. New Zealand is blessed to have strong agricultural, horticultural, forestry, fisheries and other primary industries which together provide the backbone of our productive economy.

There is a solid platform in place for the primary industries to drive and support export growth over the coming years. This was highlighted by the recent Performance Improvement Framework (PIF) review for MPI which noted our protecting functions provide a great foundation to continue to build our growth activities.

MPI has committed to focusing on growth. MPI is working with the primary sector to grow opportunities across the value chain, from growing and protecting our productive base to understanding international consumers. This SOPI explores some of this work which will help us with our export growth goals.

While the focus of this work is growth, it is nonetheless built on the fundamental regulatory and organisational functions underpinned by our biosecurity and food safety systems. We continue to progress our Biosecurity 2025 work and have invested in a number of initiatives to further strengthen our reputation for providing safe and suitable food. These systems are fundamental to our ability to grow, and our focus here is the continued development of smart and flexible systems that support our producers and exporters.

I would also like to note the opportunity which tourism presents to our primary industries. There are more visitors to our country than ever before and while this comes with challenges from a biosecurity perspective, it also presents an opportunity to showcase our primary industries' products to the world.

With these initiatives in place there is little doubt that New Zealand's primary industries are well positioned for success over the coming four years. MPI is committed to enabling the industries to achieve not only their potential for strong export growth, but also to help them implement new growth initiatives to help them navigate a challenging and dynamic global market.

A handwritten signature in black ink, appearing to read 'M Dunne', written in a cursive style.

Martyn Dunne



# 1

# OVERVIEW

# Situation and outlook for primary industries

New Zealand primary industry export revenue is expected to have reached over \$36.7 billion in the year ending June 2016. Strong growth in horticulture and other primary sector exports more than offset falling dairy prices over the past year.

With strong growth forecast across most sectors and dairy prices expected to gradually recover over the next two years as global supply and demand rebalance, the outlook for New Zealand's primary industries is positive.

Horticulture exports exceeded \$5 billion for the first time in 2015/16, and the sector is expected to continue its run of impressive growth over the medium term. Kiwifruit exports hit record levels for the year to March 2016, and exports of wine, apples, and pears are increasing due to new plantings reaching maturity. Horticulture prices have also increased as New Zealand has maintained its position as a supplier of premium products.

Dairy prices have remained weak as global supply is still abundant. New Zealand production is down marginally but export volumes are up<sup>1</sup>. Production is still high in the EU, which is keeping downward pressure on prices. Overall there has been a 6 percent decline in the value of dairy exports in the past year, but an expected gradual price recovery should lead to increasing dairy export values over the next two to three years.

For some sectors a drop in the New Zealand dollar has softened the impact of lower US dollar prices. Meanwhile on farm, production across the primary sector has been relatively stable as El Niño conditions did not result in widespread drought.

## SHORT-TERM OUTLOOK

For the year to June 2017, primary sector exports are forecast to grow at 3 percent for the second consecutive year. Next year's price outlook reflects expectations that global agricultural markets are expected to turn a corner in 2017 and prices for key commodities should start to recover. The boost to New Zealand export growth

is expected to be strongest in the dairy, forestry, and horticulture sectors. These sectors are expected to lead a 10 percent increase in export value from June 2017 to June 2018.

## MEDIUM-TERM OUTLOOK

Broad-based export growth is forecast for 2019 and 2020. Overall, MPI expects primary sector exports to reach a value of \$43.9 billion in 2019/20, up \$7.2 billion (19.5 percent) from 2015/16. This outlook is supported by a global economic environment that, while challenging at the moment, is expected to improve for food exporting countries over the next few years.

The positive outlook for the primary sector is also supported by industry's significant investments in processing capacity across the country in a range of sectors. Free trade agreements will also help grow our exports, while population growth and economic development throughout Asia will support increased demand for New Zealand's protein, horticulture, wood, and fibre products.

## EXPORT GROWTH GOAL

In 2012, MPI announced the goal of doubling primary sector exports to \$64 billion in real terms by 2025. Our latest (nominal) forecast of \$44 billion for the year ending June 2020 leaves us with more to do to achieve that goal. MPI is partnering with industry throughout the value chain to support this target; for details please see our feature *Focus on growth: MPI through the value chain* on page 14.

From 2012 to our estimate for 2016, the nominal export value grew by an average of 3.3 percent per year. In order to reach our real export target by 2025, primary sector exports would now need to grow by an average of 9.5 percent per year from 2016 onwards. Horticulture and other primary sector exports and foods have shown strong growth since 2012, but we will need contributions from the larger sectors such as dairy, and meat and wool in order to reach that target.

<sup>1</sup> Exports can exceed production due to inventory movements and changing product mix.





## Our Sectors at a glance



**-6%** Dairy

Continued high supply from the EU and other major exporters has seen our forecast for an international dairy price recovery pushed out to 2017. The short term outlook is for prices to be down through 2016 before starting to gradually increase in 2017, while production will be down slightly in the 2015/16 year.



**+15%** Seafood

Aquaculture expansions will drive export volume increases while the wild capture harvest is expected to remain steady at sustainable catch limits. Increased demand from the USA and China has led to higher seafood prices.



**+1%** Meat and Wool

Beef prices will ease back from highs in 2015, while beef cattle and sheep numbers are expected to fall. Wool exports are expected to remain strong based on demand from China, and venison exports are supported by increasing shipments of higher-value chilled meat.



**+20%** Horticulture

Higher production of kiwifruit and pipfruit and favourable exchange rates led to a record year to June 2016. We expect production growth to continue in future years as increased plantings come to maturity.



**+8%** Forestry

Harvesting increases will lead to a larger volume of products being exported. Increased competitiveness in China is helping to keep log prices stable, aided by favourable exchange rate movements.



**+14%** Other primary sector exports and foods

Strong growth is being seen in exports of innovative processed foods, honey, live animals, and other products.



**+14%** Arable

Increasing global food demand is driving growth for vegetable seed exports. Baby leaf salad demand in particular is driving export price growth.

TABLE 1.1: EXPORT REVENUES BY SECTOR (\$ MILLIONS), 2013 – 2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
DAIRY	13 139	17 791	14 050	13 230	13 814	16 626	17 055	17 735
MEAT & WOOL	7 794	8 162	9 001	9 055	8 345	8 510	8 534	8 804
FORESTRY	4 527	5 199	4 682	5 069	5 645	6 012	6 116	6 325
HORTICULTURE	3 540	3 781	4 165	5 015	5 335	5 448	5 545	5 726
OTHER	1 689	1 677	2 089	2 374	2 609	2 796	2 847	2 936
SEAFOOD	1 546	1 500	1 562	1 789	1 821	1 965	2 033	2 117
ARABLE	225	228	177	202	208	218	229	243
TOTAL	32 460	38 338	35 726	36 734	37 777	41 575	42 359	43 886
Y/Y % Change	+0.5%	+18%	-7%	+3%	+3%	+10%	+2%	+4%

\* Estimate for year ended June.

Other Primary Sector Exports and Foods includes live animals, honey, and processed foods such as chocolate and tomato sauce.

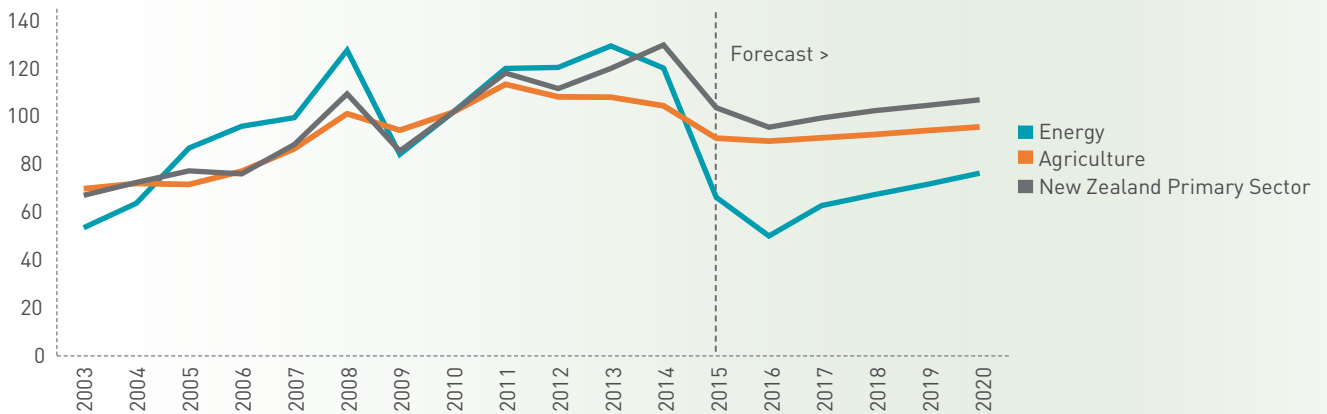
## GLOBAL ECONOMIC ENVIRONMENT

Since a large proportion of New Zealand's primary products are produced for the export market, the global economic situation is of vital importance to our primary sectors. Changes in the global marketplace have direct impacts on our economy by influencing demand for New Zealand's products, as well as indirect impacts by influencing exchange rates.

Agricultural commodity prices are likely to remain subdued over the outlook period due to ample stocks and steady production levels, and slower growth in emerging and developing markets (EMDEs).

Large drops in commodity prices and subdued global trade over the past year negatively affected global economic growth in 2015, particularly for EMDEs. Many of New Zealand's key trading partners are significant commodity traders and low commodity prices can negatively impact demand for our primary products by affecting the amount of money that our trading partners have available to spend on New Zealand's products.

FIGURE 1.1: WORLD BANK/COMMODITY PRICE INDICES, 2003-2020



Source: World Bank, Statistics New Zealand, MPI

As an economy whose exports are heavily weighted towards agricultural products, lower commodity prices have also affected the value of the New Zealand dollar. The resulting exchange rate depreciation has mitigated the effect of low commodity prices for New Zealand exporters. In the past year, there has been a 7.8 percent fall in New Zealand's trade weighted index, which equates to approximately a \$3.5 billion increase in export earnings at current volumes and prices (see exchange rate discussion on page 11).

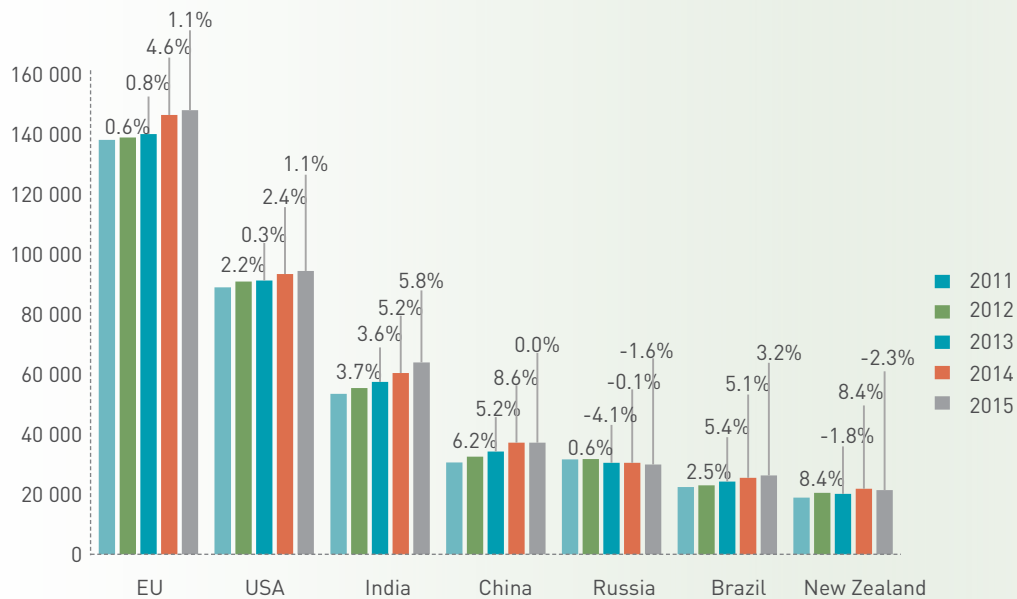
This is reflected in these forecasts, with an index of New Zealand's primary prices expected to fall 8 percent in 2016, followed by a recovery towards 2020 at an average growth rate of 2.9 percent, skewed towards a stronger short term recovery. This follows a higher path than the World Bank's more subdued commodity price forecast.

In terms of export trends, exports to China, our largest market for primary products, grew just 1 percent in the latest year, after falling by over a quarter (26 percent) in the June 2015 year. Exports to our top five markets all grew in the latest year, led by the USA. In the past two years America has overtaken Australia as our second largest market for primary products, with export growth to the USA averaging 10 percent over the past four years, the same rate as China.

## WORLD DAIRY PRODUCTION GROWTH CONTINUES

Global dairy production is estimated to have increased during 2015, despite low prices worldwide. The main concern for New Zealand is the lack of a supply response to low prices by the EU and, to a lesser extent, the US, which are the two largest dairy producers. Production in both markets has historically been very much driven by price, but there has been a rapid divergence since early in 2015, as shown in figure 1.4 on the following page.

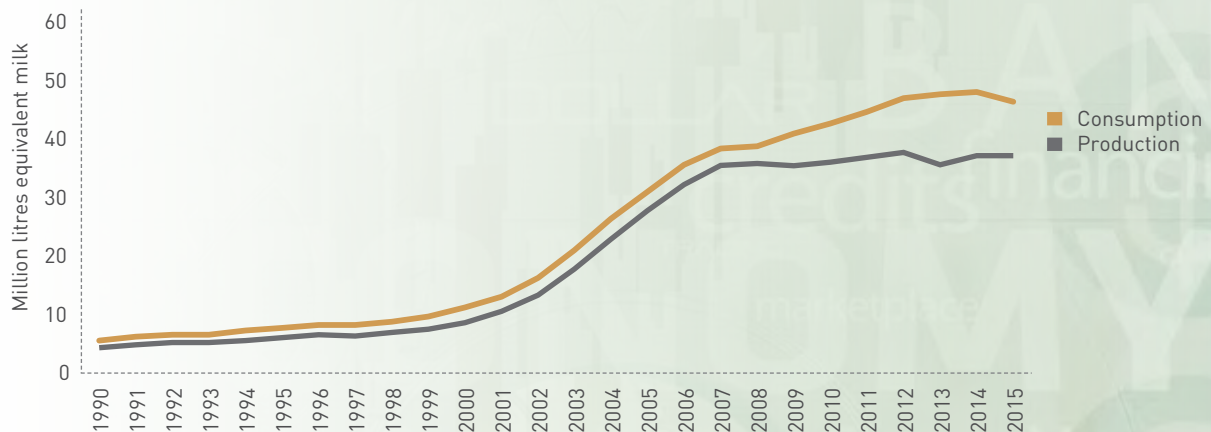
FIGURE 1.2: MILK PRODUCTION TRENDS BY COUNTRY 2011-15



Source: United States Department of Agriculture.

Estimated consumption of dairy products in China declined in 2015, so although production was also stagnant it meant a decline in their import dependence. China's domestic production has not kept pace with consumption growth in recent years, which means that we expect significant long term growth in Chinese demand for imported product.

FIGURE 1.3: CHINA ESTIMATED CONSUMPTION AND PRODUCTION IN MILK EQUIVALENTS



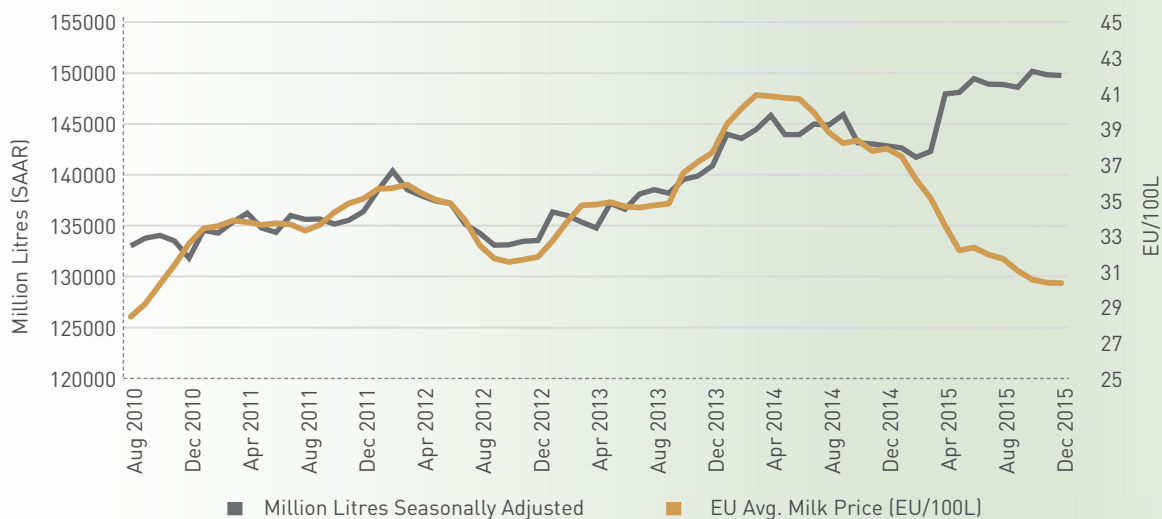
Source: Food and Agricultural Organisation, Global Trade Atlas and MPI.

The main driver for the EU has been the removal of production quotas from 31 March 2015. This has led to a rapid expansion in milk production as countries that were previously limited by the quota system were allowed to increase unconstrained.

Pre-2015 the milk price received by European producers appears to have been a driver of milk production in later periods. However, post quota removal, milk production has been considerably higher than what it normally would have been at current prices. This is partly due to support schemes like EU Intervention Stocks. The flattening off of the seasonally adjusted annual rate (SAAR) of production shows that producers may now be constrained by prices, and increases to production on a SAAR basis will be limited without any price increases.

With the slight decrease in production from New Zealand not offsetting the increases in the EU, it will take declines in EU production or an increase in global demand to tip prices back into recovery. The key area to watch then is China's demand and production.

FIGURE 1.4: EU MILK PRODUCTION VS PRICE



Sources: CLAL, MPI.



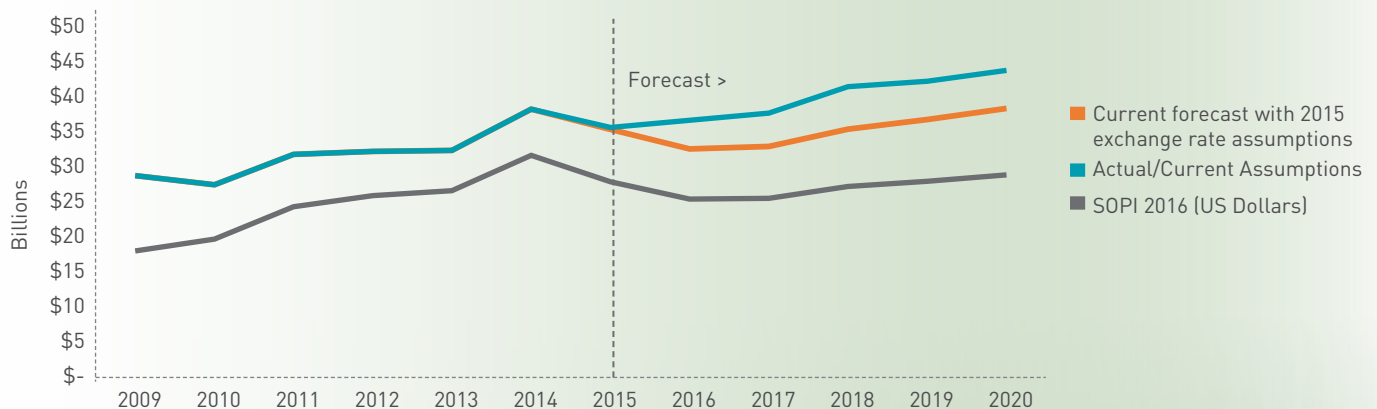
## EXCHANGE RATE MOVEMENTS BOOST EXPORT EARNINGS

Exchange rates are volatile and movements can have large impacts on the value of our trade. As a large proportion of global trade occurs in US dollars, changes in the US dollar rate can increase or decrease returns to New Zealand exporters. A fall in the NZD/USD exchange rate is favourable for New Zealand exporters since they now receive more New Zealand dollars for the same US dollar sale price.

There has been substantial change in foreign exchange rate assumptions since the SOPI 2015 publication, driven by a strengthening US economy and falling oil prices. The New Zealand dollar also depreciated against the US dollar by more than the currencies of our competitors over the past two years, which means our competitiveness has increased. In some situations this could allow New Zealand exporters to charge lower US dollar prices to secure market share while still earning greater domestic currency returns than their competitors.

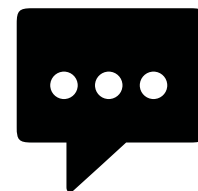
Figure 1.5 shows the impact that exchange rates had on our SOPI 2016 export forecasts. SOPI 2015 had assumed a gradual decline in the NZD/USD exchange rate from 0.749 to 0.711 in June 2020, while SOPI 2016 is assuming a decline to 0.619. In US dollar terms SOPI 2016 assumes slightly lower export returns overall than SOPI 2015, but looking out to 2020 and holding everything but the exchange rates steady, there is a \$5.5 billion increase to this year's forecast due to changes in exchange rate assumptions.

FIGURE 1.5: EXCHANGE RATE ASSUMPTION IMPACTS



Source: Treasury and MPI.

# Primary Sector Summaries



## Dairy

Dairy prices still face headwinds from increased milk production in the EU, and this is expected to keep prices low for the remainder of 2016. The year ending June 2016 forecast is for export revenue to fall to \$13.2 billion, and for only a moderate increase to \$13.8 billion in the following year. Production is expected to fall by 1.6 percent for the 2015/16 year and then stabilise for the 2016/17 year. EU production is stabilising at higher levels but we expect any global price increases to be met with increased EU production and run down of inventories. As a result we do not expect global export supply to fall quickly. This means a significant export recovery is not forecast until the 2017/18 season, where revenue is forecast at \$16.6 billion, before increasing to \$17.7 billion in 2020.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$13 139m	\$17 791m	\$14 050m	\$13 230m	\$13 814m	\$16 626m	\$17 055m	\$17 735m
Y/Y % Change	-2%	+35%	-21%	-6%	+4%	+20%	+3%	+4%

## Meat and Wool

Strong beef prices have driven increased slaughter rates and contributed to meat and wool export revenue increasing to \$9.1 billion for the year ending June 2016. However, herd size decreases, as well as lower cow slaughter rates as dairy herds stabilise, will contribute to declining production in the coming years. Beef prices continue to come down from 2015 highs due to recovering herds in Australia and the US, combined with increasing competition from Brazil. Export revenue is forecast to drop to \$8.3 billion in 2016/17, and then rise to \$8.8 billion by 2019/20.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$7 794m	\$8 162m	\$9 001m	\$9 055m	\$8 345m	\$8 510m	\$8 534m	\$8 804m
Y/Y % Change	+0.2%	+5%	+10%	+1%	-8%	+2%	+0.3%	+3%

## Forestry

The value of forestry exports increased 8 percent in the past year, but the total export value for the year to June 2016 is still likely to be below the 2014 peak. Forestry sector exports are expected to grow to a new high of \$5.6 billion in the year ending June 2017, driven by log prices holding at higher values and increasing demand for sawn timber exports. New Zealand wood is expected to gain market share in China, where despite reduced overall demand, supply from USA and Canada is expected to reduce due to strong domestic demand in those markets. New Zealand is well placed to supply the growing pulp market in China, and we expect some volume increases out to 2019/20. Export revenue is forecast to increase to \$6.3 billion in 2019/20 as the expected growth in annual harvesting boosts our export volumes.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$4 527m	\$5 199m	\$4 682m	\$5 069m	\$5 645m	\$6 012m	\$6 116m	\$6 325m
Y/Y % Change	+5%	+15%	-10%	+8%	+11%	+7%	+2%	+3%

\* Estimate for year ended June.



## Seafood

Seafood exports will be driven by increasing demand in the USA and China, and a depreciating currency. As aquaculture increases as a proportion of total seafood exports the overall value of our seafood exports will also increase. Wild capture volumes are expected to remain stable as they are managed at the maximum sustainable yield. Increased export revenue will come from increased prices, as global demand, particularly in China and the USA, drives prices upwards. Export earnings are forecast to grow from \$1.8 billion in the 2015/16 year to \$2.1 billion in the year ending June 2020.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$1 546m	\$1 500m	\$1 562m	\$1 789m	\$1 821m	\$1 965m	\$2 033m	\$2 117m
Y/Y % Change	+0.1%	-3%	+4%	+15%	2%	+8%	+3%	+4%



## Horticulture

Horticulture export revenues are expected to exceed \$5.0 billion for the first time in the year ending June 2016. The two largest horticultural sectors, wine and kiwifruit, are showing strong growth, as are pipfruit volumes, which are expected to continue growing over the outlook period. Wine export revenue is expected to nearly reach \$1.6 billion in the 2015/16 year, and kiwifruit revenue is expected to be near \$1.7 billion on the back of record export volumes. Gold kiwifruit orchards are now reaching maturity after recovery from the Psa bacterial disease. Vegetable revenues have also increased, driven by squash and onion exports, and this is forecast to continue over the medium term. Growth prospects for the horticultural sectors are positive with \$5.7 billion in export revenue expected by 2019/20.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$3 540m	\$3 781m	\$4 165m	\$5 015m	\$5 335m	\$5 448m	\$5 545m	\$5 726m
Y/Y % Change	-0.4%	+7%	+10%	+20%	+6%	+2%	+2%	+3%



## Other primary sector exports and foods

Other primary sector exports and foods covers a wide range of export products, representing an estimated \$2.4 billion of export revenue in the year to June 2016. There has been continued strong growth in some of these sectors, including innovative processed foods and in the other products category (products such as vegetable based dyes and spices). Honey prices continue to increase, driving a 20 percent increase in hive numbers in the past year. Overall though, honey production is expected to be down 5-10 percent this year due to unfavourable weather conditions over spring and summer. This collection of industries and products is forecast to contribute \$2.9 billion to New Zealand's exports by 2019/20.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$1 689m	\$1 677m	\$2 089m	\$2 374m	\$2 609m	\$2 796m	\$2 847m	\$2 936m
Y/Y % Change	+9%	-1%	+25%	+14%	+10%	+7%	+2%	+3%



## Arable

The outlook for vegetable seeds is good, with increased demand for global food production and New Zealand's good supply reputation contributing to higher prices. The 2015/16 season produced average crop yields and prices for domestic feed grains have been poor due to the downturn in the dairy sector and abundant international supply. Overall, arable sector export revenue is expected to grow from the June 2016 estimate of \$202 million to \$243 million by 2019/20.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$225m	\$228m	\$177m	\$202m	\$208m	\$218m	\$229m	\$243m
Y/Y % Change	+30%	+1%	-22%	+14%	+3%	+5%	+5%	+6%

# Focus on Growth

## MPI through the value chain

The value chain is a useful tool for explaining how value is enhanced as it moves from the producer to the consumer. The Ministry for Primary Industries (MPI) is working with stakeholders throughout the value chain to Grow and Protect New Zealand. This section provides a snapshot of some of MPI's work across the value chain, with a focus on activities that support and drive growth.

Harnessing the  
value of our  
resources



Resources



Ensuring our  
resource use is  
productive and  
sustainable, now  
and in the future

Building  
profitable  
production  
systems



Primary  
Production



Improved technology  
transfer and  
responses to market  
signals helps ensure  
the primary sector  
remains competitive  
and profitable in the  
global market

Investing  
in industry  
success



Processing



Continued  
investment ensures  
that the export  
sector will be able  
to take advantage  
of expanding  
opportunities



Expanding opportunities for export growth



Market Access



Enhanced market access creates opportunities for export growth through lower tariffs and reducing the impact of non-tariff barriers

Driving responsiveness through insight



Market Success



Value chains must rapidly respond to evolving consumer preferences

# Resources

## Harnessing the value of our resources

In this part of the value chain, MPI works with industry and across government to harness the value of our resources by:

- sustainably using natural resources;
- working in partnership to protect our industries from unwanted organisms; and
- investing in our people.

In doing so, we will ensure our primary sector can grow now and in the future.



### Growing people capability for our future primary industries

MPI continues to focus on our most important resource, our people. The primary sector currently accounts for one in six jobs nationwide, and employment is expected to increase by around 50,000 over the next ten years, and will need to be even more skilled in the future.

MPI is working across government and with industry to attract and retain talented people in the primary sector. Working with industry partners and education specialists to provide learning resources that are contextualised for the primary industries.

#### MPI supports the primary industries workforce through:

**The Primary Industry Capability Alliance support initiatives to build awareness of the primary industries as a rewarding career.**

**Primary Industry Champions in short promotional videos to increase public understanding of career opportunities**

**Primary Industries Ambassadors to work with schools to show students how their education can be applied to exciting careers in the primary industries.**



### Partnering for a stronger biosecurity system

As a trading nation, our world-class border and biosecurity system is continually challenged to keep New Zealand free of many unwanted organisms so that New Zealand's primary sector can continue to grow. MPI has taken the lead on a range of initiatives to build New Zealand's ability to respond to biosecurity risk, including:

MPI is making an \$87 million investment in the biosecurity system by building a new National Biocontainment Laboratory at Wallaceville, Upper Hutt. Construction is currently underway at the state-of-the-art facility, which is planned to open in 2017.

Since 2013, MPI has eight signed Government Industry Agreements (GIAs) with industry associations to co-manage biosecurity risk. The goal of the GIA is better preparation for, and response to, biosecurity incursions through partnership with industry.

MPI also collaborates with industry and a range of organisations to ensure biosecurity responses are fast, effective, and well-coordinated.

Managed by AsureQuality, the National Biosecurity Capability Network is a network of over 150 organisations and 55 000 people that can be rapidly deployed during a biosecurity event.



## Getting the best out of our land and water

The productive use of our land and water is a key feature of New Zealand's primary sector economy. MPI undertakes a wide range of initiatives to improve the productivity of our land and soils and ensure these resources are managed sustainably.

New Zealand is blessed with a lot of fresh water, with 145 million litres available per person per year. However, we can improve the way we manage this resource and increase productivity of the water we use. MPI supports a range of projects across the country that seek to best utilise water in order to boost production and get the most out of our lands and soils.

MPI is also committed to improving and maintaining the quality of New Zealand's waterways so that they remain available to future generations.

## Driving regional primary sector growth by improving access to water

MPI invests in the development of irrigation projects to drive growth in rural communities. Irrigation infrastructure provides a reliable water supply to farmers, which allows higher-value land uses, greater certainty of production, and environmental benefits.

**MPI has invested a total of \$39.5 million into developing irrigation infrastructure projects**

**In May 2016, \$7.85 million in funding for three separate projects in Canterbury were announced.**

## Investing in sustainable land management

MPI supports local communities to develop solutions for local issues through the Sustainable Farming Fund (SFF). Since its inception in 2000, SFF has invested \$125 million in over 990 community-led applied research and extension projects in fields covering sustainable land management, sector productivity, soil management and irrigation efficiency.

**\$125**  
million invested  
since 2000

Over  
**990**  
projects  
undertaken

# Primary Production

## Building profitable production systems

In this part of the value chain, MPI is working to invest in New Zealand's best-practice production systems through initiatives including:

- **Primary Growth Partnership Programmes** which advance science, allowing farmers to produce quality products aligned with consumer demand; and
- **Farm Systems Change** which encourage farmers to share knowledge and best practice to boost productivity and profitability.

MPI is focused not just on growing the quantity of primary sector production, but on growing the value we can extract from our production.

### Primary Growth Partnership

The Primary Growth Partnership is a joint venture between government and industry to invest in innovation throughout the value chain. The partnership programmes take a business-led, market-driven approach committed to using technology to get the most out of our production.

**To date, \$727 million of government and industry investment has been committed over time to 21 PGP programmes.**

**The PGP is estimated to contribute \$6.4 billion annually to New Zealand's GDP from 2025.**

The 'Transforming the Dairy Value Chain' PGP programme includes training rural professionals in body condition scoring in a series of workshops across the country. Body condition is a key indicator of animal welfare and assist farmers with planning and managing the feeding of animals to optimise production.

The 'Omega Lamb' programme uses scientific breakthroughs to improve the nutrient profile of lamb in response to increasing consumer demand for healthier foods. Producers will be able to market Omega Lamb as a health food to achieve a premium over existing lamb products.

Total Investment  
**\$727m**

Potential Annual Benefit  
**\$6.4b**

Identify the actions that successful farmers have taken to improve their performance and productivity



Learn from the best farms

Identify and publish the core capabilities, investment, and implementation needs required to lift overall farm performance



Understand what makes them successful

### Farm Systems Change

Farm Systems Change is an ambitious project that will assist with accelerating the transformation of New Zealand farms to a more sustainable and profitable operating platform. The project aims to understand how and why top farmers have implemented key system changes, and how these changes can ultimately improve our farm's bottom line.

Get the word out



Encourage farmers to share best practice with one another and feed lessons into productivity improvements

Develop common investment methodology



Partnerships with banks, accountants and farm advisers will improve the quality of available information on the costs and benefits associated with changes to farming systems

### Benefits of Farm Systems Change:

up to **4** times more profitable

Up to **20%** more productive

Improved **animal welfare**

Up to **50%** lower environmental impacts

# Processing

## Investing in industry success

In this part of the value chain, MPI and industry partner to increase productivity and make sure our processing systems and supporting regulatory systems are flexible and responsive to market demands.

Ultimately, it is industry who invests in building processing capacity, adding value to primary products and responding to market opportunities. Recent investment across our sectors highlights the continuing confidence of our industry partners.

MPI partners with industry to unlock future growth opportunities through:

- Primary Growth Partnership
- Stewardship of a world-class food safety system

### Increasing the value of our meat

In partnership with Silver Fern Farms and Landcorp, the "FarmIQ" PGP programme aims to create an integrated red meat value chain that is more responsive to changing consumer demands.

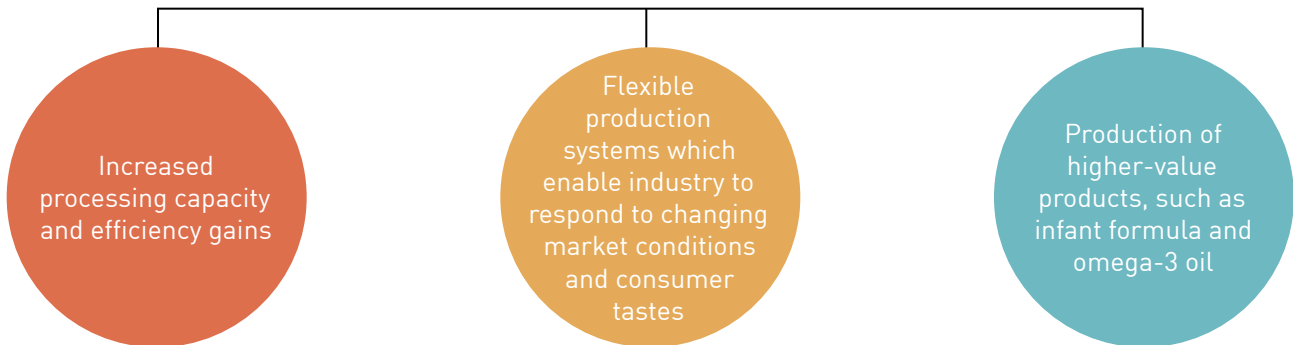
FarmIQ developed the Eating Quality System, which rates beef on 7 scientific criteria statistically proven to contribute to the eating quality of red meat. This criteria is not only used to promote the quality of New Zealand red meat, but also guides best practice throughout the value chain so that more valuable meat is grown and processed.

### Stewardship of the Food Safety System

MPI's food safety system protects consumers and New Zealand's reputation as a supplier of safe and suitable food. The strength of the food safety system is pivotal to New Zealand's reputation as a trusted trading partner and is a key pillar to growing our export opportunities.

As a part of the food safety system's continuous improvement, the Food Safety Science and Research Centre opened in Palmerston North, in May 2016. Established in conjunction with Massey University and industry partners, the centre aims to further strengthen New Zealand's food safety system.

## The future success of our primary industries will be built on industry investment to support:



In February 2016, Proliant opened a new **\$30 million** cattle blood plasma plant in Feilding. The plant produces bovine serum albumin (BSA), which is used in a variety of pharmaceuticals.

In late 2015, King Salmon opened **two new salmon farms** in the Marlborough Sounds, which have the potential to significantly expand the company's production capacity.

In December 2015, SeaDragon opened its new Omega-3 extraction plant in Nelson, which will produce up to **5000 tonnes** of fish oil per year.

Yashili New Zealand opened a **\$220 million** infant formula plant in Pokeno in late 2015



Zespri announced an additional **1600** hectares of gold kiwifruit licence would be released over the next four years, a significant addition to the **4800** hectares of gold kiwifruit in production in 2015.

Red Stag Timber is investing **\$120 million** in its Rotorua sawmill, expanding annual production capacity from 450 000 m<sup>3</sup> to **700 000 m<sup>3</sup>** over the next five years.

In mid-2015, Fonterra completed a **\$240 million** expansion in Pahiataua, which will allow the plant to process an additional **2.4 million** litres of milk into a wide array of milk products each year.

Westland Milk opened a **\$40 million** ultra-high temperature (UHT) plant in Rolleston in April 2016.

In mid-2015, Fonterra completed a **\$157 million** expansion in Edendale, the company's oldest and largest production site, which will increase annual processing capacity from 15.0 to **16.4 million** litres of milk.

# Market Access

## Expanding opportunities for export growth

In this part of the value chain, MPI works to maintain access to markets for New Zealand's primary sector, and builds lasting two-way trade relationships that benefit both producers and consumers.

### Facilitating two-way trade

New Zealand exports the majority of our primary products. MPI plays a key role in ensuring export markets remain viable propositions for our producers, by ensuring access and reducing barriers to entry.

MPI and MFAT have worked together along with industry to successfully negotiate a number of recent Free Trade Agreements (FTAs). Recent successes include China, Taiwan\*, and Korea. We have been able to leverage off these agreements to progress chilled meat and avocado exports to China and increase the value of horticulture exports to these markets.

In addition to our existing FTAs, the Trans-Pacific Partnership presents a significant opportunity to reach a number of important markets.

\*The Agreement between New Zealand and the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu Economic Cooperation (ANZTEC)

### Free Trade Agreements by the numbers

New Zealand has existing FTAs with

**16 WTO Members**

the destinations of



over **50%** of New Zealand's primary sector exports **(\$18.4b)**

When the 12-country TPP is ratified, we will have FTAs with

**5 additional WTO Members:**

USA, Japan, Canada, Mexico, and Peru. Following TPP ratification, FTA partners will account for



over **71%** of New Zealand's primary sector exports **(\$25.9b)**

### TPP Benefits to New Zealand by 2030

**\$272m**

tariff savings

**\$374m**

faster customs clearance

**\$1,460m**

addressing non-tariff barriers



**Biosecurity**  
+  
**Market Access** = **Lasting two-way trade relationships**

MPI and industry also work together to “protect to grow” by maintaining the integrity of our biosecurity systems.

The result of this work can be seen in the evolution of our pipfruit export markets since 2011. The value of New Zealand pipfruit exports have increased over **85 percent** from 2011 to 2016, largely due to expanded export opportunities.

Pipfruit exports to Taiwan have more than doubled over this time, and exports to China have increased from a very low base in 2011 to over **\$50 million** last year. Taiwan and China now rank as our 3rd and 5th largest pipfruit markets, respectively.

2007



TAIWAN

Pipfruit trade suspended following a Codling Moth detection

2008



TAIWAN

Suspension lifted following MPI negotiation of export protocol



CHINA

Pipfruit trade voluntarily suspended by MPI and Pipfruit NZ following pest detections

2011



CHINA

MPI and industry cooperation leads to new export protocol being agreed

2014



TAIWAN

New economic cooperation agreement removing the previous 20% tariff on apple exports

# Market Success

## Developing assurances to meet customer requirements

Official assurances are mandatory requirements to gain access to many overseas markets, Customer assurances, on the other hand focus on providing consumers and retailers information about attributes and benefits associated with specific products.

These customer assurances work best when industry works alongside MPI to confirm product or scientific claims which may enhance their success in specific markets.


## Driving responsiveness through insight


In this part of the value chain, MPI is providing leadership through market insight. Understanding New Zealand's markets and consumers is critical to ensure we can:


- identify where market information signals potential growth opportunities; and
- build the right regulatory frameworks with the agility to respond rapidly to changing requirements.


MPI's Customer Insights work and the evolution of our customer assurances demonstrate how we can feed insight back into the value chain.


### Official Assurances

 **Reactive** to requirements made by trading partner governments;


 Provided to **government** entities to facilitate trade.


 **Mandatory** for industry to meet requirements to gain overseas market access


 **Defensive** customer assurances assure market position can be maintained


 For example, MPI issues a statement assuring governments that an exporter complies with the Resource Management Act 1991 in response to requirements for legally harvested wood products.


### Customer Assurances

 **Proactive**, driven by NZ industry and consumers

 Provided to consumers and retailers in overseas markets

 Industry participation optional, if they see value in it

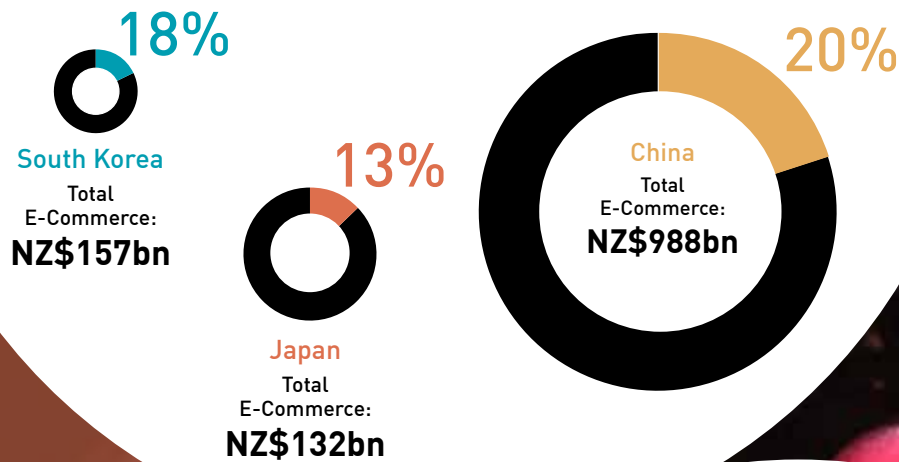
 MPI collaborates with industry to develop assurances that provide a marketing edge for New Zealand products

 For example, MPI works to substantiate industry claims such as labelling NZ meat as grass fed for the US market.

## Consumer Insight

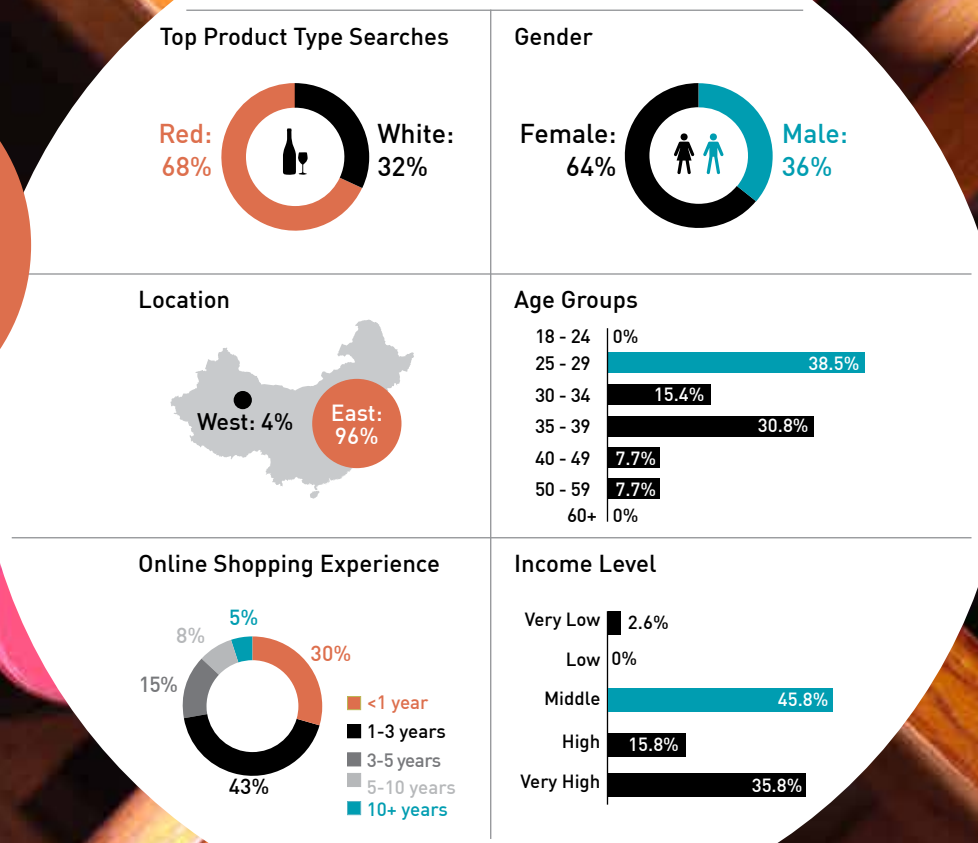
In a highly competitive global market our sectors need to be increasingly driven by analytics to exploit our remaining points of differentiation. Analytics can help understand what products customers want and why they want them, what prices they will pay, how many items each will buy in a lifetime, and what triggers will make people buy more.

Understanding key market shifts helps identify opportunities across regions. These figures show both the relative scale of e-commerce in different countries, as well as the percentage of the that market dedicated to online food shopping.



Insights into consumers and their purchasing behaviour allows exporters to tailor their strategies to optimise market success. To the right is a high level profile of Chinese consumers of New Zealand wine.

### Wine Customer Profile, China





2

# DAIRY

# Dairy

## at a glance



### KEY FACTORS



New Zealand milk solids production is expected to fall 1.6 percent in the 2015/16 year, before stabilising and starting to increase from the 2017/18 year.



Dairy export revenue is expected to fall to \$13.2 billion for the year ending June 2016, before increasing to \$17.7 billion by 2020.



European Union (EU) milk production has increased since quotas were lifted on 1 April 2015. This has contributed to a global oversupply of milk and depressed dairy prices. We expect that prices will gradually begin to recover from the December 2016 quarter onwards as supply and demand start to rebalance.

Dairy exports make up around 36 percent of New Zealand's primary sector exports. Price volatility, driven by both exchange rate movements and global commodity prices continue to affect dairy export revenue. World dairy prices will take time to recover from current low levels, which have been driven by excess global supply from dairy exporting countries (mostly the EU and New Zealand)<sup>2</sup> combined with low demand from China, our largest dairy export market. As a result of these low prices, total dairy export revenue is expected to fall to \$13.2 billion for the year ending June 2016, down 5.8 percent from the previous year.

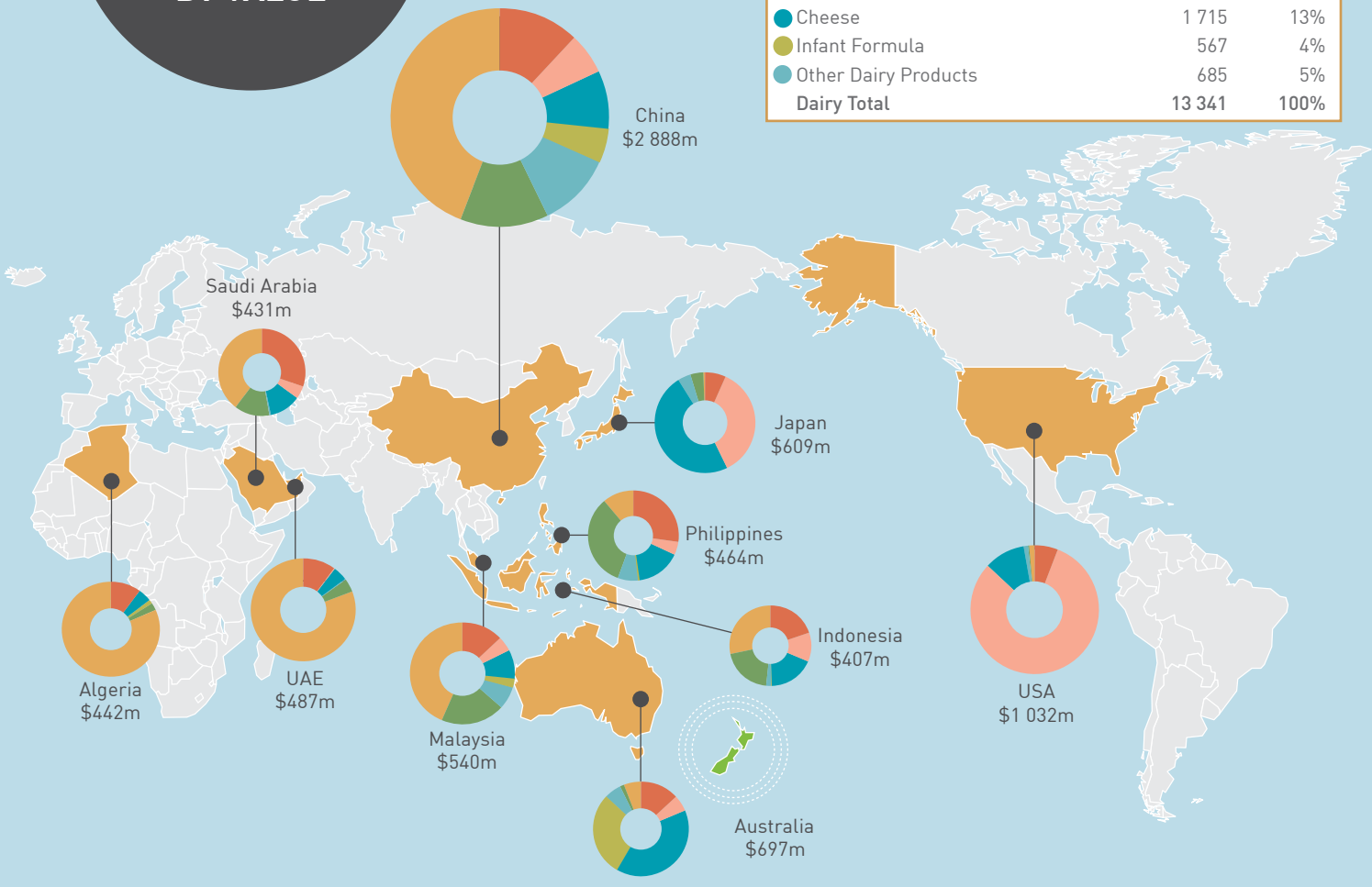
<sup>2</sup> Increased USA production has been mostly consumed domestically.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$13 139m	\$17 791m	\$14 050m	\$13 230m	\$13 814m	\$16 626m	\$17 055m	\$17 735m
Y/Y % Change	-2%	+35%	-21%	-6%	+4%	+20%	+3%	+4%

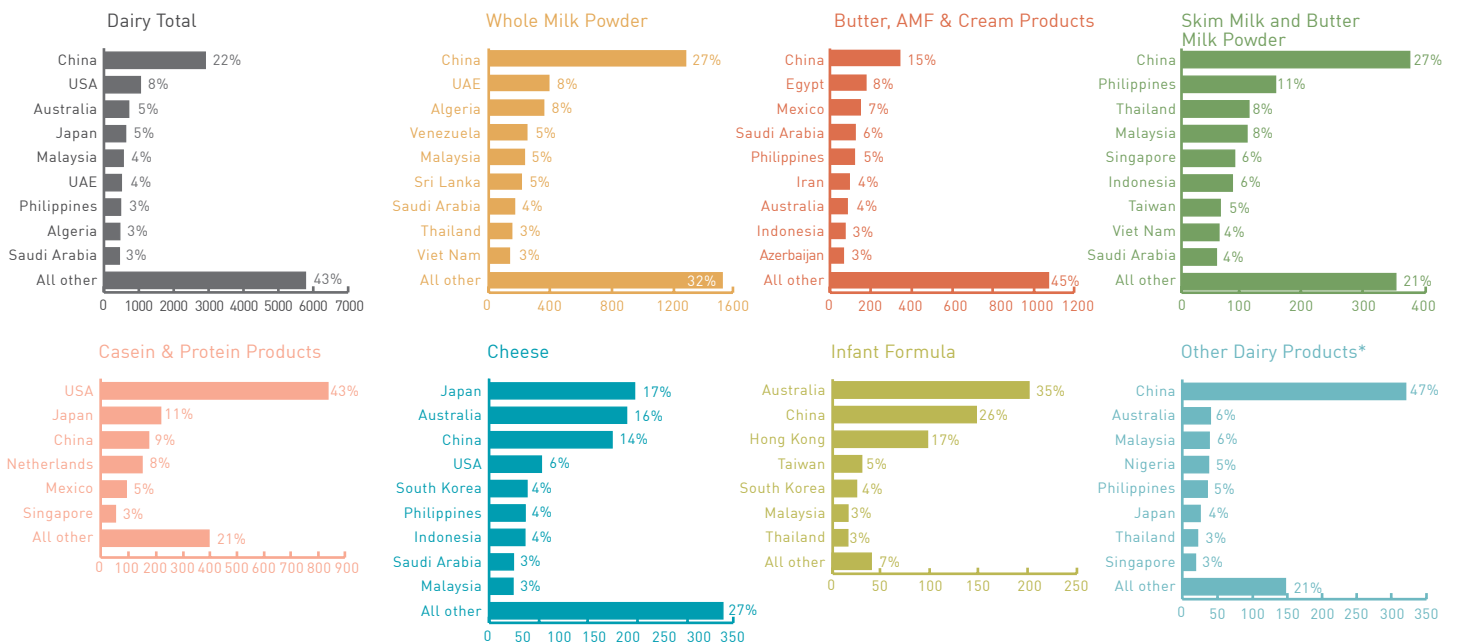
\* Estimate for year ended June.

# TOP 10 DAIRY EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Whole Milk Powder	4 698	35%
Butter, AMF & Cream Products	2 369	18%
Skim Milk and Butter Milk Powder	1 386	10%
Casein & Protein Products	1 922	14%
Cheese	1 715	13%
Infant Formula	567	4%
Other Dairy Products	685	5%
<b>Dairy Total</b>	<b>13 341</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other dairy products include: Liquid milk and cream, yoghurt, and ice-cream.

# Dairy

## detailed analysis

### PRODUCTION

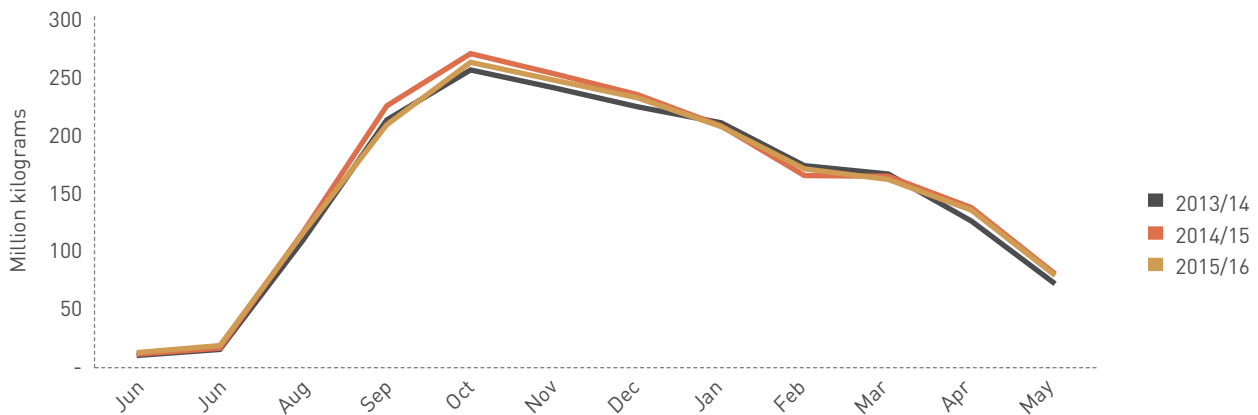
Milk solids production for the year ended May 2016 is estimated to be down 1.6 percent on the previous year's production. This is due to an estimated 3.3 percent fall in cow numbers, which is partly offset by an increase in milk solids produced per cow as less productive cows were heavily culled over the past two seasons.

This is a significant improvement from the 6.8 percent production decrease that was forecast in SOPI December 2015 Update. El Niño impacts failed to materialise over the summer, with many dairy regions instead experiencing favourable climatic conditions in the latter half of the season. For the season to April 2016, South Island production was up 1.8 percent, while North Island production fell 3.8 percent compared to the same period in the previous year.

Production for May 2016 is expected to be in line with the previous year, despite the low milk prices. Favourable grass growing conditions mean that costs of production will remain relatively low due to not having to rely heavily on supplementary feed.

**Lower cow numbers have driven milk production down 1.6 percent compared to the June 2015 year, with production increasing in future years**

FIGURE 2.1: NEW ZEALAND'S MILKSOLIDS PRODUCTION FOR 2014-2016



Sources: Statistics New Zealand, DairyNZ, MPI.





TABLE 2.1: DAIRY FARM PRODUCTION, MILK PRICES AND EXPORTS, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Cows and heifers in calf or in milk (million) <sup>1</sup>	5.00	5.18	5.06	5.05	5.12	5.18	5.25	5.44
Milk solids production (million kg) <sup>2</sup>	1 658	1 825	1 890	1 860	1 868	1 895	1 921	1 952
Milk price (cents per kg of milk solids) <sup>2</sup>	608	840	461	424	485	615	648	661
Total export value (\$ million) <sup>3</sup>	13 139	17 791	14 050	13 230	13 814	16 626	17 055	17 735
Total export volume (thousand tonnes) <sup>3</sup>	2 942	2 980	3 046	3 202	3 134	3 179	3 222	3 275
Average export price (\$ per kg) <sup>4</sup>	4.47	5.97	4.61	4.13	4.41	5.23	5.29	5.41

\* Estimate for year ended June.

<sup>1</sup> Dairy cow numbers represent opening stocks for the upcoming season. For example, milk solids produced in the June 2016 year come from the opening stock of cows as at 1 July 2015.

<sup>2</sup> Year to 31 May

<sup>3</sup> Year to 30 June

Recently released figures from Statistics New Zealand show that dairy cow numbers fell 2.3 percent from 2014 to 2015. Opening stocks of dairy cow numbers are estimated to fall slightly more as at June 2016. During the 2015/16 season, farmers responded to the low milk price, an expected El Niño weather event, and high beef prices by culling less productive cows.

We expect total milk solids production to remain stable in the 2016/17 year before increasing over the remainder of the outlook period. Milk solids production per cow is expected to increase by around 1 percent each year as dairy cow genetics improve at a slower rate following stronger rises in recent years. However, the current low price environment creates a downside risk to production as farmers have little discretionary income to spend on supplementary feed if faced with adverse climate conditions.

MPI's work in supporting farm systems change could help farmers adapt to lower milk prices by using insights gathered from high-performing peers to increase profitability. Recent farm case studies<sup>3</sup> highlight pasture management as a key area in minimising costs of production for dairy farmers.

<sup>3</sup> See ANZ's Agri Focus: April 2016.

## PRICES

New Zealand's export prices for dairy products remain low, with increased EU milk production following the removal of milk supply quotas on 1 April 2015 and subdued Chinese demand for whole milk powder contributing to a global oversupply of dairy products. Russia's ban on imports from the EU and low global oil prices reducing the ability of oil producing nations to pay for imports are exacerbating the situation. US dairy production has also increased over the past year, but exports have not as this extra supply is being absorbed by increased domestic demand.

**Increased milk production and exports by EU farmers have contributed to low international dairy prices over the past year**



Milk deliveries in the EU for April 2015 to January 2016 are 3.5 percent ahead of the same time last year. At current prices this level of production growth is unsustainable, and so over the longer-term we would expect EU production to stabilise as market demand and supply re-balances.

As of 20 April 2016, the EU has passed legislation to double the amount of product able to be held as intervention stocks. On 24 May 2016, the quantity of Skim Milk Powder (SMP) in EU Intervention Stocks reached the new limit of 218,000 tonnes. This represents just under 15 percent of total SMP production by the EU in the December 2015 year. SMP has a shelf life of around 12-18 months, so these intervention stocks will need to be sold in the near future, which could further slow any price recovery if there is no offsetting fall in production. In addition, as at April 2016, there were 78 295 tonnes of butter, 34 182 tonnes of cheese, and 32 026 tonnes of SMP in Private Storage Aid.

For the June 2016 year to date (up to March 2016), EU export volumes are 167 034 tonnes (8.5 percent) higher than for the same period in the previous year. Just over half of this increase is in butter and cheese exports but Whole Milk Powder (WMP) is also up significantly. New Zealand's dairy export quantities are up by a similar amount, as inventories were sold over the same period, resulting in an extra 334 000 tonnes of dairy products from our two areas traded in global markets so far this year.

Total global exports are estimated at 6 850 000 tonnes for the December 2015 year<sup>4</sup>. Based on these figures, the increase in dairy exports from the EU and New Zealand represents around 5 percent of global trade.

Increased exports from NZ and the EU, and a build-up of SMP quantities in Intervention and Private Storage Aid are likely to dampen global export prices in the short term, which is consistent with our analysis of the latest Global Dairy Trade (GDT) results. This means relatively flat prices are expected for New Zealand dairy export prices through

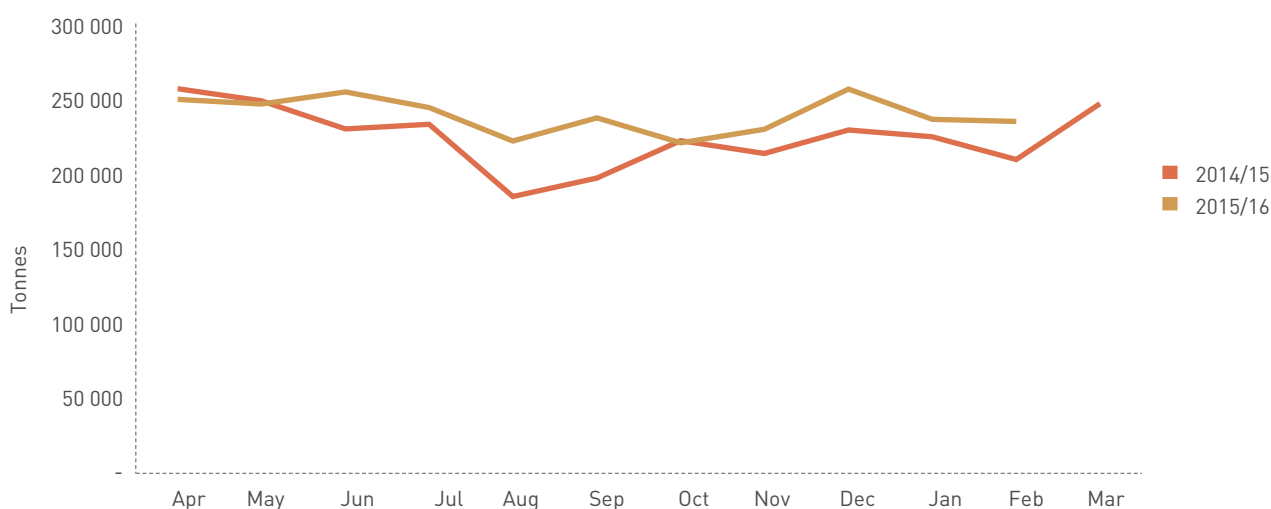
**Dairy export prices are expected to gradually rise from the December 2016 quarter onwards as global demand and supply begin to rebalance**

to the December 2016 quarter.

GDT auction results can provide indicative price movements up to six months in advance. Based on results up to 1 June 2016, our analysis indicates that prices for butter, SMP, and WMP will start to increase from October 2016 onwards.

The key to a rise in nominal dairy prices is sustained growth in demand for dairy products from developing countries, particularly oil exporting countries and China. In the midst of global uncertainty about when a recovery in demand may start, our forecast is that prices for core products will start to rise from the December 2016 quarter. Following this expected recovery through to the December 2017 quarter, dairy export prices are expected to grow at a long run rate of around 2 percent per year.

FIGURE 2.2: EU MONTHLY DAIRY EXPORTS, 2015 -2016



Source: Agriculture and Horticulture Development Board (U.K.).

<sup>4</sup> United States Department of Agriculture, Dairy: World Markets and Trade report, December 2015.

Milk production in the EU has been strongly correlated with global dairy prices in the past<sup>5</sup> (whereas in New Zealand production is correlated more strongly with weather conditions). This suggests that when dairy prices begin to recover, EU production will also increase. This increased supply coming out of the EU will dampen potential price rises, which means we do not expect future dairy prices to come close to the record highs seen during the 2013/14 season (under normal climatic conditions).

New Zealand's all company average farm-gate milk solids price is forecast to rise to \$4.85 per kilogram of milk solids for the year ending May 2017. This includes the start of our expected recovery in international dairy prices. The milk price is expected to increase to \$6.15 for the following year as global supply and demand rebalance, increasing further to \$6.61 by 2020.

## EXPORTS

Similarly to what we observed in the previous year, despite the large fall in New Zealand's WMP exports to China, total WMP export volumes increased 2.7 percent. Lower international prices have led to continued increases in demand from countries such as Venezuela, Algeria,

**Dairy export revenue is expected to grow \$4.5 billion over the next four years due to short-term price rises and longer term volume growth**

**WMP export volumes increased in the latest year as New Zealand exporters found alternative overseas markets to China**

Malaysia, Viet Nam, and the United Arab Emirates. WMP export volumes to our ten largest export destinations (excluding China) are up 25.3 percent in the December 2015 year compared to the December 2014 year.

Dairy export revenue is forecast to decrease to \$13.2 billion for the year ending June 2016, down 5.8 percent from the year ending June 2015. Falls in US dollar prices for our main dairy products more than offset a depreciating exchange rate and record dairy export volumes.

The forecast fall in dairy export revenue is mainly driven by lower revenue earned from milk powder exports. Increased supply of SMP by the EU combined with lower Chinese demand for WMP over the past 12-18 months have led to a sharp fall in export prices.

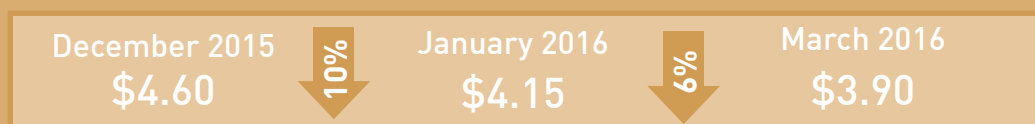
Recent trade figures show growing Chinese demand for imports of liquid milk<sup>6</sup> and infant formula, which is largely being met by countries such as France, Germany, and The Netherlands. Growth in these products represent an opportunity for New Zealand to diversify our product mix going into China towards higher value items. Despite this trend over the past few years, there remains an emerging

## FORECASTING DURING PERIODS OF PRICE VOLATILITY

MPI's dairy export revenue forecast for the June 2017 year is \$4.1 billion lower than forecasts published six months ago as part of SOPI 2015 December Update. The main reason behind the lower forecast in the current publication is a fall in expected prices. These have changed between the two forecasting periods due to:

- an 8.9 percent appreciation in Treasury's average NZD/USD exchange rate assumption for the June 2017 year (\$1.4 billion of the total fall);
- updated Global Dairy Trade auction results that indicate prices for main dairy commodities will continue to fall until the September 2016 quarter (the previous forecast assumed a dairy price recovery would begin in the March 2016 quarter);
- a resulting delay in our expected dairy price recovery, with a smaller percentage increase expected compared to our previous forecast due to expectations around future EU dairy export volumes.

Dairy prices have been extremely volatile in recent years, making it difficult to forecast future price movements. Fonterra's Farmgate Milk Price forecasts for the 2015/16 season illustrates this challenge well:



<sup>5</sup> This relationship has diverged somewhat following the removal of EU production quotas, but we expect the underlying correlation to remain in future periods.

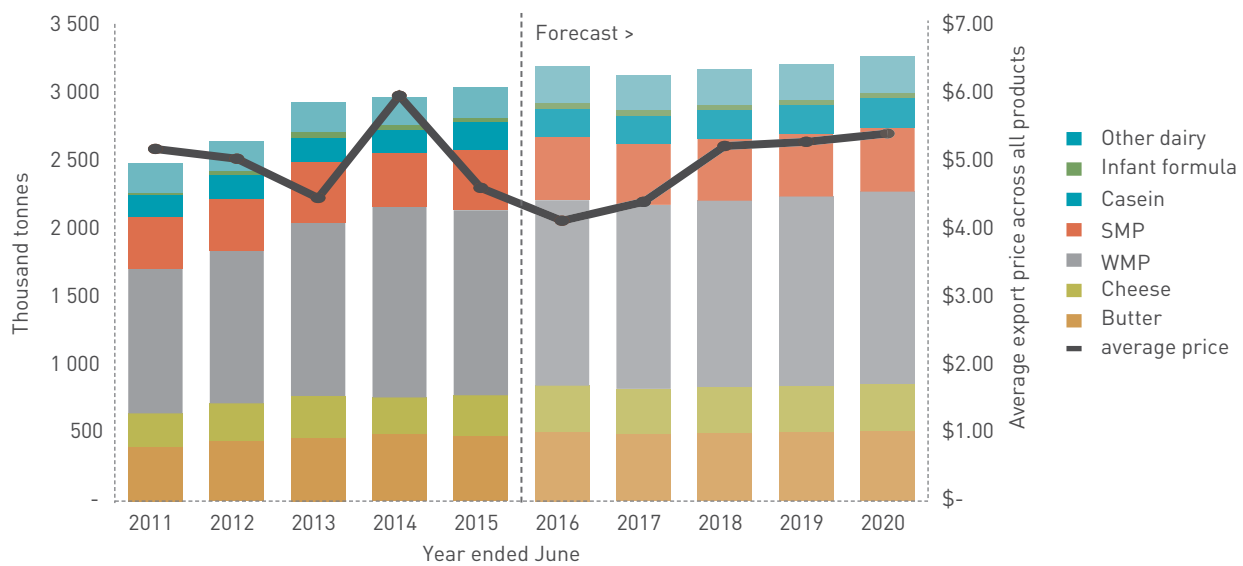
<sup>6</sup> As shown in *Situation and Outlook for Primary Industries: December 2015 Update*, page 10.

middle class that will be reliant on milk powder and other dairy products, which New Zealand will continue to supply.

We expect Chinese demand for WMP to gradually increase from the December 2016 quarter, which along with continued growth in butter and cheese exports will lift our dairy exports to \$13.8 billion in the year ending June 2017. Once Chinese demand has recovered to historical average levels, we expect total dairy export revenue to increase to \$16.6 billion in the year ending June 2018, on the back of a (price-driven) \$1.5 billion rise in whole milk powder exports.

Increases across all main dairy product exports contribute to dairy exports rising to \$17.7 billion by the year ended June 2020. Revenue growth is expected to be price driven out to 2018 as a rebalanced global supply and demand leads to a price recovery. Further out, we expect increases in New Zealand's export revenue to be driven by increased export volumes as cow numbers and production per cow continue to rise over time.

FIGURE 2.3: ACTUAL AND FORECAST DAIRY AVERAGE PRICES AND VOLUMES, 2011-2020



Sources: Statistics New Zealand and MPI.

TABLE 2.2: DAIRY EXPORT VALUES (NZ\$ MILLIONS), 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Butter, AMF	1 910	2 699	2 219	2 405	2 565	2 798	2 864	2 978
Casein	1 674	1 925	2 129	1 809	1 891	2 177	2 228	2 317
Cheese	1 441	1 482	1 557	1 720	1 792	2 001	2 048	2 130
SMP	1 832	2 285	1 762	1 364	1 421	1 857	1 909	1 985
WMP	5 104	8 393	5 385	4 682	4 926	6 405	6 585	6 847
Infant formula	555	401	415	578	542	618	632	657
Other	623	607	582	673	677	771	789	820
<b>Total</b>	<b>13 139</b>	<b>17 791</b>	<b>14 050</b>	<b>13 230</b>	<b>13 814</b>	<b>16 626</b>	<b>17 055</b>	<b>17 735</b>

\* Estimate for year ended June.

Source: Statistics New Zealand and MPI.

## NZX MILK FUTURES

In May 2016, NZX launched futures and options contracts for farmgate milk. Designed to cash settle against Fonterra's farmgate milk price, these contracts will provide a tool for dairy farmers and processors to manage the risks of operating in a volatile price environment. Fonterra's opening milk price forecast has varied from the final payout by an average of \$1.27 per kgMS over the past five years, which increases the risks and uncertainties faced by farmers and processors.

On the farmgate side, Fonterra operated a guaranteed milk price (GMP) scheme from 2013 to 2015, which allowed farmers to lock in a portion of their production at a fixed price at the beginning of the season. Fonterra discontinued the GMP scheme in 2015, but the new NZX Milk Price Futures contract could provide a similar function, with added flexibility. First, it will be available to all farmers, not just Fonterra suppliers. Second, users will be able to buy and sell throughout the year as their expectations evolve, rather than just at the beginning of the season. Third, users will be able to hedge for up to the next three marketing years, potentially allowing farmers and processors to provide long-term price certainty.

The launch of NZX Milk Price Futures was preceded by futures contracts for whole milk powder, which was first introduced in 2010, followed by skim milk powder, anhydrous milk fat, and butter. These contracts have steadily grown in volume since they were first introduced from 2010 onwards and are now widely traded among international dairy industry participants. As the Milk Price Futures contract has just launched, it is too early to say how it will be received by the industry, but it will be interesting to track its progress over the coming months and years.

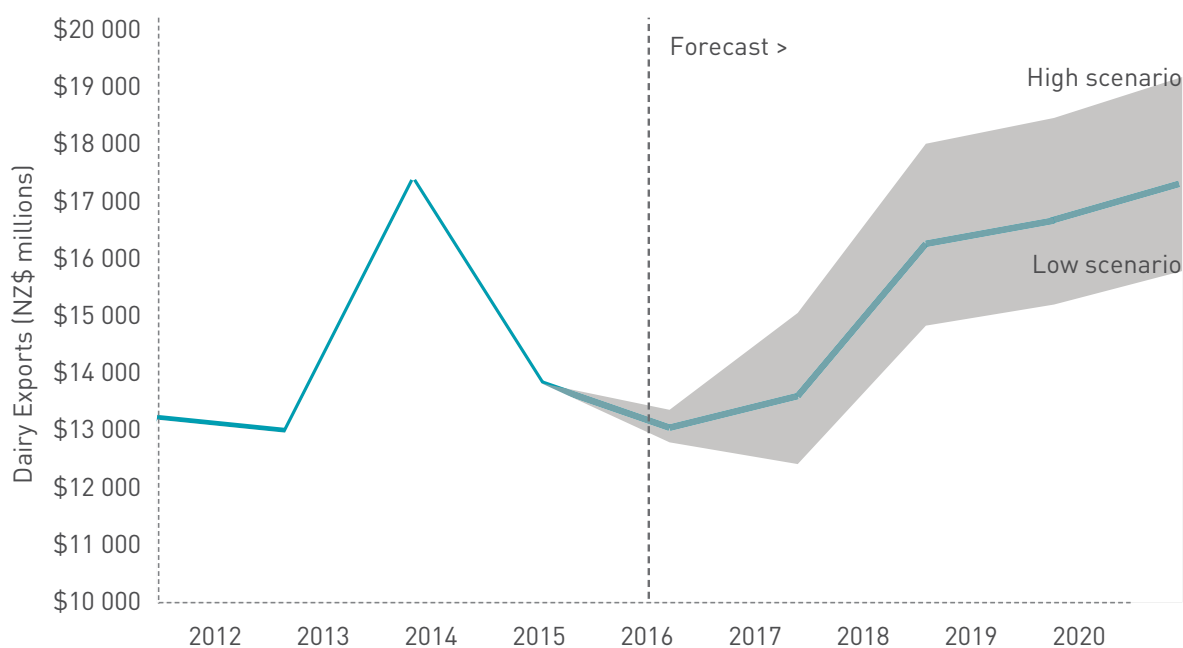
## EXCHANGE RATE SENSITIVITY

Our export revenue forecasts are based on exchange rate assumptions provided by the Treasury. As discussed in the exchange rate section on page 11, differences in the actual future exchange rate compared to these assumptions can have a large impact on export revenues. Forecasts for

dairy exports, New Zealand's largest export sector, are particularly susceptible to exchange rate fluctuations.

The graph below illustrates there is a \$3.6 billion variation in potential dairy exports by 2020 if we include a 10 percent variation in baseline exchange rate assumptions (shaded area).

FIGURE 2.4: DAIRY EXPORT VALUES (FORECASTS) WITH HIGH/LOW EXCHANGE RATE SCENARIOS



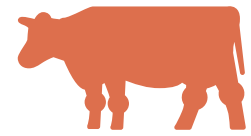


3

**MEAT AND  
WOOL**



# Meat and Wool



## at a glance



KEY  
FACTORS



For the second straight year, beef and veal exports remain elevated well above previous levels driven by strong prices and production.



Lamb and mutton exports have fallen as a result of lower prices and a poor lambing season in spring 2015.



The medium term outlook for the New Zealand meat and wool sector is positive with a steady production base and strong global consumer demand.

Export revenue earned by the meat and wool sector is expected to reach \$9.1 billion in the year ending June 2016, slightly up from last year. Beef prices have remained high, while sheep meat prices fell. We expect meat and wool export revenue to fall in the year ending June 2017, as beef and lamb prices decrease and cow slaughter numbers fall. Brazilian competition in our main beef markets (USA and China) is expected to keep prices in check in the medium term. Access for chilled meat into China could have positive impacts on the value of future meat exports, but it may be some time before these benefits are realised.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$7 794m	\$8 162m	\$9 001m	\$9 055m	\$8 345m	\$8 510m	\$8 534m	\$8 804m
Y/Y % Change	+0.2%	+5%	+10%	+1%	-8%	+2%	+0.3%	+3%

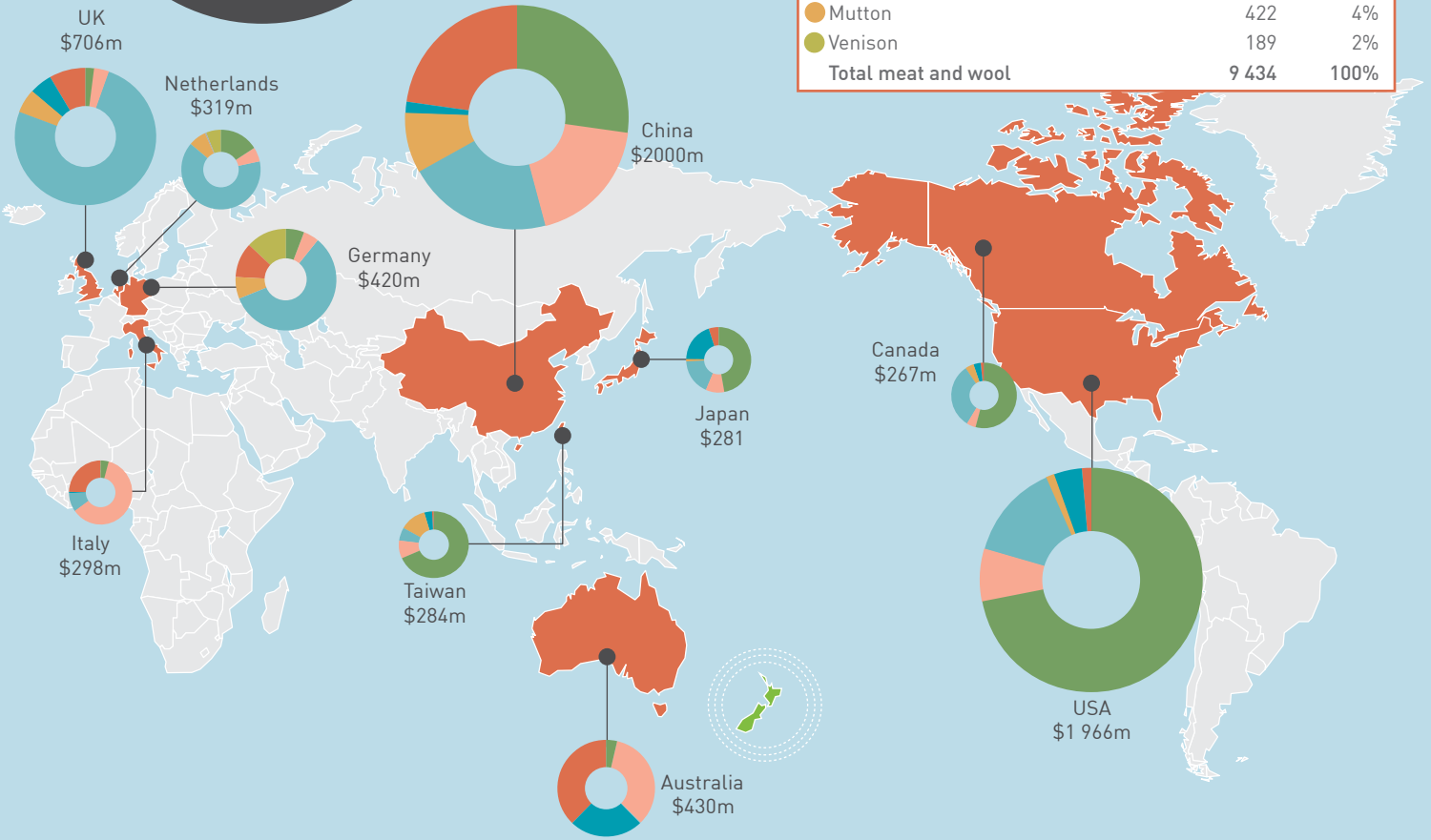
\* Estimate for year ended June.



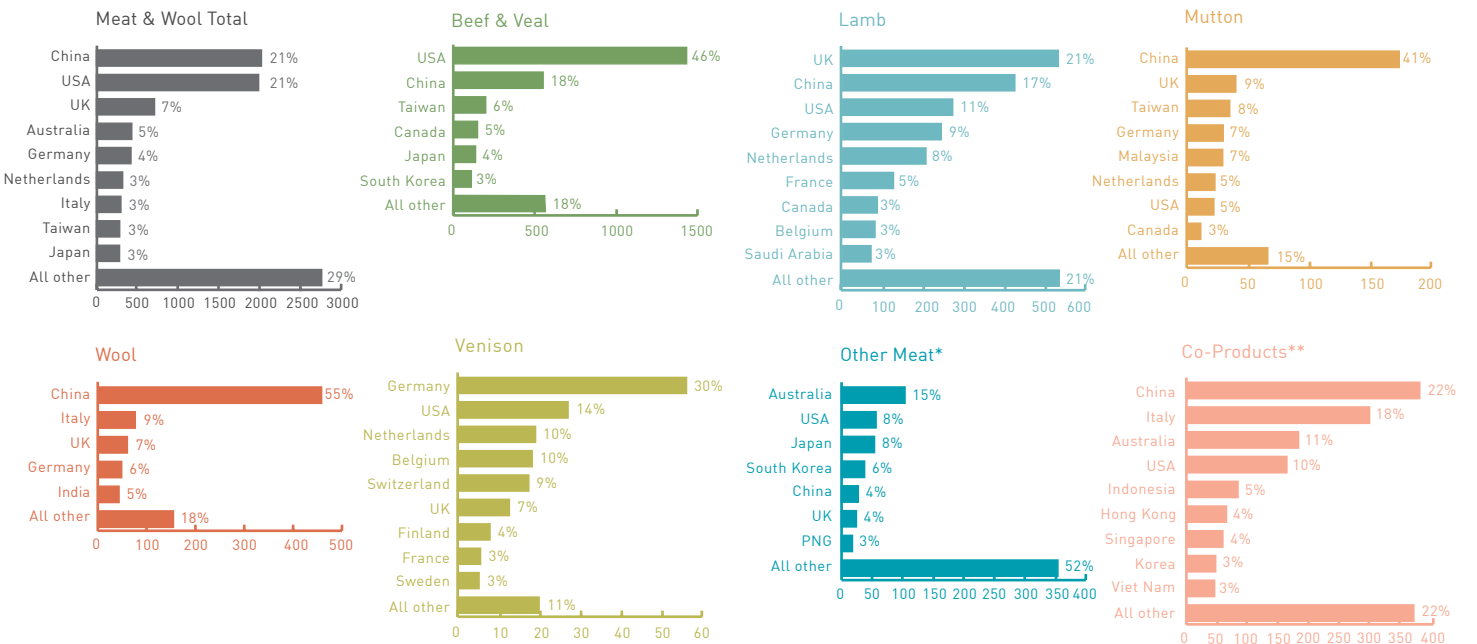


# TOP 10 MEAT & WOOL EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Beef and Veal	3 088	33%
Lamb	2 563	27%
Co-products	1 679	18%
Wool	817	9%
Other Meat	675	7%
Mutton	422	4%
Venison	189	2%
<b>Total meat and wool</b>	<b>9 434</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other meat includes: Edible offal, processed meat, and poultry.

\*\* Co-products include: animal fats & oils, animal products for feed, and other animal by-products.

# Meat and Wool

## detailed analysis

### BEEF AND VEAL

Beef and veal exports are expected to reach \$3.0 billion in the year ending June 2016, up slightly from the previous year. Beef production and export volumes are estimated to be similar to last year due to a second straight year of strong cow slaughter numbers. Export prices have also been strong for the second consecutive season, averaging \$7.21 per kg (product weight basis), 1.6 percent higher than last year. The 2015 and 2016 seasons have been exceptional for New Zealand beef exports. Over the next few years, both production volume and prices are forecast to ease back toward pre-2015 levels. This is due to a stabilising of the NZ dairy herd, rebuilding herds in Australia and the US, and increasing competition in the USA and Chinese markets, particularly from Brazil.

**New Zealand's 2016 beef exports remain strong for the second year in a row**

### PRODUCTION

The past two years have seen strong beef production volumes, supported by both high prices and slaughter numbers. Beef production in 2015 and 2016 was around 40 to 50 thousand tonnes higher than would otherwise be expected, in part because lower dairy prices meant a larger proportion of dairy cows were culled than usual. Looking ahead to 2017 and beyond, we expect production to fall back to pre-2015 levels as dairy prices gradually recover and cows are culled at a more sustainable rate.

In the current season, strong prices and good weather over summer have contributed to beef production volumes that should remain strong through to the end of June. The current year is expected to be the second highest in recent years, with production volume 2.2 percent below last year but 4.8 percent above the 5 year average.

After a year of decline, the New Zealand cattle herd is forecast to increase slightly in the year ending June 2016 and continue growing over the next few years, albeit at a slower pace than the 2006-2014 period. The beef herd is projected to remain relatively stable over the next few years.

TABLE 3.1: MEAT AND WOOL EXPORT EARNINGS, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Beef and Veal	2 143	2 199	2 980	3 027	2 608	2 596	2 610	2 722
Lamb	2 263	2 485	2 504	2 413	2 172	2 179	2 219	2 300
Mutton	395	488	418	404	381	404	389	390
Venison	171	187	174	194	167	163	154	157
Other meat <sup>1</sup>	435	438	466	497	508	559	585	620
Wool	654	726	809	806	785	801	779	782
Hides & skins	608	624	570	527	537	573	566	575
Animal co-products <sup>2</sup>	901	823	907	995	1 002	1 063	1 082	1 117
Carpets and other wool products	223	191	172	190	185	173	149	141
<b>TOTAL</b>	<b>7 794</b>	<b>8 162</b>	<b>9 001</b>	<b>9 055</b>	<b>8 345</b>	<b>8 511</b>	<b>8 533</b>	<b>8 804</b>

\* Estimate for year ended June.

<sup>1</sup> Other meat includes: Edible offal, processed meat, and poultry

<sup>2</sup> Animal co-products include: animal fats & oils, animal products for feed, and other animal by-products

Sources: Statistics New Zealand and MPI.

## EXPORTS

Despite export prices having fallen from their July 2015 peak of \$7.86 per kg, average prices this year are 1.6 percent higher than last year and are still elevated above 2012 to 2014 prices (see figure 3.1 below). Prices during the past two years have been exceptional as drought in the USA contributed to strong import demand. Export prices are forecast to settle in the \$6.50 to \$6.75 per kg range over the next two seasons.

Over the medium term, demand for beef continues to be strong in the USA and China, the world's two largest importers. On the basis of this growth, we expect New Zealand beef exports to remain strong over the next few years despite strong competition from Brazil and Australia (once the Australian herd is rebuilt after several years of drought).

**Over the medium term, beef demand remains strong in the USA and China, our two largest markets**

In calendar year 2015, China's official beef imports increased 59 percent from the previous year to 474 000 tonnes. Chinese imports from New Zealand over that time increased by 74 percent to 70 000 tonnes, so

our exporters have been ahead of the curve in capturing a share of this increasingly important market. At the same time China appears to be diversifying its imports, both with increased chilled beef imports (see following page) and new suppliers such as Brazil.

**New Zealand's market share in China has been growing**

Import demand from the United States is expected to drop off somewhat from last year's highs, and this is reflected in lower import prices. Last year's domestic supply shortfall was driven by rebuilding cattle herd following a drought and anticipation of continued demand growth. As the USA herd is being replenished, USA beef production is beginning to gather pace and import demand has fallen somewhat.

Exporting countries will also face increasing competition from Brazil over the next few years. Strong production prospects and lower domestic beef consumption (due to a recession) increases the South American country's exportable supplies, while a weak currency makes those supplies more competitive in the export market.

In addition, Brazil has gained formal market access into China, New Zealand's second largest market for beef exports. As for the USA market, Brazil anticipates gaining

FIGURE 3.1: BEEF EXPORT PRICES, JULY 2012 TO JUNE 2018 (NZ\$ PER KG FOB)



Sources: Statistics New Zealand and MPI.

market access later in 2016. Despite a disadvantage in US tariff quota allocation, a weak currency and low production costs may yet enable Brazil to profitably compete in the US market, which is New Zealand's biggest export destination.

The forecasted lower prices for the next two years are more a reflection of the historically high prices experienced in the past year rather than any negative sentiment about the beef market's outlook. Despite the prospects of increasing competition, global beef demand is robust enough to maintain New Zealand's export prices close to \$7.00 per kg.

TABLE 3.2: BEEF CATTLE NUMBERS, BEEF PRICES, EXPORT VOLUMES AND VALUES, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Total beef cattle (opening stocks in millions) <sup>1</sup>	3.73	3.70	3.67	3.58	3.59	3.57	3.56	3.54
Schedule prime beef price (cents/kg)	400	403	492	463	422	423	427	447
Production (000 tonnes)	627	626	676	661	603	599	597	597
Export volume (000 tonnes CWE <sup>2</sup> )	536	544	599	599	561	557	556	556
Export volume (000 tonnes PW <sup>3</sup> )	374	380	420	420	393	390	390	390
Export price (NZ\$/kg PW)	5.73	5.79	7.10	7.21	6.63	6.65	6.70	6.99
Export value (\$ million)	2 143	2 199	2 980	3 027	2 608	2 596	2 610	2 722

\* Estimate for year ended June.

<sup>1</sup> Opening numbers are as at 12 July of the preceding year.

<sup>2</sup> Carcass-weight equivalent of shipped product weight.

<sup>3</sup> Product weight as shipped.

Sources: Statistics New Zealand, Beef + Lamb New Zealand and MPI.

## CHILLED MEAT ACCESS TO CHINA

Recent announcements highlight that New Zealand and China are working together to facilitate the trade of chilled meat into China. Currently, Australia (on a trial basis) is the only country with the ability to export chilled meat to China.

Chilled meat currently accounts for only around 11.5 percent of New Zealand's meat exports by volume. However, chilled exports represent 18.5 percent of the total value exported, which implies a significant price premium over their frozen equivalents (see table 3.3 below).

It may take some time for full market access to be secured and for the industry to develop new sales channels, but if chilled export volumes were to increase significantly, it would provide a positive boost to export earnings. New Zealand currently exports 53 000 tonnes of beef and 86 000 tonnes of lamb to China. If just 10 percent of this volume was substituted with chilled meat, that could result in a \$47 million annual increase in export revenue (at today's prices).

TABLE 3.3: PROPORTION OF NEW ZEALAND'S MEAT EXPORTS FRESH OR CHILLED, YEAR TO JUNE 2015

Product	Total Export Volume (Tonnes)	Chilled Export Volume (Tonnes)	Percent Volume Exported as Chilled	Price Premium for Chilled*
Beef and veal	419 724	25 763	6.1%	68%
Lamb	297 805	65 151	21.9%	51%
Mutton	80 392	246	0.3%	-
Venison	15 565	2 469	15.9%	114%
Total	813 486	93 629	11.5%	-

\* As compared to a similar cut of frozen meat

Source: Statistics New Zealand.

## LAMB AND MUTTON

For the year ending June 2016, lamb and mutton exports are forecast at \$2.4 billion and \$0.4 billion, respectively. Lamb production was lower this year due to poor weather conditions, and mutton exports are forecast down 3.2 percent from 2015. For both products, export prices have softened in the past year as increased production in Europe increased supplies and global demand has been softer than expected. Over the medium term, continued export growth will be challenged by slightly declining sheep numbers, but global demand is expected to support prices from 2018.

**Bad weather contributed to a fall in lamb production this year**

## PRODUCTION

Lamb production in the current season was down 5.5 percent due to the impacts of adverse weather, particularly the cold wet weather experienced in spring 2015 which resulted in lower lambing rates. Associated with the low lambing rate is a reduced slaughter rate for both lamb and mutton, which is expected to keep the overall sheep population at just over 29 million for the next two years.

Despite the lower lamb numbers, lamb and mutton production started strong in the current season, particularly from November 2015 to January 2016. This front-loaded production was driven in part by drought concerns in several parts of the country and anticipation of a strong El Niño. However, lamb and mutton production is expected to drop off towards the end of the current season, as there are fewer supplies available to the processors than usual for this time of year.

TABLE 3.4: SHEEP BREEDING NUMBERS, LAMB PRICES, EXPORT VOLUMES AND VALUES, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Sheep breeding numbers (opening stocks in millions) <sup>1</sup>	22.79	22.23	21.85	20.99	20.59	20.29	19.93	19.65
Schedule lamb price (cents/kg)	477	546	528	517	500	535	548	567
Production (000 tonnes)	376	376	384	363	350	349	345	345
Export volume (000 tonnes CWE <sup>2</sup> )	380	372	365	363	354	353	349	349
Export volume (000 tonnes PW <sup>3</sup> )	314	306	298	297	290	289	286	286
Export price (NZ\$/kg PW)	7.21	8.11	8.41	8.12	7.49	7.53	7.76	8.05
Export value (\$ million)	2 263	2 485	2 504	2 413	2 172	2 179	2 219	2 300

\* Estimate for year ended June.

<sup>1</sup> Mated ewe and ewe hoggets are as at 1 July of the preceding year.

<sup>2</sup> Carcass-weight equivalent of shipped product weight.

<sup>3</sup> Product weight as shipped.

Sources: Statistics New Zealand, Beef + Lamb New Zealand and MPI.



## EXPORTS

We forecast lamb exports to be \$2.4 billion for the year ending June 2016, down 3.6 percent from the previous year. The primary driver for this result is lower export prices received, while export volume is also expected to be slightly lower due to lower production. Average export prices on a shipped weight basis are forecast to have fallen from \$8.41 per kg in the year ended June 2015 to \$8.12 per kg in the year ended June 2016.

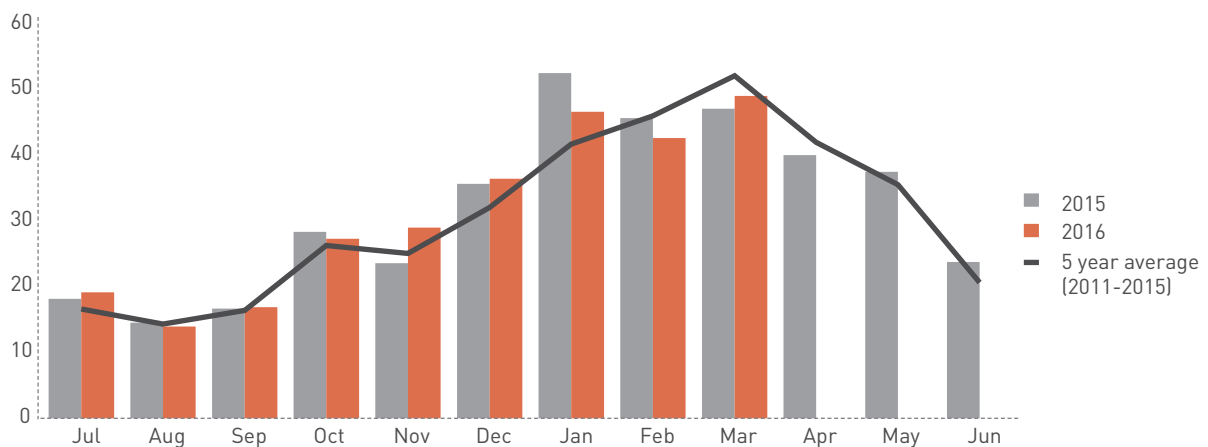
Current export prices for New Zealand lamb are in the \$7.50 to \$8.00 range, lower than the prices received in either of the past two years. Led by the United Kingdom, the European Union is the largest destination for New Zealand lamb (52 percent of export value). In the EU, expanded production has boosted lamb supplies, which has led to softer prices this year. China ranks as New Zealand's second leading destination for lamb (17 percent) and first for mutton (41 percent). China's consumption of both lamb and mutton should continue to increase over the medium term as consumers

increasingly seek to diversify their protein sources, although some of this demand growth will be met by increasing domestic production rather than imports.

Mutton production and export volumes are very similar to last year, but average export prices are projected to have declined from \$5.19 to \$4.77 per kg. Current export prices for mutton are roughly 30 percent lower than the record prices received in early 2011. In the years since those highs, mutton export prices have fallen alongside lamb as the two markets are closely linked. However, a portion of the price fall can also be attributed to increased shipments of bone-in mutton cuts, which are cheaper because they contain less meat on a shipped-weight basis than boneless cuts.

Looking forward, export prices are forecast to remain soft over the next 1-2 years before global demand rebalances with production. Over the medium term, we have a positive outlook on prices as consumer demand for diversified protein sources continues to expand.

FIGURE 3.2: MONTHLY LAMB PRODUCTION PROGRESS 2015-2016 (000 TONNES)



Source: MPI.



## WOOL

Driven by higher prices, wool exports for the year ending June 2016 are expected to exceed \$0.8 billion for the second consecutive year, a mark that was last achieved in the early 2000s when 10 million more sheep were around to be shorn. Looking forward over the next few years, we expect wool export prices to remain firm on lower production volumes.

**Wool export prices are at their highest level in five years**

Wool export prices reached the highest level since 2011 in the past year, topping \$7.65 per kg (product weight) in December 2015. Prices have since fallen off that peak, but they remain over \$6 per kg and are expected to remain at this level over the medium term. This price trend reflects consistently strong demand from China, the destination for over 59 percent of New Zealand's wool exports in 2014/15.

The volume of wool exports is forecast to decrease 9 percent to 121 000 tonnes this year as lower sheep numbers and unfavourable weather have hindered production.

**TABLE 3.5: SHEEP NUMBERS AND WOOL PRICES, PRODUCTION, EXPORT VOLUMES, AND VALUE, 2013-2020**

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Average sale price (cents/kg clean)	516	579	595	635	635	636	656	649
Production (000 tonnes clean basis)	127	118	115	117	116	115	113	112
Export volume (000 tonnes clean basis)	118	117	121	110	111	110	108	107
Export volume (000 tonnes PW)	128	128	133	121	122	121	119	118
Export price (NZ\$/kg PW)	5.09	5.68	6.10	6.67	6.43	6.61	6.55	6.65
Export value (\$ million)	654	726	809	806	785	801	779	782

\* Estimate for year ended June.

Sources: Statistics New Zealand, Beef + Lamb New Zealand Economic Service and MPI.



## VENISON

Venison export returns are expected to increase \$20 million in the year ended June 2016 to \$194 million based on strong prices and increased chilled venison exports. Over the medium term, a continuation of this trend would be expected to provide further support to venison export revenues, even as the deer herd falls below 900 000 head.

Venison export prices are expected to have increased in the year ended June 2016 on two fronts. First, frozen venison prices have improved 10.2 percent from last year on stronger demand from North America and the European Union. Second, we project chilled venison to have increased from 16 percent to 22 percent of total venison exports due to successful seasonal marketing in Europe. Since chilled product is historically twice as valuable as frozen, there is a strong positive relationship between chilled exports and overall export returns.

The New Zealand deer population is expected to dip from 908 000 in June 2015 to 888 000 in June 2016. Venison slaughter volumes are similarly expected to decline from 21 600 to 19 900 tonnes based on this constrained supply. Although it has been falling for some time, there are some indications that deer population may stabilise over the next few years. Fewer hinds are going to slaughter and farmers are looking to rebuild velvet herds in response to higher prices.

**Venison exports are starting to benefit from successful marketing campaigns in Europe**





# 4

# FORESTRY

# Forestry



## at a glance

### KEY FACTORS



We expect Chinese demand for New Zealand logs and lumber to increase, as supply from the USA and Canada falls. North America will be less competitive due to currency movements, while increased domestic demand in the US means that fewer North American products will be made available for export.



Demand for New Zealand pulp exports is likely to increase due to global population increases along with economic growth increasing paper consumption, particularly in Asia.



Log prices are increasing on the back of a depreciating New Zealand dollar and low international shipping costs.

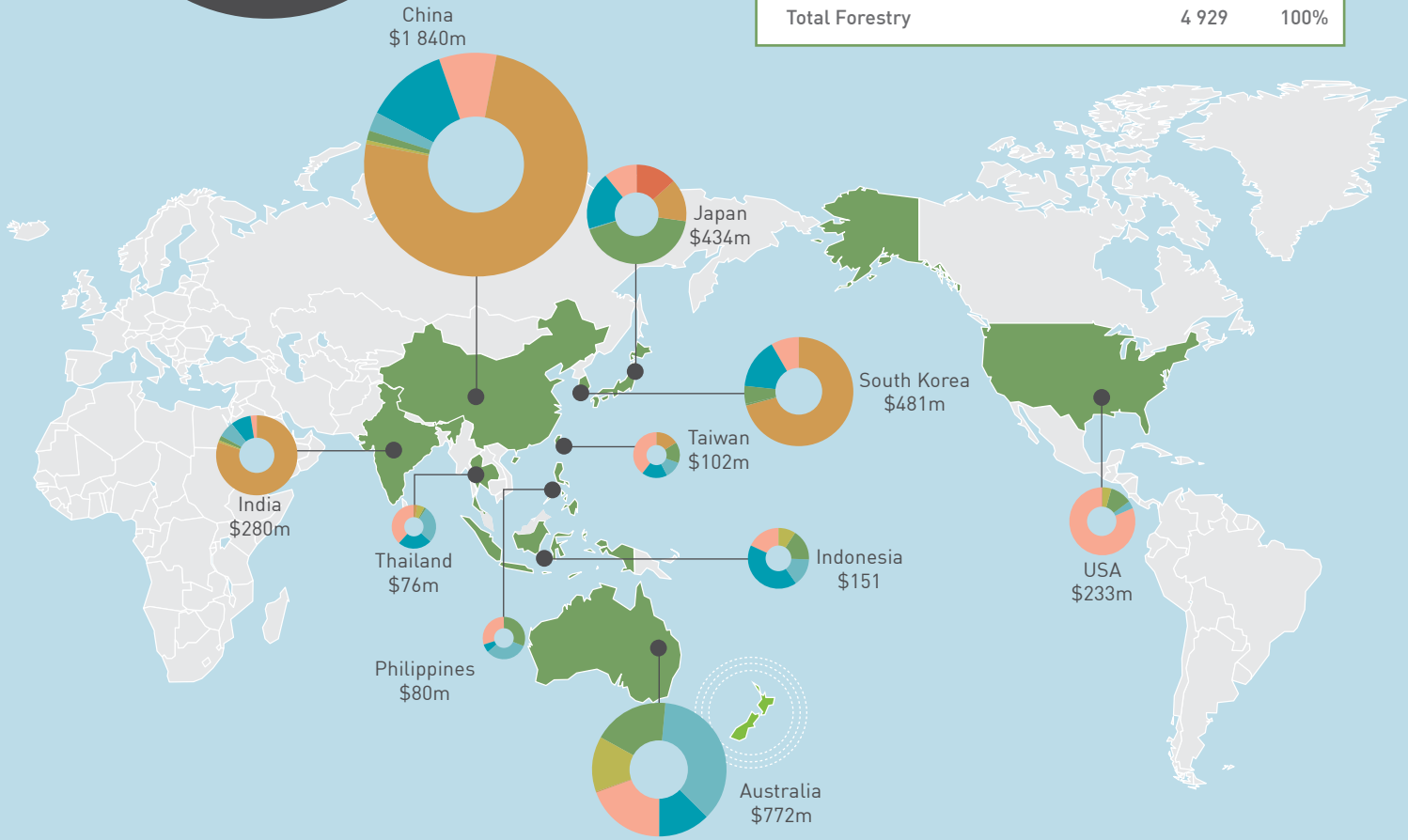
Forestry exports are forecast to reach over \$5.0 billion in the year ending June 2016. This is due mostly to a lift in log export prices, which has been brought on by a slight recovery of demand for logs in China, a lower New Zealand dollar, and low shipping costs. In 2017, an 11 percent increase in export revenue is forecast due to continued price recovery and higher log export volumes. There is also expected to be an increase in timber prices and volumes as the US housing market strengthens.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$4 527m	\$5 199m	\$4 682m	\$5 069m	\$5 645m	\$6 012m	\$6 116m	\$6 325m
Y/Y % Change	+5%	+15%	-10%	+8%	+11%	+7%	+2%	+3%

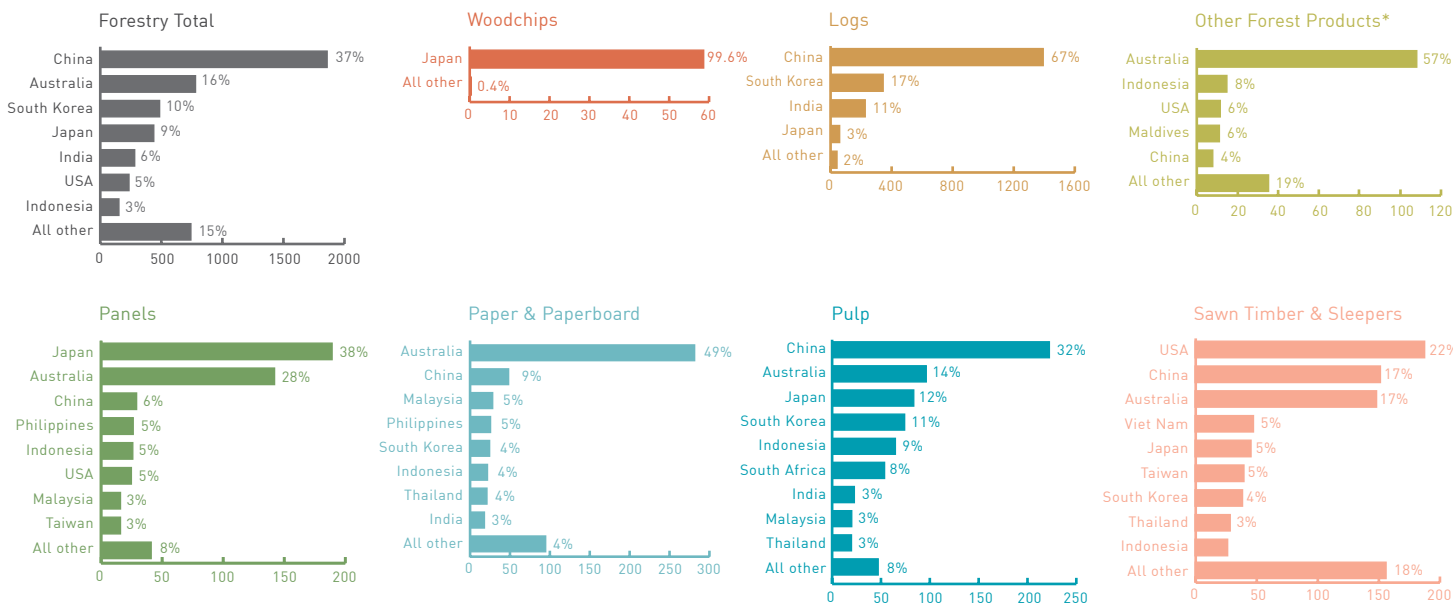
\* Estimate for year ended June.

# TOP 10 FORESTRY EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Logs	2 053	42%
Sawn Timber & Sleepers	877	18%
Pulp	692	14%
Paper & Paperboard	569	12%
Panels	497	10%
Chips	59	1%
Other Forestry Products	182	4%
<b>Total Forestry</b>	<b>4 929</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other forest products include: structural or moulded wood, furniture, and prefabricated buildings.

# Forestry

## detailed analysis

### PRODUCTION

Forestry exports are estimated to reach \$5.1 billion for the year ending June 2016, an increase of nearly \$0.4 billion from 2015. The overall value of forestry exports is expected to increase by a further \$0.6 billion in the year ending June 2017 as a better economic outlook is met with increased production. Total export values are then expected to reach \$6.3 billion by 2020, aided by an assumed strengthening of the US dollar.

Increased production is currently being driven by higher export prices, which have recovered following crashes in 2014 and 2015. Lower prices over the past two years drove a 3 percent fall in New Zealand's 2015 harvest. Harvest volumes are forecast to increase by 2 percent annually from 28.9 million cubic metres in 2015 to reach 32.4 million cubic metres in 2020. Increases in the annual harvest, due to high planting rates in the early 1990s, will be a large driver of increased export revenue and present a growth opportunity for the forestry sector.

Small forest owners are the most likely to take advantage of higher log prices, as larger forest owners and managers tend to avoid volatility in harvest volume. There is potential for larger swings in harvest volumes over the next five years, with an increasing proportion of harvest age forests being in small holdings. High domestic demand for pruned logs is also leading to increased harvesting in pruned blocks.

**Increasing log prices have opened the door for harvested volumes to rise over the next few years**

Limited capacity for logging and associated transportation will start to constrain annual harvests of over 30 million cubic metres. This will act as a cap to larger increases. As harvest volumes increase, industry training and health and safety become increasingly critical, as more new contractors are brought into the industry to deal with increased volumes.

Sawn timber production is expected to increase, driven by strength in US construction and recovery in the Chinese construction sector. Increases in export volume will see sawn timber export revenue rise from \$0.9 billion to over \$1 billion in 2018. This will be underpinned by a vibrant domestic market where the high rates of residential building in Canterbury and Auckland will continue to drive sawn timber consumption and harvesting of structural type logs.

New Zealand is expected to face less competition in the Asian log and sawn timber markets from the USA and Canada. Greater flexibility in cutting grades and sizes is likely to help New Zealand hold market share in China where buyers have shown preference for cut-to-specification timber. The largest market for USA and

TABLE 4.1: FORESTRY EXPORTS 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Logs	1 855	2 541	2 059	2 140	2 472	2 608	2 667	2 782
Timber	880	885	779	884	995	1 093	1 112	1 146
Pulp and Paper	1 099	1 131	1 154	1 285	1 362	1 447	1 466	1 505
Panels	436	407	451	507	545	578	583	597
Chips	67	51	52	66	75	79	80	81
Other	190	185	186	188	196	207	209	214
<b>Total</b>	<b>4 527</b>	<b>5 199</b>	<b>4 682</b>	<b>5 069</b>	<b>5 645</b>	<b>6 012</b>	<b>6 116</b>	<b>6 325</b>

\* Estimate for year ended June.

Source: Statistics New Zealand and MPI.

**New Zealand's flexibility around cutting grades and sizes will help us increase market share in countries such as China**

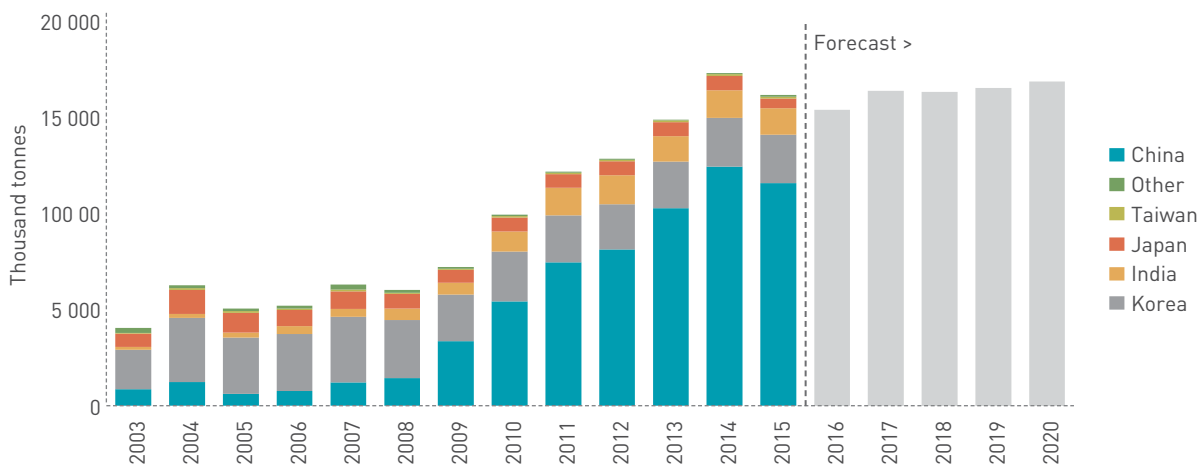
Canadian products is the strengthening US housing market, meaning they are less likely to cut specific grades for the Chinese market. A strengthening USD will also disadvantage exporters from the US, which is a major supplier of sawn timber to China, potentially leading to an increased market share for New Zealand.

In addition, New Zealand has good prospects for pulp exports in the medium to long term, driven by continued

growth in the Chinese market. This leads to a \$300 million increase between 2016 and 2020 for the pulp and paper forecast. Paper consumption per capita in China is well below averages in developed nations, which means demand will grow from China's increasing population and increased consumption rates. In other markets, Australian demand has been static and the Japanese market has declined in recent years.

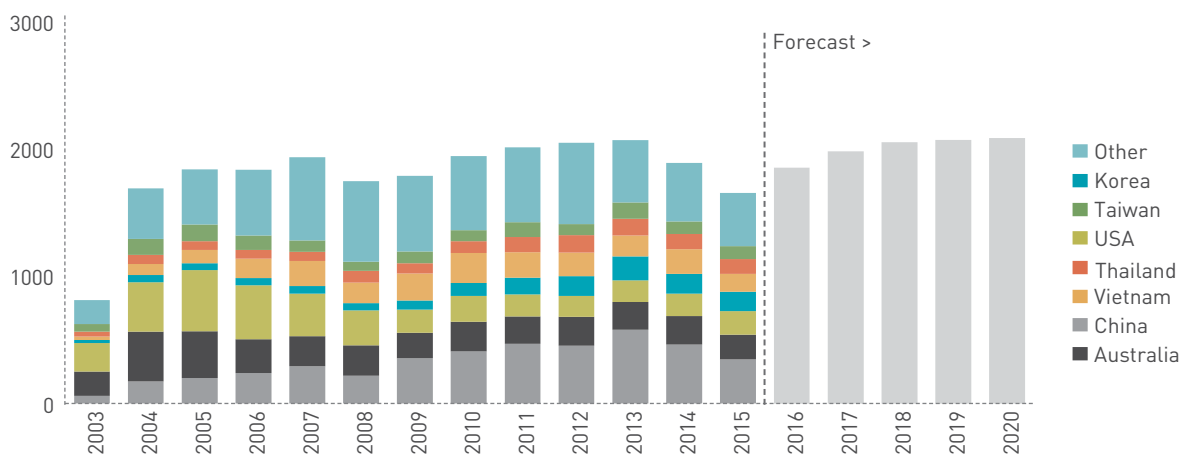
Although panel production has been relatively flat there has been an increase in exports. Declining exports to Japan were offset by a large increase to Australia, as well as increased exports to South East Asia. Japan is still New Zealand's largest destination for panels, taking 40 percent of exports in 2015. However, Japan's overall panel imports are falling, and New Zealand exporters are facing increased competition from producers in China, Malaysia and Indonesia.

FIGURE 4.1: LOG EXPORT VOLUMES BY COUNTRY, 2003-2020



Source: Statistics New Zealand and MPI.

FIGURE 4.2: TIMBER EXPORT VOLUMES BY COUNTRY, 2003-2020



Source: Statistics New Zealand and MPI.



## PRICES

Average export log prices increased 25 percent between the June quarter 2015 and March quarter 2016. This is one of the main drivers for the forestry sector returning to an annual export revenue of over \$5 billion. A fall in shipping costs and a stronger US dollar have caused the NZ dollar returns to increase, despite only small changes in prices for delivered logs in US dollars. Housing construction at the start of 2016 is up compared to a year ago, which is driving increased demand in China. Figure 4.4 shows that the USD price decreased by \$3.94 per cubic metre over the last 12 months, while the New Zealand dollar price increased by \$12.56.

Log prices are forecast to fall slightly in the June quarter despite lower than expected inventory build-ups in China after the New Year holiday season. From the September quarter onward, we expect log prices to increase (in US dollar terms) as construction in China recovers, and demand slowly increases. This will mean a more rapidly increasing New Zealand dollar price that will support higher export volumes.

Recent exchange rate movements have reduced the export value for Canadian and US suppliers, which has meant log exports from Canada and the USA have fallen. As a result we expect New Zealand and Russia to gain market share in China at their expense. That will allow for increases in New Zealand exports in the second half of 2016, while avoiding tipping the Chinese market back into oversupply.

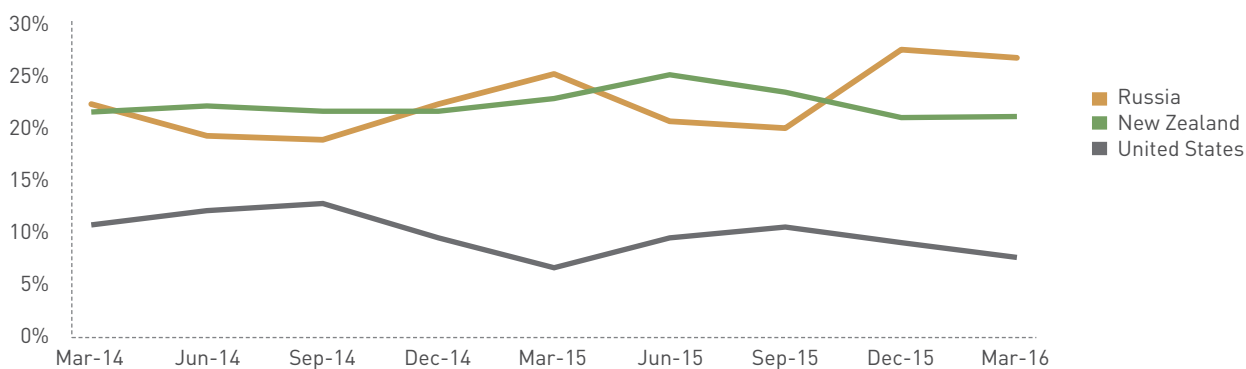
Beyond 2016, USA and Canadian supply to China will also be reduced due to higher returns available from supplying the US housing market. Nonetheless the potential for increased supply out of the Southern USA will cap any large price increases.

Increased USA housing construction will drive higher demand for New Zealand sawn timber products and contribute to increased prices. In nominal New Zealand dollars there will be a steep rise in prices due to an assumed exchange rate depreciation. The USA is currently New Zealand's highest value export destination for sawn timber, recently surpassing Australia. New Zealand sawn timber has lost market share in Australia due to increased competition from Europe and currency movements making the US market a more attractive option for New Zealand exporters.

There is particularly strong USA demand for clearwood from New Zealand, driving a rapid increase in domestic pruned log prices. However, changes that occurred in the early 2000s, shifting growers away from pruning, are now flowing through to incremental drops in the supply of pruned logs. As a result we expect the lower pruned log supply available to Central North Island sawmills to constrain sawn timber exports to the US.

We forecast pulp, paper, and panel prices to increase slowly over the outlook period. These will be given a boost in New Zealand dollar terms by a depreciating currency against the US dollar.

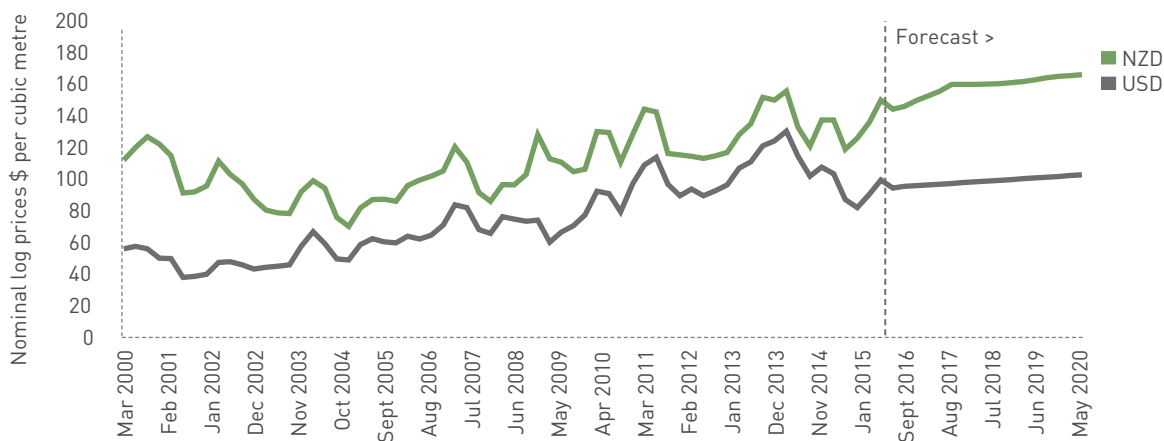
FIGURE 4.3: CHINA IMPORT LOG MARKET SHARES, 2014-2016



Source: Global Trade Atlas.

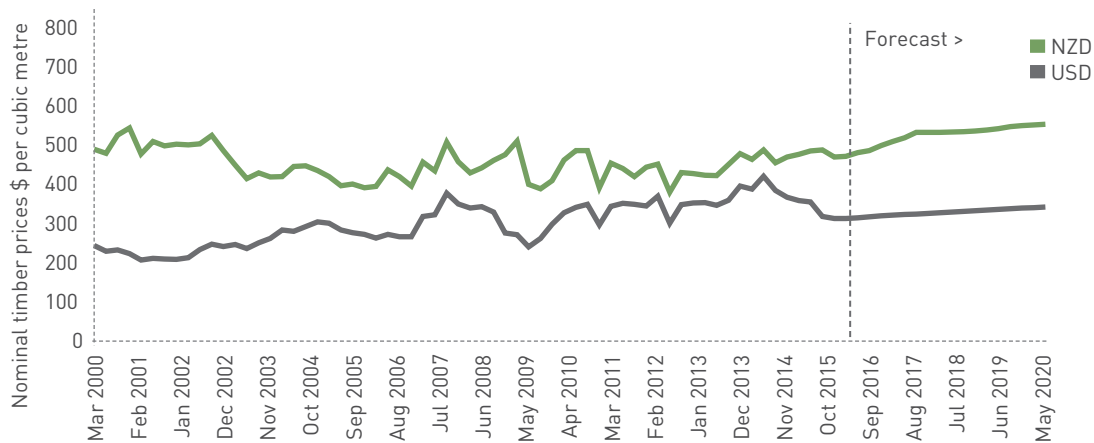


FIGURE 4.4: NOMINAL LOG PRICES, 2000–2020



Source: Statistics New Zealand and MPI.

FIGURE 4.5: NOMINAL TIMBER PRICES, 2000–2020



Source: Statistics New Zealand and MPI.



## FORESTRY DOMESTIC CONSUMPTION

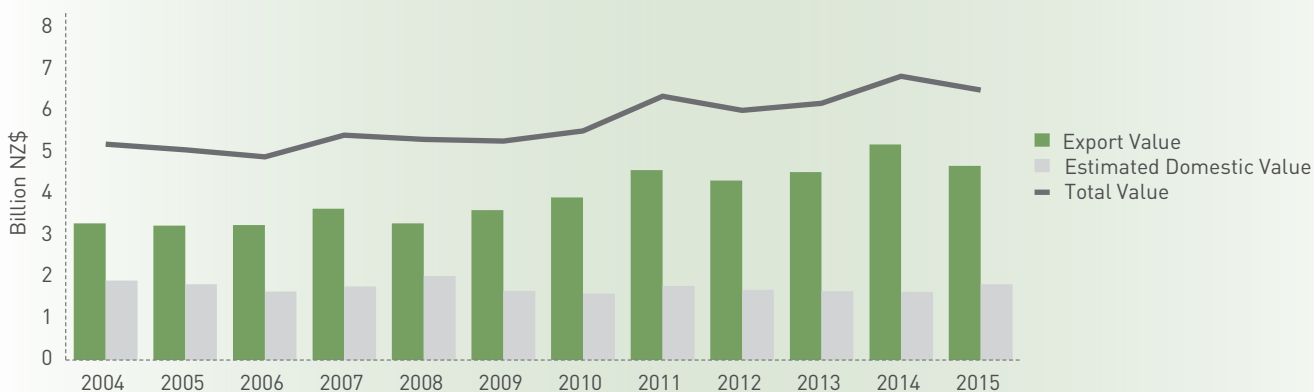
Unlike most of New Zealand's primary production, a large proportion of some forestry products is consumed domestically. Approximately 40 percent of panels, about half of paper production, and nearly 80 percent of sawn timber produced is consumed domestically. This means that export figures may only show around 70 percent of the total industry value.

Using export prices as a proxy for the price of forestry products consumed in the domestic market, we can estimate the domestic value of the forestry sector's production to be \$1.8 billion in the 2015 June year. This compares to an export value of \$4.6 billion that year. The bulk of the value is in sawn timber, which was estimated to make up about \$1.4 billion. Panel consumption was estimated to be valued at \$290 million, and paper consumption was estimated at \$160 million.

When taking both export and domestic consumption into account, there is less volatility in New Zealand's forest products markets than export revenues imply. In some years, falls in export volumes often coincide with increased domestic consumption rather than a fall in absolute value of the sector. Likewise, some of the increases in exports are redirected from the domestic market and do not necessarily represent an increase in the forestry sector's productivity.

There is a strong link between residential housing consents and domestic consumption of sawn timber and panels. Both the Canterbury rebuild and the Auckland housing market have driven increasing national housing consents, and in turn, increased domestic consumption of New Zealand's sawn timber and panels. As an example, sawn timber export volumes fell 12 percent in the year ended June 2015, but there was actually a 1 percent increase in sawn timber production that year.

FIGURE 4.6: VALUE OF NEW ZEALAND FOREST PRODUCTS (JUNE YEAR)



Source: Statistics New Zealand and MPI.



# 5

# SEAFOOD



# Seafood



## at a glance



### KEY FACTORS



There is limited scope for volume growth in wild capture fisheries in both New Zealand and the rest of the world due to sustainability limits, which will help support higher prices as demand continues to rise.



Aquaculture is expected to be a key driver of forecast growth through planned expansion of salmon farming and increased mussel production, supported by gradual supply of hatchery-bred mussel spat.<sup>13</sup>



Prices in New Zealand dollars are likely to remain high due to an expected further currency depreciation against the US dollar and growing demand from our key seafood export destinations (China and the US).

Seafood export prices are estimated to have increased 18 percent to the year ended June 2016, driven primarily by a lower New Zealand dollar. Seafood export earnings are expected to grow from nearly \$1.8 billion in the June 2016 year to over \$2.1 billion in the year ending June 2020, mainly due to rising prices as the New Zealand dollar is expected to depreciate further. Export volumes are forecast to remain steady as 78 percent of New Zealand's export revenue is generated from wild capture fisheries, which is subject to sustainability limits.

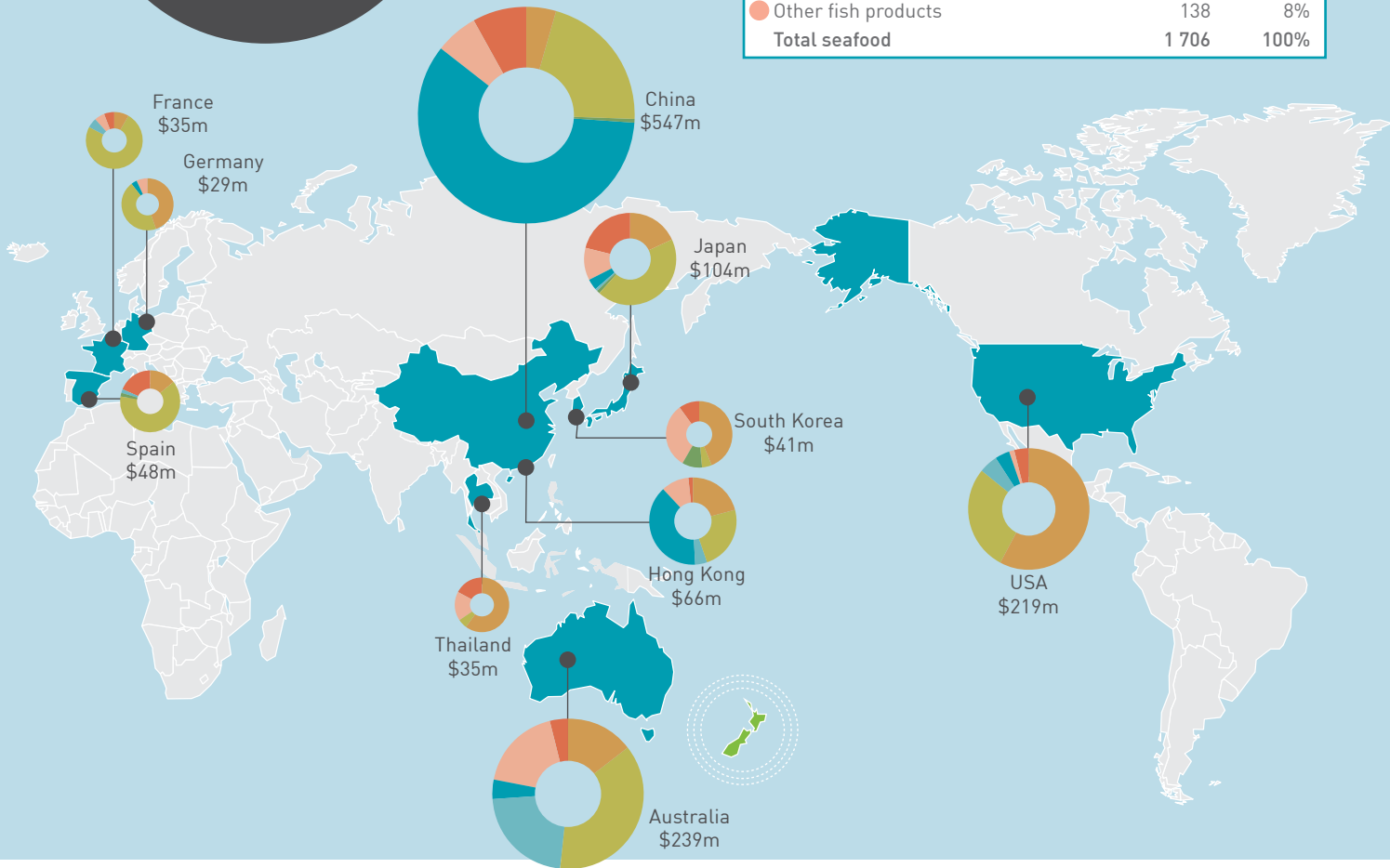
	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$1 546m	\$1 500m	\$1 562m	\$1 789m	\$1 821m	\$1 965m	\$2 033m	\$2 117m
Y/Y % Change	+0.1%	-3%	+4%	+15%	+2%	+8%	+3%	+4%

\* Estimate for year ended June.

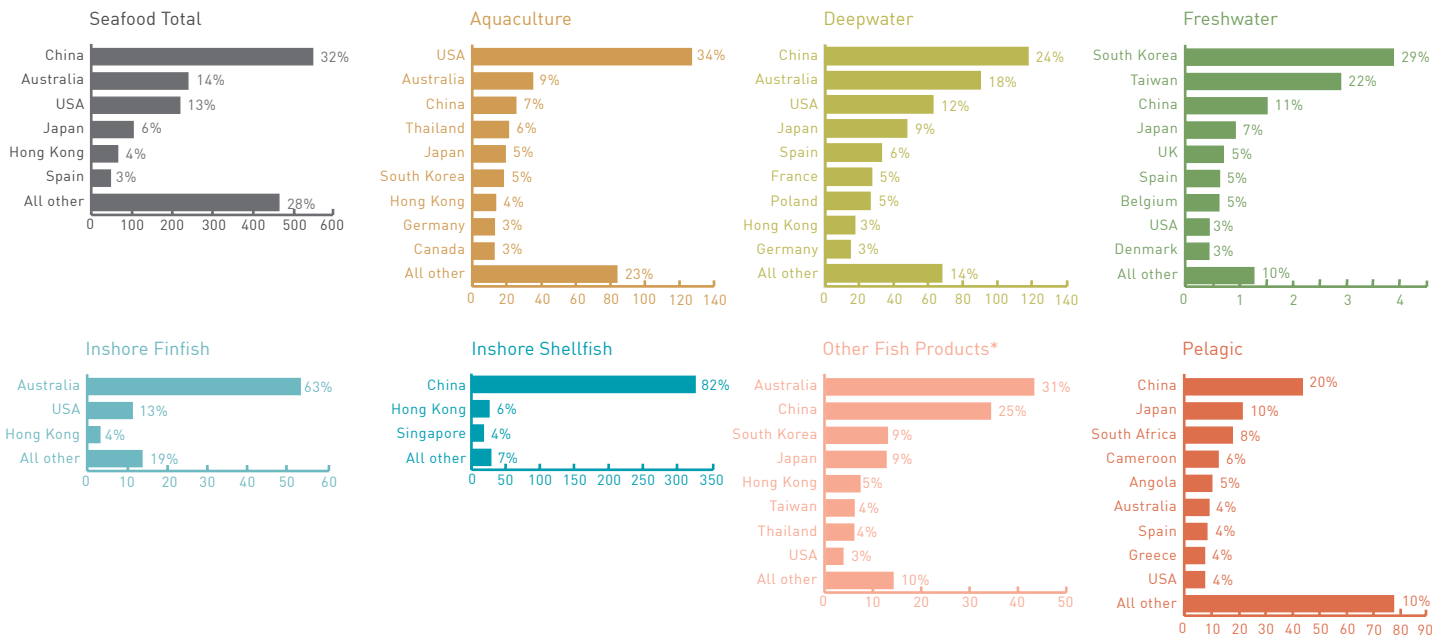
<sup>13</sup> <http://www.mpi.govt.nz/seafood/industry/industry-reports>

# TOP 10 SEAFOOD EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Deepwater	488	29%
Inshore shellfish	397	23%
Aquaculture	368	22%
Pelagics	217	13%
Inshore finfish	84	5%
Freshwater	13	1%
Other fish products	138	8%
<b>Total seafood</b>	<b>1 706</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other seafood products include: fish meal, fish extracts, and other products.

# Seafood

## detailed analysis

### PRODUCTION

#### WILD CAPTURE FISHERIES

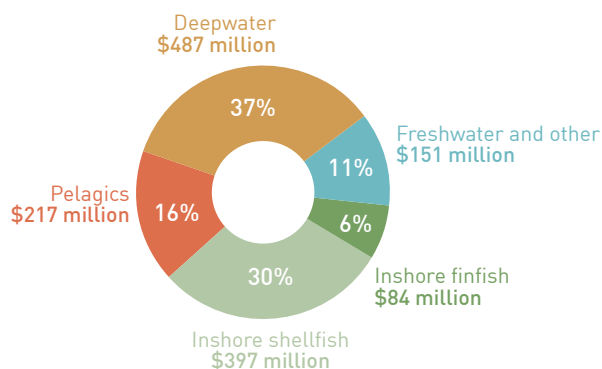
About 130 fish species are commercially caught in New Zealand waters, with most of these species being managed under the Quota Management System (QMS). Key species in terms of landed weight are hoki (36 percent), jack mackerel (10 percent), barracouta (6 percent), southern blue whiting (6 percent) and squid (4 percent). New Zealand fisheries are managed at their Maximum Sustainable Yield (MSY) levels and total allowable commercial catch limits are adjusted to achieve MSY targets.

There is a limited scope for volume growth from wild capture fisheries due to sustainability limits. As a result, we expect export volumes to contract by an average of 0.4 percent per year during the outlook period.

Wild capture fisheries accounts for 78 percent of total seafood export revenue. Wild capture fisheries are classified into five species groups: deepwater, pelagic<sup>7</sup>, inshore shellfish, inshore finfish, and freshwater and other seafood products.

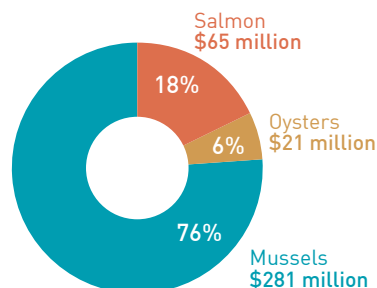
**Sustainability limits restrict volume growth in wild-capture fisheries, but aquaculture volumes are expected to increase through expansion and government-industry innovation initiatives**

FIGURE 5.1: WILD CAPTURE FISHERIES EXPORT VALUE BY SPECIES, YEAR ENDED MARCH 2016



Sources: Statistics New Zealand and MPI

FIGURE 5.2: AQUACULTURE EXPORT VALUE BY SPECIES, YEAR ENDED MARCH 2016



Sources: Statistics New Zealand and MPI

#### AQUACULTURE

The main aquaculture species farmed in New Zealand are mussels, salmon, and oysters. Aquaculture accounted for 22 percent (\$0.4 billion) of total seafood export values for the year ended March 2016 and was dominated by mussel exports.

The mussel farming industry relies on wild-caught spat (juveniles) to seed their farms, the availability of which varies with climate cycles. In order to reduce industry reliance on wild-caught spat, hatchery bred spat is being developed through the SPATnz Primary Growth Partnership programme. This is currently being trialled in grow-out areas in the Nelson-Marlborough region. Production contribution from hatchery bred spat is expected to slowly come on line from 2018 and should stabilise climate-driven fluctuations in mussel production.

**The addition of two new salmon farms will boost salmon production from 2017 onwards**

<sup>7</sup> Pelagic fish include tuna, mackerel, squid and swordfish.

TABLE 5.1: SEAFOOD EXPORT VOLUMES, PRICES AND VALUES, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
<b>WILD CAPTURE</b>								
Export volume (000 tonnes)	284	257	284	273	263	268	275	279
FOB price (\$/kg)	4.4	4.5	4.4	5.1	5.3	5.6	5.6	5.7
Export value (\$ millions)	1 250	1 162	1 240	1 405	1 398	1 491	1 531	1 577
<b>AQUACULTURE</b>								
Export volume (000 tonnes)	42	40	37	37	41	44	46	48
FOB price (\$/kg)	7.0	8.6	8.8	10.3	10.3	10.9	11.0	11.2
Export value (\$ millions)	296	339	322	385	424	475	502	540
<b>TOTAL SEAFOOD SECTOR</b>								
Export volume (000 tonnes)	326	297	321	311	304	312	320	327
FOB price (\$/kg)	4.7	5.1	4.9	5.8	6.0	6.3	6.3	6.5
Export value (\$ millions)	1 546	1 500	1 562	1 789	1 821	1 965	2 033	2 117

\* Estimate for year ended June.

Salmon production is expected to increase from 2017 when two new farms owned by New Zealand King Salmon Limited come on line in the Marlborough Sounds. These new farms are expected to increase total production by 3000 tonnes from 2017.

Pacific oyster production continues to recover from a virus in 2010 following a selective breeding programme and changes in farming techniques.

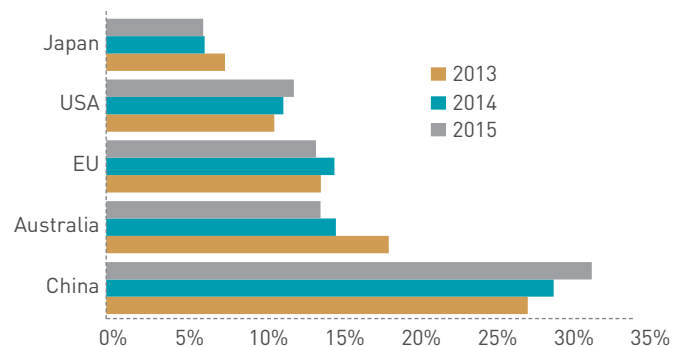
As a result of the combined expected growth in these species, aquaculture export volumes are forecast to grow by 5.6 percent per year during the outlook period.

## PRICES

Export prices are expected to increase by 18 percent on average from the year ended June 2015 to June 2016 in New Zealand dollar terms, but a majority of this price movement is attributable to a strengthening US dollar. However, overall seafood prices (in US dollars) are expected to be stable over the same timeframe.

Seafood export prices in New Zealand dollars are forecast to grow by 5.9 percent per year from 2017 onwards as the global economic outlook begins to improve, stimulating demand for seafood products. The New Zealand dollar is also forecast to further depreciate over the outlook period, which should further support NZ prices. In addition, average global fish consumption is expected to further increase from the current level of 20.2 kg per person per year.

FIGURE 5.3: KEY EXPORT MARKETS FOR NZ SEAFOOD PRODUCTS BY VALUE, 2013-2015



Sources: Statistics New Zealand and MPI.



Among the top earning species, rock lobster, mussels, hoki, salmon, and ling prices have performed well in the past year. Prices for other key stocks such as jack mackerel, paua, and tuna remained stable, while prices for squid and orange roughy did not perform well. The average unit price for aquaculture species is higher than that of wild capture fisheries in New Zealand, as the wild capture component contains a large share of lower value catches. However, the average price for wild capture fisheries grew faster than that of aquaculture species in the past year due to stronger demand.

Ongoing environmental certification efforts are likely to support rising export prices, due to improved reputation and access to premium markets. New Zealand's hoki, southern blue whiting, hake, and ling have been independently certified by the Marine Stewardship Council (MSC) and some other species are currently under assessment.

The *Precision Seafood Harvesting* Primary Growth Partnership programme has shown encouraging results in terms of producing high quality and sustainable products. Industry has already established a new premium Tiaki brand as a result of the programme, which will boost export prices through adding value to our seafood products.

**Increased environmental certification and the outcomes of precision harvesting programme are expected to increase the value of our seafood exports in the eyes of our consumers**

## EXPORTS

Total seafood exports are forecast to increase from \$1.6 billion in the June 2015 year to \$2.1 billion by the year ending June 2020. This represents average growth of 6.3 percent per year over the outlook period. Aquaculture export revenue is expected to grow faster (11 percent per year) than wild capture fisheries (5 percent per year) as aquaculture volumes are expected to increase over the outlook period, while wild capture volumes are not.

**Increased aquaculture volumes are expected to be a key contributor to lifting seafood exports to \$2.1 billion by 2020**

China, Australia, the EU, the US, and Japan continue to be New Zealand's key export markets for seafood products in terms of export values. The Chinese market share for New Zealand seafood is rising (32 percent in 2015 compared to 29 percent in 2014), while the Australian market share continues to decline, possibly driven by the depreciation of the Australian dollar against the New Zealand dollar. Our market share in the USA has risen steadily since 2013 following their improved economic performance, which led to increased demand for our seafood products.

# 6

# HORTICULTURE

# Horticulture



## at a glance

### KEY FACTORS



Expansion of the high value and very productive Gold3 cultivar is expected to drive overall kiwifruit exports up 27 percent from current levels, to \$1.9 billion by 2020.



A very large vintage in 2016 will dominate wine exports over the coming two years, nearing \$1.7 billion in 2017. Anticipated vineyard expansion in Marlborough will ensure further export growth beyond 2020.



Apple and pear export revenue has doubled since 2012 reaching almost \$700 million for the year ending June 2016.



Higher volumes of onions and squash will drive a 6 percent increase in vegetable export revenue for 2016.



A key challenge for the sector will be finding sufficient skilled labour to cope with the forecast rise in production over the outlook period.

After achieving the milestone of \$4 billion in the year to June 2015, New Zealand's horticulture sector is expected to surpass \$5 billion in export revenue in just one year, an increase of 20 percent. The result is due to a combination of the highly productive Gold3 kiwifruit plantings reaching maturity, steady volume growth from apple and pear exports, and the fall in value of the New Zealand dollar compared to 2015. Ongoing investment in the production of kiwifruit, wine and apples and pears will ensure further, albeit slower, export growth over the outlook period. Overall horticulture exports are forecast to reach \$5.7 billion in the year ending June 2020, up \$1.6 billion from the year ended June 2015.

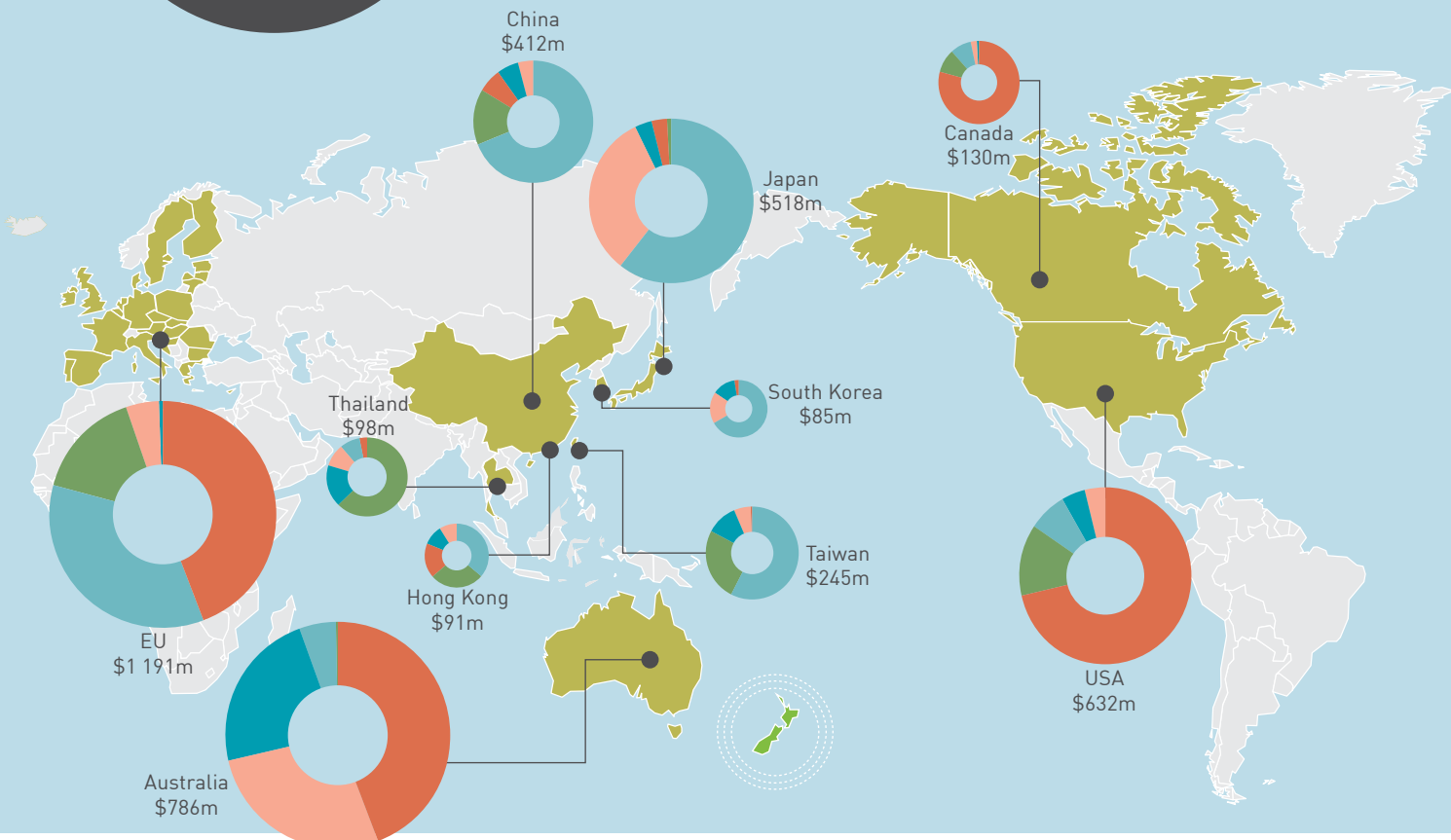
	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$3 540m	\$3 781m	\$4 165m	\$5 015m	\$5 335m	\$5 448m	\$5 545m	\$5 726m
Y/Y % Change	-0.4%	+7%	+10%	+20%	+6%	+2%	+2%	+3%

\* Estimate for year ended June.

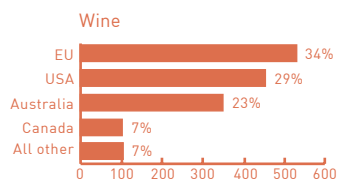
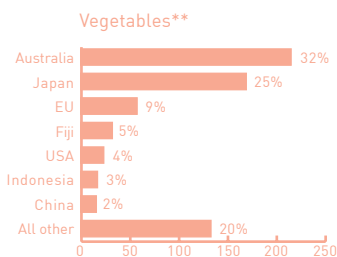
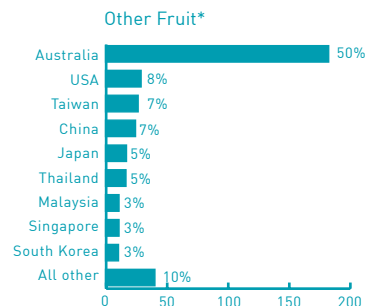
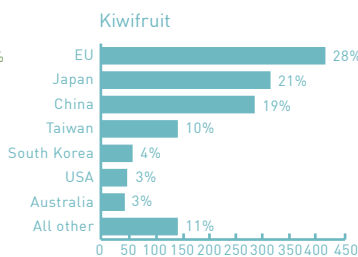
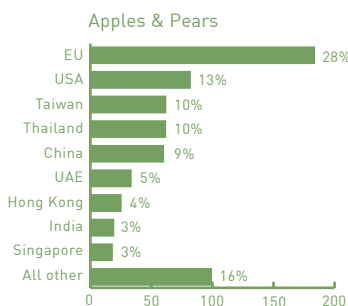
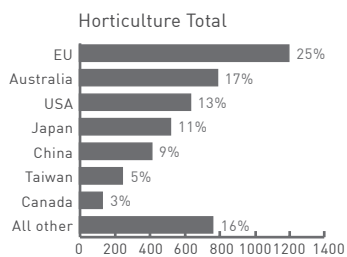


# TOP 10 HORTICULTURE EXPORT MARKETS BY VALUE

Product	Total Export Revenue [March 2016]	% of Total
Wine	1 545	33%
Kiwifruit	1 463	31%
Vegetables	663	14%
Apples and pears	647	14%
Other fruit	365	8%
<b>TOTAL Horticulture</b>	<b>4 684</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other fruit includes: avocados, cherries, blueberries, strawberries, and other fruit.

\*\* Vegetables include: squash, peas, legumes, potatoes, sweetcorn, and other vegetables.

# Horticulture

## detailed analysis

TABLE 6.1: HORTICULTURE EXPORT VALUES (NZ\$ MILLIONS) 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Kiwifruit	934	931	1 182	1 685	1 693	1 785	1 840	1 910
Wine	1 204	1 323	1 408	1 581	1 684	1 690	1 654	1 655
Apples & Pears	484	547	571	687	726	763	813	859
Fresh & Processed Vegetables	600	606	588	624	639	647	652	663
Other	318	373	416	439	593	563	586	639
<b>Total</b>	<b>3 540</b>	<b>3 781</b>	<b>4 165</b>	<b>5 015</b>	<b>5 335</b>	<b>5 448</b>	<b>5 545</b>	<b>5 726</b>

\* Estimate for year ended June.

Sources: Statistics New Zealand and MPI.

### KIWIFRUIT

The New Zealand kiwifruit industry is growing at a rapid rate with expected record export volumes and values for the year to June 2016 – volumes are estimated to have risen to 139 million trays (up 23 percent) with values reaching almost \$1.7 billion (up 43 percent) [see table 6.3].

Green kiwifruit values are estimated to rise 31 percent to \$995 million to June 2016 on the back of a 10 percent increase in volumes to 92 million trays.

Gold orchards are now reaching mature production levels after transitioning to the highly productive Gold3 cultivar following the bacterial vine-killing disease Psa. Our forecasts indicate 71 million export trays of gold kiwifruit for the year ending June 2020 – more than double pre-Psa levels.

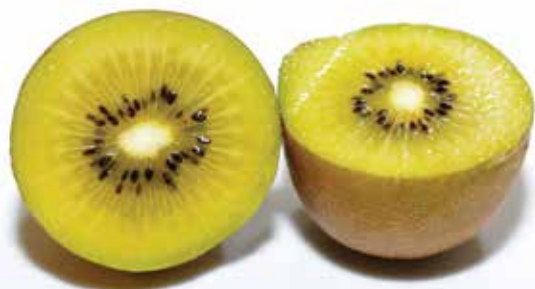
Looking out to 2020 we anticipate the New Zealand kiwifruit industry will grow its export value to over \$1.9 billion.

### PRODUCTION

Due to favourable climatic conditions, the autumn 2016 harvest provided a better than expected crop – comprising high yields of well-sized fruit. Despite being delayed by a cool, dry start to spring, the favourable summer provided good conditions for fruit maturity.

Combined with further Gold3 licence releases, the total area producing gold kiwifruit is now over 4800 hectares. A further 400 hectares of Gold3 licence will be made available to growers in 2016 and a further 1200 hectares could be made available over the next 3 years. Gold3 is highly productive, however, it is uncertain where the long-term productivity will settle. Forecasts are based on an average of 13 000 trays per hectare, some 20 to 30 percent higher than Hort16A which will be replaced by Gold3.

Green kiwifruit production is expected to be relatively stable over the outlook period. Volumes will soften over the long-term as further kiwifruit licenses are sold, which will see some green kiwifruit orchards convert to Gold3. Investment in greenfield orchard development is likely to occur, due to elevated product prices and the future potential to convert orchards to new varieties.



**Total gold kiwifruit export volumes are expected to hit 71 million trays in 2020 – more than double pre-Psa levels**

## PRICES

Export prices for gold kiwifruit have fallen back to 2012 levels as export volumes have increased. New Zealand is facing increased competition in key markets from Chilean kiwifruit exports which returned to normal levels following severe spring frosts in 2013 and 2014. There

were also large Italian and Greek kiwifruit crops in 2015 which softened prices leading into the current southern hemisphere selling season in Europe.

Over the outlook period, export prices for both green and gold kiwifruit are expected to be mostly stable, but are expected to be aided by a strengthening US dollar.

TABLE 6.2: KIWIFRUIT EXPORT VOLUMES, PRICES AND VALUES, 2013–2020, MARCH YEAR END

YEAR TO 31 MARCH	Actual				Forecast					
	2012	2013	2014	2015	2016*	2017	2018	2019	2020	
Export volume (million <sup>1</sup> trays)	Green kiwifruit	83	78	77	77	91	85	77	73	70
	Gold kiwifruit	27	23	12	18	35	50	57	64	68
	Total	111	101	89	96	128	136	135	138	139
FOB <sup>2</sup> price (\$/tray)	Green kiwifruit	7.7	8.1	8.0	8.9	10.0	11.0	11.4	11.4	11.5
	Gold kiwifruit	14.2	17.4	16.7	17.2	15.0	14.1	14.4	14.7	15.1
	Total	9.3	10.3	9.1	10.4	11.4	12.1	12.7	13.0	13.3
Export value (million)	Green kiwifruit	639	632	612	687	917	935	879	835	805
	Gold kiwifruit	389	405	198	304	529	703	822	943	1 026
	Total <sup>3</sup>	1 034	1 043	815	1 002	1 463	1 657	1 721	1 798	1 851

\* Estimate for year ended June.

Sources: Statistics New Zealand and MPI.

1 One tray equals 3.6kg.

2 Free on board is the value of the goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.

3 Total may not round due to the 'other kiwifruit' category.

TABLE 6.3: KIWIFRUIT EXPORT VOLUMES, PRICES AND VALUES, 2013–2020, JUNE YEAR END

YEAR TO 30 JUNE	Actual				Forecast					
	2012	2013	2014	2015	2016*	2017	2018	2019	2020	
Export volume (million trays)	Green kiwifruit	81	80	77	84	92	81	75	72	69
	Gold kiwifruit	25	17	15	28	46	55	62	67	71
	Total	107	98	94	113	139	137	138	140	141
FOB <sup>2</sup> price (\$/tray)	Green kiwifruit	7.8	8.0	8.5	9.0	10.8	11.2	11.5	11.5	11.6
	Gold kiwifruit	16.1	17.0	17.2	14.6	14.7	14.1	14.7	14.9	15.3
	Total	9.8	9.6	9.9	10.4	12.1	12.4	12.9	13.2	13.5
Export value (million)	Green kiwifruit	634	635	654	761	995	901	861	821	794
	Gold kiwifruit	403	293	265	403	670	772	904	998	1 095
	Total	1 046	934	931	1 182	1 685	1 693	1 785	1 840	1 910

\* Estimate for year ended June.

1 One tray equals 3.6kg.

2 Free on board is the value of the goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.

3 Total may not round due to the 'other kiwifruit' category.

## WINE

New Zealand wine export earnings are on target to reach close to \$1.6 billion for the year ending June 2016, reinforcing the sector's position as New Zealand's sixth largest export product. The wine industry has achieved 7.9 percent annual export value growth since the Global Financial Crisis (GFC) of 2008, making it the fastest growing sector out of New Zealand's Top 10 exports over this time<sup>8</sup>.

The sector outlook through to 2020 should consolidate this position, given high export volumes in 2017 and 2018 and sustained demand for Sauvignon Blanc and other marketable varieties, in both traditional and emerging markets. Volume growth arising from predicted new vineyard plantings in coming years will contribute to export earnings beyond 2020.

## PRODUCTION

The 2016 vintage, estimated at 450 000 tonnes, exceeds earlier predictions when El Niño induced drought conditions were anticipated. The larger than expected vintage will result in a welcome lift in wine company inventories after the weaker 2015 vintage.

Industry confidence in Marlborough has been confirmed with a recent survey showing a potential 25 percent (5000 hectare) increase in the region's vineyard area by 2020. This expansion will provide production growth beyond 2020 as this new area matures.

**The expected 2016 vintage of 450 000 tonnes is much higher than previously expected. This will translate into higher export volumes during the June 2017 year**

**TABLE 6.4: WINE EXPORT VOLUMES, PRICES AND VALUES, 2013-2020**

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export volume <sup>1</sup> (million litres)	169.7	186.2	206.7	215.0	237.0	230.0	225.0	225.0
FOB <sup>2</sup> price (\$/litre)	7.09	7.11	6.81	7.35	7.10	7.35	7.35	7.36
Export value (\$ million)	1 204	1 323	1 408	1 581	1 684	1 690	1 654	1 655

\* Estimate for year ended June.

Sources: Statistics New Zealand, New Zealand Winegrowers and MPI.

<sup>1</sup> Forecast export volume rounded.

<sup>2</sup> Free on board is the value of goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.

<sup>8</sup> NZIER report to New Zealand Winegrowers, *Economic contribution of the New Zealand wine sector* (2015)

## EXPORTS

The industry expect 215 million litres of wine to be shipped offshore in the year ending June 2016. The price per litre forecast of \$7.35 reflects strong demand in main markets and the on-going effect of recent favourable movements in our exchange rate. Export volumes are expected to climb to 237 million litres in 2017 as the large 2016 vintage reaches the market.

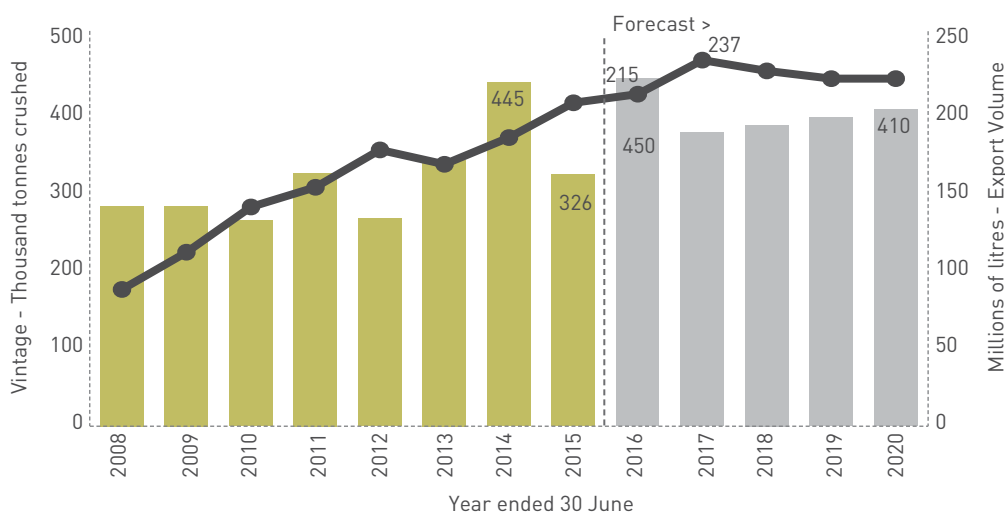
**US consumers, our largest market, are starting to purchase higher-priced wines**

Figure 6.2 shows that the standout markets for New Zealand wine exports since 2008 have been the USA and “Other Markets” (including Canada, The Netherlands, Sweden, Germany, China, and Hong Kong); experiencing value growth of 184 percent and 143 percent respectively.

In the USA, New Zealand is benefiting from consumers trading up to better quality wine. There is significant growth in the mid to high price points for wine. The growth leaders in wine varietals are the Red Blends, Cabernet Sauvignon, Sauvignon Blanc, Pinot Noir and Moscato.

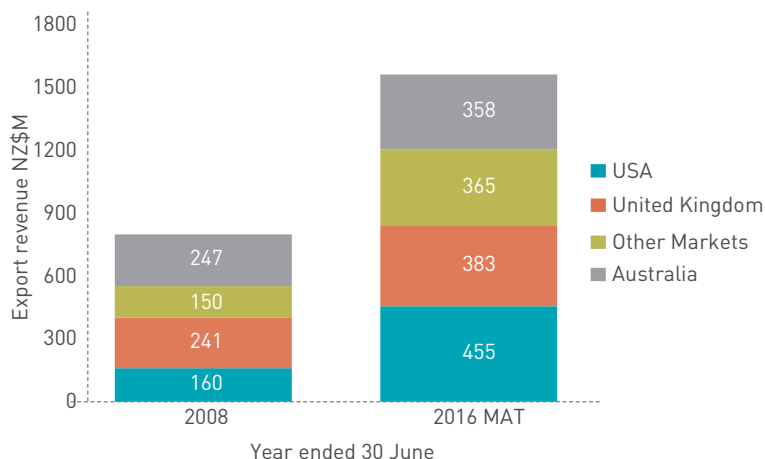
Wine export revenue is forecast to continue to trend upwards over the next two years, potentially reaching \$1.7 billion by 2017. Remaining years out to 2020 will be strongly influenced by vintage size and on-going market development. We assume exports post 2017 will be relatively stable. Allowance is made for growing demand for new offerings of “lifestyle wines” (naturally produced lower alcohol and lower calorie wines).

FIGURE 6.1: NEW ZEALAND WINE VINTAGE AND EXPORTS, 2008–2020



Sources: New Zealand Winegrowers and MPI.

FIGURE 6.2: WINE EXPORT DESTINATIONS BY VALUE, 2008 VS 2016 MAT\*



\* Moving Annual Total.

Source: New Zealand Winegrowers.

## APPLES AND PEARS

Apple and pear export revenue has doubled since 2012 reaching almost \$700 million for the year ending June 2016.

Export volumes are expected to increase steadily, with volumes exceeding a milestone of 360 000 tonnes in the 2017 harvest as recent plantings come into production.

Sustained growth in export revenue is dependent upon the New Zealand apple and pear industry maintaining its position as a supplier of premium quality fruit. A key challenge to overcome is finding skilled seasonal and full time staff, as labour demand will increase over the forecast period.



## PRODUCTION

Apple and pear production in the year ended December 2016 is similar to last year despite it being an off-year in the biennial bearing pattern<sup>9</sup> of some apple varieties. The influence of this pattern on overall production is diminishing because of changes in the variety mix, new orchards having a high tree density and a net increase in planted area.

A dry winter with good winter chill and favourable conditions during flowering led to high return bloom and good fruit set for the 2016 crop. The warm summer with regular rainfall and adequate irrigation lifted fruit size and sugar levels.

**Asian markets continue to demand high quality fruit such as New Zealand-grown apples**

**TABLE 6.5: APPLE AND PEAR EXPORT VOLUMES, PRICES, AND VALUES, 2013-2020**

YEAR TO 31 DECEMBER	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export volume (million cartons) <sup>1</sup>	18.2	17.4	18.5	19.5	21.0	22.0	23.5	24.8
FOB <sup>2</sup> price (\$/carton)	27.80	30.05	33.95	35.00	35.00	35.00	35.00	35.00
Export value (\$ millions)	504	522	628	683	735	770	823	866

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export volume (million cartons) <sup>1</sup>	18.0	18.3	17.3	19.4	20.8	21.8	23.3	24.5
FOB <sup>2</sup> price (\$/carton)	26.90	29.85	32.90	35.50	35.00	35.00	35.00	35.00
Export value (\$ millions)	484	547	571	687	726	763	813	859

\* Estimate for year ended June.

<sup>1</sup> A carton is equivalent to 18.0 kilograms.

<sup>2</sup> Free on board is the value of goods delivered to the port of export and loaded onto the vessel for transportation out of the country of origin.

Sources: Statistics New Zealand, Pipfruit New Zealand Inc. and MPI.

<sup>9</sup> Some apple varieties produce large crops in one year and then much smaller amounts of fruit in the following year.

The industry has embarked on a significant phase of orchard replanting and new plantings since 2012. This investment is forecast to continue in the future, aided by three consecutive years of profitable returns, access to niche and managed varieties, and increasing demand from markets in Asia for high quality fruit.

Confidence in the industry is strong with surveys indicating that the apple and pear planted area could top 11 000 hectares by 2020, up from around 9,600 hectares currently. Hence, apple and pear production is expected to increase year on year over the forecast period.

**Industry and Government are working together to ensure production increases are not constrained by a lack of skilled staff**

One of the biggest challenges for the industry in delivering high quality fruit alongside increasing production is having an adequate supply of skilled seasonal and full time staff. Several industry initiatives are underway, working alongside government agencies to address this potential constraint.

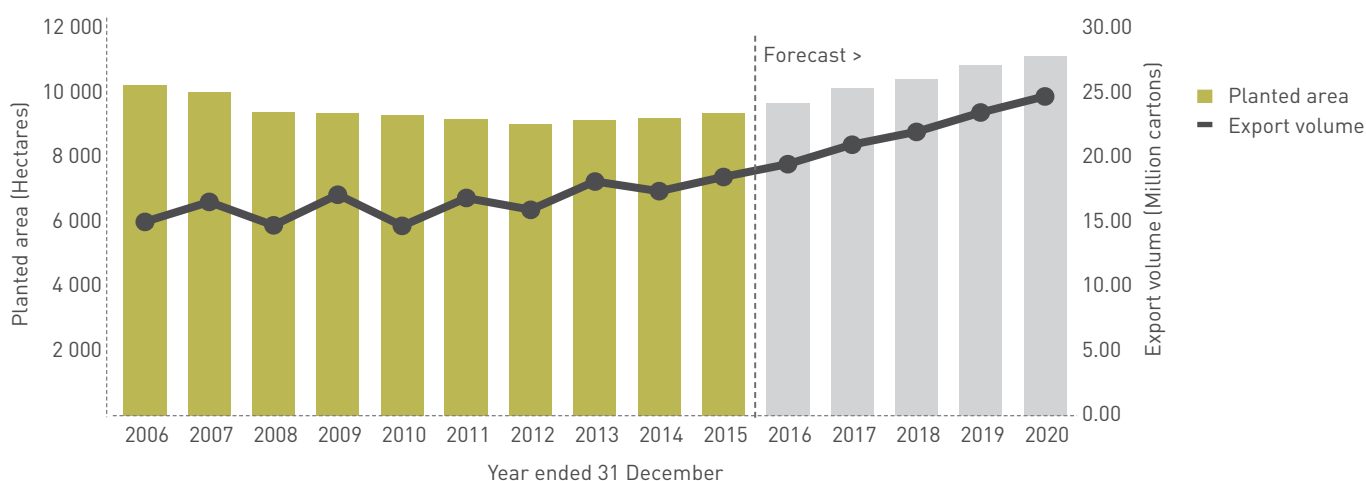
## EXPORTS

An export volume of 351 000 tonnes (19.5 million cartons) is estimated for the year ending December 2016, up 5.4 percent on the previous year, despite some hail damage in the Nelson region.

Annual export volumes are expected to increase steadily over the forecast period as recent plantings and those planned for the next few years come into production (see Figure 6.3). Orchard productivity has increased significantly in the past decade; apple and pear export volumes were 23 percent higher in 2015 compared with 2006 and grown on around 8 percent less orchard area. On-going improvements in orchard productivity are anticipated arising from higher density plantings, and investments in research, technologies and practices to continually improve yield and fruit quality.

**Apple and pear export volumes were 23 percent higher and grown on 8 percent less orchard area**

FIGURE 6.3: NEW ZEALAND APPLE AND PEAR PLANTED AREA AND EXPORTS, 2006-2020



Sources: Pipfruit New Zealand, Statistics New Zealand, and MPI.

More fruit has been shipped to the USA earlier than usual in the New Zealand 2016 export season. This is unlikely to be an ongoing market development, but rather the result of Washington State having a challenging growing season in 2015 where extreme heat impacted fruit size, ripening, and storability.

Asian markets continue to expand, taking 41 percent of apple and pear exports in 2015 compared with 35 percent in 2012 and 15 percent in 2006. The intention to grow markets in Asia is reflected in the quality characteristics of apple varieties planted in recent years, including Pacific Queen™, high-colour strains of Fuji (including Kiku®) and Gala, Envy™, Smitten® and Diva™, which are varieties preferred by Asian consumers.

## PRICES

Market conditions for the 2016 season are generally positive with expectations of a small lift in export prices, assisted by favourable exchange rates.

Strong demand is being reported in Asian markets (particularly Taiwan) and the Middle East. In addition, although apple stocks are high in some European countries, New Zealand exporters are confident of strong European demand for high quality new season fruit.

In the midst of rising global apple production, export prices for New Zealand apples and pears are expected to maintain their current strong position despite increases in our export volumes. An increasing proportion of niche and protected<sup>10</sup> varieties, continued development of higher paying markets (particularly Asia), and favourable exchange rate movements should conspire to keep our export prices high. However, our ability to consistently deliver premium quality fruit will be paramount.

## FRESH AND PROCESSED VEGETABLES

Total fresh and processed vegetable export revenue is up 6 percent in the year to June 2016 driven by higher volumes of onions and squash and favourable exchange rates.

Total vegetable export volumes are expected to grow slightly in the short to medium term based on current market access and competitiveness expectations for fresh vegetable exports, and vegetable processing capacity remaining relatively stable.

## FRESH VEGETABLES

The El Niño weather pattern delivered generally favourable growing conditions for onions and squash in 2016 with average to good yields for these crops.

The 2015 onion crop harvest in Continental Europe was down on the previous year, offering Southern Hemisphere exporters better prospects in 2016. Markets in Asia and the Pacific are showing steady demand for New Zealand onions. This, combined with a weaker New Zealand dollar should lead to higher export volumes and prices in 2016.

**Onion growers are investing in research to lift on-farm productivity and bulb quality**

<sup>10</sup> Protected by intellectual property regulations.





Onion growers are investing in research to lift on-farm productivity and onion bulb quality. Longer term, growth in onion exports is reliant on improved access to growing markets in Asia, as improved storage systems are reducing the sales window into the UK and Europe.

An increase in planted area, favourable growing conditions and market development are contributing to an increase in squash exports in 2016. Steady increases in export volumes are anticipated in the medium term as exporters develop opportunities from recent trade and economic cooperation agreements with China, Taiwan and South Korea.

## PROCESSED VEGETABLES

Average yields are reported for vegetable crops grown for processing in the 2016 season, in line with contracted volumes.

In the absence of significant changes in vegetable processing capacity, total export volumes of processed vegetables are expected to remain relatively stable over the forecast period, although individual categories may vary.

TABLE 6.6: VEGETABLE EXPORT VOLUMES AND VALUES, 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
<b>FRESH VEGETABLES</b>								
Export volume (000 tonnes)	314	306	299	317	326	341	351	370
Export value (\$ millions)	225	219	215	252	250	260	265	276
<b>PROCESSED VEGETABLES<sup>1</sup></b>								
Export volume (000 tonnes)	207	224	212	200	210	210	210	210
Export value (\$ millions)	375	387	373	372	389	387	387	387
<b>TOTAL FRESH AND PROCESSED VEGETABLES</b>								
Export value (\$ million) Year to 30 June <sup>2</sup>	600	606	588	624	639	647	652	663

\* Estimate for year ended June.

Sources: Statistics New Zealand and MPI.

<sup>1</sup> Processed vegetables includes frozen vegetables, dried vegetables, dry legumes, prepared and/or preserved vegetables, and vegetable juices.

<sup>2</sup> The forecast value of total vegetable exports of \$777 million for the year to June 2017 in SOPI Update December 2015 was a data reporting error. The correct number was \$677 million.



## OTHER HORTICULTURE

Dominated by avocados, cherries and berries, this category includes other fresh, frozen, preserved and processed fruit such as fruit juices. Also included are flowers and ornamentals. Exports are forecast to surpass \$500 million in 2017 as a result of favourable exchange rates and higher export volumes.

A lower avocado crop in the year to June 2016, due to the biennial bearing pattern, caused export volumes to fall 42 percent to 2.6 million trays, while export values fell 28 percent to \$83 million. A combination of favourable climatic conditions and avocado plant production profiles<sup>11</sup> suggests a record avocado crop for 2017. Export volumes and values are forecast to double to 5.1 million trays and \$165 million respectively for the year ending June 2017.

<sup>11</sup> Avocados, like some apple varieties, also have a biennial bearing pattern where yields are strong in one year and weaker the next.

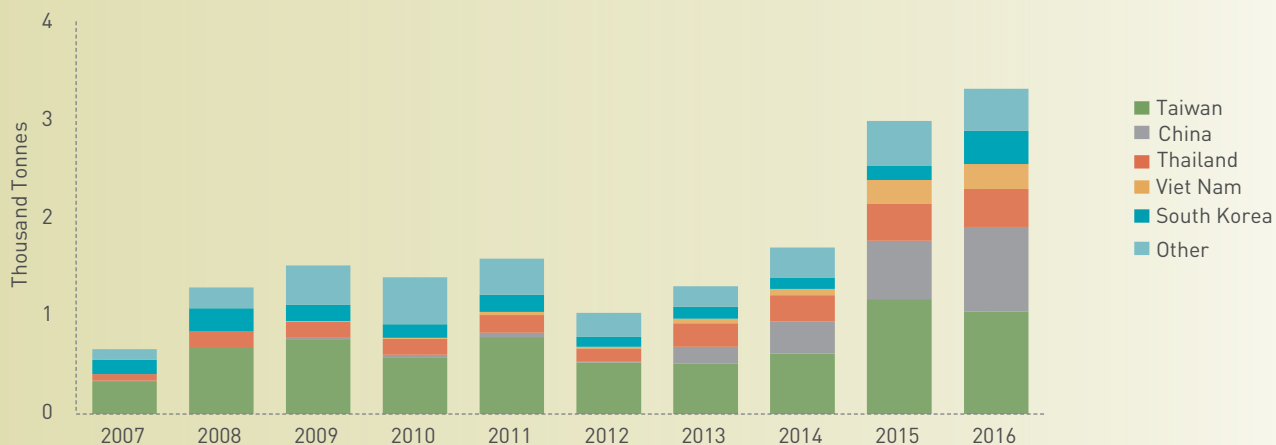
## CHERRY PICKING

New Zealand cherry growers have been taking advantage of a rising middle class in Asia. Cherries are a high value export, achieving export values of over \$20 per kilogram in the 2015/16 season. Orchard expansion has been occurring since 2007 to capitalise on the growing demand in Asia and the high orchard returns compared to other summer fruit crops.

New Zealand cherries are primarily produced in the South Island, during a short and sharp season which typically includes the Christmas and Chinese New Year periods. New Zealand aims to supply premium quality fruit which achieves high prices during these special occasions. New Zealand cherry export volumes are only a fraction of our key competitor Chile, but tend to achieve higher prices due to superior quality fruit. Additionally, with the exception of China, Chile does not enjoy the same tariff-free access that New Zealand now does.

New Zealand cherry exporters have benefited from recent trade and economic cooperation agreements with the Asian region. These agreements have achieved tariff elimination in China (January 2013), Taiwan (December 2013) and South Korea (December 2015) which are now three of the top five markets for New Zealand cherries.

FIGURE 6.4: NZ CHERRIES EXPORTS – YEAR TO JUNE



Source: Statistics New Zealand.



# 7

## **OTHER PRIMARY SECTOR EXPORTS AND FOODS**



# Other Primary Sector Exports and Foods



## at a glance

### KEY FACTORS



Australia continues to be our largest market for these products



Strong growth in exports of innovative processed foods to China in 2015 is expected to continue at more moderate levels over the outlook period



Exports to Japan and South Korea, our key markets for Other products, are continuing to grow strongly

This category includes a wide range of products such as processed foods, honey, and live animals. Export revenue for Other Primary Sector Exports and Foods is forecast to reach \$2.4 billion for the year ending June 2016. This represents an overall increase of 14 percent from the previous year. Continued high growth in the honey and innovative processed food categories is being supported by growth in Other products such as vegetable based dyes and spices.

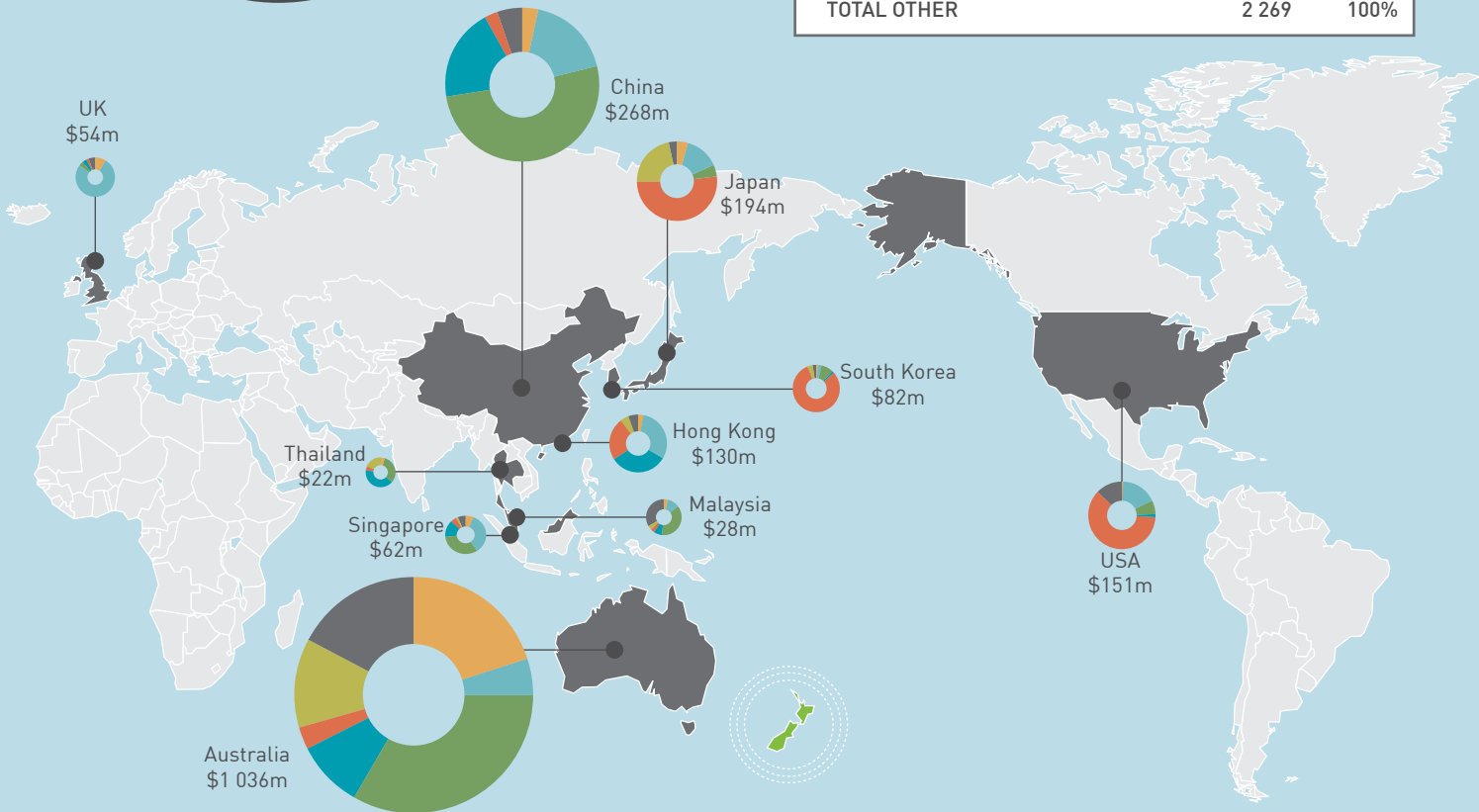
	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$1 689m	\$1 677m	\$2 089m	\$2 374m	\$2 609m	\$2 796m	\$2 847m	\$2 936m
Y/Y % Change	+9%	-1%	+25%	+14%	+10%	+7%	+2%	+3%

\* Estimate for year ended June.

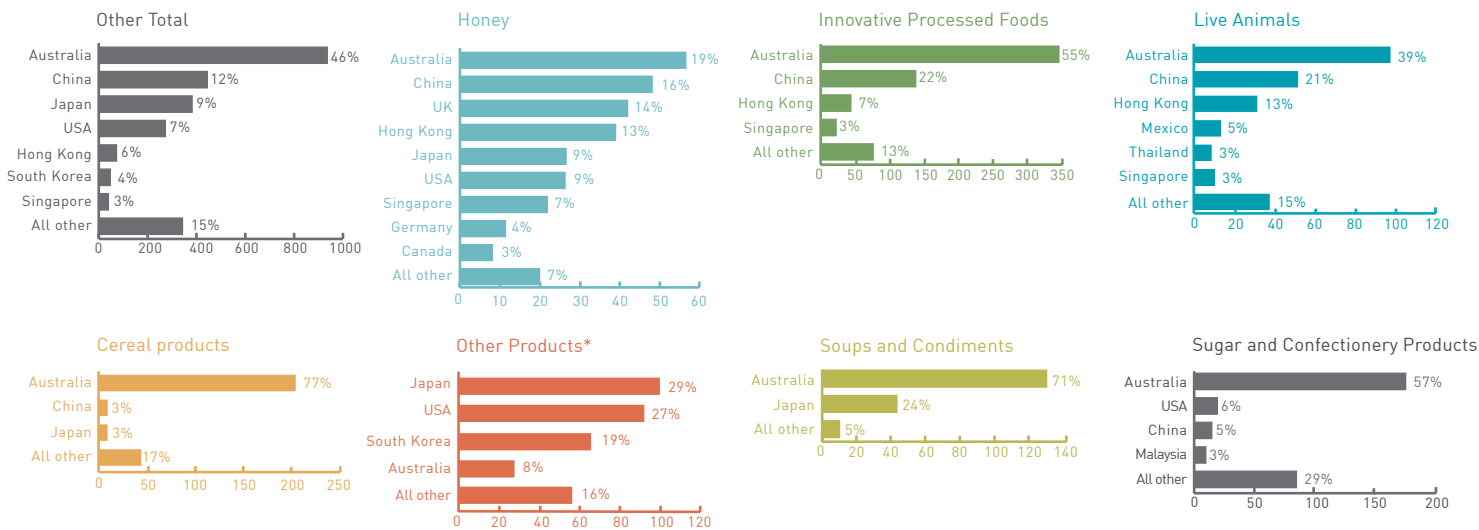


# TOP 10 OTHER PRIMARY EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Innovative Processed Foods	625	28%
Sugar and Confectionery Products	306	13%
Honey	299	13%
Cereal Products	266	12%
Live Animals	248	11%
Soups and Condiments	181	8%
Other products	608	27%
<b>TOTAL OTHER</b>	<b>2 269</b>	<b>100%</b>



## TOP MARKETS (NZ\$ millions, year ended March 2016)



\* Other products include: vegetable based dyes, coffee and spices.

# Other Primary Sector Exports and Foods

## detailed analysis

This category is diverse and includes processed foods, live animals and honey. Processed foods include:

- innovative processed foods such as prepared meals and sweet and savoury fillings;
- cereal products such as flour, pastry and pasta;
- sugar and confectionery products such as snack bars and chocolate in slabs;
- soups and condiments such as mustard and tomato sauce;
- other products such as coffee, spices and vegetable based dyes.

### LIVE ANIMALS

Live animal exports in 2016 are down almost a third on 2015, however 2015 was unusually high. Exports of dairy and beef cattle have returned to their long term average in 2016 of around 25-30 000 per year after a spike in 2015.

However, racehorse exports were higher than usual as shipments to New Zealand's key markets of Australia and Hong Kong were complemented by increases in trade with China, Malaysia, Japan, and the USA.

Growth in the value of live chicken exports for breeding is accelerating. Exports grew slowly from 2006, reaching \$6.9 million in 2013. However, accelerating growth over the next two years more than doubled export values, to \$16 million. Exports for the first three quarters of 2016 alone were \$20 million, led by strong growth in exports to Asia. New Zealand is a key source of chickens when the main breeding areas of the USA and Europe have disease outbreaks due to our high quality stock and lack of many established chicken diseases. China is expected to be our fourth largest market in 2016.

TABLE 7.1: OTHER PRIMARY SECTOR EXPORTS AND FOOD EXPORT VALUES (NZ\$ MILLIONS), 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Live animals	238	208	370	265	330	354	363	377
Innovative processed foods	339	330	468	669	763	818	827	846
Honey	145	187	233	298	324	355	370	390
Cereal products	261	253	253	282	311	332	338	349
Sugar and confectionery products	263	290	293	314	331	354	361	373
Soups and condiments	196	192	183	176	177	186	187	192
Other products	246	217	289	369	372	396	400	409
Total Other primary sector exports and foods	1 689	1 677	2 089	2 374	2 609	2 796	2 847	2 936

\* Estimate for year ended June.

Source: Statistics New Zealand and MPI.

## INNOVATIVE PROCESSED FOODS

New Zealand's key markets for innovative processed foods are Australia and China. Australia has been New Zealand's most important market for a long time now. However, despite a 22 percent annual growth rate in export value, Australia's share of exports has declined the last couple of years due to strong growth in exports to China. Other key markets for New Zealand's innovative processed foods are the Philippines, Hong Kong, Singapore, and the USA.

Growth in exports of these products to China has been large in recent years. Exports leapt from \$29 million in 2014 to \$105 million in 2015. The value of exports for the September, December and March quarters of the year to June 2016 was \$103 million alone, so strong growth is expected in 2016 and for future years.

## HONEY

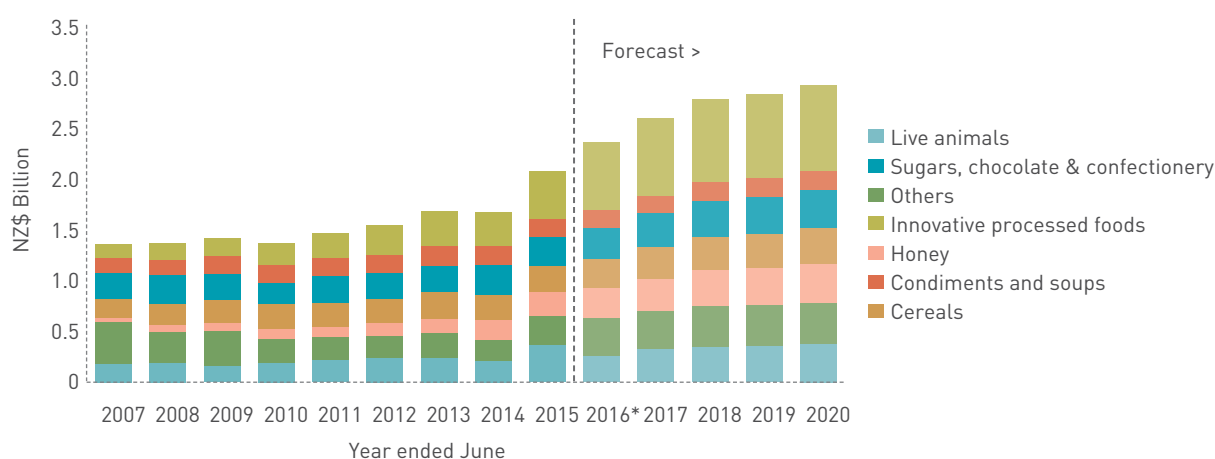
The value of honey exports is expected to continue to show steady growth from 2017/18. Since 2013 New Zealand has exported around 45 percent of the annual domestic honey harvest as pure honey. The rest of the honey harvest is sold for domestic consumption or used as an ingredient in other products. When the domestic harvest is lower, exports of pure honey remain at similar levels and less honey is available for the domestic market and as an ingredient in other products.

The total honey harvest for 2016 is expected to be about 5-10 percent lower than in 2015 due to unfavourable weather conditions over spring and summer in many parts of New Zealand. Exports of pure honey are expected to remain at similar levels as in 2015. Value continues to be driven primarily by price increases.

The number of registered beehives has increased by 100 000 hives (20 percent) in the last year as increasing prices incentivise the establishment of more hives. This will not necessarily lead to a significant increase in the amount of honey harvested as some areas appear to be overstocked with hives resulting in the bees consuming any otherwise surplus honey. Lack of suitable pollen sources in some areas may also compromise hive vigour.

While the United Kingdom took around a third of New Zealand's honey exports in 2012, this declined to around 20 percent in 2013 and has stayed at similar levels since then. In contrast, Asia is gaining in importance as a trading partner for our honey. In 2012 China only took 11 percent of our honey; by 2015 this had grown to 16 percent. Hong Kong has been maintaining its share at around 14 percent during this period.

FIGURE 7.1: OTHER PRIMARY EXPORTS AND FOODS, 2007-2020



\* Estimate for year ended June.

Sources: Statistics New Zealand and MPI.

## CEREAL PRODUCTS, SUGAR AND CONFECTIONERY PRODUCTS, SOUPS AND CONDIMENTS

Exports of cereal products, sugar and confectionery products are expected to remain steady for the next few years as demand for these products is fairly stable.

Exports of soups and condiments has slowly been declining in recent years, although this is expected to reverse, driven by steady demand from Australia and slowly increasing demand from Asia.

## OTHER PRODUCTS

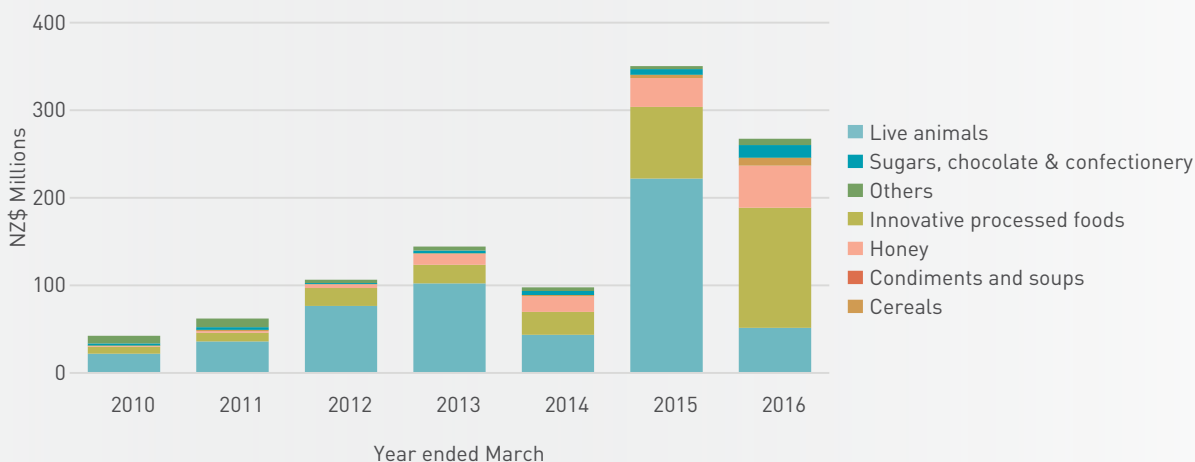
Exports of other products have increased at an annual rate of over 30 percent for the last two years. These products are a mixture of various low volume niche products. While our key markets for these products are usually Japan and South Korea, exports to the USA increased significantly in 2016. Growth in exports to Japan was just under 3 percent in 2015 and is on track for a similar level of growth in 2016. On the other hand, growth to South Korea more than doubled in 2015, but is on track to show only small growth in 2016.

### GROWTH IN EXPORTS TO CHINA

China is now New Zealand's second largest market for the other primary sector exports and food category. Exports of products in this sector have grown massively in recent years. Exports in 2010 were only worth \$42 million, but by 2016 exports are expected to have jumped to \$268 million.

The key product types sent to China in this category are innovative processed foods, live animals and honey. Exports of innovative processed foods to China have grown from \$8.1 million in 2010 to \$137 million in 2016. Live animal exports have grown from \$22 million in 2010 to a high of \$222 million in 2015 due to a large spike in the number of dairy cows exported that year. They dropped back to \$51.5 million in 2016. Exports of honey have expanded from \$0.7 million in 2010 to \$48 million in 2016.

FIGURE 7.2: EXPORTS OF OTHER PRIMARY SECTOR EXPORTS AND FOODS TO CHINA, 2010-2016



Sources: Statistics New Zealand and MPI.



8

**ARABLE**



# Arable

## at a glance

### KEY FACTORS



Feed grain prices dropped significantly over the year due to lower dairy sector demand and abundant international grain supply.



Booming demand for baby leaf salad has significantly increased export demand for spinach, beet and kale seeds.



Ryegrass seed contracts are down on previous years due to high stocks held in Europe.

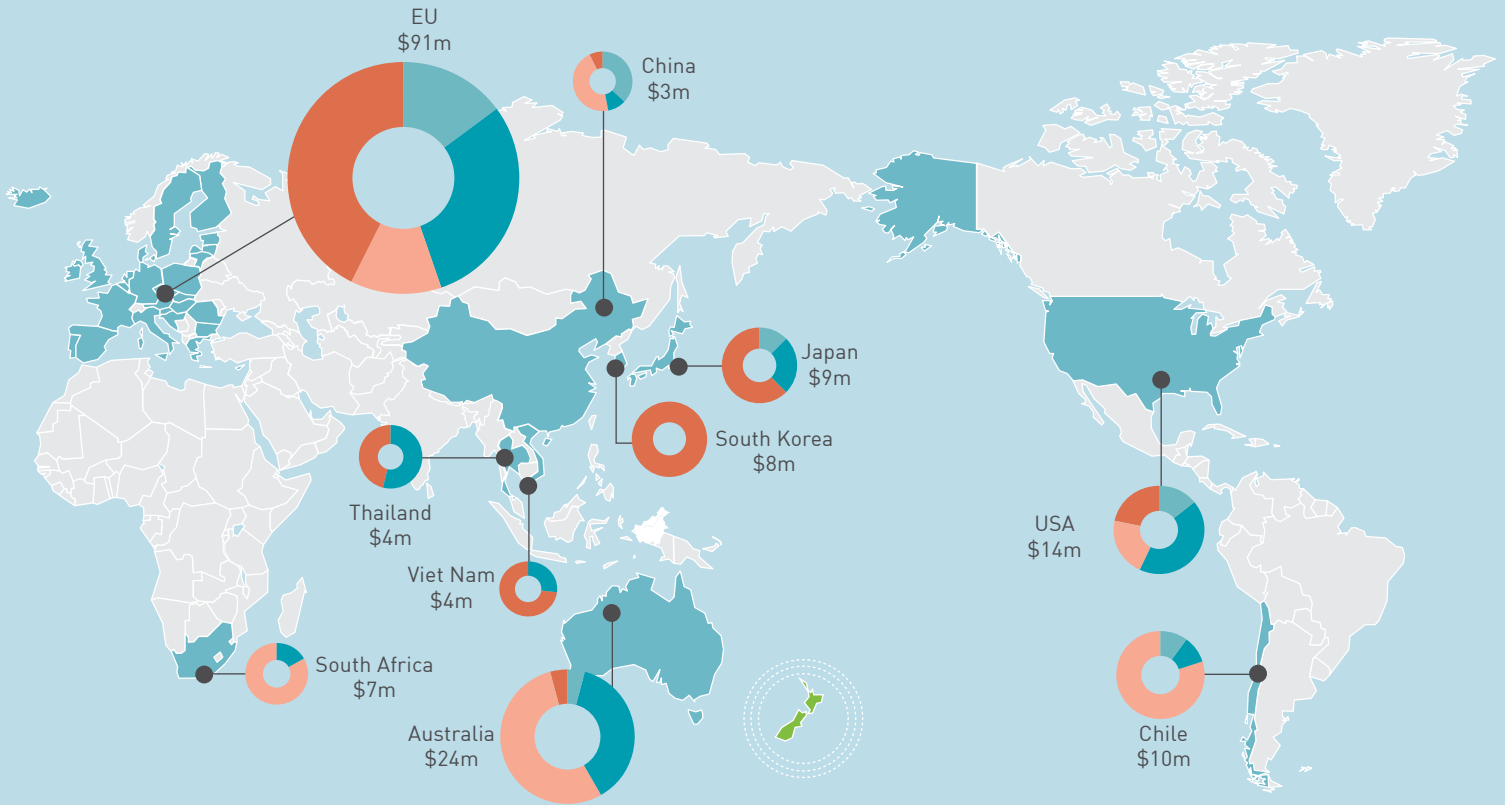
Arable export revenue is expected to be \$202 million for the year ending June 2016. This is up 14 percent (\$24 million) on the previous year as a depreciation of the New Zealand dollar against the main trading partners boosted export prices. The outlook for arable export revenue is positive and expected to rise to \$243 million by 2020, driven by steady growth in export volumes and prices. While returns for seeds improved in 2016, there was a considerable fall in the domestic grain market, particularly for dairy feed grains.

	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Export Revenue	\$225m	\$228m	\$177m	\$202m	\$208m	\$218m	\$229m	\$243m
Y/Y % Change	+30%	+1%	-22%	+14%	+3%	+5%	+5%	+6%

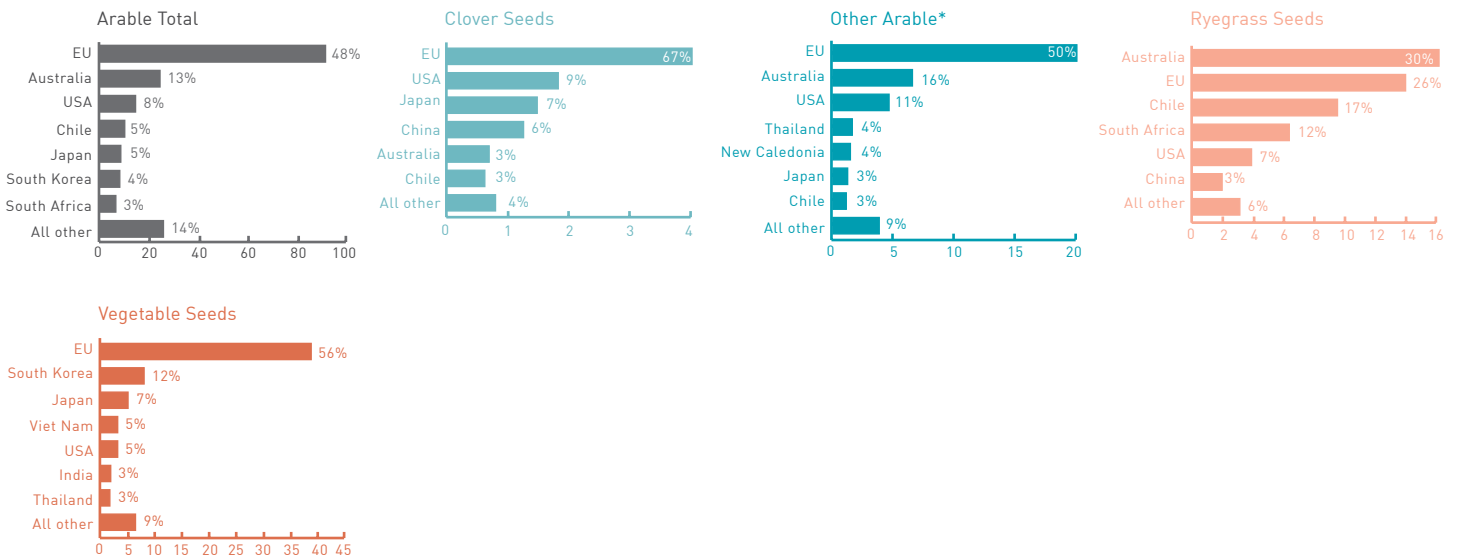
\* Estimate for year ended June.

# TOP 10 ARABLE EXPORT MARKETS BY VALUE

Product	Total Export Revenue (March 2016)	% of Total
Clover Seeds	20	11%
Other Arable	55	29%
Ryegrass Seeds	45	24%
Vegetable Seeds	69	36%
<b>TOTAL ARABLE</b>	<b>189</b>	<b>100%</b>



## TOP 10 MARKETS (NZ\$ millions, year ended March 2016)



\* Other arable products include: maize, other cereals, and other seeds.

# Arable

## detailed analysis

### SEEDS

The outlook for vegetable seed exports is positive. International consumption of vegetables continues to grow and New Zealand's climate and reputation for dependable, high quality seed production continues to attract international seed companies. Carrot and radish seed continue to be the mainstays of vegetable seed export revenue. However, a worldwide boom in baby leaf salad consumption has significantly increased demand for spinach, beet and leafy brassica seeds such as kale. Production of baby leaf salad uses a lot of seed with up to seven plantings a year.

**Baby leaf salad has increased in popularity, driving up demand for spinach, beet, and kale seeds**

Asian demand (particularly from South Korea, Japan, Thailand and Viet Nam) for brassica seed remains strong, but access to the Chinese market remains embargoed while a review of the phytosanitary certification to allay concerns over black-leg disease is undertaken. Black-leg fungus was found in a New Zealand brassica seed export consignment to China in 2011.

**Excess European supply has led to subdued demand for ryegrass seed exports**

Multiplication contracts<sup>12</sup> for ryegrass seed exports were down on previous years due to high stock holdings in Europe following a good production season. Exporters say no improvement is expected for 2016/17. Demand from the domestic market for ryegrass seed is also soft as farmers limit spending on pasture renewal in response to low dairy prices. Proprietary herbage seed lines<sup>13</sup> continue to do well with Australia, South Africa and Chile the main export destinations.

Velvetleaf was recently detected in fodder beet crops. This weed affects many arable crops by competing for nutrients, space and water, and it may also affect the purity of seed lines and impact on international seed markets. MPI is working with industry partners to provide support and management information to farmers and agricultural contractors. This includes velvetleaf farm management plans, and guidelines for field management and stock movement, which provide details on reducing the spread of velvet leaf going forward and periodically re-inspecting affected fields. As a consequence of velvetleaf's latest discovery, MPI has also strengthened New Zealand's import requirements for pelletised seed.

TABLE 6.1: ARABLE EXPORT VALUES (NZ\$ MILLIONS) 2013-2020

YEAR TO 30 JUNE	Actual			Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020
Clover/Legume seed	21.2	20.0	22.2	21.1	20.7	20.7	21.0	21.5
Ryegrass seed	68.1	54.6	48.7	43.8	47.3	49.9	51.5	53.4
Vegetable seeds	80.2	66.2	62.2	72.9	73.5	77.7	83.6	90.7
Other grains and seeds	55.3	86.9	44.3	64.0	66.2	69.5	73.1	77.4
<b>Total</b>	<b>225</b>	<b>228</b>	<b>177</b>	<b>202</b>	<b>208</b>	<b>218</b>	<b>229</b>	<b>243</b>

\* Estimate for year ended June.

Sources: Statistics New Zealand and MPI.

<sup>12</sup> Seeds sent to New Zealand by an overseas company to grow (multiply) here and then export back overseas. This takes advantage of our complimentary growing season to the Northern Hemisphere and tends to occur when there has been a poor harvest overseas and companies need to boost their supply.

<sup>13</sup> Proprietary seed lines are those bred in New Zealand, for which New Zealand companies own the intellectual property.

The outlook for clover seed exports is positive with a shortage of white clover seed in Europe and increasing demand from China.

## GRAINS

New Zealand exports very little grain with most used for domestic stock feed and some domestic milling. Prices for most grains were on a continual downwards trend during 2016, with prices around \$100 per tonne lower than the previous year.

Prices and demand for feed grain are closely linked to international grain and dairy prices.

Demand for feed grain from the dairy sector fell as farmers reacted to the low milk payout by reducing herd sizes and the use of supplementary feed. Sales of domestic feed grain face difficulties competing with imported grain due to lower international grain prices and lower shipping costs.

The Foundation of Arable Research's AIMI Survey estimates that at 1 April 2016, 48 percent (146 600 tonnes) of the 2016 feed barley harvest and 46 percent (162 389 tonnes) of the feed wheat harvest were unsold. Storage is becoming an issue with the unsold grain, carryover stocks from 2015 and a significant amount of the sold grain still stored on farm.

Arable farmers are responding by growing less feed barley. However, the area in feed wheat is expected to increase by 2000 hectares (6 percent) as there are more options for end use such as poultry and pig feed.

## TRANS-PACIFIC PARTNERSHIP (TPP)

If ratified the TPP will provide export growth opportunities for the arable sector. The partnership requires that the Plant Variety Rights Legislation 1987 be updated to align with the International Union for the Protection of New Varieties of Plants 1991 convention. This will give New Zealand farmers access to a wider variety and higher yielding seeds, as TPP provisions will assure international suppliers that their Intellectual Property is sufficiently protected. Low level tariffs will also be removed such as those on ryegrass and clover seed exports to the USA.

**Arable farmers are struggling with competition from grain imports and weak demand for dairy feed grain**



# Appendix 1

## GROSS AGRICULTURAL REVENUE AND EXPENDITURE

Agriculture's contribution to gross domestic product (GDP) is a measure of the total value added by the sector. In this instance, GDP is measured in current prices. Agricultural GDP is estimated to have decreased by 3.4 percent in the year to March 2016 due to the net effect of a decrease in both total gross revenue (down \$566 million) and intermediate consumption (down \$288 million). The main revenue change was a decrease in gross revenue from dairy farming (down \$1.7 billion) with moderating gains

from other revenues, particularly from fruit orchards (up \$625 million) and cattle farming (up \$322 million).

Agriculture sector income is the residual from GDP after allowing for wages, depreciation, and the net of interest paid and received. It is a proxy for taxable income which was estimated to have fallen 8 percent to \$1.2 billion for the year to March 2016.

Agricultural GDP is expected to reach \$12.0 billion by the year ending March 2020 due to a recovery in dairy prices, moderate expansion in dairy production and growth in horticulture revenues.

TABLE A1: GROSS AGRICULTURAL REVENUE AND EXPENDITURE, YEAR TO END MARCH 2013-2020

YEAR TO 30 JUNE	Actual				Forecast				
	2013	2014	2015	2016*	2017	2018	2019	2020	
Dairy	10 385	14 823	9 381	7 644	8 433	10 671	11 716	12 206	
Cattle	2 316	2 166	2 801	3 123	2 694	2 633	2 619	2 719	
Sheepmeat	2 263	2 340	2 365	2 388	1 973	2 059	2 076	2 136	
Wool	587	573	644	666	637	653	639	636	
Deer	200	196	200	216	205	189	178	179	
Poultry/eggs	172	186	188	196	195	197	199	201	
Pigs	167	185	196	202	204	206	208	210	
Other farming	216	216	212	225	190	192	192	199	
Sales of live animals	866	760	953	1 012	855	864	865	894	
Value of livestock change	-150	70	-231	-54	-7	76	33	19	
Fruit	1 981	2 288	2 495	3 120	3 525	3 605	3 693	3 807	
Vegetables	987	1 026	941	976	1 047	1 051	1 062	1 073	
Other horticulture	325	361	393	408	437	439	443	448	
Crops and seeds	751	748	748	615	609	637	665	695	
Agricultural services	220	216	222	216	219	245	256	265	
Non-farm income	436	411	443	432	437	488	512	529	
<b>Total Gross Revenue</b>	<b>21 722</b>	<b>26 565</b>	<b>21 951</b>	<b>21 385</b>	<b>21 655</b>	<b>24 205</b>	<b>25 356</b>	<b>26 215</b>	
Intermediate consumption	12 513	13 048	13 688	13 400	13 255	13 527	13 866	14 205	
<b>Contribution to GDP</b>	<b>9 209</b>	<b>13 517</b>	<b>8 263</b>	<b>7 985</b>	<b>8 400</b>	<b>10 678</b>	<b>11 490</b>	<b>12 011</b>	
Wages	2 231	2 153	2 181	2 231	2 270	2 305	2 352	2 412	
Depreciation	1 475	1 501	1 534	1 562	1 590	1 619	1 648	1 678	
Net indirect taxes <sup>1</sup>	728	759	794	616	648	825	888	929	
<b>Operating Surplus</b>	<b>4 775</b>	<b>9 104</b>	<b>3 754</b>	<b>3 576</b>	<b>3 892</b>	<b>5 928</b>	<b>6 601</b>	<b>6 992</b>	
Interest paid	2 586	2 485	2 743	2 627	2 500	2 774	2 949	3 138	
Interest received	200	188	248	205	150	152	209	274	
<b>Agriculture Sector Income</b>	<b>2 389</b>	<b>6 807</b>	<b>1 259</b>	<b>1 154</b>	<b>1 541</b>	<b>3 306</b>	<b>3 862</b>	<b>4 128</b>	

\* Estimate for year ended June.

<sup>1</sup> Net indirect taxes are indirect taxes less subsidies.



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