



Situation and Outlook for Primary Industries

JUNE 2022



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Notes

Annual figures are for the year to 30 June unless otherwise noted. Year to 30 June refers to the 12-month period to that date.

Currency figures are in New Zealand dollars unless otherwise noted.

Some totals may not add up due to rounding.

At the time of writing, goods trade statistics for the March 2022 quarter are provisional. Late data and amendments may be included in subsequent Stats NZ data releases.

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Minister's foreword



It's my pleasure to present this *Situation and Outlook for Primary Industries* (SOPI). It caps off an excellent year for export performance.

Overall food and fibre export revenue for the year to 30 June 2022 is expected to reach \$52.2 billion. This is a tremendous result for the sector as farmers, growers, fishers, foresters and others have continued to deliver quality products for Kiwis and overseas consumers while navigating the challenges of COVID-19.

Building on this stellar performance, we're also forecasting food and fibre export revenue will hit \$56.8 billion by the year to 30 June 2026.

It has not been an easy year for the sector as COVID-19 has continued to impact supply chains and workforces. However, this SOPI is cause for optimism.

Our markets abroad are demanding high-quality products that are made with care, and exporters are already responding to market signals. The Government is investing to support farmers and growers to ensure they produce food and fibre with low emissions and high sustainability credentials and we're opening up new market opportunities through negotiating free trade agreements (FTAs) and upgrading existing ones.

Our food and fibre sector continues to lead New Zealand's economic recovery from COVID-19, guided by the Government and sector roadmap *Fit for a Better World*. At its heart is boosting productivity, sustainability and jobs over 10 years.

We continue to partner with the food and fibre sector to deliver these outcomes. This includes investing in 195 projects through our Sustainable Food and Fibre Futures fund.

For example, we're supporting projects that are investigating regenerative agriculture from a New Zealand perspective. These projects will develop a sound evidence base of how regenerative agricultural practices can be integrated into New Zealand with a focus of what works well with our soils, climates and farming systems.

We're also supporting almost 190 catchment groups to help improve land management practices, with \$31 million invested through the Ministry for Primary Industries' Extension Services and Jobs for Nature programmes since December 2019. A further \$14.7 million has been allocated through the One Billion Trees programme and the Sustainable Food and Fibre Futures fund.

In May, the Government's Budget committed more than \$1 billion over four years to further accelerate these efforts.

This funding will boost productivity and export returns, accelerate technology development and provide vital support to farmers and growers to lower their agricultural emissions. This includes establishing a Centre for Climate Action on Agricultural Emissions to develop and commercialise smart new products to reduce emissions.

Our trade agenda has strong momentum as the Government opens new market opportunities. We signed a historic FTA with the United Kingdom in March. It will eliminate all tariffs on New Zealand exports, with duties removed on 99.5 percent of our current trade from entry into force, expected by the end of 2022. This is expected to boost New Zealand's GDP by up to \$1 billion.

Through our ongoing implementation of our FTA with China, most New Zealand dairy products to China are now duty free. This is expected to drive savings of \$180 million per annum at current export volumes. The upgrade of this FTA, which entered into force in April 2022, will drive further growth and savings for our exporters.

We're also making good progress in negotiating an FTA with the European Union, a market with over 400 million consumers.

The basis for my optimism is our food and fibre sector's strong history of innovating and adapting to changing markets. It's what has made us world leaders and will keep us world leaders.

I'd like to acknowledge the commitment of sector businesses to keep the supply of vital food and fibre products flowing. The Government remains committed to working with the sector to drive New Zealand's economic security and ongoing prosperity.

A handwritten signature in blue ink, appearing to read 'Damien O'Connor'.

Hon Damien O'Connor
Minister of Agriculture

Director-General's introduction



Welcome to our *June 2022 Situation and Outlook for Primary Industries* (SOPI), which provides an update on export revenue for the year to 30 June 2022 and a forecast to 30 June 2026.

SOPI continues to be a key source of information about the export performance of our food and fibre sector. Alongside financial information, it provides key observations from our engagement with sector groups and businesses.

SOPI forecasts food and fibre export revenue will reach \$52.2 billion by 30 June 2022. It also forecasts export revenue will reach \$56.8 billion by the year to 30 June 2026.

This SOPI clearly shows the ongoing economic success of our food and fibre sector and is only possible through the hard work and commitment of the sector to keep their operations running throughout the pandemic.

Our dairy sector export revenue continues to go from strength to strength with an increase of 13 percent in export revenue expected. There's solid demand worldwide for our dairy products, which is providing high export prices, and our producers continue to fill a crucial gap from reduced supply from other key dairy exporting nations.

Meat and wool exports are also on the rise, reflected in an 18 percent jump in export revenue expected by 30 June 2022. Demand is rebounding for meat with food service reopening around the world, and our meat producers continue to fill the shortage left by tight global supply of meat. We're also seeing the start of the wool sector's recovery to pre-pandemic levels.

Demand for our high-quality horticulture continues. Export revenue is expected to increase 2 percent, with kiwifruit leading the way. Record harvest volumes are expected for gold kiwifruit and wine grapes in 2022.

With food service reopening, demand for our seafood is rebounding. We're predicting an impressive 9 percent jump in seafood export revenue by 30 June 2022, close to pre-pandemic levels.

Forestry export revenue is expected to take a slight dip this financial year due to lower export volumes but to rebound and return to growth in the following years as infrastructure projects increase and logistics issues ease.

While there may be further headwinds, the sector's future looks bright. Encouraging progress is being made across the country to deliver the Government and sector roadmap *Fit for a Better World*. For example, MPI is partnering with the sector, and together, we're investing more than \$436 million into 195 projects through Sustainable Food and Fibre Futures. Our Opportunity Grows Here campaign also continues to connect New Zealanders with meaningful and rewarding jobs.

Budget 2022 funding committed more than \$1 billion over four years to accelerate our work with the sector such as boosting support, advice, tools and technology to lower emissions and drive further transformation.

The results in this SOPI speak to the significant success of our food and fibre sector. I'd like to acknowledge the sector's ongoing efforts to keep their people safe and supply crucial food and fibre products to consumers in New Zealand and overseas, working alongside MPI to drive New Zealand's economic prosperity.

A handwritten signature in black ink, appearing to be 'Ray Smith'. The signature is fluid and cursive, written on a white background.

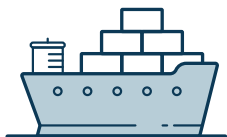
Ray Smith
Director-General,
Ministry for Primary Industries

Food and fibre sector in the New Zealand economy



\$52.2 billion
in export revenue

Forecast, year to 30 June 2022.



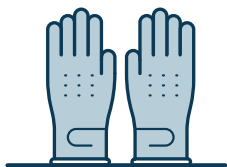
81.8% of trade

The food and fibre sector accounted for 81.8 percent of New Zealand's merchandise exports in the year to 31 March 2022. This ratio has increased over the past decade, with primary industry export growth exceeding that of non-primary industries in nine of the past 10 years.



11.1% of GDP

The food and fibre sector accounted for 11.1 percent of New Zealand's GDP in the year to 31 March 2020. This figure includes both the production of primary products such as dairy farming and the subsequent processing and commercialisation industries such as dairy product manufacturing.



13.8% of
employment

367,000 people are employed in New Zealand's food and fibre sector as of 2019,¹ representing 13.8 percent of the total workforce. Primary production employment is distributed across the country, but processing and commercialisation activities are concentrated in Auckland and other major population centres.

¹ Based on the latest report available. Human capability in the primary industries – 2002-2019 Overview (MPI).



Sector summary

Food and fibre sector export prices have outperformed expectations in the disrupted global trade period to date. Food and fibre sector exports are forecast to increase 9 percent to a record \$52.2 billion in the year to 30 June 2022. Looking ahead to the year to 30 June 2023, food and fibre sector export revenue is forecast to remain steady at \$52.1 billion, with strengthening export revenue in horticulture and forestry sectors partially offsetting weakening export revenue in dairy, meat and wool, seafood, arable and processed food and other products sectors. Export revenue is expected to rise to \$56.8 billion in the year to 30 June 2026.



Dairy

Dairy export revenue is forecast to increase by 13 percent to reach \$21.6 billion in the year to 30 June 2022 despite an estimated decline in milk production of 4 percent. This increase in exports is driven by a reduced supply from key dairy exporting regions and firm demand for dairy from importing nations. The resulting high export prices will lead to a record high farmgate milk price. Strong export revenue comes in spite of ongoing headwinds, especially from rising farm input costs, labour shortages, COVID-19 related disruptions and high freight costs.



Meat and wool

Meat and wool export revenue is forecast to increase 18 percent to reach \$12.2 billion in the year to 30 June 2022. Meat and wool export prices have surged due to tight global supply, food service reopening and demand rebounding. Global meat supplies are tight due to a reduction in the global cow herd, a range of export restrictions in key exporting countries and African swine fever limiting pork production. Wool and animal hide/skin prices have partially recovered. However, ongoing global freight issues and the COVID-19 situation in China are likely to limit further price increases.



Forestry

Forestry export revenue is forecast to decrease 4 percent to \$6.2 billion for the year to 30 June 2022. This decline is mostly driven by lower export volumes, despite higher prices, as well as a record harvest in the year prior. Fewer logs were exported due to freight congestion and ongoing uncertainty, putting profits at risk as producers pay for delays. Domestic timber demand is currently elevated due to high growth in residential housing, lowering export volumes as more wood is consumed domestically. In China, the construction market has contracted and is facing near-term uncertainty due to COVID-19 lockdowns. However, over the forecast period, demand is expected to rise as infrastructure projects increase and logistics issues ease.



Horticulture

Horticulture export revenue is forecast to increase 2 percent to \$6.7 billion for the year to 30 June 2022 driven by two consecutive seasons of large kiwifruit crops and higher export prices for wine. Record harvest volumes are anticipated for gold kiwifruit and wine grapes in 2022, whilst the production of apples and pears and several vegetable crops have been impacted by adverse climatic conditions. Consumer demand for New Zealand fresh fruit and wine has remained strong, and this is expected to continue.

Industry responses to increased costs of production, seasonal labour shortages and logistics issues are expected to result in reduced or static planted areas for some crops in the short term and an accelerated investment in labour-saving and emissions-reducing technologies where practical.



Seafood

Seafood export revenue is forecast to increase 9 percent to reach \$1.9 billion in the year to 30 June 2022. Seafood exports have increased with food service reopening and demand rebounding. Growth has been due to strong export performance across key species, although the sector is not without its challenges. Higher fuel prices, logistics constraints and higher costs of shipping are creating uncertainty over the outlook period.



Arable

Arable export revenue is forecast to fall 2 percent to \$255 million in the year to 30 June 2022. A challenging season affected the yield and quality of grain and seed crops. Lower volumes of clover and ryegrass seed are expected to be the main contributors to the fall in export returns. The total tonnage of grain harvested remained similar to 2021, with a 4 percent fall in yield offset by an increase in the area of feed wheat and feed barley grown.



Processed food and other products

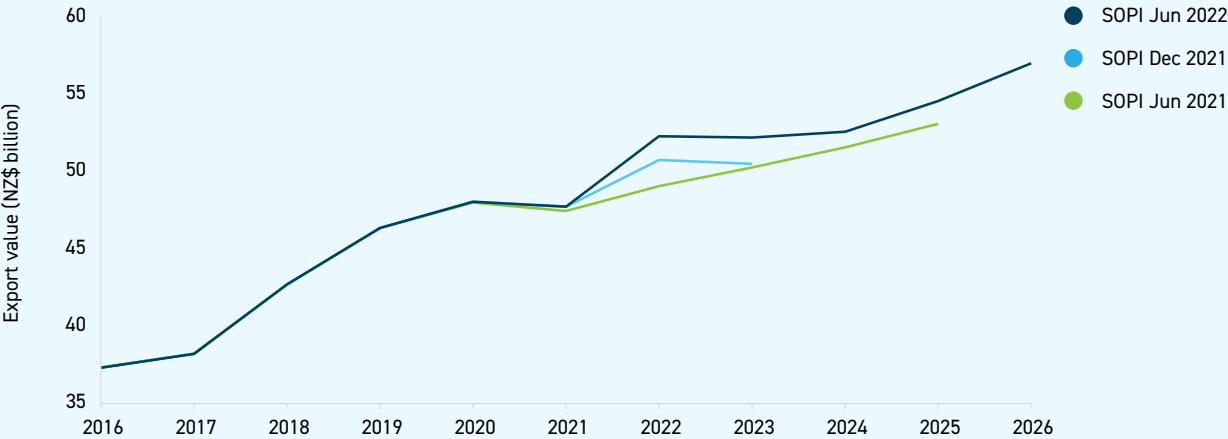
Export revenue for this sector is forecast to reach \$3.2 billion in the year to 30 June 2022, a moderate increase of 3 percent on the previous year. This is being driven by a strong performance in prices for other products, which is responsible for approximately 25 percent of total revenue in the sector, and an increase of forecast revenue from live animal exports. However, these gains are partially offset by a forecast reduction in honey.

Forecast tracking

Export revenue for the year to 30 June 2022 has been revised upwards compared with the forecast in December 2021 (Figure 1) with stronger export prices due to constrained commodity supply, food service reopening and recovering demand. Individual sector revisions are shown in Table 1.

Figure 1: MPI export revenue forecasts

Year to 30 June, 2016–26



Source: Stats NZ and MPI.



Table 1: Export forecast comparison 2017–25

Year to 30 June, NZ\$ million

Sector	Forecast round	Actual					Forecast			
		2017	2018	2019	2020	2021	2022	2023	2024	2025
Dairy	Jun 2022	14,638	16,655	18,107	20,135	19,093	21,610	21,170	21,130	22,500
	Jun 2021	14,638	16,655	18,107	20,135	19,050	20,420	20,730	21,400	22,020
	Difference	-	-	-	-	43	1,190	440	-270	480
Meat and wool	Jun 2022	8,355	9,542	10,176	10,678	10,391	12,220	11,820	11,680	11,710
	Jun 2021	8,355	9,542	10,176	10,678	10,380	10,420	10,660	10,910	11,170
	Difference	-	-	-	-	11	1,800	1,160	770	540
Forestry	Jun 2022	5,482	6,382	6,883	5,539	6,531	6,250	6,470	6,880	6,950
	Jun 2021	5,482	6,382	6,883	5,539	6,250	6,430	6,520	6,620	6,760
	Difference	-	-	-	-	281	-180	-50	260	190
Horticulture	Jun 2022	5,165	5,392	6,134	6,555	6,583	6,720	7,310	7,430	7,820
	Jun 2021	5,165	5,392	6,134	6,500	6,650	6,780	7,260	7,620	8,020
	Difference	-	-	-	55	-67	-60	50	-190	-200
Seafood	Jun 2022	1,744	1,777	1,963	1,855	1,772	1,940	1,940	1,980	2,020
	Jun 2021	1,744	1,777	1,963	1,855	1,780	1,730	1,830	1,880	1,920
	Difference	-	-	-	-	-8	210	110	100	100
Arable	Jun 2022	197	243	236	290	260	255	240	260	265
	Jun 2021	197	243	236	290	270	280	290	295	300
	Difference	-	-	-	-	-10	-25	-50	-35	-35
Processed food and other products*	Jun 2022	2,639	2,709	2,854	3,006	3,112	3,210	3,130	3,000	3,070
	Jun 2021	2,639	2,709	2,854	3,004	3,080	3,000	3,000	2,850	2,910
	Difference	-	-	-	2	32	210	130	150	160
Total exports	Jun 2022	38,220	42,700	46,355	48,058	47,741	52,205	52,080	52,360	54,335
	Jun 2021	38,220	42,700	46,355	48,001	47,460	49,060	50,290	51,575	53,100
	Difference	-	-	-	58	281	3,145	1,790	785	1,235

* Includes live animals, honey and processed food.

Totals may not add due to rounding.

Source: MPI.

Overview





Overview

Table 2: Food and fibre sector export revenue 2018–26

Year to 30 June, NZ\$ million

Sector	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Dairy	16,655	18,107	20,135	19,093	21,610	21,170	21,130	22,500	24,260
Meat and wool	9,542	10,176	10,678	10,391	12,220	11,820	11,680	11,710	11,820
Forestry	6,382	6,883	5,539	6,531	6,250	6,470	6,880	6,950	7,030
Horticulture	5,392	6,134	6,555	6,583	6,720	7,310	7,430	7,820	8,170
Seafood	1,777	1,963	1,855	1,772	1,940	1,940	1,980	2,020	2,070
Arable	243	236	290	260	255	240	260	265	270
Processed food and other products*	2,709	2,854	3,006	3,112	3,210	3,130	3,000	3,070	3,140
Total export value	42,700	46,355	48,058	47,741	52,205	52,080	52,360	54,335	56,760
Year-on-year % change	12%	9%	4%	-1%	9%	0%	1%	4%	4%

* Includes live animals, honey and processed food.

Percentages in the table are rounded to the nearest whole percentage.

Source: Stats NZ and MPI.

Food and fibre sector exports have outperformed expectations throughout the disruption caused by the COVID-19 pandemic, Russia-Ukraine conflict and global inflation to reach an expected \$52.2 billion of export revenue for the year to 30 June 2022. This represents a 9 percent increase from the previous year and a great result given the challenges farmers, growers and fishers have faced over the past two years to produce and deliver food and fibre products to their customers.

The food and fibre sector has shown strong resilience and resourcefulness as they navigated these challenges. These are some examples:

- Employers across the sector, particularly in horticulture, adapted to the lack of Recognised Seasonal Employer scheme workers by hiring local students through targeted advertising campaigns.
- Meat processors responded to shipping delays and uncertainty by adjusting their product mix from chilled to frozen.
- Several key exporters implemented a highly successful cross-industry freight-sharing operation.

Responding to production, harvest, processing, and shipping challenges enabled our sector to capitalise on high commodity prices for a range of New Zealand's key exports.

The dairy and meat and wool sectors experienced sharp lifts in revenue related to constrained commodity supply, which pushed prices up, and easing domestic and international COVID-19 restrictions. Dairy, meat and wool, horticulture, seafood, and processed food and other products revenues are forecast to increase, predominantly due to higher export prices.

In addition, kiwifruit and wine production reached record volumes in the year to 30 June 2022 with production volumes well supported by strong overseas demand post-COVID-19. Seafood export values bounced back from the shock of the pandemic and are expected to reach near pre-COVID-19 levels in the year to 30 June 2022.

The recent New Zealand-United Kingdom Free Trade Agreement will contribute to New Zealand's future exports as all tariffs are incrementally removed from key export products, reducing in-market prices for New Zealand products in the UK.

Looking ahead to the year to 30 June 2023, food and fibre sector export revenue is forecast to remain steady at \$52.1 billion, with strengthening export revenue in horticulture and forestry sectors offset by weakening export revenue from the dairy, meat and wool, seafood, arable, and processed food and other products sectors. Extreme global volatility and uncertainty are expected to continue into 2022/23. Labour pressures are forecast to ease with the Accredited Employer Work Visa starting and the reopening of New Zealand's borders to all visa categories on 4 July 2022.

In the long-term, climate change, demographic pressures, and geopolitical disruptions are likely to continue to increase prices for commodities such as food, feed, fertilisers and energy. Navigating higher input costs for fertiliser, disruptions to supply chains, uncertainty about international partners' commitment to the rules-based trading system as well as rising costs of adapting to the changing climate, will bring challenges for the sector. Today's high prices are an opportunity to further invest in future resilience and productivity. This will be particularly important as

climate change, technological disruption and changing consumer preferences affect supply of and demand for food and fibre products both here and overseas.

On a more positive note, this report shows a reduction in the sector's environmental footprint. Despite a 9 percent increase in New Zealand's food and fibre sector export revenue, New Zealand's greenhouse gas emissions are forecast to decline by 1.4 percent in 2022, following falls in the two previous years.

Climate outlook

Weather has had a strong influence on production over the last year. Several sectors were affected by wet conditions typical of La Niña, which decreased pasture quality and increased parasite growth in spring. Both lamb and milk production were affected. The arable sector was damaged by a very wet November and December, which decreased pollination and yields. With the exception of Southland, this resulted in one of the worst seasons on record.

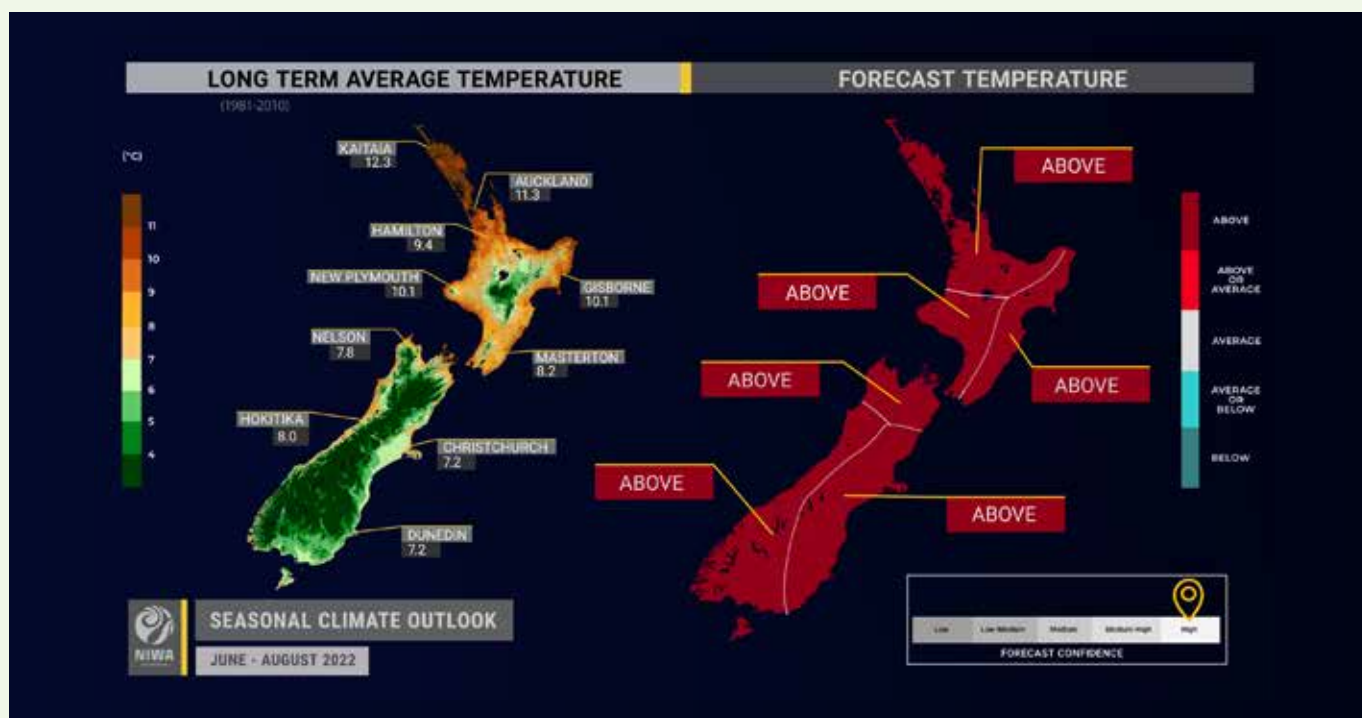
Cyclone Dovi impacted crops in Wairarapa, Taranaki and Waikato. Wet weather also affected fruit set and disrupted harvest for apples in Hawke's Bay. Cherries in the region also had to contend with increased disease pressure from humid conditions. For vegetables, heavy rains damaged vegetable crops in Horowhenua and delayed summer planting, but conversely, dry conditions in Pukekohe reduced the onion harvest.

However, the Nelson-Tasman region had a better apple crop than recent years due to increased sunshine days, and despite difficult conditions at the start and end of the season in Hawke's Bay, growing conditions over summer were good. A record process tomato crop was also harvested in Hawke's Bay. Later-flowering crops, including many of the vegetable seed crops, benefited from a warm January.

Looking forward, New Zealand is set for another warm winter following 2021's warmest winter on record (Figure 2). NIWA expects a continuation of La Niña for at least part of winter, and if this continues into spring, this would be the third year in a row, something that has only happened twice before since 1950. La Niña would be expected to bring the warm northeasterly winds and humid conditions that have influenced production since last spring.

Figure 2: Warm weather expected to continue through winter with prolonged La Niña

NIWA seasonal climate outlook, 1 June 2022



Source: NIWA.

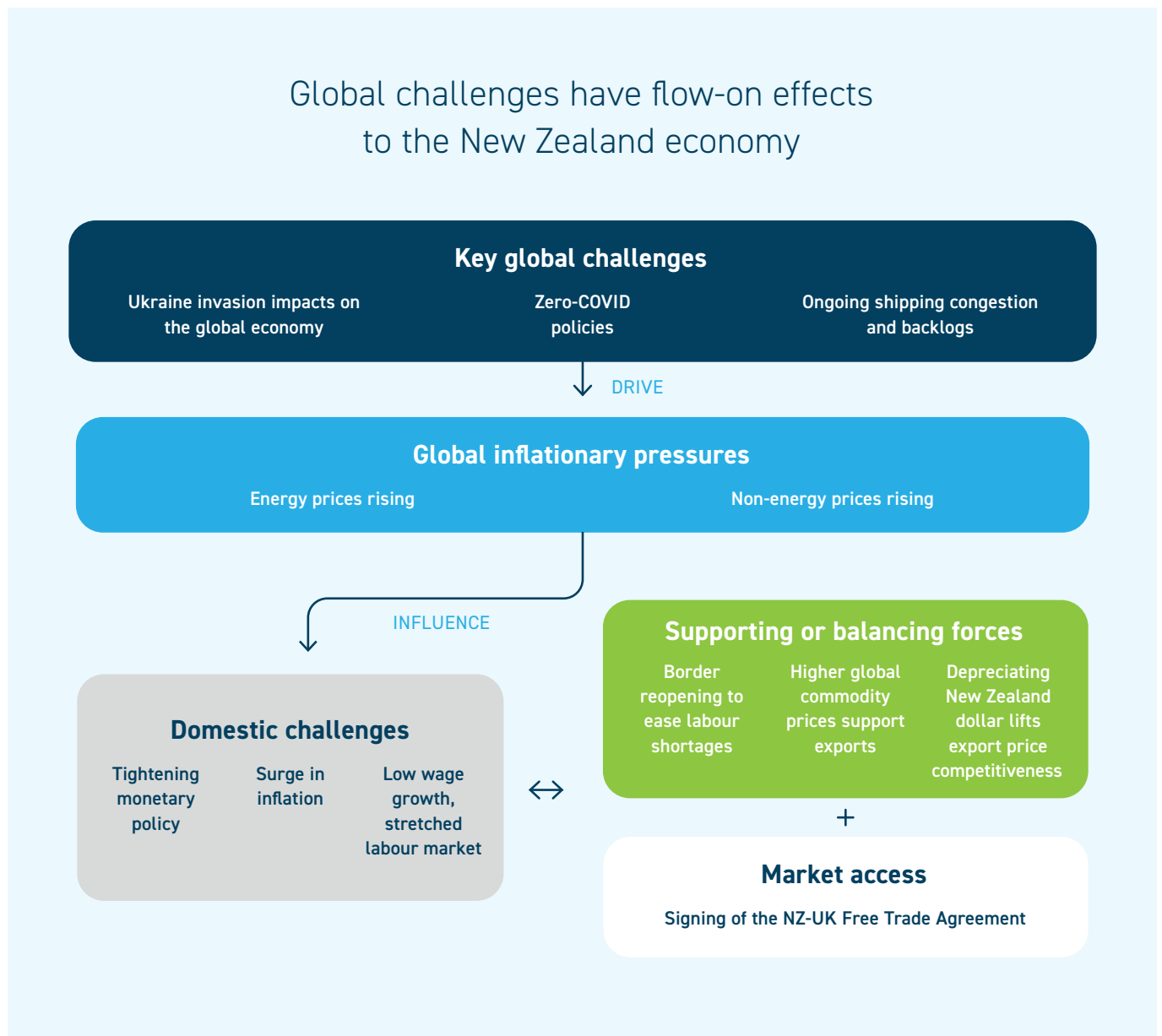
A new set of challenges and opportunities in a complex global environment

The medium-term global economic outlook continues to be clouded by high uncertainty as new challenges emerge. Since the December 2021 forecast, Russia invaded Ukraine on 24 February 2022, resulting in the displacement of over 12 million Ukrainians, exacerbating existing supply chain disruptions and causing many key commodity prices (including agricultural inputs such as fuel and fertiliser) to rise sharply.

At a global macroeconomic level, the conflict is expected to contribute to a substantial slowdown in global growth in 2022. The International Monetary Fund (IMF) has cut its previous

forecast for global economic growth in 2022 by 0.8 percentage point (US\$250 billion, which is greater than New Zealand's total GDP in 2022) to 3.6 percent (as at April 2022). Global growth is expected to moderate to around 3.3 percent beyond 2023 in the medium term (Figure 3).

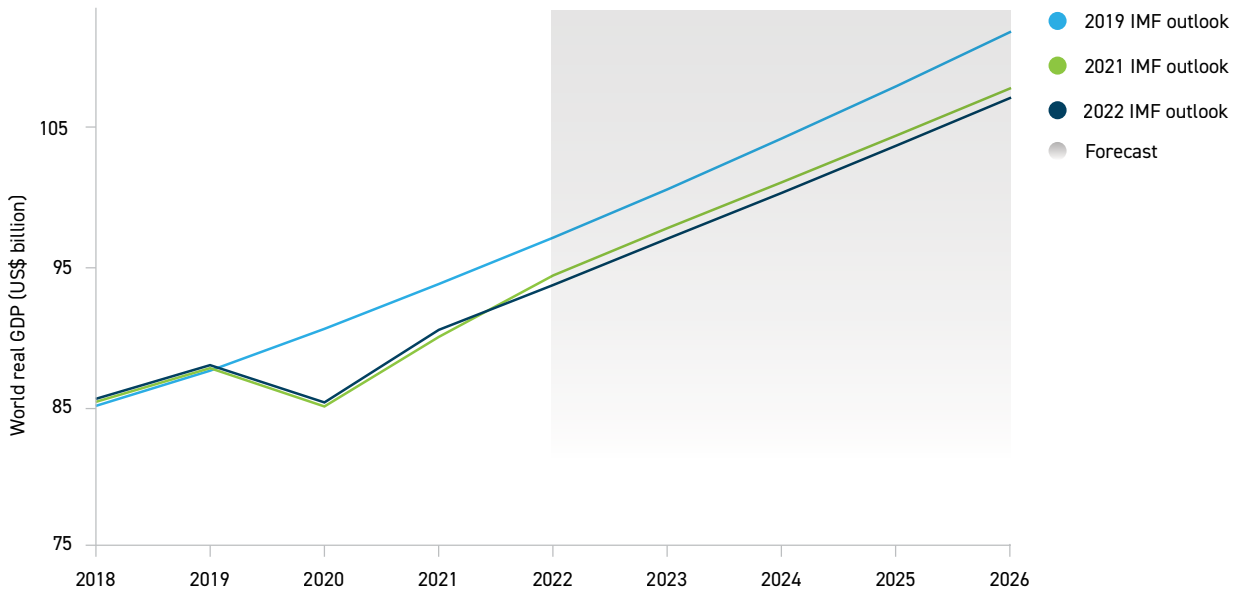
In the short term, this is expected to negatively impact consumer demand in our key trading markets as economic activity slows.



¹ New Zealand GDP in 2022 is around US\$222 billion (NZ\$350 billion).

Figure 3: A slower economic recovery path on the back of the Russia-Ukraine conflict

Year to 31 December, real GDP in 2020 constant price



Source: IMF, World Economic Outlook.

Global commodity prices soar on Russian invasion

Both Russia and Ukraine are major global producers and exporters of agricultural commodities and fertilisers. In 2021, both countries were among the top three global exporters of wheat, maize, rapeseed, sunflower seeds and sunflower oil, while Russia was also one of the world's top exporters

of fertilisers. Disruptions have caused price spikes in some key primary sector inputs, reducing profitability of producers and growers.

Commodity prices have risen sharply on projected supply disruptions, mainly in the oil and gas markets but also in agricultural products that Russia and Ukraine export. Prices for energy and non-energy commodities are reaching the highest levels since the global financial and food crises of 2007/08 and 2011/12 (Figure 4).

Figure 4: Commodity prices hit highest levels since 2008

Monthly price index based on nominal US dollars: base 100 = 2010



Source: World Bank.

Agricultural commodity price hikes are driven by edible oils and cereals

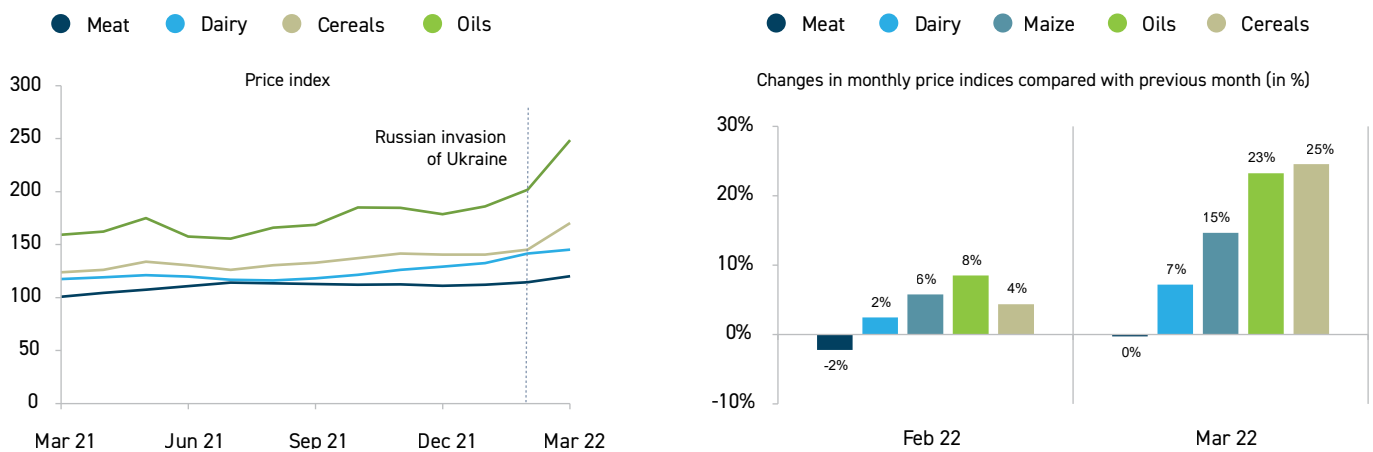
Agricultural commodity price indices, especially for edible oils and cereals, increased sharply adding to the post-COVID rally (Figure 5). The edible oil price index increased 25 percent in March 2022, while the wheat and maize price index increased by 25 percent and 15 percent, respectively.

Supply constraints in South America and disruptions to Ukraine’s sunflower seed oil exports have pushed edible oil prices higher this year. Indonesia’s late-April restriction on palm oil exports is likely to further inflate oil prices, which, in turn, could drive up prices for animal feed in the coming months.

The Food and Agriculture Organization of the United Nations (FAO) dairy price index rose by 7 percent in March 2022. Rising dairy prices are due to insufficient milk production in Western Europe and Oceania to meet global demand, as well as lower US milk production due to rising grain prices. In the near to medium term, global dairy prices are expected to weaken but remain elevated and above their historical average.

Figure 5: Edible oils and cereals prices drive surge in food prices in 2022

Price index: base 100 = 2014–16



Source: FAO, World Bank, ANZ and MPI.



Energy price increases are the largest since 2008

Considerable disruptions in the supply of Russian energy exports have exacerbated existing freight constraints. As a result, energy prices for March 2022 were twice as high as they were in March 2021 (Figure 6).

European natural gas prices climbed by more than 50 percent from February to March 2022. Most of the increase is driven by Germany's decision to halt the Nord Stream 2 gas pipeline from Russia, as well as expected disruptions in Russia's natural gas and coal exports. Higher prices are already affecting demand for natural gas in Europe. Energy-intensive factories such as fertiliser plants are curtailing production in response to rising costs, which could increase the cost of fertiliser imports and purchases in New Zealand.

Oil price rises also accelerated in anticipation of supply disruptions, building on a 2021 gain (Figure 6). Brent crude oil price averaged \$116 per barrel (/bbl) in March 2022. This represents a 55 percent increase since December 2021 and its highest level since 2013. Many countries, including Canada, the UK, and the United States (US), are restricting or phasing out imports of oil from Russia. Oil prices are forecast to average \$100/bbl in 2022 before easing at \$92/bbl in 2023.

Reduced Russian supply of oil is expected to be partially offset by inventory releases and diverted exports to other countries. To limit oil price increases, the International Energy Agency's 31 member countries stated, on 7 April 2022, they intend to release 120 million barrels from emergency oil reserves over a six-month period.



Figure 6: Energy prices are rising sharply

Price index: base 100 = March 2007



Note: Monthly data. Last observation is March 2022.
Source: World Bank, World Commodity Outlook.

Fertiliser prices hit a 15-year high due to rising energy costs

Global fertiliser prices have increased substantially in the last 18 months, reaching their highest levels in 15 years in March 2022 (Figure 7). Fertiliser price increases have been driven by a number of compounding variables since the end of 2020:

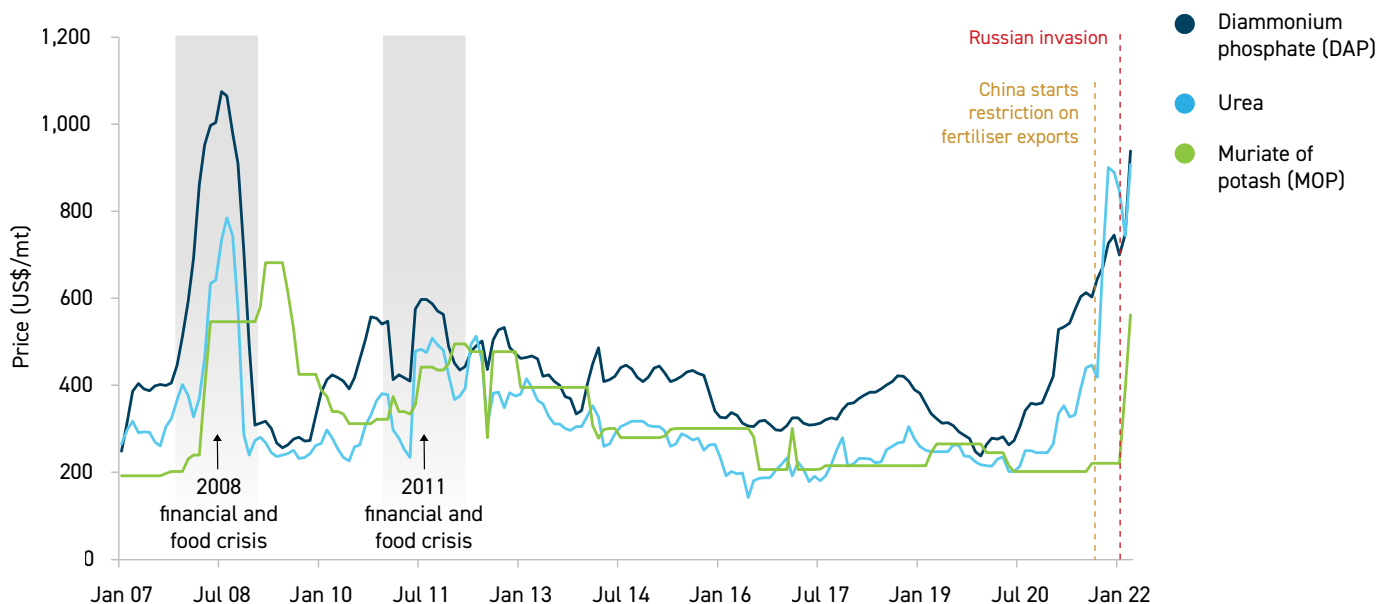
- Global demand for fertilisers surged by 6 percent in 2020/21 as crop prices recovered following the COVID pandemic. Higher crop prices tend to enhance fertiliser demand as long as farmers maintain favourable fertiliser/crop price ratios.
- China halted fertiliser exports in August 2021 until at least June 2022 to ensure domestic availability due to food security concerns.
- An increasing coal price in China is driving fertiliser factories in the country to cut down production. This is adding upward pressure to fertiliser prices.
- In March 2022, Yara, the world's second-largest producer of ammonia, announced that it will reduce its European production capacity of ammonia and urea by 55 percent.

- The Russia-Ukraine conflict, the economic sanctions resulting from it and disruptions in the Black Sea trading routes have all raised trade costs and uncertainty regarding Russian and Belarus exports, including fertilisers.
- Projected supply disruptions have also driven a sharp rise in natural gas prices, particularly in Europe and Asia, adding upward pressure on fertiliser prices. In Europe, Russian gas is the main input for synthetic fertilisers such as diammonium phosphate (DAP).
- Other supply-side drivers, such as ongoing labour constraints in global value chains and the impacts of Hurricane Ida on the US Gulf Coast production centres, have also hampered production and trade of both fertilisers and fertiliser inputs.

Higher fertiliser prices are likely to raise production costs across countries, including New Zealand, thereby influencing which crops are cultivated and how much fertiliser is used. Crop yields and grain quality may suffer if farmers choose or are pushed to reduce fertiliser applications. This could have a negative impact on New Zealand's food sectors, especially dairy, sheep and beef, arable and horticulture industries.

Figure 7: Fertiliser prices are at their highest level since 2008

US\$ per million tons, last observation is March 2022



Source: Bloomberg, World Bank, MPI.

Medium-term commodity prices are expected to remain above the last five-year average². Energy and non-energy prices are likely to rise by 50 percent and 20 percent, respectively, in 2022, before falling slightly in 2023 and levelling off at higher levels than previously forecast.

Commodity prices could rise even further and become more volatile if the Russia-Ukraine conflict continues or if sanctions against Russia continue to tighten further. The impact of rising commodity prices will likely be uneven across countries and be most acute in commodity-importing countries, especially those that were already vulnerable prior to the conflict.

The Russia-Ukraine conflict will drive higher fuel and other primary sector input prices in New Zealand

New Zealand has little direct trading relations with Russia and Ukraine. The main economic impacts on New Zealand are likely to come from higher global energy prices and through the various impacts of the conflict on global economic growth.

Disrupted global energy supplies are further driving up imported commodity prices, especially fuel but also food, fertilisers, feed and aluminium. This will likely add pressures to already high domestic inflation and rising production costs, dampening spending power further as well as consumer and business confidence. This disruption is expected to have a greater impact on some of New Zealand's main trading partners, especially the European Union (EU) and the UK. This could affect New Zealand's medium-term trade outlook, especially if the conflict lingers.

² World Bank, Commodity Markets Outlook, April 2022.



China's zero-COVID policy is shaping the near-term global growth outlook

Another key development since the December 2021 forecast is the impact of large-scale lockdowns and movement restrictions in China, which has seen an increase in COVID infections since mid-March. As a result, several cities have been in lockdown or partial lockdown. This includes Shanghai, a major financial, manufacturing and shipping centre. The city is set to reopen gradually as of 1 June if progress towards controlling the Omicron outbreak is maintained. China's COVID restrictions are likely to slow economic growth in New Zealand's main market.

Shipping backlogs and port congestion are exacerbated by lockdown in Shanghai

The port of Shanghai, the world's largest container port, has been running at about half its capacity since the beginning of the city's lockdown. Time taken to move containers has risen to 12 days from less than five before the lockdown. Some carriers have stopped docking at the port, and truck drivers have been unable to access docks. There have been flow-on effects at other Chinese ports. Shippers in Ningbo, the world's third-busiest container port, are experiencing increasing delays as a result of Shanghai freight diversions.

Port of Shanghai's congestion is affecting production in the city and other parts of China

Since early April, lower manufacturing production and limited truck access to Shanghai's port and airport have reduced export volumes. Imports have also slowed, preventing key raw materials from reaching manufacturers, and many businesses have either shut down or are operating under severe constraints.

Strict lockdown measures to contain an Omicron outbreak have also dampened Shanghai's economy. Plants were forced to halt or reduce production, and most of the city's 25 million residents have been confined at home. Given Shanghai's status as a key commercial and industrial hub, the disruptions have rippling effects across the country and the world.

Lockdowns in China hit New Zealand exporters

While Shanghai is set to gradually reopen, supply-chain bottlenecks are likely to last through the year. Prolonged lockdowns and COVID restrictions in China will likely put further strains on New Zealand producers' ability to get their products to market. New Zealand exporters are struggling to get shipping containers for their products and boats to transport them. Exporters are considering rerouting their shipments to other Chinese ports, which are also becoming more congested, or other destinations. Exporters of time-sensitive perishables are keeping their products in storage for longer periods. They are also sending more frozen meat and fish products offshore rather than fresh and chilled products, which are more prone to spoil if they are held up. Overall, these shipping disruptions, along with high freight costs and uncertainty, are likely to hinder primary sector export returns and profits.



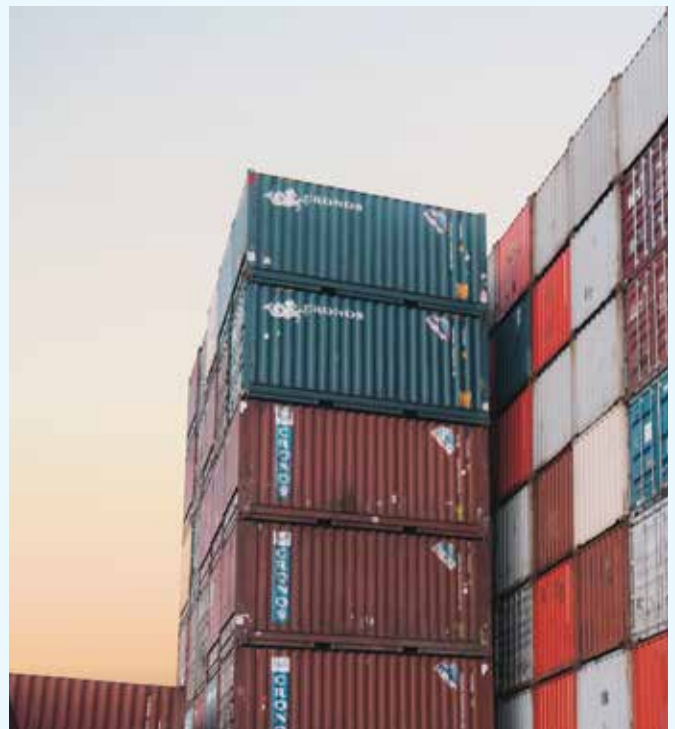
Global shipping costs are easing but constraints remain

Over the past year, lockdowns, capacity constraints and supply chain issues have resulted in higher shipping costs and longer delivery times. These pressures are easing, and global shipping costs have moderated to \$7,648 per 40-foot container (as at 19 May 2022) from a September 2021 peak of \$10,377 (Figure 8).

This 26 percent decrease is mostly due to lower shipping costs on trans-Pacific eastbound routes – the principal sea link between China and the US – as well as reduced volumes with recent COVID-19 lockdowns in Shanghai and other major Chinese manufacturing hubs.

Other factors are also contributing to declining demand, which are in turn driving freight rates lower. Consumer spending appears to be returning to more-typical pre-COVID levels as people have resumed more-normal daily routines while strong inflation and higher gas prices also caused consumers to cut back on discretionary spending. Similarly, high fuel prices drove up trucking and other costs, prompting retailers and others to delay their orders to control costs.

However, global shipping delays and costs will likely remain elevated through 2022, mostly due to port congestion in China and the Russia-Ukraine conflict. Shippers and carriers are also becoming concerned about the potential for disruptions and delays at US west coast ports once normal operations resume in China and how these future disruptions may increase freight rates. Higher fuel prices, labour shortages,

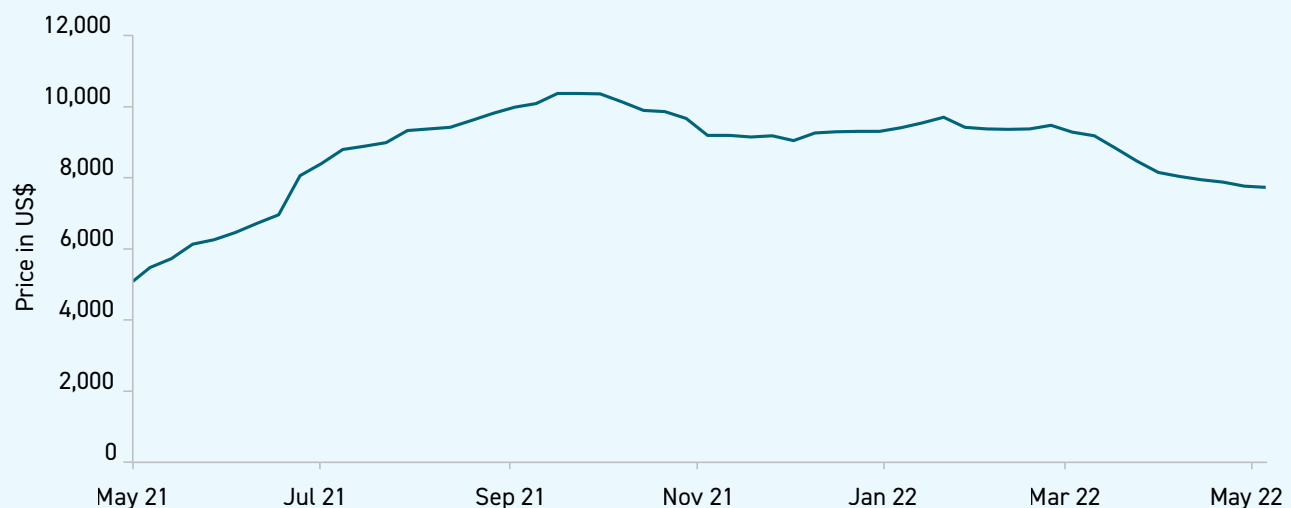


the increased Suez Canal tariff and shortages of transport industry inputs will also add upward pressures on shipping and freight costs in the medium term.

High freight costs are putting pressures on New Zealand businesses, including in the food and fibre sector. This is affecting profit margins for New Zealand exporters as their products become less competitive compared with products in other international markets. High freight costs imply that New Zealand importers are also paying more to have goods shipped to New Zealand.

Figure 8: Shipping costs are easing but remain high

World container freight index in US\$ per 40-foot container, 29 April 2021 – 19 May 2022



Source: Drewry World Container Index.

Inflation reaches new high

Rising commodity prices and ongoing logistics challenges resulted in high and widespread global inflation

Continued supply chain disruptions, port congestion and high demand for commodities have all contributed to increasing price pressures. Global inflation has risen to levels that exceed central banks' target ranges in many countries.

US inflation reached a 40-year high of 8.5 percent in the year to 31 March 2022. Over the same period, annual inflation in the eurozone reached an all-time high at 7.4 percent. The main upward contribution was made by energy costs, which increased by 32 percent and 44 percent in the US and EU, respectively. In the UK, inflation rose by 6.2 percent in the year to February 2022. Higher electricity, gas and fuel prices contributed the most to annual inflation. In Australia, inflation reached 5.1 percent in the year to 31 March 2022 due to higher fuel prices and construction costs, caused by continued material and labour shortages.

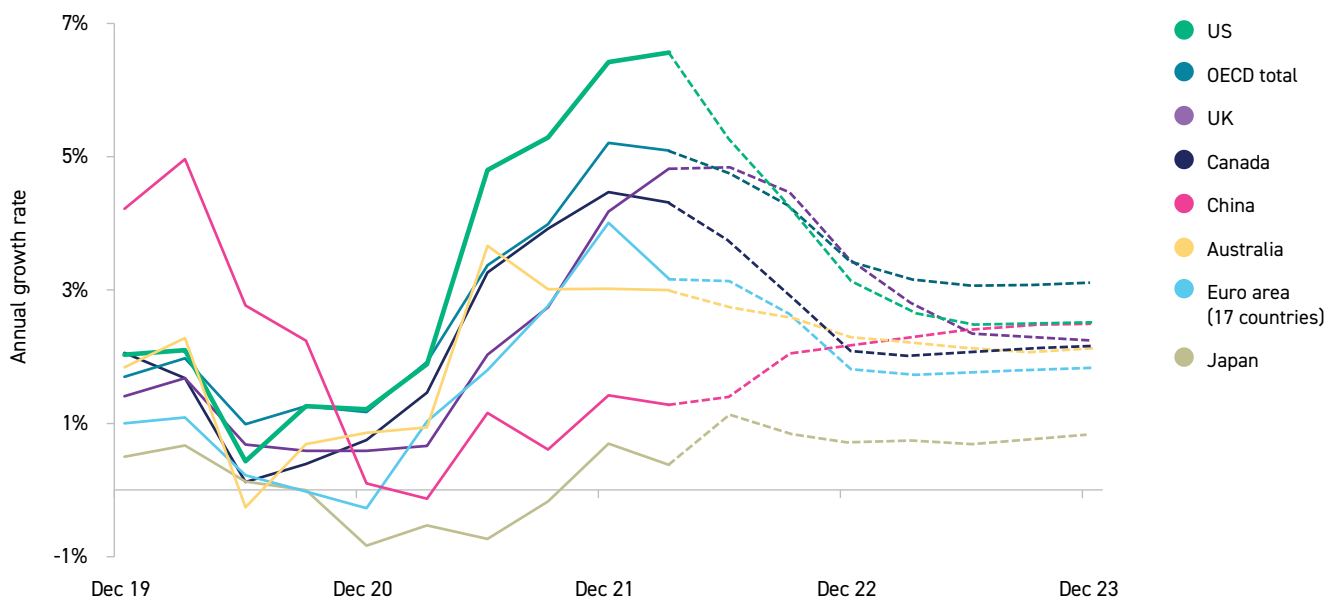
Despite fast-rising producer prices and recent increases in food prices, annual inflation in China has remained modest thanks to stable domestic supplies, government support, low port prices and weaker domestic demand. The OECD expects the inflation rate to be around 1.9 percent in China for 2022, comparatively lower than other emerging economies.

Inflation is forecast to peak in 2022 for most advanced economies (Figure 9).



Figure 9: Inflation is expected to peak in 2022 in most countries

Annual percent change, December quarter 2019 – December quarter 2023, selected countries



Note: Dotted lines are forecast quarters.

Source: OECD, Economic Outlook.

Rising prices in global markets are flowing through to higher prices in New Zealand

Annual inflation as measured by the consumers price index (CPI) rose to a 30-year high of 6.9 percent in the March 2022 quarter (Figure 10). Rising inflation has been driven by rising costs for housing, food and fuel and a tight labour market.

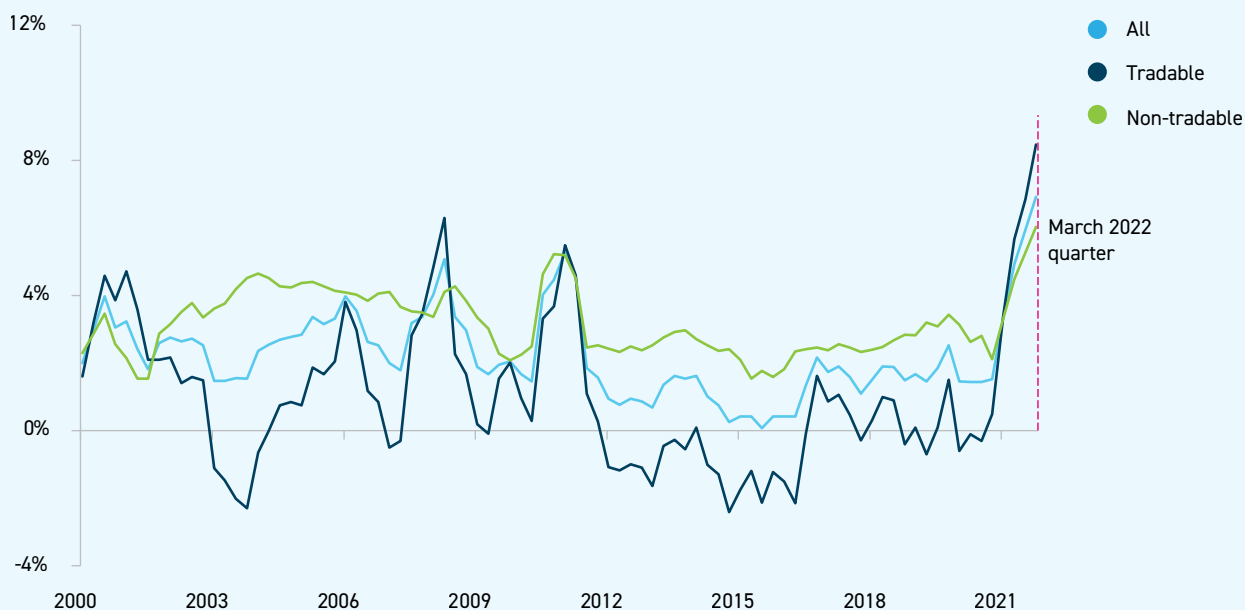
Both annual tradable (imported) inflation and non-tradable (domestic) inflation reached decade highs in the March 2022 quarter at 8.5 percent and 6.0 percent, respectively. Quarterly tradable inflation climbed 2.4 percent in the March 2022 quarter, mostly due to higher petrol prices as a result of heightened pressures on global supply. The lower New Zealand dollar has also further driven up the cost of imported goods such as fuel, fertilisers, machinery and equipment used in primary sector activities.

Non-tradable inflation rose by 1.5 percent in the March 2022 quarter boosted by firmness in domestic demand, rising raw material prices and labour shortages.



Figure 10: Both tradable and non-tradable inflation are at record highs

Year-on-year quarterly growth rate (in %): base 1,000 = June 2017 quarter



Source: Stats NZ and MPI.

Inflationary pressures are prompting tighter monetary policy

More central banks are raising or planning to raise their interest rates

Rising inflationary pressures have prompted central banks in several countries to tighten their monetary policy (Figure 11). The growing risk that inflation expectations could also get higher is likely to lead to more-aggressive rate hikes in the medium term.

Both the Bank of England and the Reserve Bank of Australia have increased their interest rates by 25 basis points to 1 percent and 0.35 percent, respectively, in early May. Both banks have hinted at more rate hikes to come in an effort to tackle rising inflation. In the US, the Federal Reserve raised its interest rate by half a percentage point on 4 May 2022. This is the highest increase in more than two decades. With inflation at a 40-year high in the US, further hikes are expected. There are growing concerns that aggressive Federal Reserve tightening to combat elevated inflation will trigger a global slowdown while Ukraine tensions continue to rise. The European Central Bank is expected to raise its rate in the September 2022 quarter.

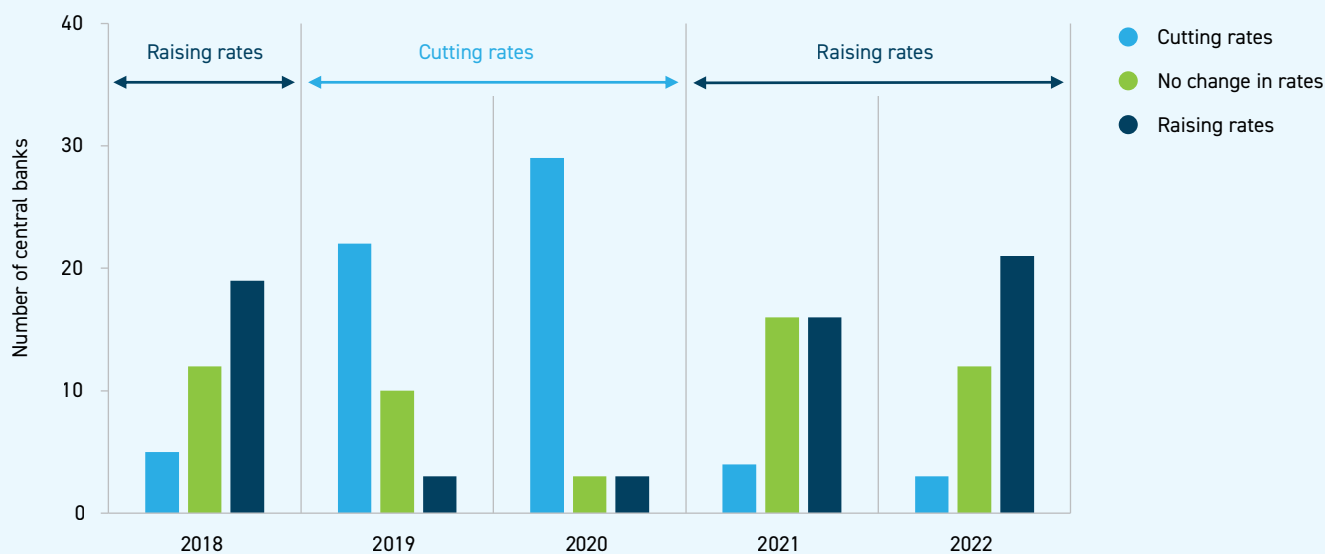
Monetary policy tightening in some of New Zealand's key markets could slow their consumption and economic growth, which could reduce demand for New Zealand's products.

The Reserve Bank of New Zealand will continue to increase its OCR to control inflation

After increasing the Official Cash Rate (OCR) last November and February, the Reserve Bank raised its interest rate by 50 basis point twice on 13 April and 25 May, to 2 percent. With year-on-year inflation at 6.9 percent, the Reserve Bank is increasing the OCR faster than expected to try to achieve its inflation target of 1-3 percent and, to ensure that current inflation does not become embedded into longer-term inflation expectations. The Reserve Bank has also signaled a tightening in its monetary policy over the next two years, with both a faster pace and greater degree of OCR hikes. The OCR is forecast to peak at 4 percent around the second half of 2023.

Although rising interest rates will slow demand and support price stability, primary industries will have to weather higher interest costs. This will put downward pressure on profitability and will have a greater impact on farms and businesses with high debt levels. Rate hikes will have a stronger impact on the economy later this year, when homeowners and businesses face refinancing fixed-rate mortgages and a reduction of discretionary cash.

Figure 11: Central banks are raising rates



Source: Bank for International Settlements and MPI.

New Zealand's labour market remains strong but wage growth muted

The labour market is stretched

International border restrictions have driven labour shortages for workers as businesses have found it difficult to hire workers from overseas. However, demand for labour remains high. This is reflected in both the unemployment and underutilisation rates falling to historical lows of 3.2 percent and 9.3 percent, respectively, in the March 2022 quarter.

For food and fibre sector firms, reduced Recognised Seasonal Employer (RSE) workers and working holiday workers has made it difficult to plan seasonal peaks, especially in horticulture. While the Government increased the RSE cap from 14,400 to 16,000 for the 2021/22 season, the number who could enter New Zealand was affected by COVID-19 related border settings, the Tongan eruption and plane capacity. However, producers and growers have adapted by hiring more New Zealanders, especially students, supported by initiatives such as *Opportunity Grows Here*.

Reopening of border will ease labour shortages

The New Zealand border is reopening, with the Government outlining a five-step plan to reopen borders in early February 2022.

The country moved to step 4 in early May 2022. Vaccinated visitors from more than 40 visa-waiver countries can enter New Zealand quarantine-free for the first time in over two years. The Accredited Employer Work Visa will open on 4 July 2022, allowing for border exceptions to be phased out. The reopening of all remaining visa categories will now occur on 31 July 2022.

Inflows of temporary work migrants will begin to increase under the Government's Immigration Rebalance. This will provide streamlined residence pathways to attract migrants in specified occupations, such as veterinarians, food technologists and dairy farm managers. The Immigration Rebalance will also facilitate employment of skilled migrants earning the median wage and above, through the Accredited Employer Work Visa. From September 2022, sector agreements for the seafood and meat processing sectors will be in place to ensure ongoing access to lower-paid migrant workers in exchange for sector improvements.

The labour market may also tighten further in the short term as Kiwis seek higher wages and a higher standard of living overseas. An initial estimate is that 50,000 New Zealanders may leave the country over the next year.³

³ MBIE briefing to Ministers, February 2022.
www.mbie.govt.nz/dmsdocument/19761-assessing-the-risk-of-new-zealanders-emigrating-as-border-restrictions-ease



New Zealand wage growth is not keeping pace with inflation in the short term

Despite labour shortages and strong demand for workers, wages have increased at a slower rate than inflation.

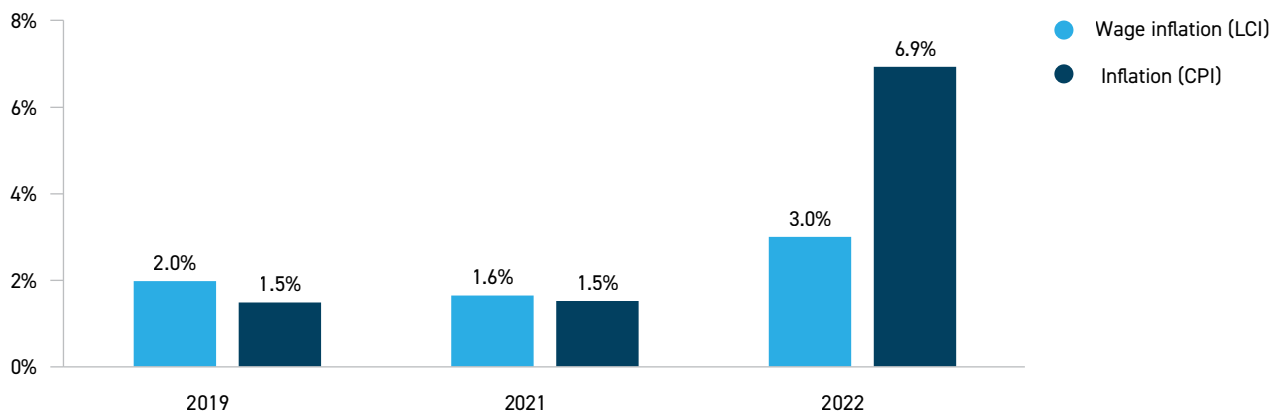
The labour cost index (LCI), a measure of wage inflation akin to the CPI, increased by 3.1 percent in the March 2022 quarter, up from 2.6 percent in the December 2021 quarter. For the year to 31 March 2022, annual wage growth was half the rate of CPI inflation (Figure 12). This indicates that costs rose at twice the rate of wages and, household purchasing power declined.

In the medium term, wages are expected to increase as workers will be expected to be compensated for rising cost of living. Producers and growers are likely to face increased cost pressures as wages rise.



Figure 12: Inflation is increasing at a faster rate than wage growth

Year to 31 March, annual growth rate in percent



Source: Stats NZ.

A depreciating New Zealand dollar supports primary product exports

The New Zealand dollar (NZD) has continued its downward trend against the US dollar (USD) after reaching a high of US\$0.74 in February 2021 (Figure 13). The NZD depreciated to below US\$0.63 as of 16 May 2022, reaching its lowest level in nearly two years. As the NZD falls in value, New Zealand's primary goods become less expensive to other countries, making us more competitive on the global market.

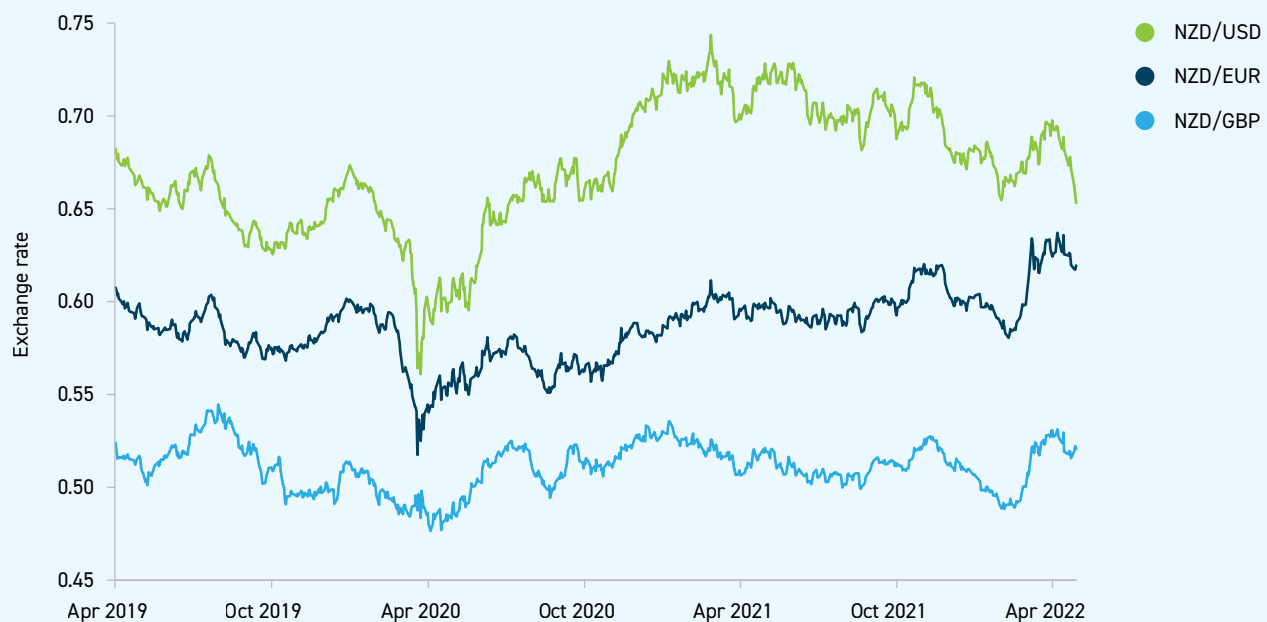
The NZD's weakness is primarily due to the strengthening of the USD, which benefits from the strong American economy compared with the more mixed outlook in other countries. Expectations of rising interest rates by the Federal Reserve have also helped to support the USD against major currencies. The USD has gained about 2 percent against the NZD since the beginning of the year.

The NZD is expected to gradually rise to US\$0.70 in 2022. However, existing global and domestic challenges could impact the accuracy of this projection. Further hikes in the OCR in the medium term are likely to boost the NZD against the USD and other major currencies. This upward trend may be partially offset by other central banks raising their policy rates, leading their own currencies to appreciate.



Figure 13: NZD exchange rate is weakening

NZD exchange rates against selected currencies, April 2019 – April 2022



Source: Reserve Bank.



Strong global prices for dairy and meat support exports

Rising global commodity prices have continued to support New Zealand's export revenues in the food and fibre sector. New Zealand exported \$65.6 billion in total goods and services in the year to 31 March 2022, up \$6.6 billion (11.2 percent) from the previous year. Total exports reached \$16.7 billion for the March 2022 quarter, which represents a 15.9 percent (\$2.3 billion) increase from the March 2021 quarter.

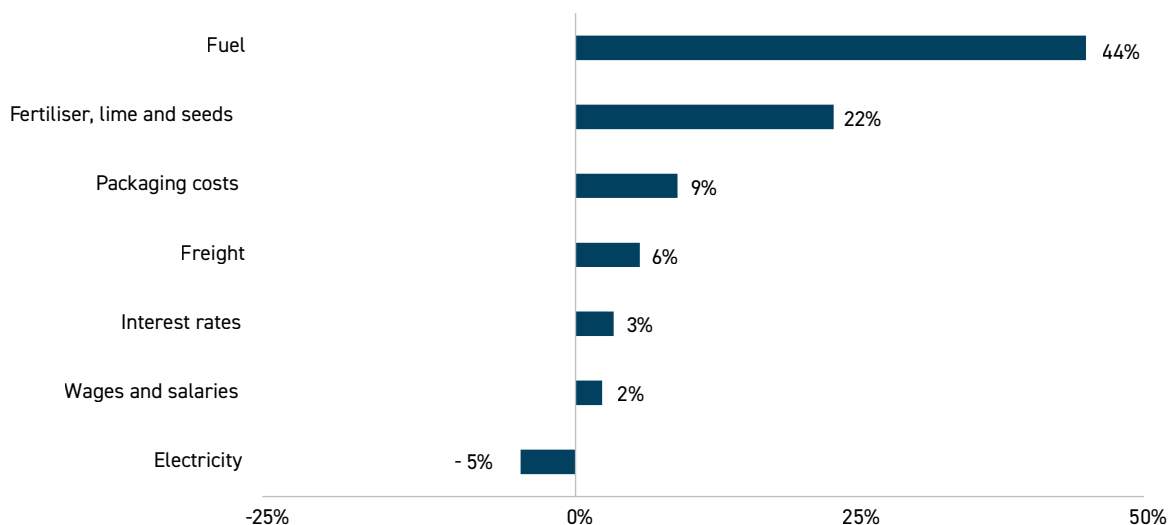
- Dairy exports rose 21.8 percent to \$5.2 billion in the March 2022 quarter compared with the March 2021 quarter. Recent high dairy export prices have lifted values higher throughout most of the 2021/22 season, despite a fall in quantity exported.
- Meat exports increased 16.9 percent to \$2.8 billion in the March 2022 quarter compared with the March 2021 quarter thanks to strong export prices, especially for beef.

While New Zealand primary producers are receiving higher prices for their commodities, they are also facing higher prices for imported inputs. New Zealand's trade deficit widened to \$3.3 billion in the March 2022 quarter, as import growth continued to outpace export growth in both goods and services.

Production costs are expected to rise further, putting strain on New Zealand producers (Figure 14).

Figure 14: Input costs were already rising before the Russian invasion of Ukraine

Year to 31 December 2021, annual percent change in farm expense price index



Source: Stats NZ and MPI.



New Zealand and the UK have signed a historic free trade agreement

The New Zealand-United Kingdom Free Trade Agreement (NZ-UK FTA) will improve New Zealand's market access to the UK. The FTA also includes commitments on the movement of business people, making it easier to do business in the UK.

The NZ-UK FTA is expected to come into force by the end of 2022, with tariff elimination on a range of primary products over the next 15 years:

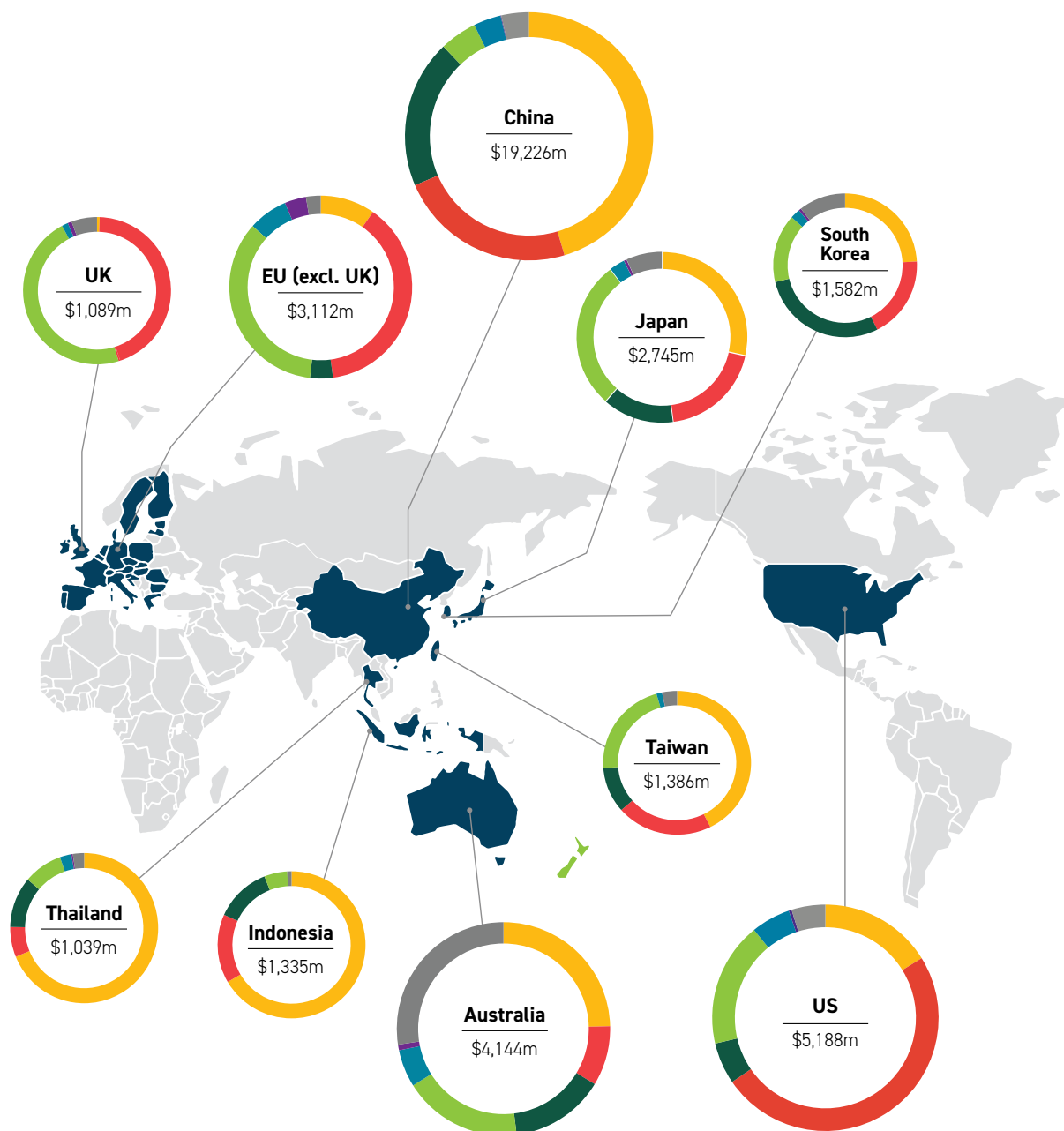
- Wine, honey, and onions will enter the UK duty free at entry into force of the FTA. Tariffs on apples will be eliminated within three years (2025). At entry into force of the FTA, 99.9 percent of New Zealand's existing horticulture exports will enter the UK duty free and 100 percent within seven years (2030).

- Tariffs will be eliminated from day one on hoki and on mussels after three years. Overall, 46 percent of New Zealand's current fish and seafood trade will enter the UK duty free when the FTA enters into force, 99.5 percent within three years and 100 percent within seven years.
- Tariffs will be eliminated over five years for butter and cheese with substantial new duty-free quotas. Many other dairy products will also become tariff free at entry into force of the FTA, with the remainder over three or seven years – 60 percent of New Zealand's current dairy trade will enter the UK duty free at entry into force of the FTA, 99.5 percent within five years and 100 percent within seven years.
- Tariffs will be eliminated after 10 years for beef and 15 years for sheep meat. Significant new quotas will be established for both products to allow trade to grow.

The NZ-UK FTA acknowledges the unique status of te Tiriti o Waitangi and includes a chapter on Māori trade and economic cooperation that will provide a platform for cooperation on a variety of issues important to Māori. Māori interests are also reflected in other areas of the agreement, especially in chapters on intellectual property and on trade and the environment.

Top 10 export destinations

Year to 31 March 2022, NZ\$ million

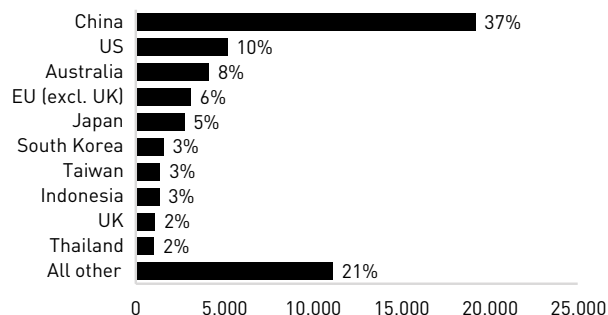


Product	Export revenue (NZ\$ million)	% of total
Dairy	21,481	41%
Meat and wool	11,882	23%
Forestry	6,701	13%
Horticulture	6,579	13%
Seafood	1,891	4%
Arable	273	1%
Processed food and other products	3,198	6%
Total	52,005	100%

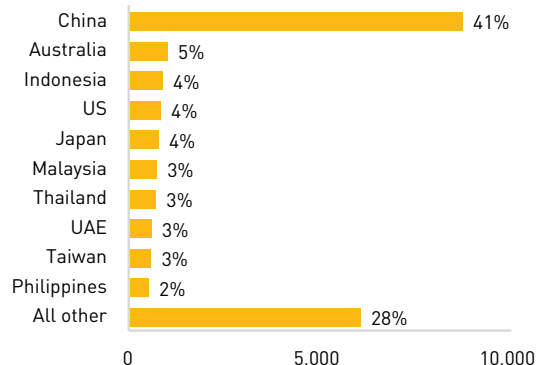
Top export markets

Year to 31 March 2022, NZ\$ million and percent

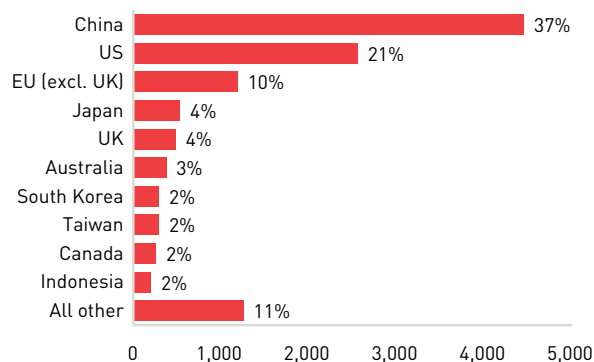
All primary industry exports



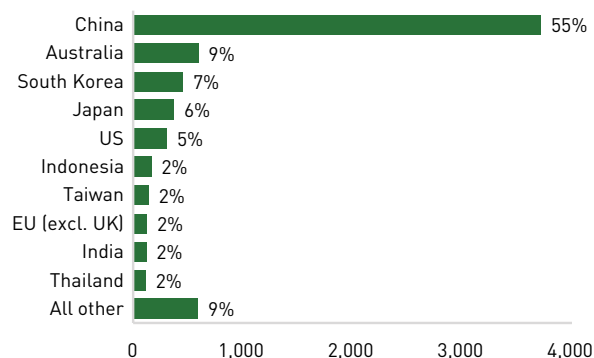
Dairy



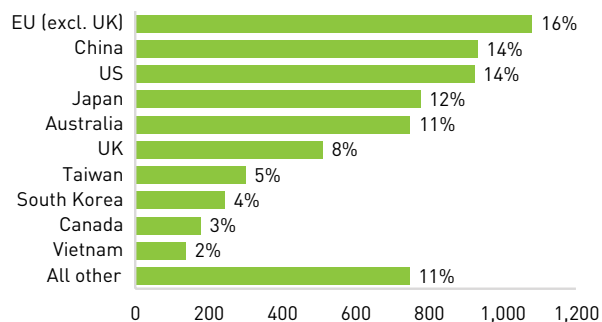
Meat and wool



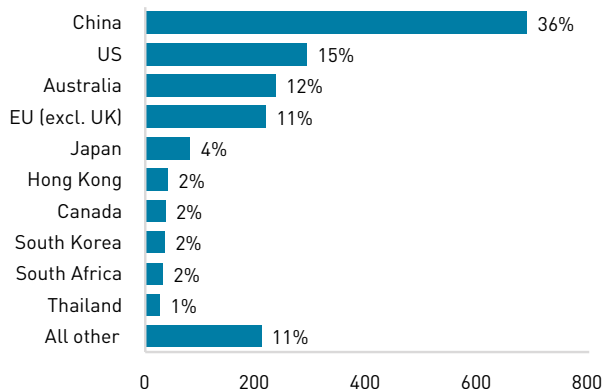
Forestry



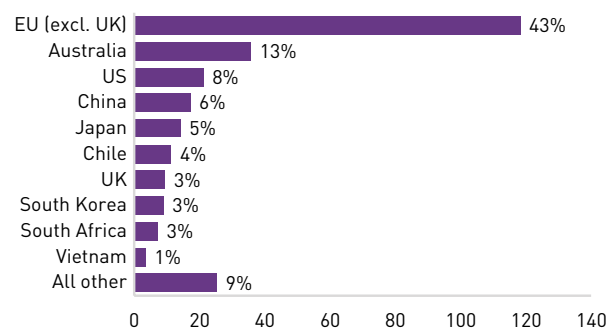
Horticulture



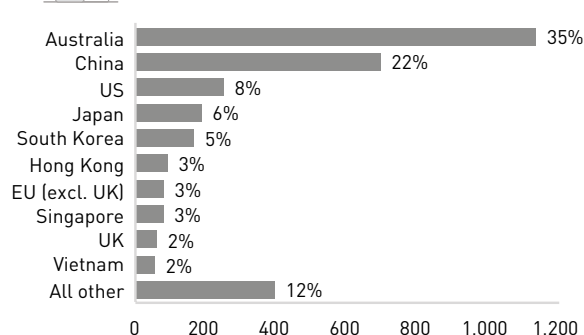
Seafood



Arable



Processed food and other products



Source: Stats NZ.

Sector briefs



Dairy



- Export revenue is forecast to increase 13 percent and reach a record high of \$21.6 billion in 2021/22 due to strong global demand and reduced supply from other key dairy exporting regions.
- Milk production for the 2021/22 season is forecast to decrease 4 percent and reach 1,869 million kilograms of milksolids due to unfavourable weather conditions, rising input costs and labour shortages.
- Despite COVID-19 related supply chain and market disruptions, global dairy prices started high and then lifted substantially over the season, reaching a record level.
- High global dairy prices lifted the all-company average forecast farmgate payout to a record high of \$9.30 for 2021/22, improving on-farm profitability.

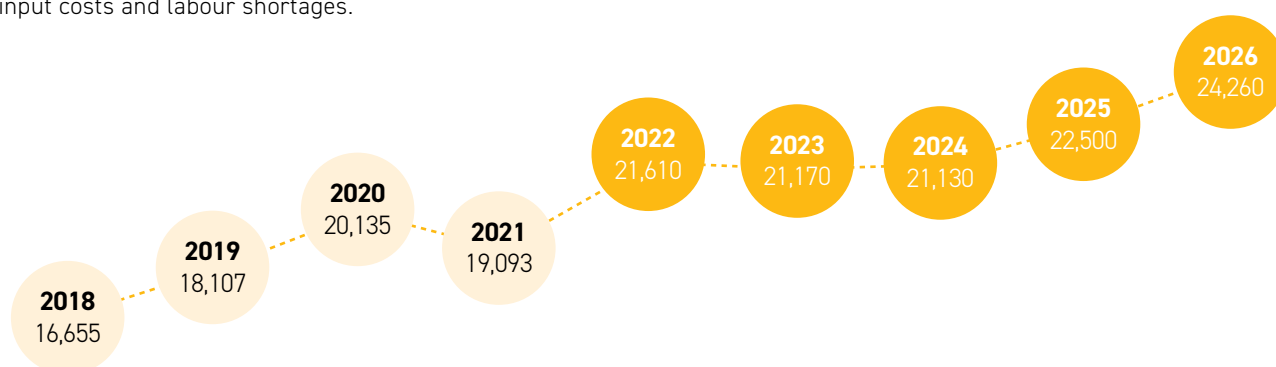


Table 3: Dairy export revenue 2018–26

Year to 30 June, NZ\$ million

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Whole milk powder	5,818	6,675	7,565	7,581	8,270	7,500	7,300	7,810	8,460
Butter, anhydrous milk fat and cream	3,812	3,612	3,365	2,670	3,320	3,090	2,990	3,190	3,520
Skim milk and butter milk powder	1,228	1,323	1,792	1,535	1,930	1,980	1,880	2,000	2,150
Casein and protein products	1,601	1,574	1,997	2,007	2,640	3,080	3,200	3,350	3,490
Cheese	1,905	1,965	2,074	2,064	2,220	2,230	2,210	2,290	2,460
Infant formula	1,240	1,641	1,851	1,579	1,310	1,300	1,410	1,650	1,900
Other dairy*	1,050	1,318	1,492	1,655	1,910	2,000	2,130	2,200	2,280
Total export value	16,655	18,107	20,135	19,093	21,610	21,170	21,130	22,500	24,260
Year-on-year % change	14%	9%	11%	-5%	13%	-2%	0%	6%	8%

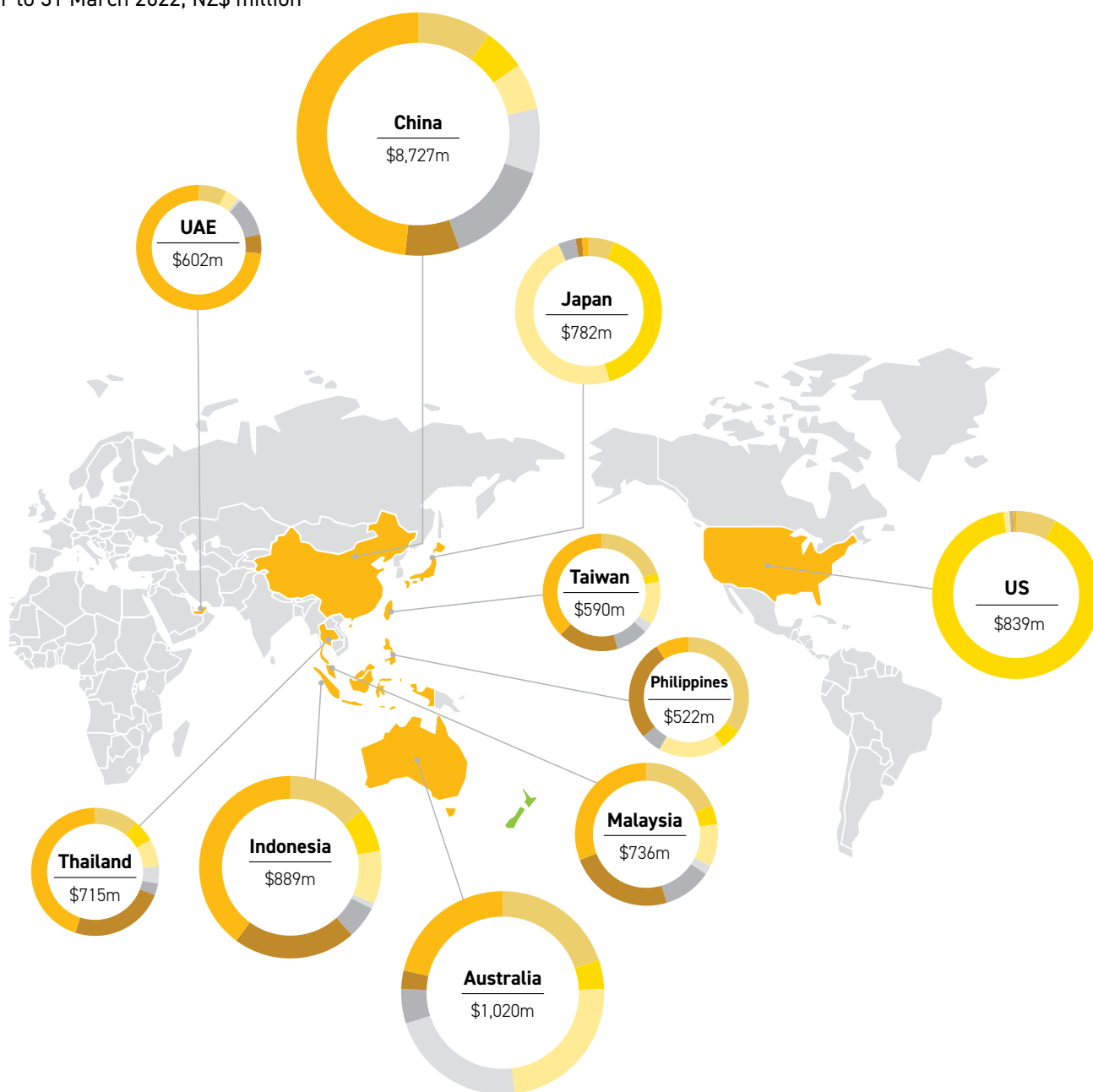
* Includes liquid milk and cream, ultra-high temperature milk, yoghurt and ice-cream. Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ and MPI.



Top 10 dairy export destinations

Year to 31 March 2022, NZ\$ million

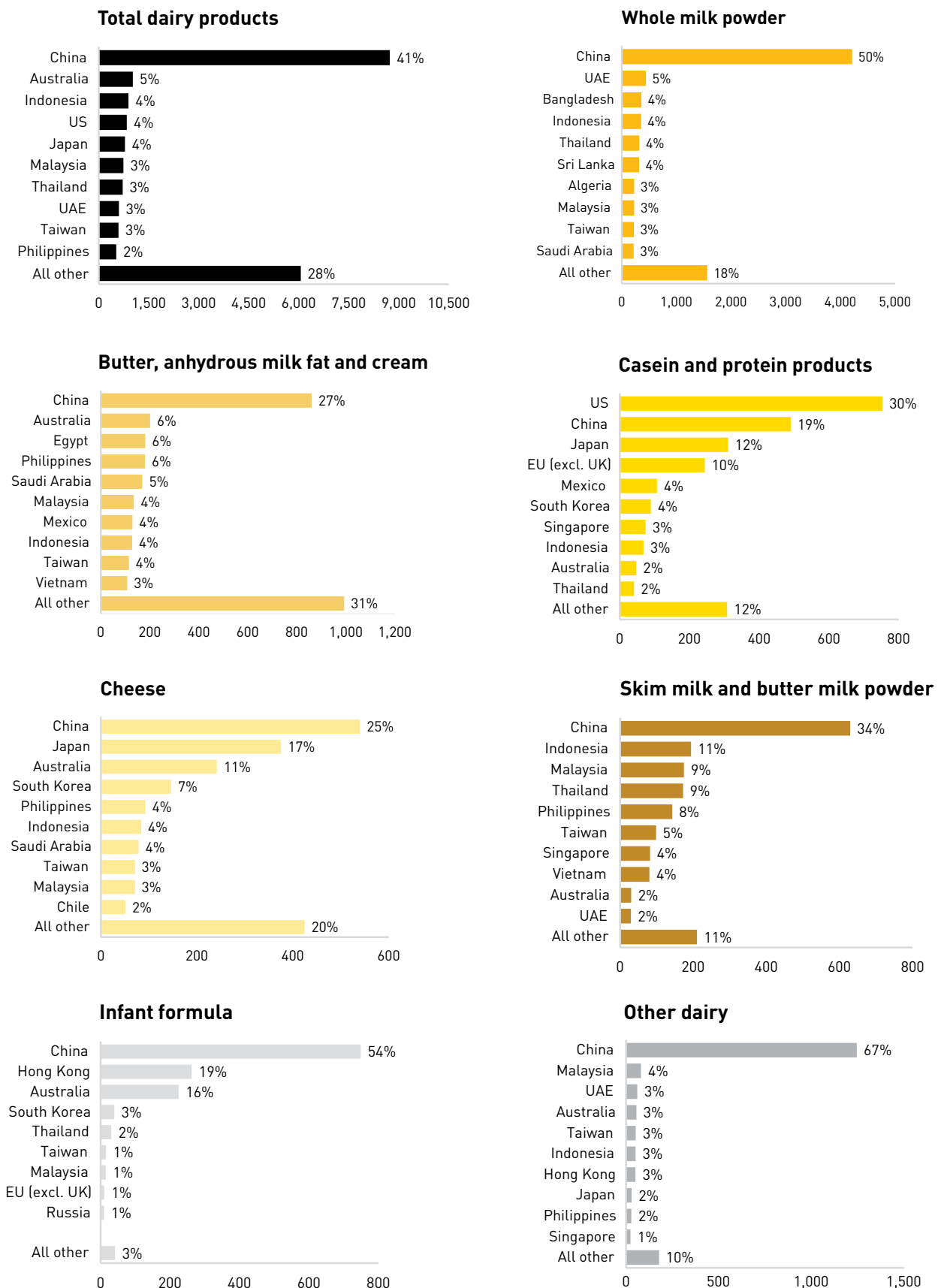


Product	Export revenue (NZ\$ million)	% of total
Whole milk powder	8,470	39%
Butter, anhydrous milk fat and cream	3,201	15%
Casein and protein products	2,532	12%
Cheese	2,175	10%
Skim milk and butter milk powder	1,844	9%
Infant formula	1,398	7%
Other dairy	1,860	9%
Total	21,481	100%

Source: Stats NZ.

Top dairy export markets

Year to 31 March 2022, NZ\$ million and percent



Source: Stats NZ.



New Zealand dairy export revenue is forecast to reach record high levels

Strong dairy prices are forecast to drive New Zealand’s dairy export revenue up 13 percent to a record high of \$21.6 billion for the year to 30 June 2022, up \$2.5 billion from the previous year (Figure 15). Strong Chinese demand and a reduction in milk supply from key dairy exporting regions, including New Zealand, are keeping prices high. All dairy product categories except infant formula are forecast to outperform their five-year average in terms of export earnings.

This is an excellent performance by the dairy sector, especially given how challenging and uncertain this year has been due to COVID-19, the Russia-Ukraine conflict, continued supply chain disruptions and rising inflation. Despite these challenges, the New Zealand dairy industry has reliably supplied dairy products to destination markets across the world. However, the disruptions are beginning to impact the dairy sector as well, indicated by a drop in export volumes in the March quarter of 2022.

On the downside, total dairy export volumes are forecast to decrease by 7 percent for the year to 30 June 2022 (Figure 15), driven primarily by a decrease in milk production. Additionally, supply chain disruptions are likely to heavily impact export volumes in the June quarter.

Considerable global commodity price volatility over the year has influenced returns across dairy products. Over the medium term, a decline in global prices and flattening milk production are expected to result in a slight decline in export revenue. For the year to 30 June 2023, export revenue is estimated to fall to \$21.2 billion, a decrease of 2 percent compared with the 2021/22 forecast.

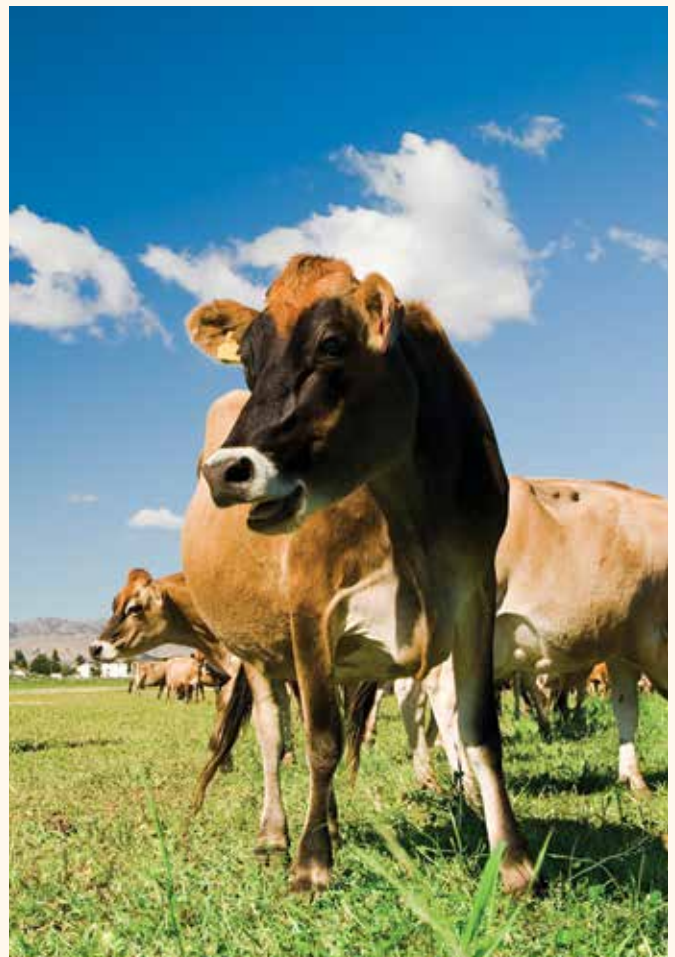
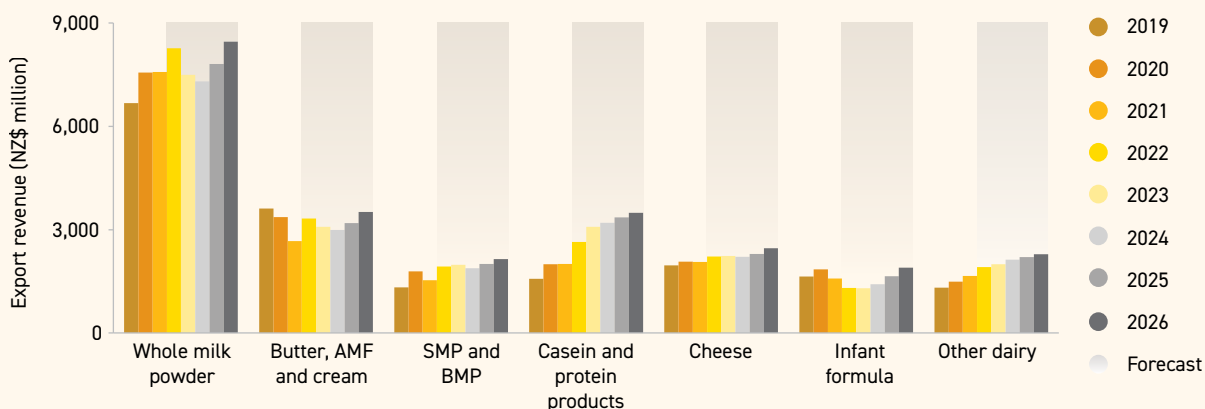


Figure 15: New Zealand dairy exports estimated to reach record high

Year to 30 June, NZ\$ million



Source: Stats NZ and MPI.

Global dairy prices reach new heights

Strong demand among traditional dairy importing nations and weakening supply from some key dairy exporting regions has resulted in record high global dairy prices this season (Figure 16). The average Global Dairy Trade (GDT) price in the 2021/22 season to 4 May 2022 was 21 percent higher than the average price for the 2020/21 season. Starting the season at above-average levels, GDT prices further strengthened over the season and reached record high levels.

Similar to the GDT price trends, the Food and Agriculture Organization dairy price index is at record high levels. This index is calculated using price quotations of four dairy products (butter, cheese, skim milk powder and whole milk powder) from two representative markets. The index averaged 147.1 points in April, increasing for the eighth consecutive month and lifting the index 24 percent above its value a year ago. Tight global supply is pushing prices up. In addition to the decline in New Zealand milk production, high input costs (especially feed and fertiliser) are expected to constrain milk supply growth in other critical dairy exporting nations.

Demand for dairy has been strong, driven by increasing demand for dairy imports from China and other Asian countries. In the short to medium term, global demand for dairy products is expected to fall slightly and be more volatile due to a slowdown in global economic growth, rising inflation and high food prices, COVID-19, supply chain disruptions, the Russia-Ukraine conflict and increased geopolitical tensions.

Moreover, demand uncertainty has increased considerably due to the COVID-19 situation in New Zealand's main dairy export market, China. The Omicron outbreak in Shanghai, the economic growth engine of China, has caused a shock to the dairy market. This is likely to impact consumption and reduce import demand in the near term.

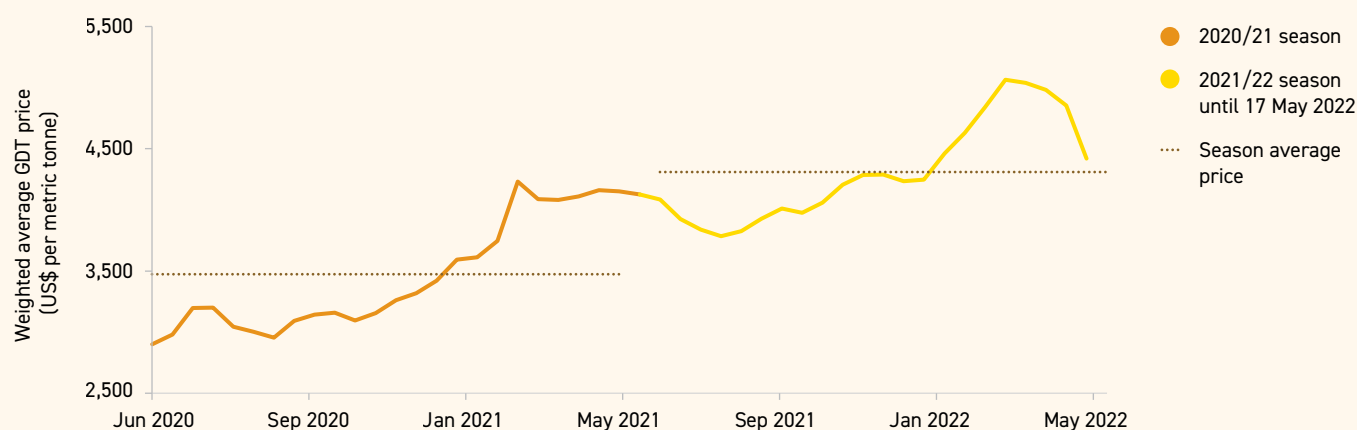
The food service sector in particular has been greatly impacted in China. Rabobank estimates that food service sales are likely to decline by 6–15 percent in 2022. Dairy products such as cheese, butter and cream that have a greater exposure to food service channels are likely to be affected the most. In response to this disruption, exporters supplying this channel are likely to shift some production from cheese, butter and cream into whole milk powder (WMP) and skim milk powder (SMP). This could result in more milk powder on the global market. Further disruptions are also expected as COVID-19 infections rise and the virus spreads to Beijing. While stockpiling is also likely, the availability and delivery of products is expected to remain a challenge.

Although prices have declined by 13 percent from the peak price achieved at the GDT auction on 1 March 2022, they remain at elevated levels. The lower prices attained at the 15 March GDT event was the beginning of a downward correction in prices, specifically for WMP and butter. This fall in prices won't have much impact on farmgate milk price this season, as only a small proportion of this season's product will be sold at these lower prices. However, a further decline in prices of key reference commodities is likely to result in a lower farmgate milk price next season.

Given that the GDT prices increased for 10 consecutive auctions to reach record highs, a correction in prices is not surprising. It is expected that the price correction will be limited by the tight global milk situation, which is driven by high feed, fertiliser and energy costs. This will impact production in the more-intensive production systems of the northern hemisphere. Once current impacts of COVID-19 in China begin to resolve, demand is expected to recover and will support prices. As the demand-supply imbalance is likely to persist for the medium term, dairy prices are forecast to remain above average. This is further reflected in the dairy futures market, which, as of 18 May 2022, remains above average levels across key commodities.

Figure 16: Global Dairy Trade auction prices (all products) higher in 2021/22 season

Year to 31 May, US\$ per metric tonne



Source: Global Dairy Trade and MPI.



Unfavourable weather conditions contribute to a decline in milk production

Lower milk production is expected for the 2021/22 season due to unfavourable weather conditions, lower cow numbers, labour shortages and rising input costs (Figure 17). Milk production in the season to 31 March is down by 4 percent. Given the record high production achieved in April and May 2021, it is unlikely that milk production this season can make up any lost ground.

As a result, total milksolids production for the season to 31 May 2022 is forecast to decrease 4 percent from the record production of the previous year. This would be the highest fall in milk production season on season over the past 15 years.

The decline in milk production is mainly due to poor weather conditions through spring, summer and most of autumn across the major dairy regions. Because New Zealand's dairy systems are pasture based, weather conditions are the most important driver of milk production. Moreover, the poor milk supply response to a high milk price this season indicates that further constraints on the farming system have made it more difficult to increase production in response to a high milk price.

At the start of the 2021/22 season, milk production was supported by increased winter milking in June and July 2021 (up 2 percent and 3 percent on the previous year, respectively). However, unusually wet conditions over spring and a dry summer resulted in sluggish pasture growth. As a result, from August to March, there was a month-on-month decrease in milk production each month over the previous season.

The largest drop in milk production was in the summer months. December production was down 12.7 million kilograms of milksolids (-6 percent), and February production was down 12.5 million kilograms of milksolids (-7 percent). Pasture conditions have improved in the later part of the season, with milk production in March only slightly lower at -2 percent. Moreover, the lack of capacity to process cull cows due to COVID-19 disruptions has resulted in farmers holding on to cows for longer. This could help increase milk production in April and May. Despite this possibility, milk production is unlikely to make a recovery and is expected to be well below last season.

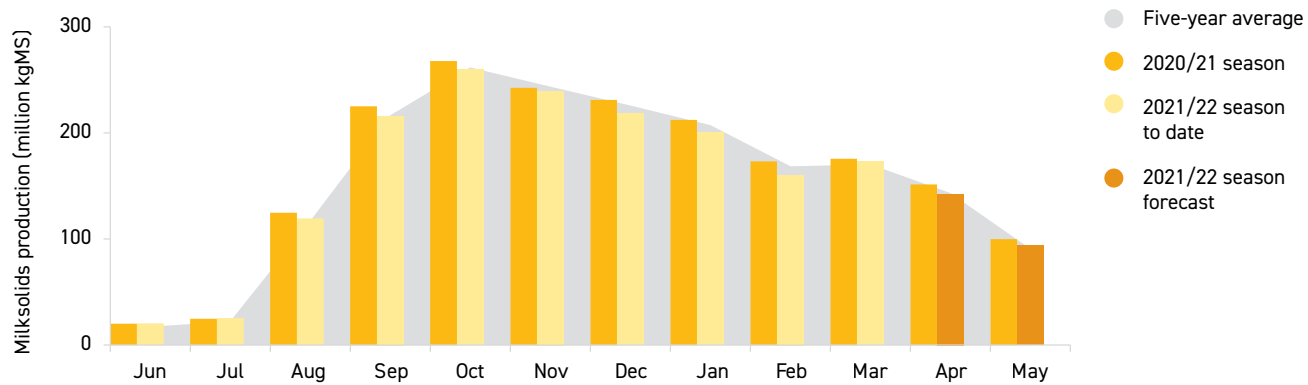
Figures from the 2021 Agricultural Production Survey released by Stats NZ show that, as at June 2021, dairy cows in milk or in calf were 1 percent lower than the previous year at 4.80 million. The total dairy cattle number is estimated to have decreased by 301,000 cows since 2015. This is mainly due to increased regulation and compliance, labour constraints and tighter credit conditions. Together, these factors have also made it substantially more challenging to convert land to dairy farming. The net impact of these changes and challenges has been a small degree of consolidation in the dairy sector. This slight downward trend in the national dairy herd and land use area is expected to continue over the next few years, and dairy farmers will continue to focus on optimising and future-proofing their farm systems.

Despite falling cow numbers, there are expected to be improvements in dairy cow genetics, advances in farm management practices and development of new technology to keep increasing on-farm productivity. Genomically selected bulls and sexed semen, which generates female replacements from high-performing cows, are examples of the high-impact technology farmers are adopting to increase the rate of genetic gain in their herds.

Milksolids production for the season to 31 May 2023 is forecast to increase slightly to 1,901 million kilograms. This forecast assumes average weather conditions next season and is driven by increasing milk yield per cow. Having said this, the downside risks to milk production are high. Should weather conditions be unfavourable, milk production could decline, especially because cows may not be in the best condition at the start of next season and feed and fertiliser costs are likely to remain high. Over the medium to long term, increased production per cow is likely to result in slight growth in total milksolids production. However, production is unlikely to surpass the peak levels of 2020/21 for the next few seasons.

Figure 17: New Zealand milksolids production forecast to decline in 2021/22 season

Year to 31 May, million kgMS



Source: DairyNZ and MPI.



A reduction in global milk production is supporting high dairy prices

Supply-side constraints remain an important driver of dairy prices and are a vital feature of the situation and outlook for the dairy sector. Besides New Zealand, milk production growth in key dairy exporting regions is also slowing down and is expected to decline in 2022. In particular, the impact of the Russia-Ukraine conflict on feed markets will lead to an extended period of high input costs (corn, grain and fertiliser) for milk producers. The resulting weak margins will limit milk producers from expanding milk supply in the short to medium term. This, in turn, will help support dairy prices.

Milk production growth in the US has slowed down despite milk prices reaching a record high. Typically, when milk price increases, dairy farms expand their herds and ramp up milk production. However, this has not been the case so far. Rising input costs, especially feed costs, are driving the decline in milk production. Steadily increasing feed costs over the past year and a half were pushed considerably higher by the Russia-Ukraine conflict, which heightened fears of reduced

global grain production. In addition to feed costs, other input costs such as fertiliser, fuel and energy have also increased. Because high input costs have constrained dairy farm profit margins, farmers have been hesitant to expand production.

Milk production in Europe is expected to decline in the short to medium term due to rising input costs and unfavourable weather. The European Milk Board recently highlighted that the cost increases in milk production are reaching levels that are threatening the survival of dairy farms and milk production in Europe. Milk production in Europe is likely to be impacted by a hotter and drier summer than usual in 2022.

Milk production growth in Argentina over the 2021/22 season to March is also slower than it was in 2020/21. In Australia, despite a 10 percent increase in farmgate milk price, milk production is expected to decrease in 2021/22 due to extremely wet weather in the second half of 2021. Going forward, Australian milk production is likely to be impacted by a decline in cow numbers due to high beef prices and increased live animal demand from China.



New Zealand dairy export volumes decline for most products but values increase significantly

New Zealand's total dairy export volumes are estimated to decrease by 7 percent in the year to 30 June 2022 mainly due to a decline in milk production. Total dairy export volumes in the first three quarters of this season were 5 percent below the same three quarters of the previous year. Export volumes in the June quarter are also expected to be well below last year due to the substantial supply chain disruptions that are occurring from the current COVID-19 outbreak in China and the Russia-Ukraine conflict. Moreover, the extraordinarily high prices for food globally and the slowdown in the world economy are likely to decrease demand. As a result, it is very unlikely dairy export volumes will make up any of the lost ground in the June quarter.

Amongst dairy products, WMP had the greatest drop in both percentage (-9 percent) and total volumes (-115 kilotonnes). In addition, a decline in volumes was observed for butter, anhydrous milk fat (AMF) and cream products, cheese and infant formula. In contrast, SMP, butter milk powder (BMP) and casein and protein product export volumes increased. Exports of other dairy products such as liquid milk and cream, ice-cream and whey also increased. The increase in SMP export volumes is attributed to stronger demand for New Zealand SMP as output from the EU, a traditional SMP heavyweight, slowed down.

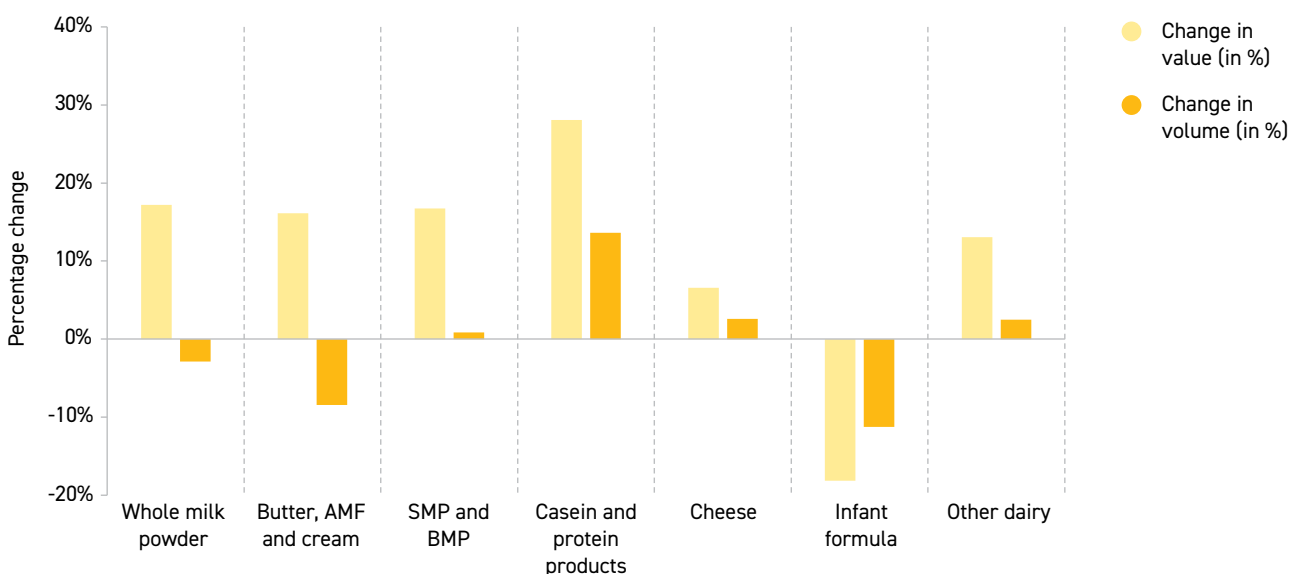
The impact of declining export volumes on export revenue has been more than offset by a strong increase in export prices of most dairy products. Export values increased by 13 percent in the year to 31 March 2022 (Figure 18), despite lower volumes, compared with the same time last year. Export values increased for all products except infant formula. Strong demand for dairy fats, specifically butter and AMF, and a reduction of supplies from the EU, a major exporter, resulted in a 16 percent increase in the export value of the butter, AMF and cream category. Similarly, strong demand from China and a decline of supplies globally resulted in export values of WMP, SMP and BMP increasing by 17 percent.

Similar to the previous year, infant formula continued to decline in both volume (down 11 percent) and value (down 18 percent). This drop is attributed to changes in the infant formula market dynamics in China. Due to there being fewer travellers and students outside of China acting as personal shoppers that buy on behalf of Chinese consumers, an important route to market (the daigou channel) has been disrupted by the COVID-19 pandemic.

There has also been a shift in consumer purchasing behaviour to favour Chinese-produced infant formula over imported products. This competition from domestic producers is a consequence of China's policy to improve the quality of Chinese infant formula and China's dual circulation economic strategy. Lastly, a decline in birth rates in China is likely to have reduced overall demand for infant formula as well. Consequently, a decline in revenue from infant formula is forecast in the year to 30 June 2023.

Figure 18: Dairy export volumes decrease but revenue increases in year to 31 March 2022

Change in export volumes and revenue, year to 31 March 2021 vs year to 31 March 2022



Source: Stats NZ and MPI.

Strong demand from China drives export revenue increase

Strong demand from China has been a key driver of New Zealand dairy export increases this year (Figure 19). In the year to 31 March 2022, China imported \$8.7 billion worth of dairy products from New Zealand, an increase of 20 percent from the previous year. Export revenue for all dairy products except for infant formula increased year on year as both volumes and prices rose.

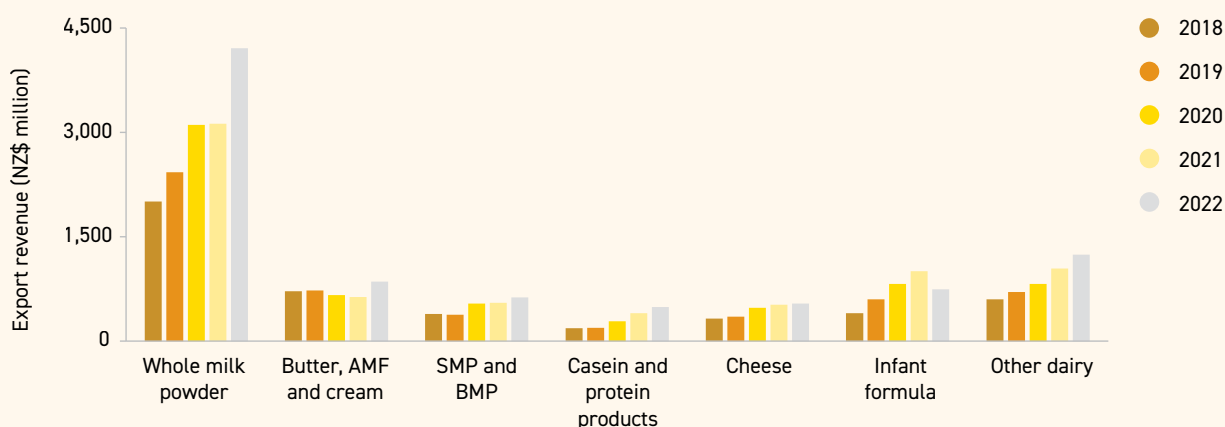
WMP exports to China are driving this increase. In the year to 31 March 2022, China imported 776 million tonnes of WMP

from New Zealand, up 8 percent over the previous year. The increased volumes contributed an additional \$1.1 billion in export revenue. The main reason for increased demand of WMP is the growing demand for liquid milk products in China. As liquid milk consumption grows in China, so will the demand for WMP.

Over the past year, COVID-19 related disruptions, rising costs of milk production and stronger regulation has resulted in domestic milk supply not keeping up with growing demand in China. This, in turn, has resulted in increased WMP imports. The New Zealand-China Free Trade Agreement coupled with New Zealand's strong reputation for being an efficient producer of high-quality WMP and a well-developed distribution infrastructure in China have established New Zealand as the main WMP supplier to China. This situation is unlikely to change significantly in the near future.

Figure 19. New Zealand dairy exports to China increase driven by whole milk powder

Year to 31 March 2022, NZ\$ million



Source: Stats NZ and MPI.

Record high farmgate milk price likely this season

Strong global dairy prices are expected to result in a record high farmgate milk price and strong dairy farm profitability this season. New Zealand's all-company average milksolids payout for the 2021/22 season is forecast to be \$9.30 per kilogram of milksolids (Figure 20). This would be the highest farmgate milk price on record, bettering the previous highest farmgate milk price in 2013/14 by \$0.83 per kilogram of milksolids.

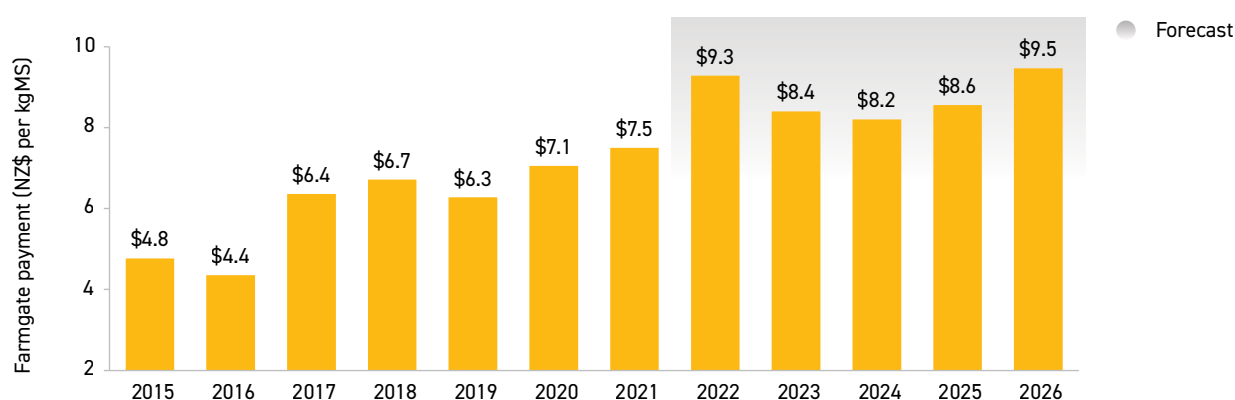
The timing of this payout is crucial due to the challenges that dairy farmers are facing. These include regulatory compliance costs, constraints around labour availability and, most importantly, increasing input costs, especially feed and fertiliser costs. Despite the high and rising input costs, dairy farm profitability is estimated to be strong this season. For a modelled average dairy farm producing 169,400 kilograms

of milksolids in 2021/22, the \$9.30 milk price will offset the impacts of rising input costs and result in operating profits of around \$3.32 per kilogram of milksolids. This is an estimated increase of \$0.70 per kilogram of milksolids over the previous season. It is important to note that, despite the milk price increasing by over \$1.50 per kilogram of milksolids, operating profits are likely to have increased by only \$0.70.

The high payout is likely to enable farmers to pay down debt and make investments needed for improving on-farm productivity and sustainability. Next season's farmgate milk price is forecast to be lower but still at elevated levels. This is due to an expected decline in prices of the main reference dairy commodities that inform the milk price. The farmgate milk price for the 2022/23 season is forecast to be in the range of \$7.90 to \$8.90 per kilogram of milksolids. As input costs are likely to continue increasing, the lower forecast payout puts greater pressure on farm profitability next season. In response, farmers are likely to have a strong focus on controlling costs and be extra cautious with their expenses next season.

Figure 20: Record high farmgate milk price forecast for 2021/22 season

Year to 31 May, NZ\$ per kgMS



Source: DairyNZ and MPI.

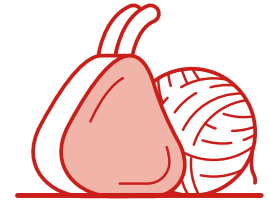
Table 4: Dairy farm production, milk prices, export volumes and values 2018–26

Year to 30 June

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Cows and heifers in calf or in milk (millions)	5.01	4.95	4.92	4.91	4.89	4.86	4.84	4.82	4.80
Milksolids production (million kg)	1,840	1,884	1,896	1,948	1,869	1,901	1,920	1,931	1,938
Milksolids per cow (kg of milksolids)	367	376	385	397	382	389	395	399	402
Milk price (cents per kg of milksolids)	672	628	706	750	929	839	819	856	947
Total export value (NZ\$ million)	16,655	18,107	20,135	19,093	21,610	21,170	21,130	22,500	24,260
Total export volume (000 tonnes)	3,238	3,524	3,462	3,636	3,375	3,555	3,623	3,701	3,781
Average export price (\$ per kg)	5.14	5.14	5.82	5.25	6.40	5.96	5.83	6.08	6.42

Source: Stats NZ and MPI.

Meat and wool



- Meat and wool export revenue is forecast to increase 18 percent to \$12.2 billion for 2021/22, revised up from the previous forecast due to a sharp lift in prices.
- Beef, lamb and mutton prices have surged due to tight global supply, food service reopening and demand rebounding. Factors limiting further price increases include ongoing global freight issues and the current COVID-19 outbreak in China.
- Strong wool prices have partially recovered this year, reflecting the start of the wool sector's recovery to pre-pandemic levels.
- Average farm profit before tax for the 2021/22 season for all classes of sheep and beef farms is forecast to be \$166,900 per farm, up 36 percent, according to Beef + Lamb New Zealand. Inflation-adjusted profit remains below the 2017/18 to 2019/20 seasons.

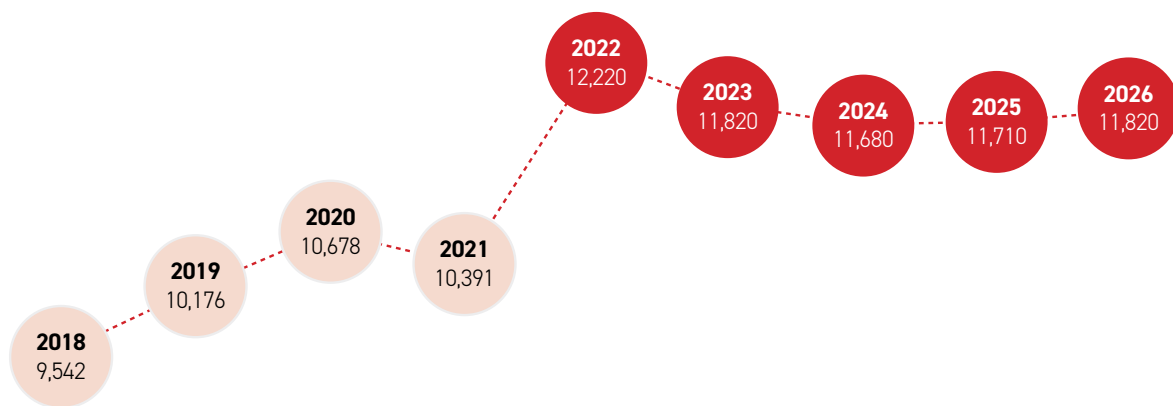


Table 5: Meat and wool export revenue 2018–26

Year to 30 June, NZ\$ million

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beef and veal	2,943	3,324	3,811	3,587	4,550	4,210	4,180	4,190	4,210
Lamb	3,018	3,227	3,331	3,167	3,520	3,540	3,470	3,470	3,490
Mutton	575	576	643	698	710	680	670	660	670
Wool	543	549	432	396	420	390	380	400	420
Venison	196	186	152	150	160	160	160	160	170
Other meat*	543	610	593	628	710	740	750	750	750
Hides and skins	396	354	241	201	300	290	290	290	290
Animal by-products	700	729	803	822	920	840	800	830	860
Animal fats and oils	147	115	140	181	310	320	320	280	270
Animal products for feed	332	376	430	452	520	530	550	570	590
Carpets and other wool products	148	130	102	108	100	110	110	100	100
Total export value	9,542	10,176	10,678	10,391	12,220	11,820	11,680	11,710	11,820
Year-on-year % change	14%	7%	5%	-3%	18%	-3%	-1%	0%	1%

* Includes edible offal, processed meat and poultry.

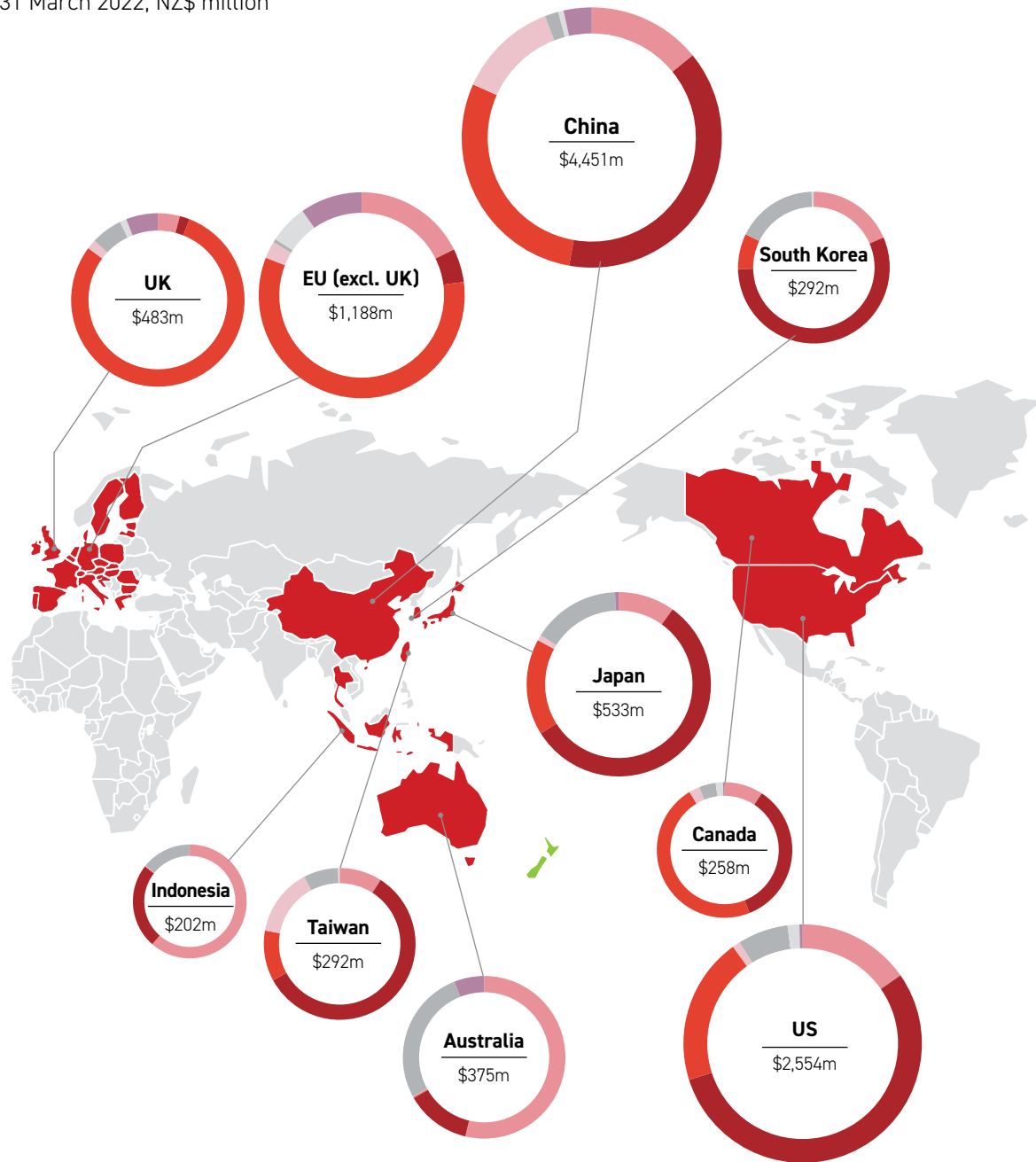
Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ and MPI.



Top 10 meat and wool export destinations

Year to 31 March 2022, NZ\$ million

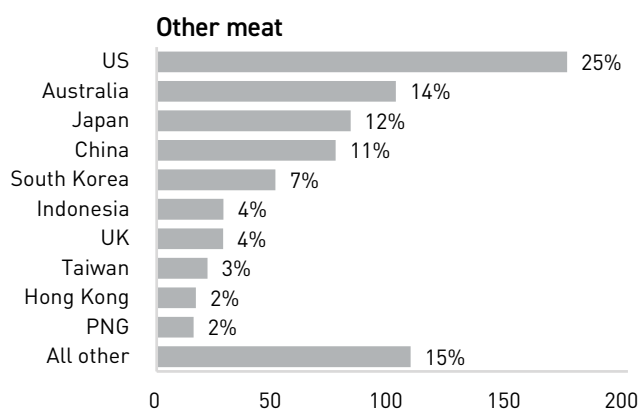
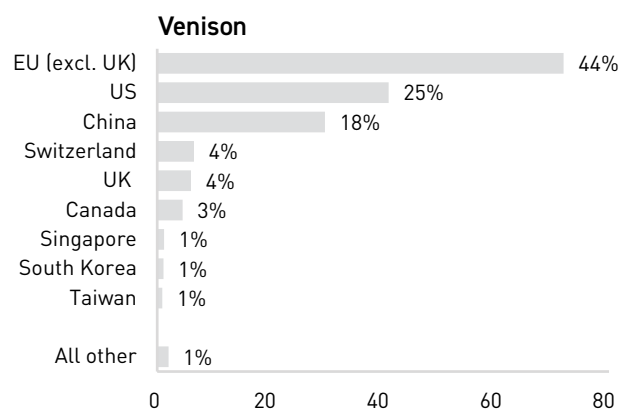
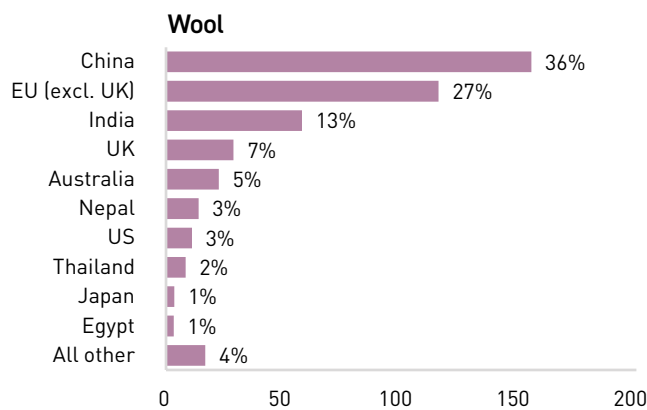
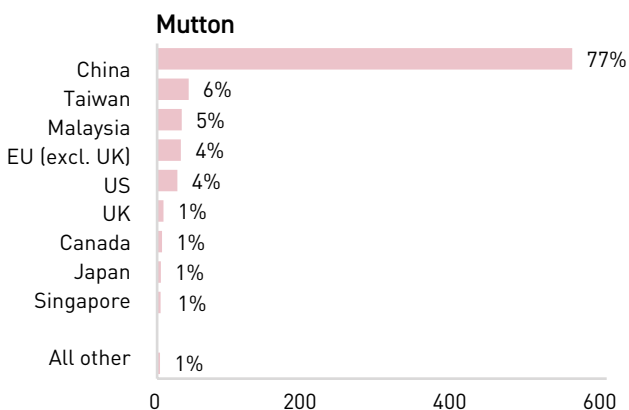
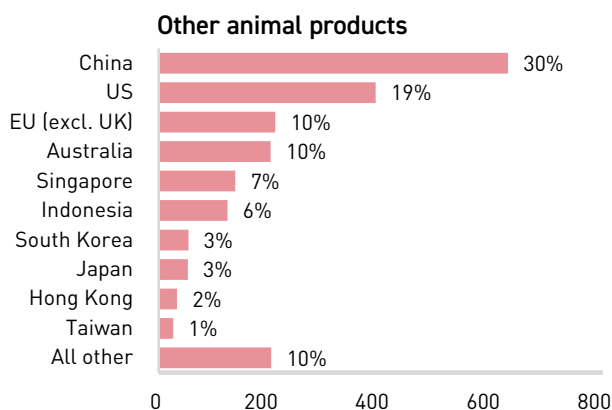
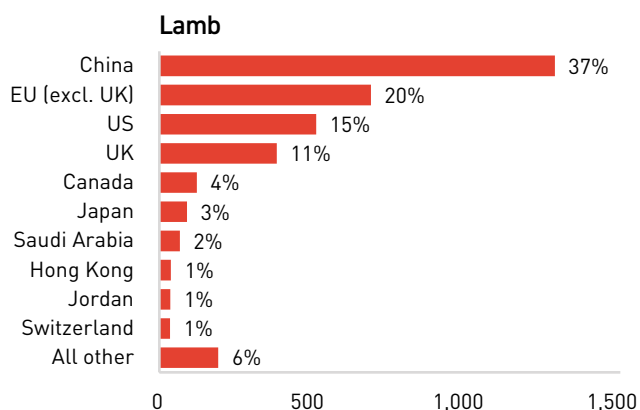
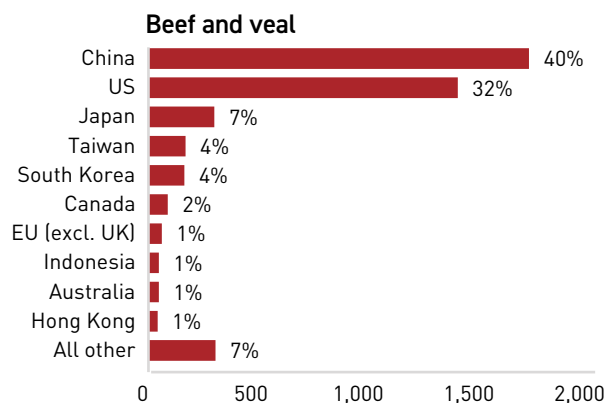
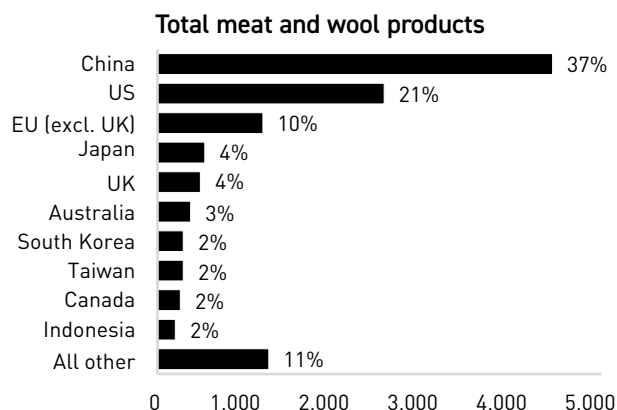


Product	Export revenue (NZ\$ million)	% of total
Beef and veal	4,348	37%
Lamb	3,449	29%
Other animal products*	2,063	17%
Mutton	717	6%
Wool	437	4%
Venison	165	1%
Other meat	703	6%
Total	11,882	100%

* Includes animal co-products, animal fats and oils, animal products for feed, carpets and other wool products, and hides, leather and dressed skins.
Source: Stats NZ.

Top meat and wool export markets

Year to 31 March 2022, NZ\$ million and percent



Source: Stats NZ.

Meat and wool export revenue is forecast to increase 18 percent to \$12.2 billion in the year to 30 June 2022. A combination of tight global meat supplies, parts of the world re-emerging from various forms of lockdown and input cost inflation is putting upward pressure on meat prices. Factors limiting further price increases include freight issues related to COVID-19 and the Russia-Ukraine conflict, COVID-19 disruption in China and constrained labour availability in New Zealand hindering optimal animal processing.

Tight global supplies paired with strong global demand has caused a sharp lift in meat prices in early 2022. In March 2022, the Food and Agriculture Organization global meat price index was up 19 percent compared with March 2021. Following the removal of COVID-19 restrictions, food service has recovered in most key markets, supporting export and farmgate prices. Global protein demand will continue to be supported by an estimated 3.6 percent growth in the global economy in 2022 and 2023 (as forecast by the IMF).

Growing demand for meat protein from developing countries continues to support export prices. There is also a renewed interest in red meat in high-income countries as customers focus on the quality and micronutrient content of food in response to increased focus on health during the pandemic. In addition, rising animal feed costs also have the potential to increase New Zealand's price competitiveness due to the high proportion of animals being grass-fed.

Global meat protein supplies continue to be hampered by multiple global phenomena, pushing prices higher. The ongoing African swine fever (ASF)-induced protein deficit continues to support demand for all meat products. In late 2018, the ASF outbreak began to alter global supply and demand, with China culling half of its swine herd and importing protein from around the world. Over this period, ASF-induced demand put upward pressure on meat prices. Pork production has partially recovered from ASF in China but outbreaks continue. ASF-related demand is expected to continue until a successful vaccine is developed. Vaccine development is under way, but until testing and rollout is complete, the risk of ASF spreading even further remains.

In addition, a reduction in the global cow herd and a range of export restrictions in key exporting countries is leading to tight global beef supplies. The spread of lumpy skin disease has the potential to further disrupt global beef supplies, and the spread of avian influenza in the northern hemisphere could further disrupt global poultry supplies. In addition, the foot and mouth disease outbreak in Indonesia in May 2022 could cause further disruption to global beef supplies.

Freight issues and correspondingly high freight prices are expected to have an ongoing impact over the next year due to the Russia-Ukraine conflict, increased goods demand throughout the pandemic and the COVID-19 restrictions in China. Key freight issues include a shortage of chilled shipping containers and ships docking at New Zealand ports and various congestion and scheduling issues reducing certainty of collection and delivery timing. The slow pace at Shanghai port (and neighbouring Asian ports) is a concern for product delivery and timing, especially for New Zealand beef due to its reliance on Shanghai port (as at mid-May 2022). The high cost of freight has created huge disparity between export prices and in-market



(imported) meat prices, eroding export and farmgate returns. The shelf life on some products has been affected, and the chilled premiums have been lost in some instances.

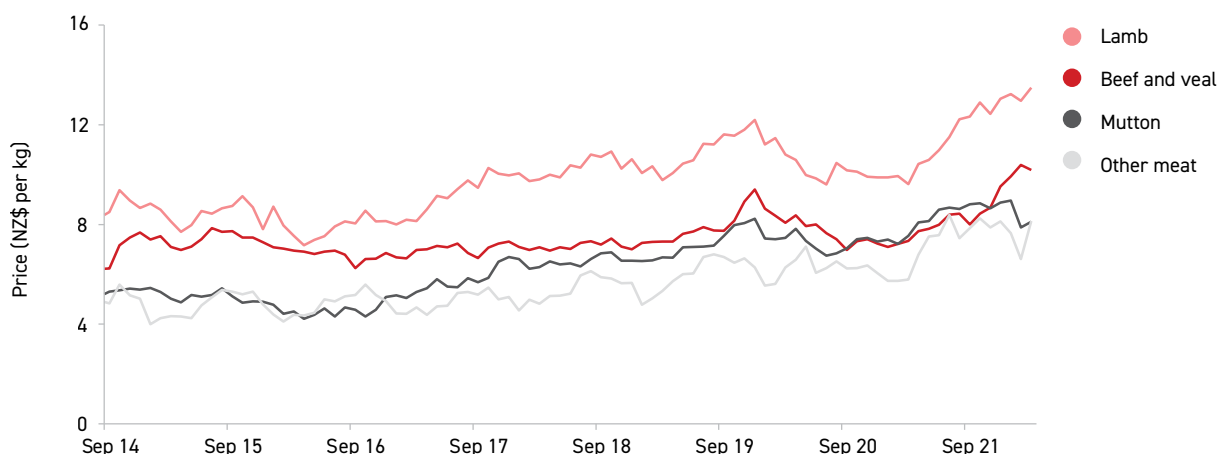
Prices for all meat categories are forecast to increase in 2021/22, with most categories more than recovering from pandemic lows last year. Lamb is set to lead price growth (21 percent increase), closely followed by beef (19 percent increase) and mutton (15 percent) (Figure 21). Venison, which is usually slower to recover from price falls, is forecast to have the smallest price increase (6 percent).

The price of animal fats and oils has skyrocketed in 2021/22 due to the Russia-Ukraine conflict, Indonesia's palm oil export ban and increasing demand for poultry feed (which fats and oils are a key component of) (Table 5). Animal fats and oils prices are forecast to remain elevated due to constrained production and supply in the medium term.

The pandemic further subdued demand for wool due to lower end-user demand for wool products during the pandemic. Wool prices are forecast to partially recover (increasing 18 percent) in 2021/22. The current wave of COVID-19 in China and related zero-COVID policies present downside to this forecast due to potential impacts on demand and logistics. Due to global disruption, more volatility and uncertainty than normal is expected over the coming year.

Figure 21: Key meat export prices recovered from pandemic

Monthly export prices, NZ\$ per kg



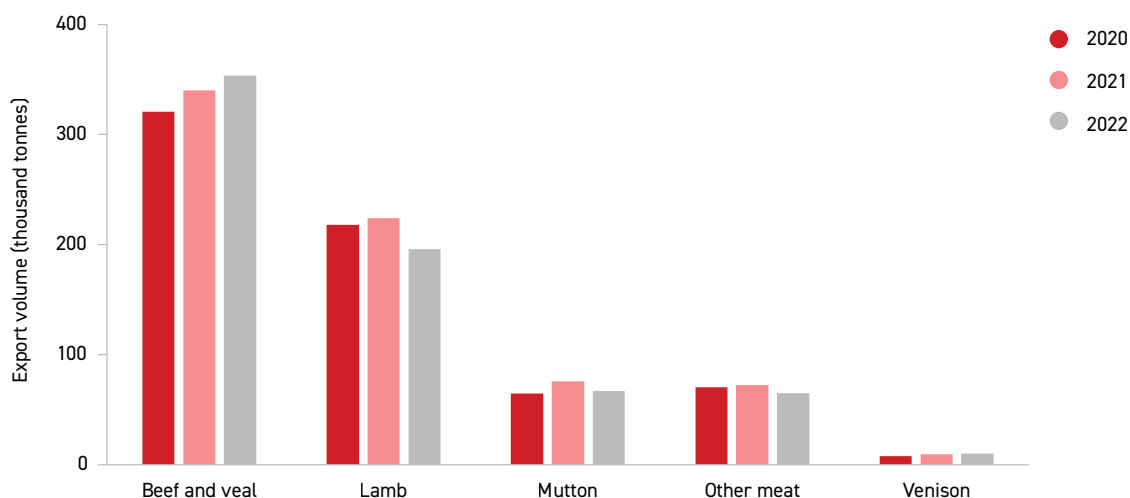
Source: Stats NZ.

Export volumes are forecast to increase for beef and venison and decrease for lamb and mutton categories this year, with beef seeing the largest increase (7 percent) and mutton seeing the largest fall (11 percent) (Figure 22). Sheepmeat production in the 2021/22 season has been subdued by a smaller sheep flock, slower lamb growth and lower processing capacity due to labour constraints, COVID-19 sickness and related employee isolation periods. Venison production continues to be elevated due to a shift towards velvet production (which is harvested from stags and not hinds). Beef production is higher due to a larger cattle herd in 2020/21 and ensuing high prime cattle slaughter.

Meat and wool export revenue is forecast to decrease 3 percent in 2022/23, with meat prices dropping back slightly from highs in 2021/22 and volumes declining. Prices of key meat categories are forecast to be slightly lower due to COVID-19 disruption in China and some consumers trading down to cheaper meat alternatives in key markets. Export volumes for beef, mutton and wool are forecast to decline in 2022/23 in line with the long-term declining trend. Uncertainty regarding value and volume forecasts is elevated, and high volatility is expected over the coming year as global disruption alters production and trade flows and freight remains under severe pressure.

Figure 22: Lamb and mutton export volumes fall back after record year

Export volumes in nine months to 31 March



Source: Stats NZ.

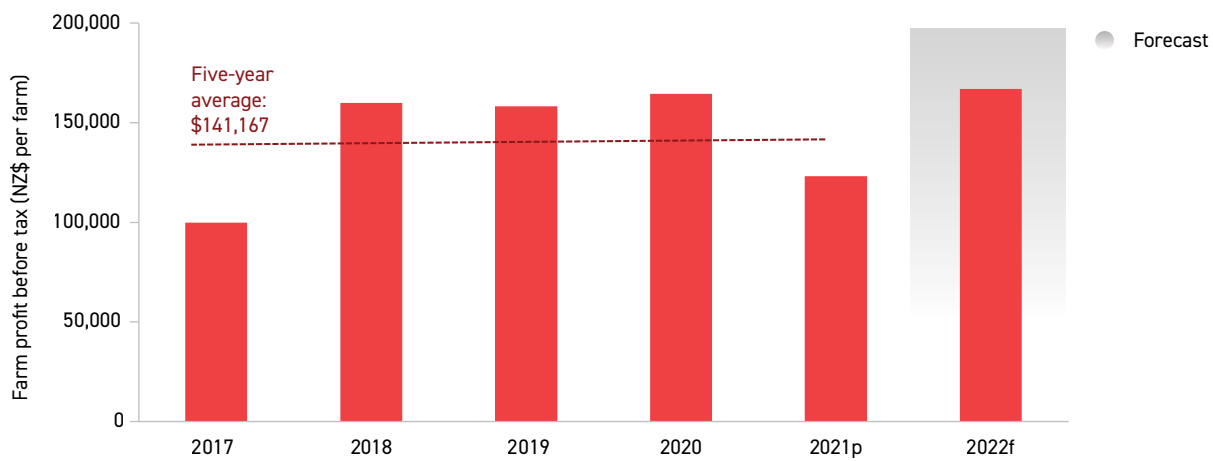
Profitability forecast to improve in 2021/22, inflation eroding real profits

In 2021/22, the average farm profit before taxes for all classes of sheep and beef farms is projected to climb by 36 percent to \$166,900 per farm (Figure 23). This increase in profit is bolstered by strong export meat prices and significantly constrained profitability in the season prior. Expenses paid out of farm profit before tax include taxation

payments, personal drawings for family living expenses, debt repayments and the purchase of farm capital items. Upward pressure on input prices will likely continue into 2022/23, eroding farmer profits. There is uncertainty in this forecast relating to weather, feed, exchange rates and inflation.

Figure 23: Sheep and beef farm profitability forecast to improve in 2021/22

Year to 30 June, NZ\$ per farm



p: provisional, f: forecast.
Source: B+LNZ.



Inflation is putting downward pressure on sheep and beef farm margins and profitability. Input prices are forecast to increase by 12 percent, with expenditure in most categories forecast to increase. After adjusting for inflation, farm profit before tax for the season to 30 June 2022 is forecast to increase 29 percent but remain lower than real (inflation-adjusted) profit achieved in 2017/18.

Livestock numbers are forecast to fall in 2023 and over the longer term (Table 6). This decline is driven by land diversification, environmental regulations in relation to freshwater and greenhouse gases as well as productivity improvements in key animal species and farm systems. Potential changes to the Emissions Trading Scheme could affect the magnitude of future conversions to forestry.

Table 6: Livestock numbers 2018–26

As at 30 June, million head

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total cattle	10.1	10.2	10.1	10.2	10.0	9.9	9.9	9.7	9.7
Beef cattle	3.7	3.9	3.9	4.0	3.9	3.8	3.8	3.7	3.7
Dairy cattle	6.4	6.3	6.2	6.2	6.1	6.1	6.1	6.0	6.0
Total sheep	27.3	26.8	26.0	25.8	25.2	24.7	24.2	23.8	23.6
Breeding ewes	17.2	16.8	16.6	16.3	16.0	15.6	15.3	15.0	14.9
Lambs marked and/or tailed	24.7	23.8	23.2	22.9	22.5	21.6	21.3	21.0	20.8
Total deer	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7

Source: Stats NZ and MPI.



Beef and veal

Beef and veal export revenue is forecast to increase 27 percent to \$4.6 billion in the year to 30 June 2022. This increase is driven by 19 percent growth in beef and veal prices and a 7 percent increase in volumes. These high prices reflect tight global beef supplies and recovering demand.

Drivers include Australia recovering from prolonged drought and rebuilding herds, lower volumes in the US due to higher slaughter in mid-2021, Argentina's self-imposed export ban to reduce domestic food inflation and Brazil's two cases and Canada's one case of bovine spongiform encephalopathy (BSE) in late 2021. More recently, the foot and mouth disease outbreak in Indonesia in May 2022 could cause further tightness to global beef supplies.

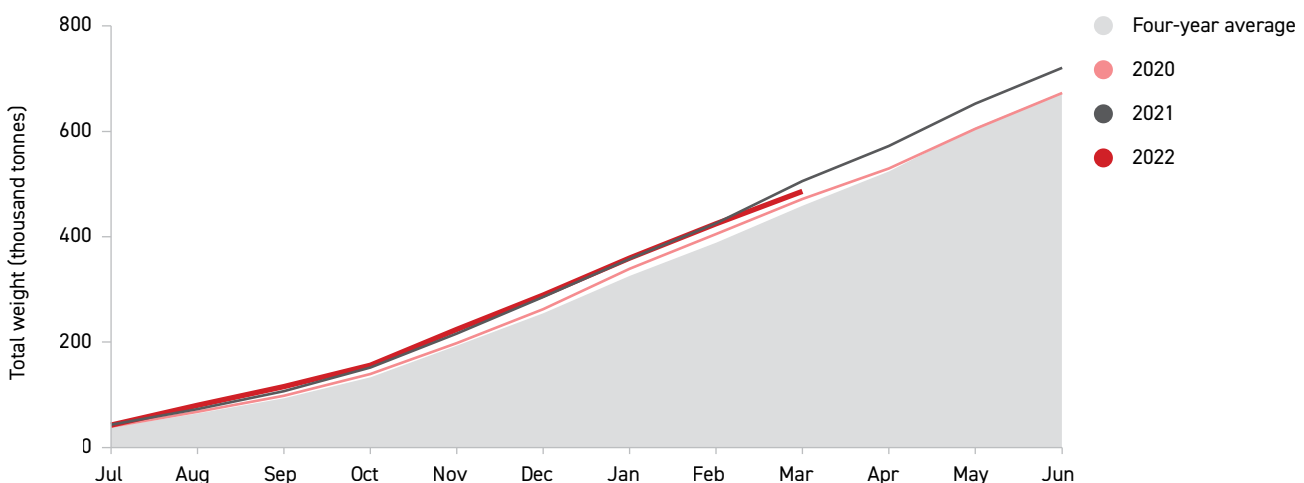
In addition to tight supplies, recovering demand from COVID-19 lockdowns and the related food service downturn are supporting export prices. COVID-19 freight issues have continued to put downward pressure on prices. Record in-market and export prices have more than compensated for increased freight costs. For 2022/23, beef and veal export revenue is forecast to decrease 8 percent due to lower production and slightly lower prices.

Domestically, it has been a slightly slower beef production season, driven by backlogs at processing plants. Beef production for 2021/22 is forecast to be just (3 percent) below the previous year (Figure 24). Dairy cattle slaughter has been pushed later into the season due to backlogs created by COVID-19 related absenteeism and a tighter labour force, which will lead to the main processing season finishing later than usual, with some of the cattle slaughter likely being shifted into the start of the next season.

Prime slaughter volumes are forecast to remain elevated and on par with the previous season. Dairy cattle slaughter volumes are forecast to lift in the last quarter of 2021/22 to clear processing backlogs and remain slightly lower than last season. Slaughter weights are forecast slightly lower (1 percent) in the 2021/22 season compared with the previous season. Beef production has been growing over the past four seasons and is forecast to decrease over the next few years in line with a gradual fall in beef cattle numbers (Table 6).

Figure 24: Backlogs slow cattle throughput from February 2022

Cumulative monthly production, thousand tonnes



Source: Stats NZ.

Tighter global beef supplies and soaring prices

Meat export prices have surged this year, reaching new records. Key drivers include tightening beef supplies (herd rebuild cycles, weather issues in key grain growing regions and the Russia-Ukraine conflict) and strong demand (food service reopening, COVID-19 related panic buying, pent-up demand from previous lockdowns and US Government stimulus packages). Markets continue to purchase all the beef that New Zealand has available, with some buyers prioritising the volume that processors have available over the price to secure product. China's demand for beef continues to increase competition for New Zealand beef (Figure 25).

In the nine months to 31 March 2022, beef and veal exports to China reached 154,000 tonnes, up 15 percent on the previous year, reflecting China's continued battle with ASF, incomes surging higher, migration to urban areas and a growing population. China accounted for 44 percent of New Zealand beef exports over this period. The volume of beef exports to the US has lowered slightly this year (8 percent decrease) following a jump in 2020/21 as Brazil redirected exports from China to the US following a temporary BSE-related suspension.

The US accounted for 30 percent of New Zealand beef exports in the nine months to 31 March 2022. Exports to Japan lifted 38 percent, and exports to Korea lifted 24 percent over the same period. More recently, China's latest wave of COVID-19 outbreaks and related restrictions have created demand uncertainty for cuts destined for food service. Ongoing disruption presents downside to beef price forecasts, especially for prime cuts.

Beef and veal export prices are forecast to surge from \$7.46 to \$8.89 per kilogram in 2021/22, up 19 percent from the previous year. China's substantial demand for beef imports

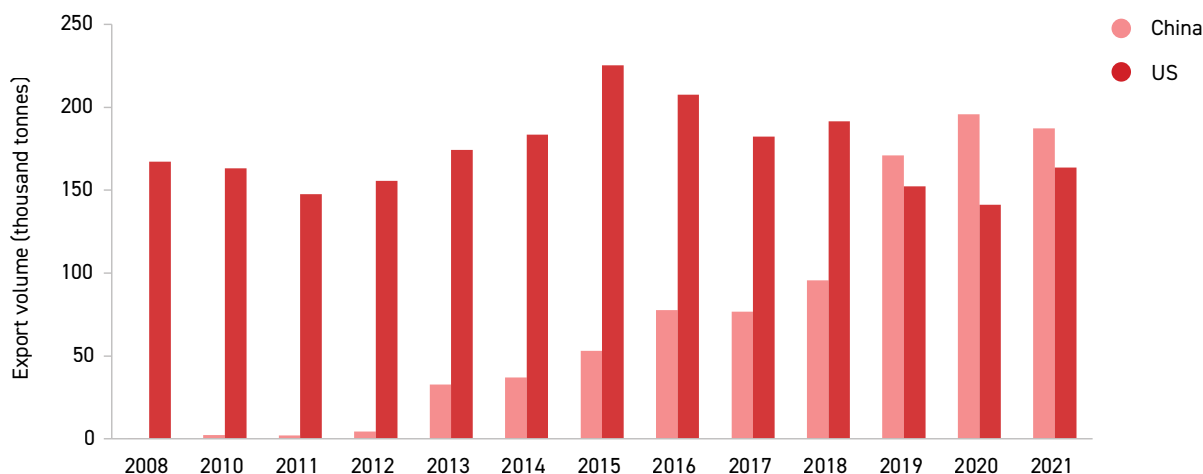


paired with curtailed supply from key competitors (including Australia, Argentina and Brazil) has lifted prices in the first nine months of the year to 30 June 2022. Competition between the US and China has ensured that export prices have remained strong. In the US, demand for lean trimmings into the quick service market is a key driver of higher prices, followed by a shortage of imported beef (especially lean trimmings from Australia) and low stock in cold stores.

The global beef shortage is set to remain throughout 2022/23, and prices are forecast to remain elevated. Downside risks to prices include processing and freight challenges, further COVID-19 restrictions in China, lower consumer sentiment and expenditure on prime beef (which has a relatively high price compared with poultry and pork) and higher grass-fed beef supplies as cattle are moved off feed due to high prices.

Figure 25: China remains top export destination for New Zealand beef and veal

Year to 30 June, top two export destinations



Source: Stats NZ.

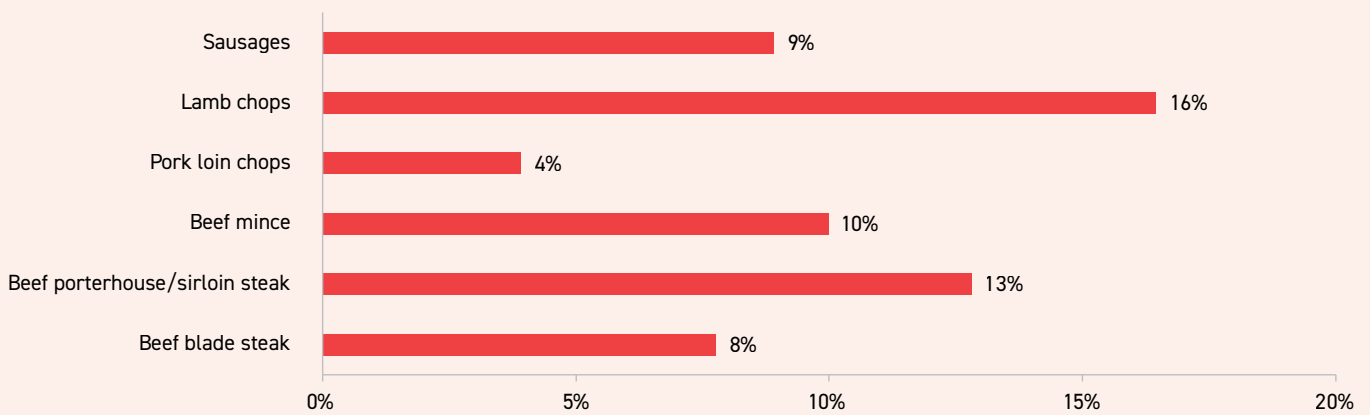
Domestic meat prices are also at record highs

Domestic meat prices are also surging in line with general food inflation in New Zealand and global meat prices. Domestic beef mince prices reached \$17.58 per kilogram in March 2022 (\$1.66 per kilogram dearer than a year prior), and porterhouse/sirloin prices reached \$33.04 per kilogram (\$3.75 per kilogram dearer than a year prior). In the same period, lamb chops reached \$20.46 per kilogram (\$2.89 per kilogram dearer than a year prior) (Figure 26).

Domestically and in key export markets, meat price inflation could change the typical basket of groceries consumers purchase, with some consumers choosing to decrease portion sizes or trade down to cheaper meats. As discretionary spending decreases, middle-income customers generally trade down from higher-priced meat (venison, prime beef cuts and prime lamb cuts) to lower-priced products (beef mince and chicken). Low to middle-income consumers favouring cheaper protein options is likely to be an ongoing trend during the economic recovery from COVID-19. High-income consumers, who tend to purchase premium products, are generally not responsive to these price increases.

Figure 26: Domestic meat prices increase across the board

Meat price (NZ\$/kg) change in percent, March 2022 compared with March 2021



Source: Stats NZ.



Under UK-NZ FTA, beef trade will be fully liberalised after 15 years

A key trade development in early 2022 was the free trade agreement with the UK. An expansion of beef exports to UK is expected due to the removal of tariffs and reduction of in-quota rents. Under the UK-NZ FTA, New Zealand has secured market access for primary products. Transitional duty-free quotas have been agreed for products deemed most sensitive in the UK, including sheep meat and beef.

Beef trade will be fully liberalised after 15 years. In the interim, New Zealand will have access to a duty-free volume starting at 12,000 tonnes in year one and growing to 39,000 tonnes in equal instalments over 10 years. In years 11 to 15, a product-specific safeguard may apply under which a 20 percent duty on trade exceeding the safeguard volume can be applied by the UK.

Table 7: Beef cattle numbers, prices, export volumes and values 2018–26

Year to 30 June

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total beef cattle (opening stocks in millions)	3.62	3.72	3.89	3.88	3.96	3.87	3.80	3.76	3.71
Schedule prime beef price (cents/kg)	545	546	548	515	605	620	630	650	665
Production (000 tonnes)	677	684	701	751	730	695	685	680	670
Export volume (000 tonnes CWE)*	594	645	655	685	725	690	685	675	670
Export volume (000 tonnes PW)**	417	453	460	481	510	485	480	475	470
Export price (NZ\$/kg PW)	7.06	7.34	8.28	7.46	8.89	8.68	8.73	8.85	9.00
Export value (NZ\$ million)	2,943	3,324	3,811	3,587	4,550	4,210	4,180	4,190	4,210

* Carcass-weight equivalent of shipped product weight.

** Product weight as shipped.

Source: Stats NZ and MPI.





Lamb and mutton

Lamb export revenue is forecast to grow 11 percent to reach \$3.5 billion for the year to 30 June 2022, while mutton export revenue is forecast to grow 2 percent to \$710 million. The growth in export revenue for both lamb and mutton can be attributed to extremely high prices over the year driven by strong demand as COVID-19 restrictions ease and food service recovers, continued tight supplies, low inventories in the US and a depreciation of the New Zealand dollar. Lamb export prices are forecast to grow 21 percent this year, and mutton export prices are forecast to grow 15 percent.

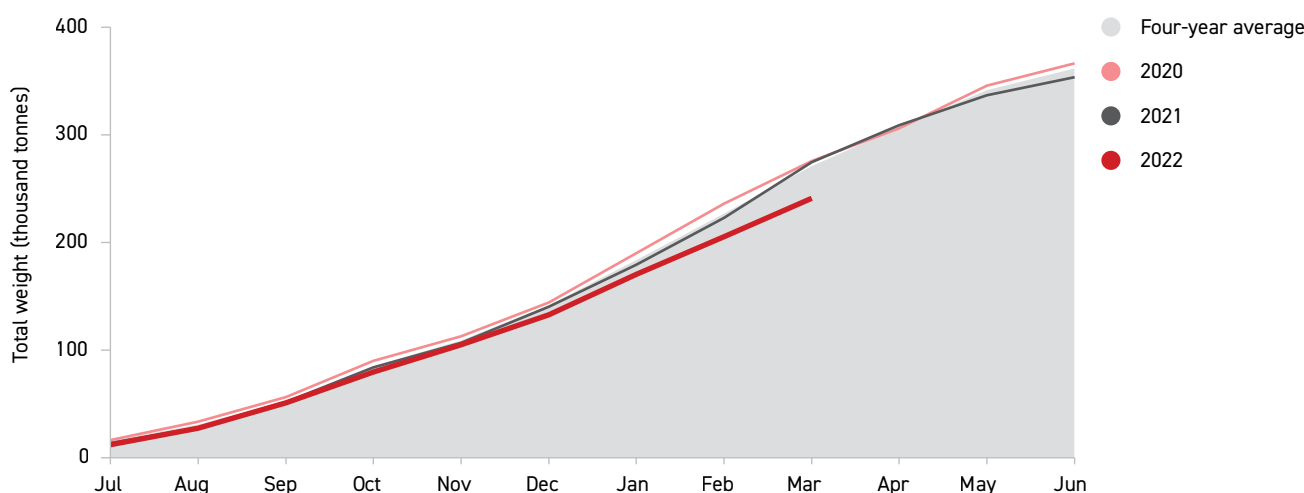
For the 2021/22 season, lamb production is forecast to be 330,000 tonnes, down 6 percent from the previous season.

Lamb processing in the 2021/22 season started slowly due to slow lamb growth and farmers holding on to lambs for longer to improve their condition (Figure 27). Lambs had trouble reaching processing weights early in the season due to suboptimal ewe health at mating time, cold spring conditions and ensuing tight feed conditions through early spring. In addition, more multiples born in spring 2021 meant that more of the lamb crop took longer to reach target weights.

Lamb carcass weights have been lower than the previous season due to wet conditions and a lack of sunlight in spring. Mutton production is forecast to be 87,000 tonnes in 2021/22, down 13 percent on the previous year. This decrease follows

Figure 27: Slower lamb production season in 2021/22

Cumulative monthly production, thousand tonnes



Source: Stats NZ.

a higher than usual adult sheep slaughter the previous year in response to strong export demand and dry conditions and reflects a smaller sheep flock overall.

In the 2021/22 season, ample feed and high prices for lamb have reduced the number of adult sheep sent to slaughter. In 2021/22, processing and ensuing production volumes have been limited by a range of issues, including a shortage of labour and absenteeism due to sickness and COVID-19 isolation. The backlogs are forecast to shift a portion of production to slightly later in the season but be cleared by June 2022. Lamb export volumes are forecast to fall 8 percent to 285,000 tonnes, and mutton export volumes are forecast to fall 11 percent to 85,000 tonnes in 2021/22.

Over the outlook period, breeding ewes and overall sheep numbers are forecast to continue to fall (Table 6). The long-term decline in ewe numbers is set to continue, driven by afforestation (carbon farming), an increased frequency of drought and other extreme weather events, increasing farm expenses, environmental regulations, productivity improvements and very low crossbred wool prices.

A smaller lamb crop and lower lamb and adult sheep slaughter weights are expected in the 2021/22 season. The smaller lamb crop and lower weights are due to declining ewe numbers, wet conditions decreasing pasture quality and supporting parasite growth from late November and extremely dry weather conditions in early 2022 prior to the wet weather events in February and March. The lambing percentage for the 2021/22 season is estimated to be 125 percent, up 1 percent compared with the previous season. The overall number of lambs tailed in the 2021/22 season is forecast to fall 2 percent to 22.5 million head driven by fewer breeding ewes.

Buoyant demand lifts prices to high levels

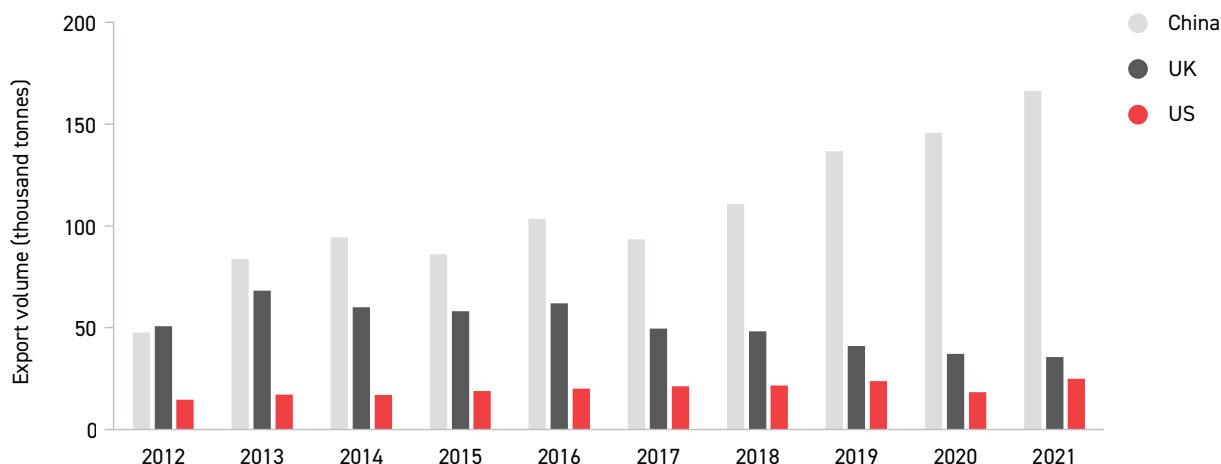
Demand for lamb and mutton has continued to stay firm in the nine months to 31 March 2022, with China accounting for 46 percent of lamb exports and 82 percent of mutton exports by volume in the nine months to 31 March 2022. The UK remains the second-largest importer of New Zealand lamb (11 percent), closely followed by the US (11 percent).

Revenue growth in 2021/22 has been driven by increases in export prices for both lamb and mutton, more than offsetting the drop in volumes exported for both products. Higher prices have been underpinned by tight supplies in New Zealand and Australia (and the UK in terms of lamb), low inventories in Europe and the US, key markets stocking up before the reopening (albeit patchy) of food service industries and high uncertainty due to unpredictable logistics.

The ASF-driven protein deficit, a focus on high-quality protein and increasing incomes in China have also continued to support increasing demand (Figure 28). In addition, demand for lamb from the US is growing substantially, with a 22 percent increase in export volumes in the nine months to 31 March 2022. Export prices for all categories of lamb and mutton have increased, including boneless, bone-in and carcass.

Figure 28: China remains top export destination for New Zealand lamb

Year to 30 June, New Zealand's top three lamb export destinations



Source: Stats NZ.

Lamb export prices and schedule prices are forecast to increase in the 2021/22 season. Prices are being supported by strong global demand, constrained supplies and high global meat price inflation. Domestically, farmgate prices were supported by high export prices, weak supply due to high adult sheep slaughter in the year prior and strong competition between processors to procure stock.

Prices are set to remain elevated in 2022/23 as global demand recovers and supplies remain constrained. Further price increases are being limited by ongoing freight issues, Australia's flock recovery and ensuing export increases meeting demand from China and China's gradual ASF recovery. More recently, China's COVID-19 outbreak and related restrictions have decreased ovine meat demand in April 2022, marginally lowering prices. Further outbreaks and restrictions in China present downside risk for prices, especially for cuts destined for food service.

Australia's flock remains constrained but is recovering

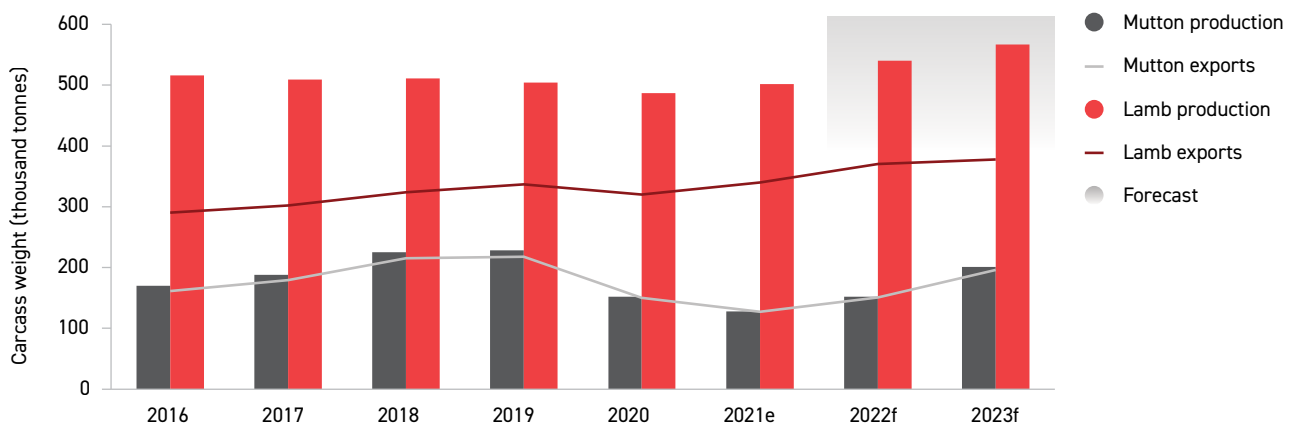
Global lamb export supplies remain constrained by falling breeding ewe numbers in New Zealand and major flock rebuilding in Australia. Australia's drought in 2019 led to its flock shrinking to a 100-year low, which caused a fall in production and exports in 2019/20 (30 percent fewer sheep slaughtered). Global supplies are set to increase in 2021/22 due to favourable weather conditions in key sheep-producing states boosting the flock's growth and ensuing production.

Competition from Australia is set to increase in the coming years, with Australia's national flock forecast by Meat & Livestock Australia (MLA) to increase by 5 percent to 74 million head in 2021/22. Australia's lamb exports are forecast to increase by 9 percent, and its mutton exports are forecast to increase by 19 percent in 2021/22 (Figure 29). It is possible that these forecasts may be revised downwards slightly due to a slow beginning to lamb slaughter and lower carcass weights in the 2021/22 season. Increased global lamb and mutton supplies will apply downward pressure on prices as exports increase.

As noted above, New Zealand and the UK signed a free trade agreement in early 2022. As a result, sheepmeat trade will be fully liberalised after 15 years. In the interim, New Zealand will have access to a duty-free quota of 35,000 tonnes per annum for years 1–4 and rising to 50,000 tonnes for years 5–15. This volume will become available and is in addition to New Zealand's existing duty-free access of about 114,000 tonnes under the World Trade Organization. The volume of sheepmeat exports to the UK is not forecast to change in response to the free trade agreement over the outlook period because sheepmeat exported to the UK is well below the quota volume and already duty free.

Figure 29: Australian lamb and mutton production and exports recovering

Year to 30 June, thousand tonnes



e: estimate, f: forecast.

Source: MLA.



Table 8: Sheep numbers, lamb prices, export volumes and values 2018–26

Year to 30 June

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total sheep (opening stocks in millions)	27.53	27.30	26.82	26.03	25.76	25.22	24.71	24.21	23.78
Schedule lamb price (cents/kg)	713	751	755	679	855	860	860	875	905
Production (000 tonnes)	367	358	366	354	330	340	340	335	330
Export volume (000 tonnes CWE)*	380	390	377	391	355	370	360	355	350
Export volume (000 tonnes PW)**	304	312	302	313	285	295	290	285	280
Export price (NZ\$/kg PW)	9.92	10.33	11.05	10.12	12.29	12.07	11.98	12.12	12.45
Export value (NZ\$ million)	3,018	3,227	3,331	3,167	3,520	3,540	3,470	3,470	3,490

* Carcass-weight equivalent of shipped product weight.

** Product weight as shipped.

Source: Stats NZ and MPI.



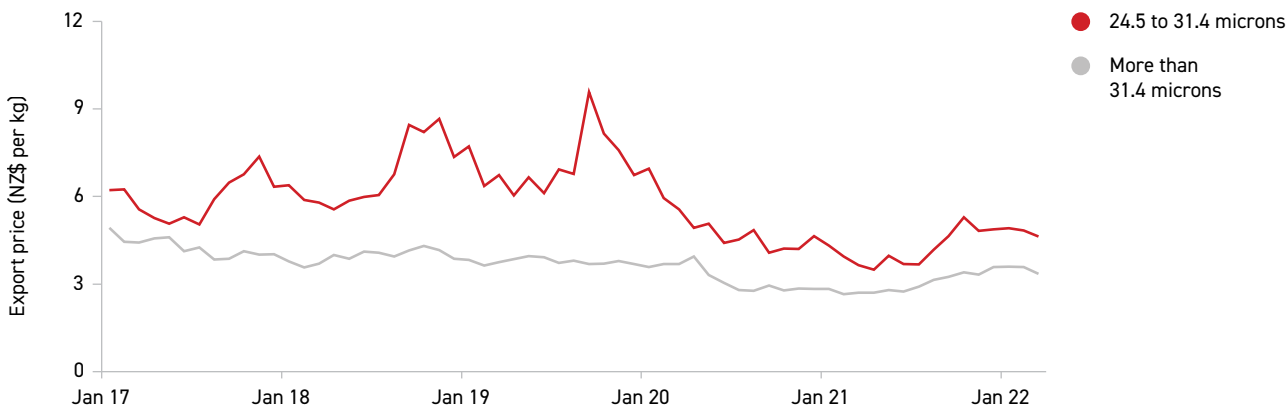
Wool

Wool export revenue is forecast to increase 5 percent to \$420 million in the year to 30 June 2022, partially recovering but remaining below 2018/19 levels (Figure 30). Export revenue growth is due to an improvement in the price received for all micron categories. Higher export prices are expected to more than offset an 11 percent drop in volumes, reflecting the

start of the wool sector's recovery to pre-pandemic levels. Lower volumes in 2021/22 are forecast due to export volumes retreating from highs in 2020/21 when inventories were being cleared. In addition, New Zealand's sheep flock contracted in the past season, resulting in lower wool production.

Figure 30: Wool prices have begun recovering from pandemic lows

NZ\$ per kg



Source: Stats NZ.

The pandemic and wider freight issues continue to weigh on prices, driven by lower global consumer sentiment and lockdowns in China disrupting manufacturing. In the nine months to 31 March 2022, the proportion of wool exports to China fell (from 37 percent to 28 percent of total export volume), with India, Italy, the UK, Germany and Australia increasing their imports of New Zealand wool. The recent COVID-19 resurgence in China presents downside to this forecast and raises the level of uncertainty in the forecast. Like other exports, wool volumes and prices have been impacted by freight issues, including shipping delays and a related fall in demand.

At the farmgate, coarse crossbred auction prices have started to recover from the COVID-19 induced fall to \$1.82 per kilogram (clean), a 42 percent decline over a nine-month period to September 2020. Prices were depressed due to reduced end-user demand, which flowed back to manufacturing volumes in China. Auction prices for strong wool have a way to climb before they fully recover, achieving just \$3.10 per kilogram (clean) in mid-May 2022. Lower-quality wool (yellow colouring) decreased farmgate prices in the first nine months of the season, driven by higher humidity levels and long waits for shearers. Wool quality started to pick up in April 2022.

Shearing costs continue to account for 99 percent of wool revenue

In the 2021/22 season, Beef + Lamb New Zealand estimates that shearing expenses will account for 99 percent of wool revenue for the average farmer compared with 36 percent in the 2016/17 season (before the downturn in strong wool demand and prices). While wool revenue has been generally declining, shearing costs have been increasing (shearing expenses are estimated to increase by 6 percent in the 2021/22 season).

In addition to rising shearing costs, many farmers had trouble booking shearers this season due to fewer shearers being available. In some cases, the inability to have sheep shorn at the right time has decreased wool quality (increased vegetable matter in wool and wool colouring). Most farmers have no option but to continue shearing their sheep for animal welfare reasons. Farmers are reducing shearing costs where possible via shearing less frequently, reducing the number of sheep on farm and looking into self-shedding sheep breeds.

Although fine wool is performing well, strong wool (31.4 microns or greater), which constitutes 75 percent of New Zealand's wool exports, continues to struggle. Research and trials into alternative uses for strong wool present upside to this forecast. New higher-value uses, shifting consumer demand for natural fibres and New Zealand's new national standard for wool have the potential to lift the performance of the strong wool industry to more-sustainable levels.

Table 9: Wool production, prices, export volumes and values 2018–26

Year to 30 June

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Average sale price (cents/kg clean)	509	521	468	347	370	360	470	480	380
Production (000 tonnes clean basis)	105	103	102	99	95	95	90	90	90
Export volume (000 tonnes clean basis)	102	95	77	96	85	80	80	80	80
Export volume (000 tonnes PW)*	112	104	84	105	95	90	90	85	85
Export price (NZ\$/kg PW)	4.86	5.30	5.13	3.77	4.45	4.28	4.33	4.70	5.08
Export value (NZ\$ million)	543	549	432	396	420	390	380	400	420

* Product weight as shipped.

Source: Stats NZ and MPI.



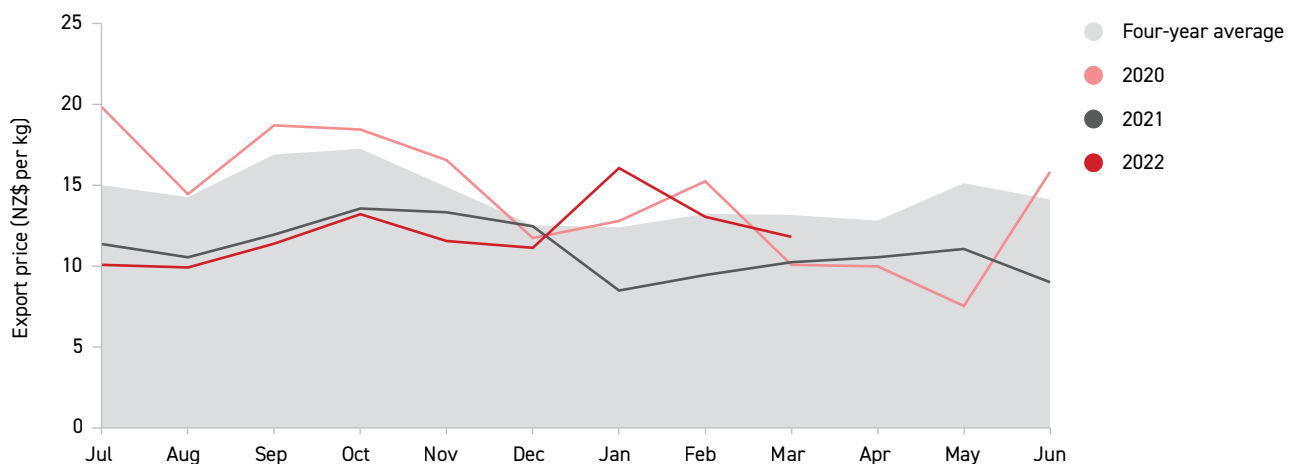
Venison and velvet

Higher venison export prices and volumes are forecast to drive a 7 percent increase in venison export revenue to 160 million for the year to 30 June 2022. On a price per kilogram basis, venison has been the slowest to recover out of all meat categories in 2021/22 due to heavy reliance on food service channels and its relatively high price point. In 2020/21,

venison export prices fell 25 percent due to COVID-19 related disruption. Prices in the six months to 31 December 2021 were slightly lower than the previous year but picked up in the three months to 31 March 2022, resulting in a forecast lift of 6 percent from the previous year (Figure 31).

Figure 31: Venison export prices starting to recover

Year to 30 June, monthly



Source: Stats NZ.

Production and ensuing export volumes are up due to a shift towards velvet production due to relative prices (elevated hind slaughter), environmental regulations, low venison prices and higher productivity. Looking to the 2022/23 year, export volumes are forecast to fall, and prices are expected to continue their gradual recovery from COVID-19.

Venison prices slowly recovering

In the 2020/21 season, the average farmgate venison price fell to lows not experienced since 2007 due to depressed demand caused by the COVID-19 pandemic and food service closures. Farmgate prices began recovering in mid-2021 and are forecast to gradually recover. The prime venison schedule has partially recovered from its heavily deflated level of \$5.77 for the 2020/21 season. In the nine months to 31 March 2022, the prime venison schedule was up 20 percent compared with the corresponding period in the season prior but remains below the five-year average.

Venison export and farmgate price recovery is still highly dependent on food service and further market sentiment recovery in key export markets. Pricing is currently a balancing act, with the need for sustainable prices at the farmgate paired with prices needing to be at an acceptable level to maintain placement on menus. Throughout the pandemic, the industry successfully moved product into retail and e-commerce channels, including retail-ready venison mince packs into the US. Substantial frozen venison stocks in Europe present last season that were putting downward pressure on prices have now been cleared, helping rebalance supply and demand.

Uncertainty among importers about when food service will reopen has led to a higher proportion of venison being exported as frozen in 2020/21 and 2021/22. Frozen venison volumes continued to grow in the nine months to 31 March 2022, whereas chilled venison volumes have only partially recovered. In the nine months to 31 March 2022, 87 percent of total venison exports were in frozen form compared with 81 percent prior to the pandemic.

In the nine months to 31 March 2022, exports to the US accounted for 27 percent of venison export revenue, followed by China (17 percent), Germany (16 percent) and Netherlands (13 percent). Demand from China continues to grow, achieving a 786 percent increase in the three years to 30 June 2022, reflecting an increasing appetite for venison and China's general protein shortage.

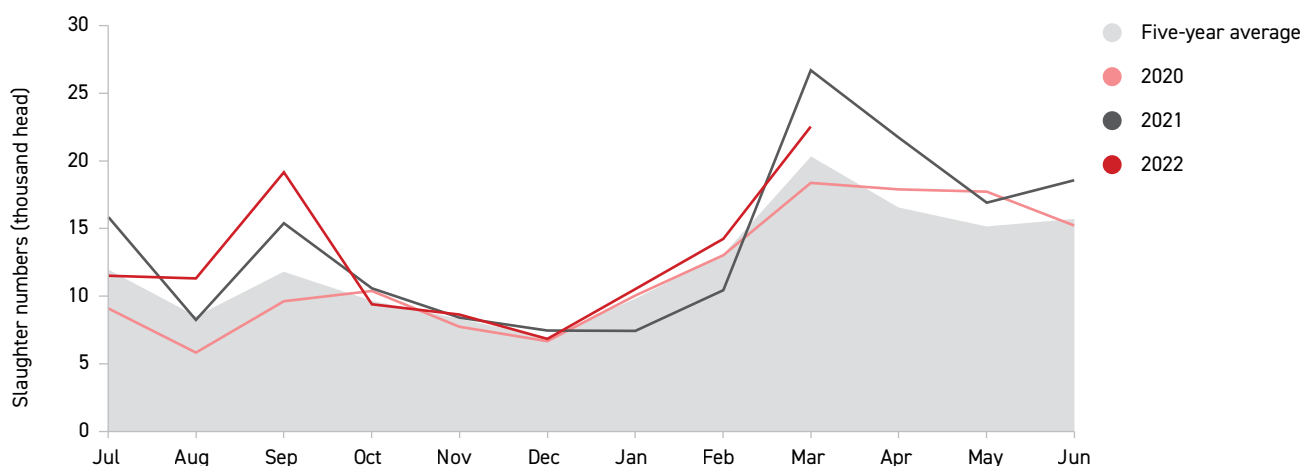
Velvet exports continue to grow

Velvet continues to perform well, with export revenue up 26 percent in the nine months to 31 March 2022. Export prices (up 12 percent) and volumes (up 12 percent) are high due to strong wholesale demand from China and South Korea in 2021/22. The majority of New Zealand's velvet is exported to China, accounting for 73 percent of export value. Demand from China and South Korea is expected to remain strong, supporting export prices.

Perceived health and healing benefits from velvet are the key driver of demand in the global pandemic context as consumers seek immune-enhancing and COVID-19 recovery products. On the back of strong demand, velvet production has doubled in the last 10 years and is forecast to continue to increase over the outlook period. Farmgate velvet profits have increased 20 percent this season. Increasing demand for velvet paired with lower demand for venison continues to shift gender ratios towards stags, with more hinds culled in the nine months to 31 March 2022 (Figure 32).

Figure 32: Hind slaughter remains high in 2021 and 2022

Year to 30 June, monthly



Source: DINZ.

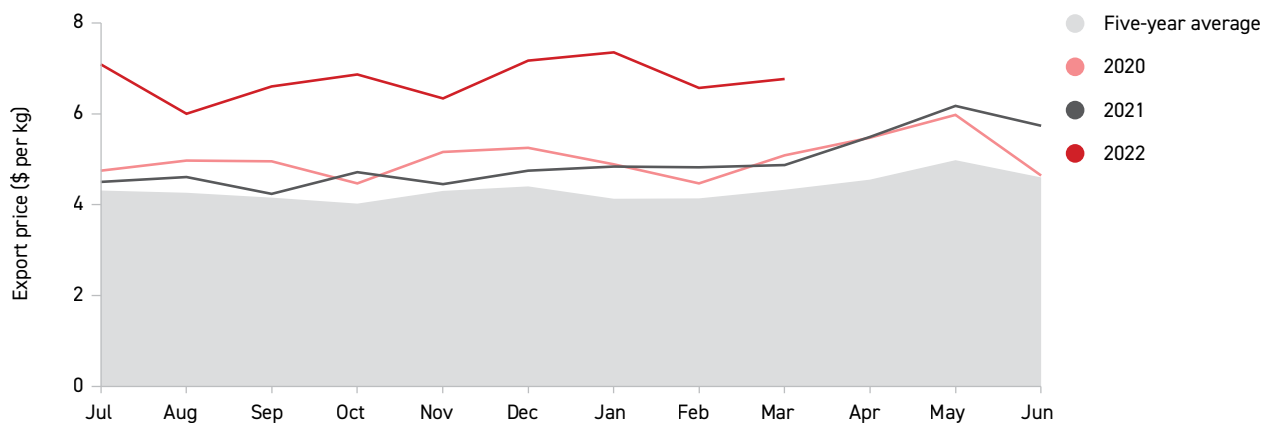
Edible offal prices up, volumes down

Edible offal export revenue category is forecast to increase 23 percent to \$390 million in the year to 30 June 2022. This increase is driven by 42 percent growth in offal prices. These high prices reflect lower animal processing in Australia and South America and growing demand for lower-priced red meat (such as livers and tongues) in the context of rising food inflation (Figure 33). Demand is predominantly being driven out of Japan, the US and South Korea.

Offal export volumes are forecast 10 percent lower in 2021/22, partially attributable to lower throughput and labour shortages in processing plants reducing the ability to process the entire animal. For 2022/23, export revenue is only forecast to increase 4 percent due to constrained global supplies supporting prices and recovering animal processing capacity. Offal exports account for 48 percent of the other meat forecast category by value and includes products such as brains, hearts, kidneys, livers and tongues from all animal species.

Figure 33: Edible offal prices performing well above average in 2021/22

Year to 30 June, monthly



Source: Stats NZ.



Alternative proteins

Background

MPI's Economic Intelligence Unit (EIU) prepares economic, financial and market insights reports that tackle key issues in the food and fibre sector. One of the EIU's important functions is to understand the sector implications of new products and technologies, particularly those with the potential to drive primary sector transformation.

Alternative protein is an evolving area with the potential to have a game-changing impact on global consumer preferences and consequently the demand for protein exports like dairy and red meat. A recent study estimates one in every 10 protein products sold in 2035 will come from alternative protein sources. Some reports suggest alternative proteins will be superior across many key consumer attributes such as nutrition, health, taste and convenience. They also outline the

incredible variety of products that could be brought to market by innovation in the alternative protein space.

New Zealand's optimal response to these developments will depend on the scale, breadth and timing of innovation as well as the ability of alternative proteins to deliver to core consumer needs such as taste, texture, variety, nutrition, health, convenience, sustainability and price. Alternative proteins will also face culture-related barriers to their acceptance in different export markets, which could be reflected in market access decisions. While there will be strategic risks to the food and agriculture sector, alternative proteins also offer potential opportunities to diversify on-farm production and build new income streams.



In 2021, new investment in alternative proteins continued to accelerate to reach \$5 billion, spread across plant-based (\$1.9 billion), fermented (\$1.7 billion) and cultivated (\$1.4 billion) protein, globally.

This investment came from a mix of both public and private investment. The number of alternative protein companies, brands and product options has similarly increased in line with this investment. The last couple of years have seen a surge in activity in this space globally. The number of alternative protein companies has grown rapidly since 2020 with a focus on cultivated and fermentation-based proteins. More brands with alternative meat options have hit the shelves. Given the environmental credentials and increasing market potential of alternative meat proteins, investment continues to rise both from public and private funding sources (Table 10).

Table 10: Alternative protein investment summary, 2010–21

Category	Invested capital			One-year growth (2010–21)	Largest rounds (2021)
	2021	2020	All time (2010–21)		
Total alternative protein	\$5.0b	\$3.1b	\$11.1b	+60%	\$500 million Impossible Foods
 Plant based	\$1.9b	\$2.1b	\$6.3b	-	\$500 million Impossible Foods
 Fermentation	\$1.7b	\$600m	\$2.8b	3x	\$350 million Nature's Fynd and Perfect Day
 Cultivated	\$1.4b	\$400m	\$1.9b	3x	\$347 million Future Meat Technology

Source: GFI State of the Industry report.

MPI's research on alternative proteins

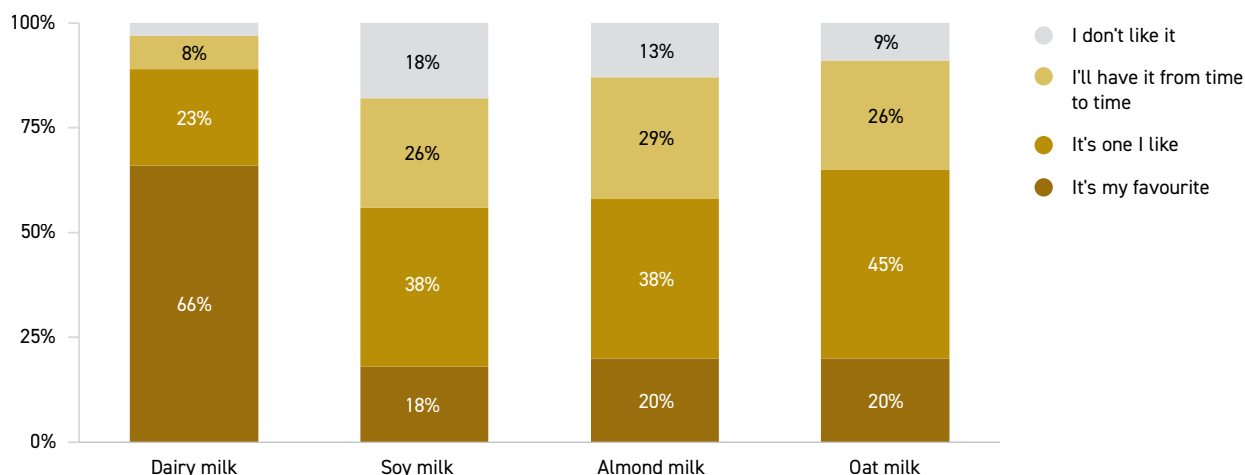
Initial EIU effort focused on understanding consumer attitudes and reactions to hero products in the alternative protein space such as the Impossible Burger. At the same time, investment patterns were tracked to understand the focus of investment, the strategies being employed to raise capital and the scale of that investment. New product launches were also monitored to identify the consumer benefits being promoted and the entry price points of products in different markets.

More-recent work has centred on understanding the implications of alternative proteins on New Zealand's primary industries in the coming decade, including the potential size and timing of impact. Extensive market research has already been undertaken with more under way to address these key questions.

In late 2021, a consumer-based assessment of the potential of alternative milk was undertaken in five key markets (China, US, Australia, Indonesia and New Zealand). The focus of the research was the fluid milk category, a key battleground for alternative milk as it seeks to build consumer relevance and acceptance. This provided a clear read on the current state of consumer preference for alternative milk versus dairy milk as this product format is where they both compete in their most pure, unmodified form (not as an ingredient).

The results showed strong consumer preference for dairy milk compared with current plant-based alternatives across all markets, mostly driven by the relative strength of dairy milk on the important consumer choice drivers of fresh, nutritious and healthy (Figure 34). On the less-important choice driver "is better for the environment", plant-based alternatives such as soy, almond and oat milk only marginally outperformed dairy. Until alternative milk products build their offer around the core product needs of consumers in this category (including taste and value for money), they are unlikely to represent a short-term threat to dairy milk.

Figure 34: Consumer preference by fluid milk type – five key markets



Source: EIU Alternative Milk Consumer Survey, 2021.

In early 2022, the EIU started a broader piece of work investigating alternative meat proteins with a specific focus on red meat. This research aims to understand the global alternative meat proteins sector through both a demand-side and supply-side lens. The key objectives of this research include:

- developing an in-depth knowledge of alternative meat proteins that already compete in the red meat space as well as emerging options;
- understanding the demand drivers for alternative meat proteins and the extent to which this demand will act as a substitute or be incremental to the demand for traditional meat protein;
- understanding the key drivers and challenges for the alternative meat proteins industry;
- mapping the key features of New Zealand's red meat trade and examining the role alternative proteins might play in the food security responses of different governments;
- understanding the implications of alternative meat proteins from a global trade perspective.

Given the breadth and depth of these objectives, the views of key demand-side and supply-side stakeholders will be critical to understanding the most probable future scenarios to prepare for.

Supply-side risks and opportunities

In-depth stakeholder interviews have already been undertaken with alternative meat protein producers, innovation hubs, universities and traditional meat protein companies to understand supply-side risks and opportunities. These stakeholders have included start-ups, established companies and R&D centres such as FoodHQ, which will be pivotal to domestic production growth. This work has been supported by quantitative scenario modelling that has concentrated on examining the potential disruption effects of alternative proteins and their implications for global trade.

Demand-side potential

To understand the demand-side potential of alternative meat proteins, a structured consumer survey is ready to be launched in six countries. These represent a mix of current key markets and potential future growth markets for the red meat sector. A total of 1,000 interviews will be conducted with household shoppers in the US, UK, China, Germany, Indonesia and Japan. Survey questions will explore the factors driving consumers towards alternative meat proteins, future consumption intentions and relevant context around in-store decisions, in-home cooking, in-restaurant menu choices and on-plate satisfaction.

Next steps

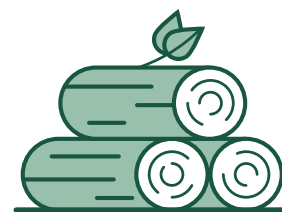
A series of reports will start being released in the third quarter of 2022. Based on the initial supply-side interviews and modelling, the impact of alternative meat proteins on New Zealand's red meat industry is likely to be low in the near to medium term. Long-term impacts could be considerable depending on factors related to upscaling of new technologies and consumer acceptance.

New Zealand red meat companies are prepared and well positioned to respond to immediate competition from plant-based meats. There is already a strong focus on future-proofing initiatives such as carbon-zero beef and recent innovation around blended and hybrid products.

Te Puna Whakaaronui, New Zealand's food and fibre sector think tank, is also preparing to publish a focused report on the potential direction of alternative protein development. This follows on from the recent release of its inaugural report: *WELL_NZ- Reframing New Zealand's Food Sector Opportunities*.



Forestry



- New Zealand's forestry export revenue is forecast to decrease to \$6.2 billion for the year to 30 June 2022, down 4 percent from the previous year. Slowing production is contributing to the decrease despite high prices.
- Log export volumes are expected to decrease 15 percent, while domestic processed consumption volumes are expected to increase 12 percent in the year to 30 June 2022. With high shipping prices and ongoing supply chain disruptions, New Zealand's export outlook remains uncertain.
- Log harvest volumes are set to be 34.4 million cubic metres in the year to 30 June 2022, down 10 percent from a record 37.7 million cubic metres last year. Roundwood available for harvest is expected to remain at historically high levels over the forecast period.
- China's lockdowns, the Russia-Ukraine conflict and the COVID-19 Omicron variant are driving higher uncertainty. While exporters benefit from rising export prices, they are also affected by increased operating costs, high shipping prices and port congestion. This puts downward pressure on profits and is disincentivising roundwood removals.

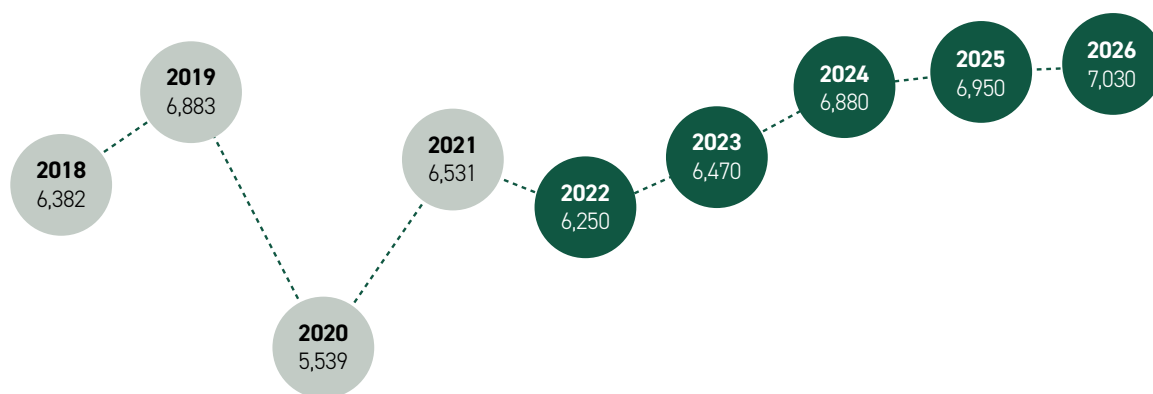
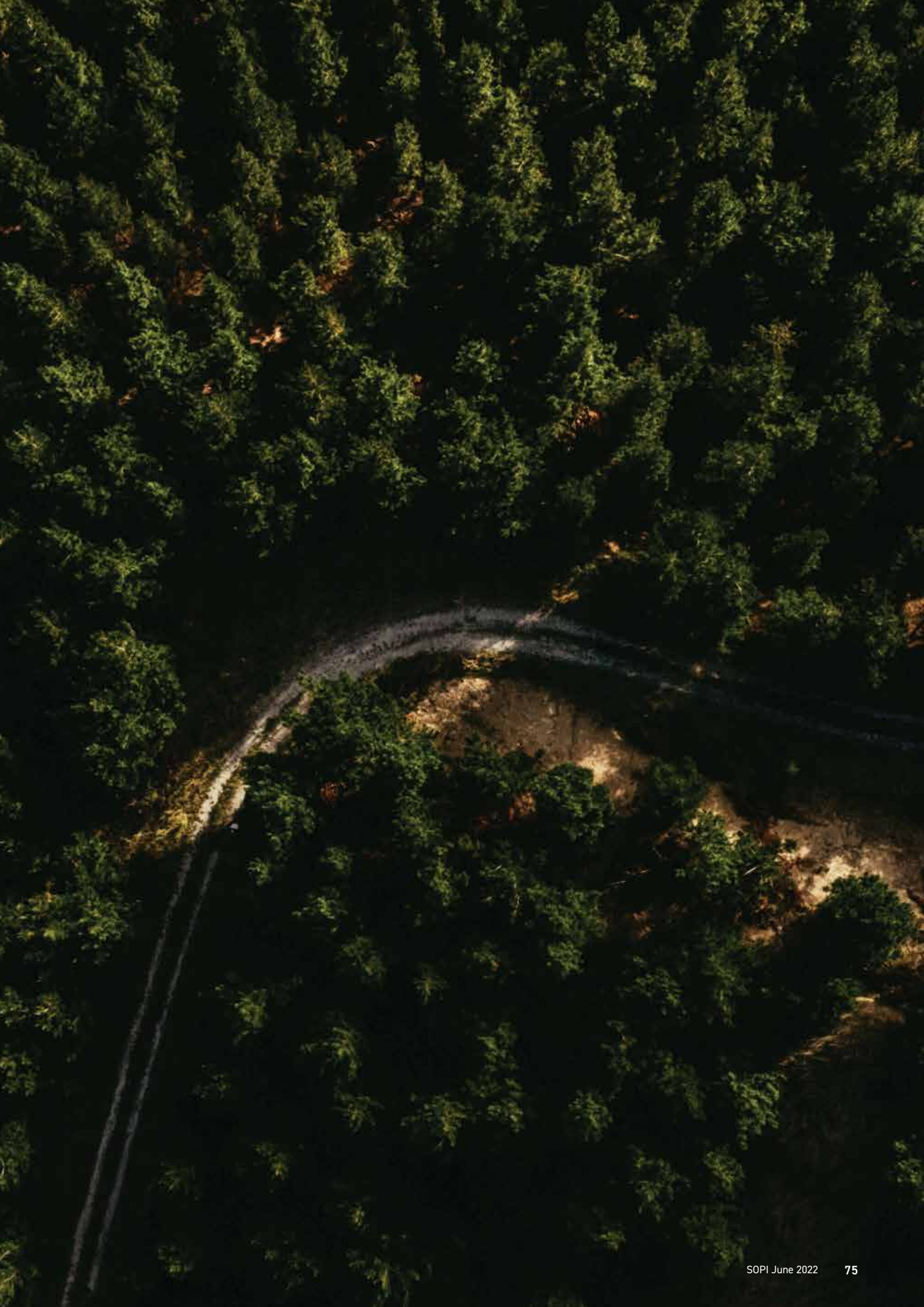


Table 11: Forestry export revenue 2018-26

Year to 30 June, NZ\$ million

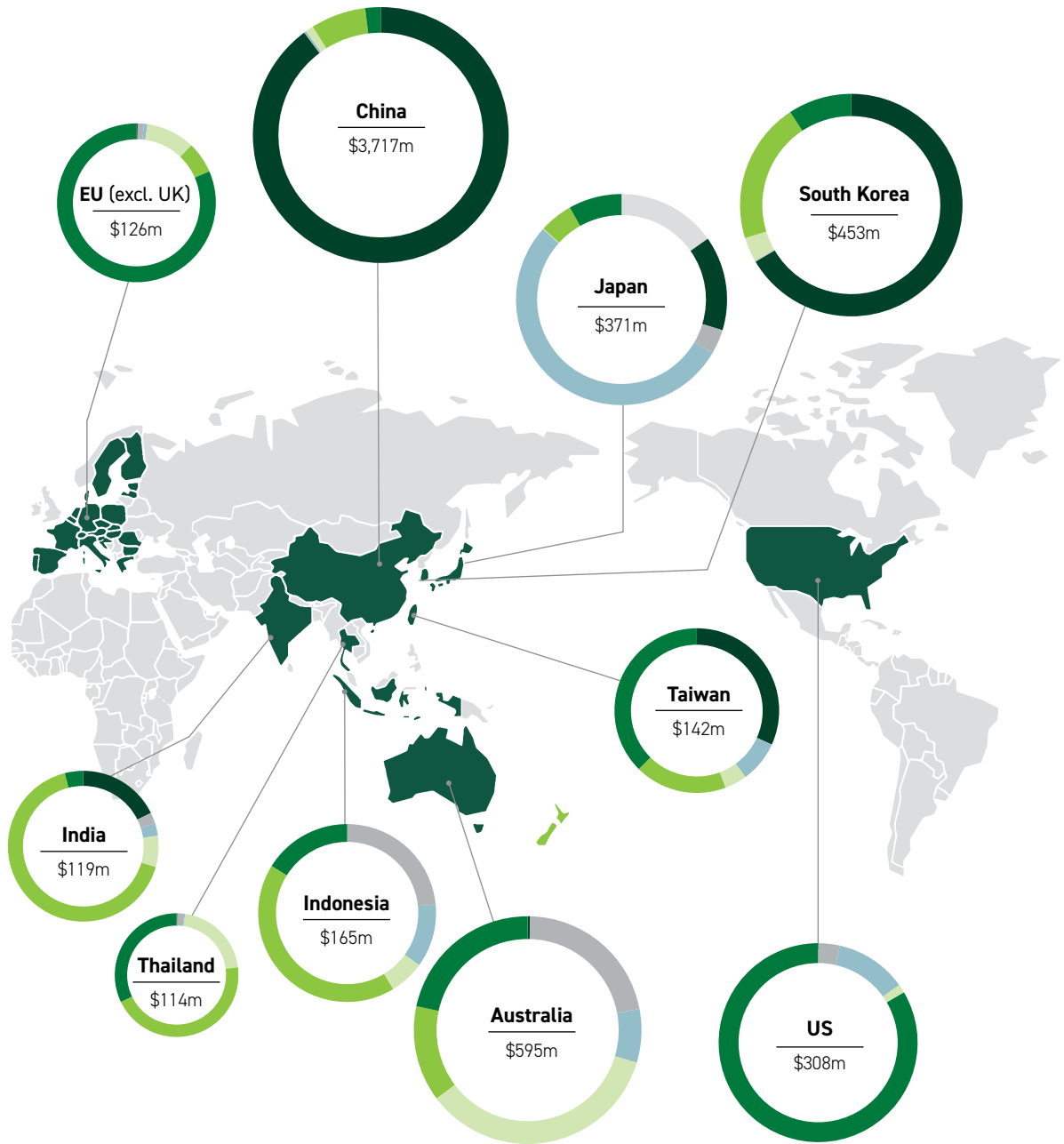
Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Logs	3,337	3,806	2,877	3,854	3,400	3,550	3,890	3,910	3,960
Sawn timber and sleepers	890	936	809	910	960	1,010	1,050	1,080	1,090
Pulp	828	812	646	663	750	740	750	760	770
Paper and paperboard	491	491	492	438	430	430	430	420	420
Panels	501	514	438	389	420	450	470	470	480
Woodchips	56	67	56	61	60	60	60	60	60
Other forestry products*	281	257	222	215	230	230	230	240	240
Total export value	6,382	6,883	5,539	6,531	6,250	6,470	6,880	6,950	7,030
Year-on-year % change	16%	8%	-20%	18%	-4%	4%	6%	1%	1%

* Includes structural or moulded wood, furniture and prefabricated buildings. Percentages in the table are rounded to the nearest whole percent. Source: Stats NZ and MPI.



Top 10 forestry export destinations

Year to 31 March 2022, NZ\$ million

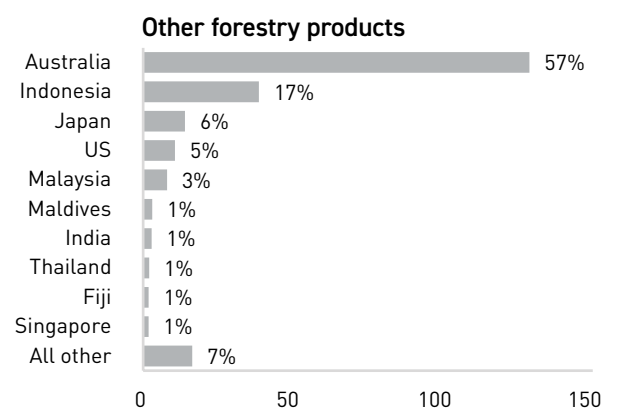
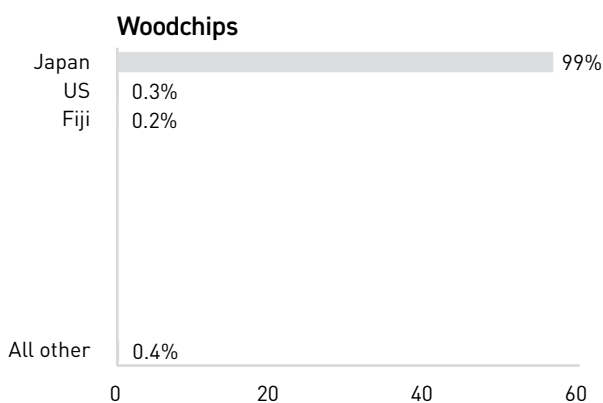
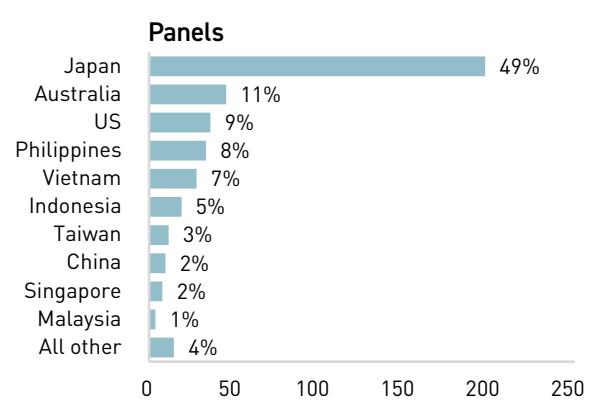
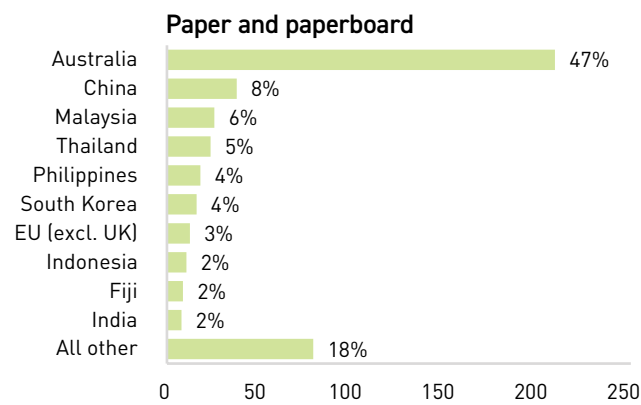
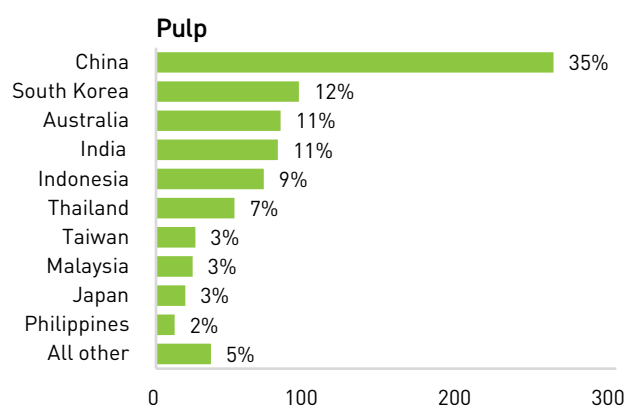
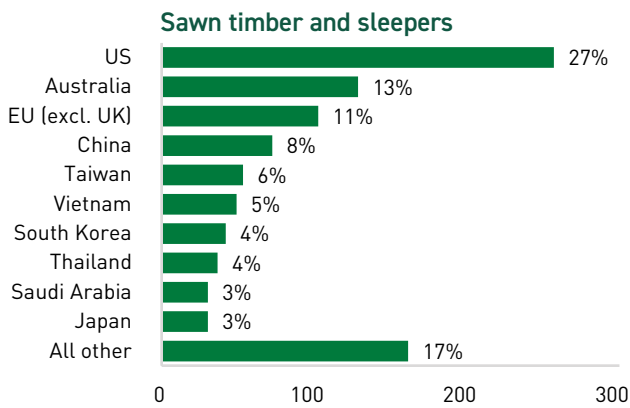
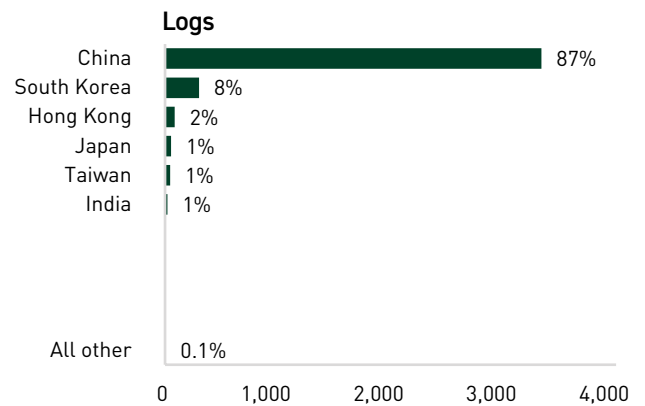
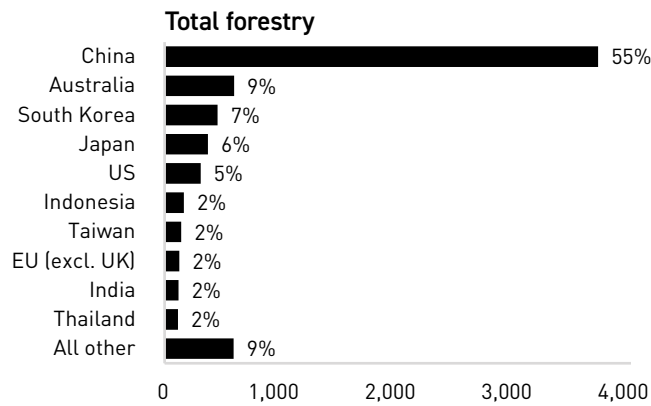


Product	Export revenue (NZ\$ million)	% of total
Logs	3,849	57%
Sawn timber and sleepers	964	14%
Pulp	750	11%
Paper and paperboard	448	7%
Panels	406	6%
Woodchips	57	1%
Other forestry products	228	3%
Total	6,701	100%

Source: Stats NZ.

Top forestry export markets

Year to 31 March 2022, NZ\$ million and percent



Source: Stats NZ.



New Zealand's high wood availability meets uncertainty

Roundwood harvest and export volumes are expected to drop

Following an all-time high harvest of 37.7 million cubic metres last year, roundwood harvest volumes are set to drop to 34.4 million cubic metres in the year to 30 June 2022 (Figure 35). This lower harvest is driven by New Zealand's Delta and Omicron outbreaks, high shipping prices and demand uncertainty in key log export markets. Profits are uncertain as growers absorb high shipping costs and pay for delays. Roundwood removals are expected to slow, likely until margins become more predictable when port congestion improves.

New Zealand's forestry export revenue is forecast to drop to \$6.2 billion in the year to 30 June 2022, down 4 percent from the previous year on the back of a 14 percent fall in roundwood equivalent export volumes. This fall is mostly driven by a decrease in log exports, which have been falling since the June 2021 quarter. In the March 2022 quarter, log export volumes were 16 percent lower than the same quarter last year.

Over the forecast period, New Zealand is expected to have large volumes of roundwood available for harvest due to increased afforestation in the mid-1990s. Roundwood available for harvest from 2022 to 2026 is forecast to sit around 35–38 million cubic metres per year. As logistics disruptions ease and infrastructure projects increase in China, New Zealand is likely to be in a good position to meet supply. Harvests are expected to increase to 35.8 million cubic metres in the year to 30 June 2023 (Figure 35).

Table 12: Forestry production, prices and export volume 2018–26

Year to 30 June, thousand cubic metres roundwood equivalent

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Harvest volume	34,821	36,872	31,879	37,675	34,400	35,800	37,500	37,500	37,600
Log export volume	20,333	22,571	18,928	23,555	20,000	21,500	23,300	23,300	23,400
Domestic processed input volume	14,488	14,300	12,949	14,120	14,400	14,300	14,200	14,200	14,200
Estimated processed exported input volume	8,000	7,851	7,140	7,180	6,600	6,800	7,300	7,400	7,500
Estimated domestic processed consumption input volume	6,488	6,449	5,811	6,940	7,800	7,500	6,900	6,800	6,700
Average log export price (NZ\$)	164	169	153	163	171	165	167	168	170

Source: Stats NZ and MPI.

China's property market weighs on New Zealand log exports

China's property market has contracted for three straight quarters due to a tightening in lending following a government announcement against property speculation, which has changed buyer motivations. This means less demand for new builds as speculative investments are discouraged, placing downward pressure on the construction sector. In addition, liquidity problems and high levels of debt are still constricting some of China's main property developers. The Chinese construction market is one of the best predictors for log demand as it processes and uses the majority of New Zealand logs. China is also a major export destination for sawn timber.

In response to low real estate market demand, Chinese banks have decreased rates in many cities, and the government has advised it will loosen regulatory policies and increase infrastructure spending to support construction. This change will likely take several quarters to take effect, and speeding up construction may prove to be difficult as China faces its largest outbreak of COVID-19 to date. However, investment in the construction sector puts upward pressure on the log demand outlook over the medium term and should support export prices. China's construction sector is expected to grow at a more steady rate in the future compared with previously.

The domestic market is supported by high home building consents in the near term

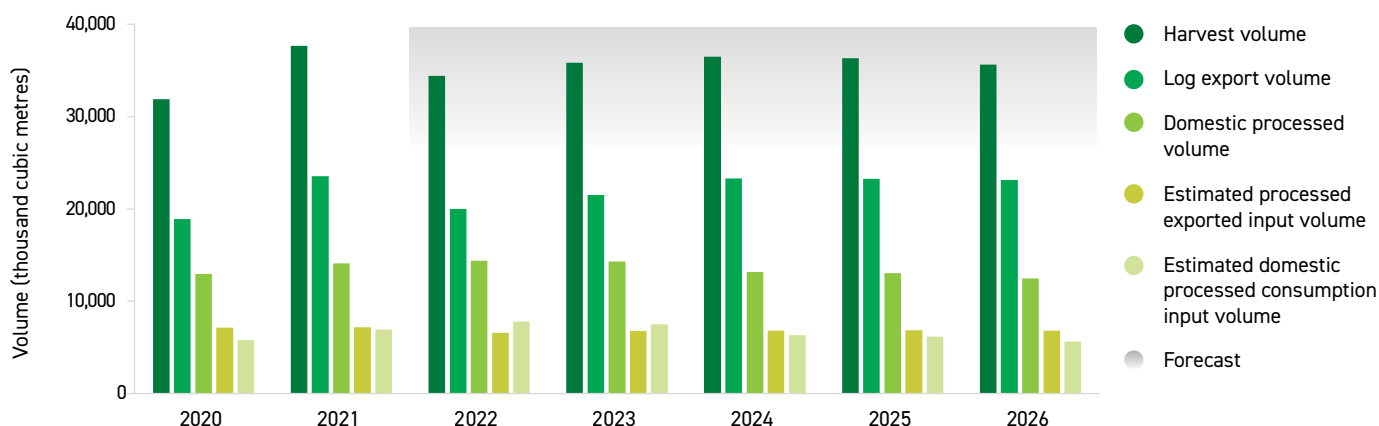
Domestic processed and consumed volumes converted into cubic metres of roundwood is expected to increase 12 percent in the year to 30 June 2022 (Figure 35). Domestic consumption of wood products has been supported by low interest rates and historically high home building consents. In the year ended March 2022, new dwelling consents were up 24 percent from the year ended March 2021.

Rising interest rates are forecast to lower investment in the construction and property sector. Price increases, wage increases and supply issues for complementary materials are contributing to cost increases, and projects are taking longer to complete.

Domestic demand for wood products is expected to remain strong in the short term as the high levels of new projects take time to complete. In the medium term, domestic demand is expected to slow as the construction sector sees decreased investment.

Figure 35: Harvest by export volumes and domestic consumed volumes

Year to 30 June, thousand cubic metres roundwood equivalent



Source: Stats NZ and MPI.

Log export revenue is expected to drop due to lower export volumes

Log exports are forecast to drop by 12 percent to \$3.4 billion for the year to 30 June 2022. Prices remain relatively high, but export volumes have decreased (Figure 36). Export volumes fell 12 percent in the nine months to 31 March 2022 compared with the same time last year, mostly due to heightened uncertainty in logistics. A substantial portion of the decrease was attributed to the roughly 40 percent of forests owned by small-size growers who are not willing to risk the uncertain profits in export markets. Larger growers will continue to harvest regularly to supply their long-term customers.

Under normal conditions, production ramps up in response to higher prices. However, in the current environment, production is being hampered by high shipping costs, putting downward pressure on demand and profits. Port congestion is contributing to the uncertainty and putting further pressure on profit margins as growers have to pay for delays, disincentivising harvest. Logistics issues are forecast to remain an issue until 2023, affecting production over this period. China's lockdowns and the Russia-Ukraine conflict have increased logistics disruptions in recent months. More recently, China also has elevated log inventories at port as COVID-19 disrupts logs flowing out, decreasing its capacity to take New Zealand's logs in.

Construction in China has slowed due to high levels of debt among its main developers and stricter lending policies. This slowdown is now exacerbated by the country's latest COVID-19 outbreak, further putting downward pressure on demand and prices as port congestion increases and projects slow. Despite this, supply and demand dynamics in China are keeping upward pressure on New Zealand log prices. Log prices are driven by the Chinese market, New Zealand's top export destination with 87 percent of logs shipped there in the year to 30 June 2022.

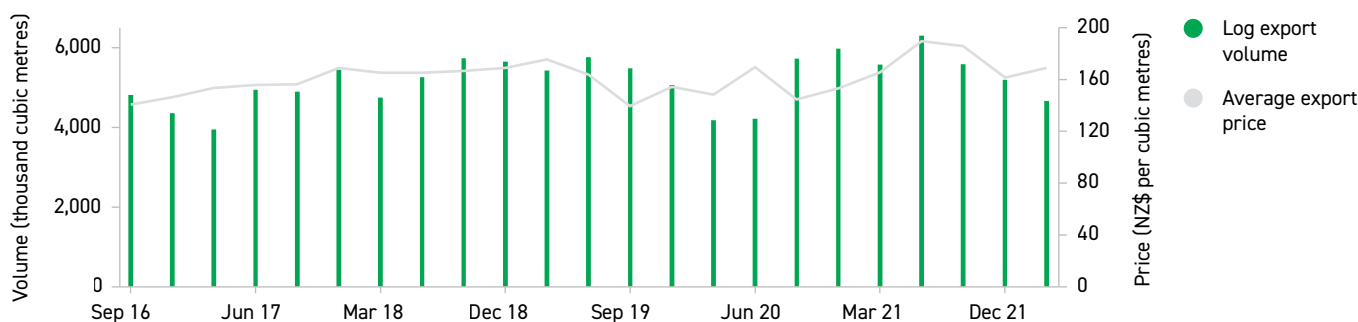
Currently, China has limited options as to where it can source logs. This constrained supply has resulted in New Zealand log exporters achieving higher than usual export prices in the Chinese market. The Chinese Government has banned log imports from Australia and Lithuania and has new customs regulations on pine imports from the US and Canada. In addition, Europe has stopped imports of sawn timber from Russia and Belarus, which has put pressure on the domestic supply market to fill the gap. This means lower exports from Europe to China. Alongside this, continuing supply chain issues, including difficulties accessing containers, will reduce the volume of log exports from Europe to China. Log supply to China from South America continues to be subdued due to high freight costs. These supply constraints are generally outweighing the drop in demand from China, keeping prices relatively high.

Log export volumes to India as a proportion of total exports are forecast to fall 7 percent to 0.1 percent in the year to 30 June 2022 from three years ago. The market decline is partly due to increased competition from Australia and Uruguay. In 2020, exports dropped substantially as a result of the implementation of regulations by the Environmental Protection Agency (EPA) regarding recapture of methyl bromide used to fumigate logs. In the March 2022 quarter, log exports stopped completely upon a decision by the EPA to further restrict methyl bromide fumigation to small quantities (allowing containerised only). The EPA has approved a new fumigation product, ethanedinitrile (EDN). MPI is awaiting confirmation for India's approval to allow methyl bromide to be applied in India upon arrival. The Indian market presents diversification and growth prospects that should support demand in the long term.

Looking ahead, there is a high level of uncertainty. Shipping costs and port congestion are likely to remain elevated into the medium term. China's construction industry is experiencing a slowdown, but infrastructure investment and a loosening of policies by the government is expected to increase demand for logs in the medium term. As a result, log exports are forecast to reach \$3.6 billion for the year to 30 June 2023.

Figure 36: Log export volumes decrease as prices rise

Export volume in thousand cubic metres and export price in NZ\$ per cubic metre



Source: Stats NZ and MPI.



Record prices in the sawn timber market

Sawn timber export revenue is forecast to reach \$960 million in the year to 30 June 2022, up 5 percent compared with last year. Sawn timber prices have been historically high in the first three quarters to the year to 30 June 2022. Up to 31 March 2022, average sawn timber export prices were \$660 dollars per cubic metre compared with \$535 dollars in the year to 30 June 2021, 23 percent higher. High prices are being supported by strong domestic and overseas demand while production remains relatively stable. Issues such as Omicron, rising cost of inputs, wage increases and labour availability have prevented an increase in production despite domestic log prices being much more stable than the current volatile export prices.

Exported volumes have decreased as an increasing proportion of sawn timber is being sold domestically (Figure 37). The proportion of timber produced for domestic consumption has risen to 49 percent for the year to 30 June 2022 compared with 38 percent for the previous year. Low interest rates earlier in the year and high construction consents are causing this switch, reducing export volumes. Over the medium term, this trend is forecast to cool as domestic interest rates rise and construction slows.

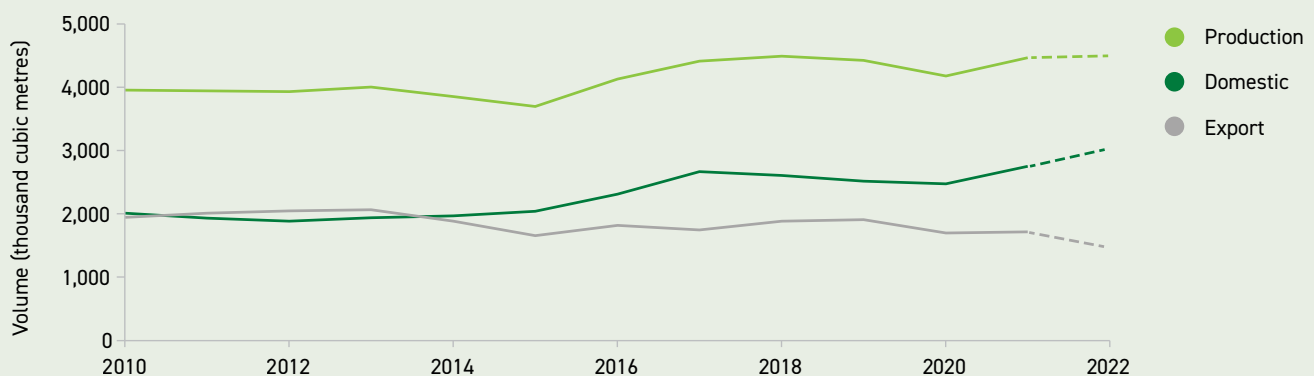
Australia and the US have both experienced strong construction growth in recent years. However, both countries are now raising interest rates to control inflation, which is expected to slow growth. Over the long term, this is expected to reduce demand for sawn timber as construction activity cools in response.

Decreased demand from China has reduced the amount of timber New Zealand exported there by about 40 percent, likely reflecting increased competition from Russia and China's construction slowdown. However, the trend of decreasing exports has happened to other main consumers such as the US and Australia. High shipping prices are likely a big contributor to this as well as domestic demand increasing. Timber was increasingly sent to a diverse range of countries. In the year to 30 June 2022, South Korea doubled the amount of New Zealand timber it consumed. This is a result of South Korea's construction industry bouncing back following a contraction due to COVID-19 in 2021. The proportion of the value of exports sent to countries other than China, Australia and the US rose from 45 percent to 54 percent.

Looking ahead to the year to 30 June 2023, timber export revenue is forecast to grow to \$1 billion. Global supply is likely to remain constrained, keeping prices high. Demand may slow over the medium term as major export countries raise rates, putting downward pressure on construction. From 2023 onwards, sawn timber prices are expected to slow while export volumes are forecast to grow as domestic demand eases.

Figure 37: Domestic demand for sawn timber increases

Year to 30 June, thousand cubic metres



Dotted lines are forecast years.
Source: Stats NZ and MPI.

Pulp exports supported by high prices

Pulp export revenue is expected to reach \$750 million in the year to 30 June 2022, 13 percent higher than last year. Average pulp export prices for the year to 30 June 2022 have risen 15 percent compared with the previous year. Pulp production has decreased in the last few years along with export volumes and domestic consumption (Figure 38). The closure of paper mills and decreased demand for paper products in the domestic market as well as high shipping costs have contributed to the decrease in production. However, high prices are supporting a projected increase in export output. Production has decreased in line with log harvests but increased in the December quarter in response to higher prices. Production is set to be relatively flat over the forecast period as there is considerable price uncertainty.

Upward pressure on pulp prices remains as a result of increased demand for hygiene products following the pandemic. Europe cannot source wood from Russia, meaning European pulp producers have curbed production, decreasing global supply. Latin American pulp production has increased to partially offset the decreased supply.

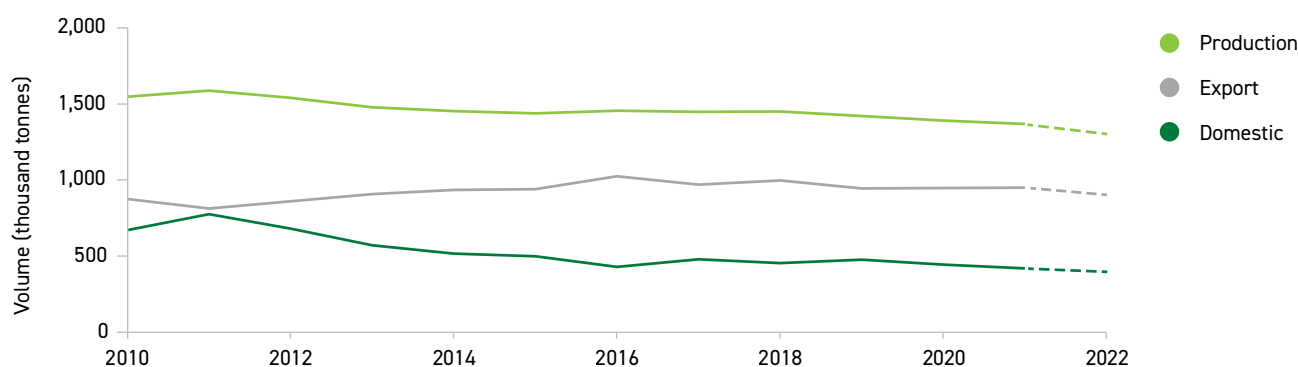
Increased exports to Australia, India and Thailand are all contributing to higher pulp export revenue. South Korea has also ramped up pulp imports from New Zealand as urbanisation and middle-class growth drives more people to consume paper products such as tissues and packaging products.

However, the Chinese market has suffered a setback. Pulp exports to China have decreased for the year to 30 June 2022. This is likely the result of China increasing its own capacity in converting wood into pulp by incentivising companies to expand into China as part of its five-year plan. China still consumes the highest proportion of New Zealand pulp exports at 35 percent, down from 42 percent for the year to 30 June 2022.

Demand for pulp is forecast to remain strong in the short term with global supply constraints resulting from sanctions in the wake of the Russia-Ukraine conflict. Increased demand for end-use pulp products is a continuing trend in Asia as the middle class grows. In addition, the trend away from plastic products towards corrugated packaging is likely to increase demand for pulp in future years. Prices are forecast to come down from all-time highs but remain strong while production remains relatively stable. Pulp exports for the year to 30 June 2023 are forecast to decrease slightly to \$740 million. For the remainder of the forecast period, export values are expected to increase steadily to \$770 million by 2026.

Figure 38: Pulp production continues to fall

Year to 30 June, thousand tonnes



Dotted lines are forecast years.
Source: Stats NZ and MPI.

Paper and paperboard outlook is relatively stable

The value of paper and paperboard exports is forecast to drop 2 percent to \$430 million for the year to 30 June 2022. In the first three quarters of the year to 30 June 2022, export volumes for paper and paperboard dropped 12 percent compared with the previous year. Average export prices have decreased 5 percent between the year to 30 June 2021 and the year to 30 June 2022.

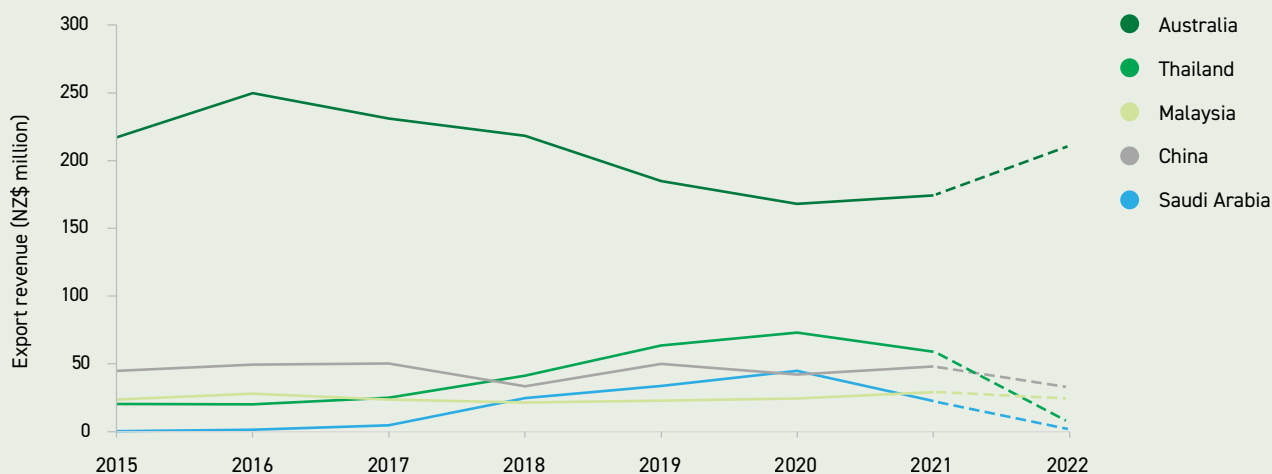
Australia remains New Zealand's largest export market, responsible for 48 percent of total export values, reflecting strong demand for paperboard. This compares with 40 percent in the year to 30 June 2021. China has imported less paper products, likely reflecting the country's slowdown, as it requires less paperboard to package products and increased investment in pulp processing.

Exports to Thailand and Saudi Arabia have declined. The proportion of paper and paperboard sent to Thailand and Saudi Arabia was 19 percent in the year to 30 June 2021, and this now sits at 2 percent (Figure 39). This loss is likely linked to increased competition from China and higher demand from Australia, which is closer geographically. The loss of demand from two big markets puts downward pressure on prices. Increased exports to Australia have partially offset this, along with Germany increasingly importing New Zealand paper.

Since the peak in export value in the year to 30 June 2009, paper and paperboard exports have been steadily declining. This is mostly due to increased competition in the domestic market, pricing out New Zealand's producers. Looking forward, there is no reason to believe this will change. Paper and paperboard exports are expected to remain stable to \$430 million in the year to 30 June 2023 and decrease to \$420 million by 2026.

Figure 39: Paper and paperboard exports to Australia increase

Year to 30 June, export revenue in NZ\$ million, by destination



Dotted lines are forecast years.
Source: Stats NZ and MPI.





Japan demands more panels

Panel export revenue was down 11 percent to \$389 million in the year to 30 June 2021 but is forecast to bounce back to \$420 million for the year to 30 June 2022. This 8 percent increase is driven by higher average export prices. The downturn in 2021 was primarily due to decreased demand from Australia and Japan. Panel export demand and prices are correlated with the strength of property and construction sector in export markets. The downturn in Japan was primarily due to disruptions in the construction sector from COVID-19. The Australian downturn is a more structural trend that has been occurring for some time.

For the year to 30 June 2022, demand in Japan has increased significantly, supporting growth in exports (Figure 40). In the first three quarters for the year to 30 June 2022, Japan has increased export values by 23 percent compared with the same three

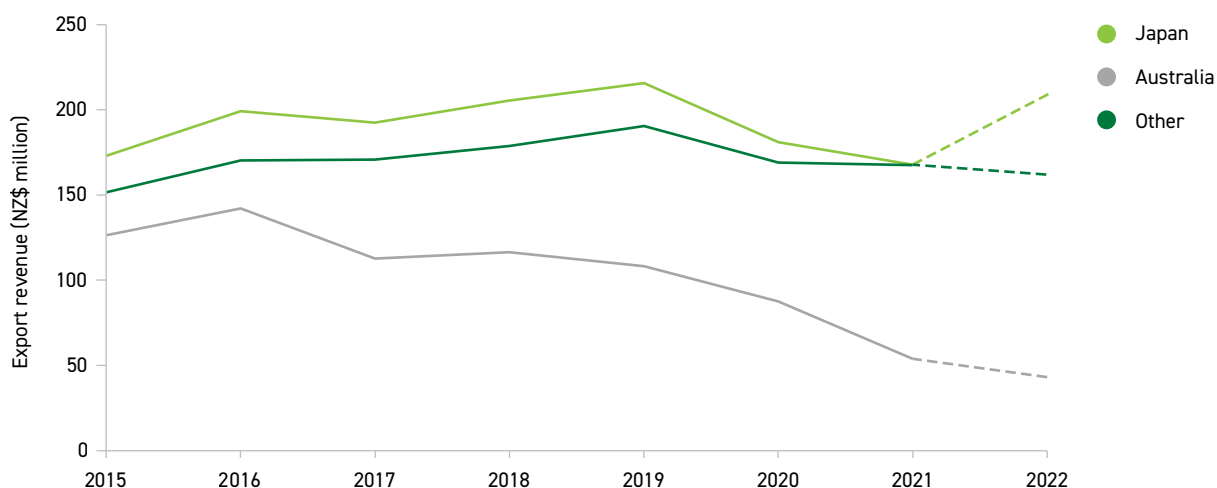
quarters in the previous year. The Japanese construction sector has recovered strongly after a COVID-19 induced slowdown. The government has increased investment in infrastructure, which is starting to show. Japan's construction industry is expected to grow 10.7 percent in 2022. This momentum is expected to continue at a strong rate over the forecast period.

The trend of Australia reducing panel imports has continued. From the peak of \$142 million in the year to 30 June 2016, exports to Australia have steadily decreased to just \$54 million last year. This trend is forecast to continue in the year to 30 June 2022 and is primarily being caused by a reduction in demand for plywood. The Australian construction industry is strong and total plywood imports are up, indicating that New Zealand producers are facing increased competition in the Australia market.

Panel exports are forecast to increase to \$450 million in the year to 30 June 2023. Demand from Japan is expected to be high, outstripping the demand drop from Australia. From 2023 onwards, export values are expected to grow at a steady rate to \$480 million in 2026.

Figure 40: Panel exports to Japan increase

Year to 30 June, export revenue in NZ\$ million, by destination



Dotted lines are forecast years.

Source: Stats NZ and MPI.

Horticulture



- Horticulture export revenue is forecast to rise 2 percent to \$6.7 billion for the year to 30 June 2022 driven by a larger kiwifruit crop and higher export prices for wine.
- Adverse climatic conditions in spring and late summer/autumn, influenced by the La Niña weather pattern, impacted the production and harvest of apples and pears and several vegetable crops. The main kiwifruit and wine growing regions escaped any major climatic impacts with record harvest volumes anticipated for gold kiwifruit and winegrapes.
- Consumer demand for New Zealand fresh fruit and wine has remained strong, and this is expected to continue.
- Industry responses to increased costs of production, seasonal labour shortages and logistics issues are expected to result in reduced or static planted areas for some crops in the short term and an accelerated investment in labour-saving and emissions-reducing technologies where practical.

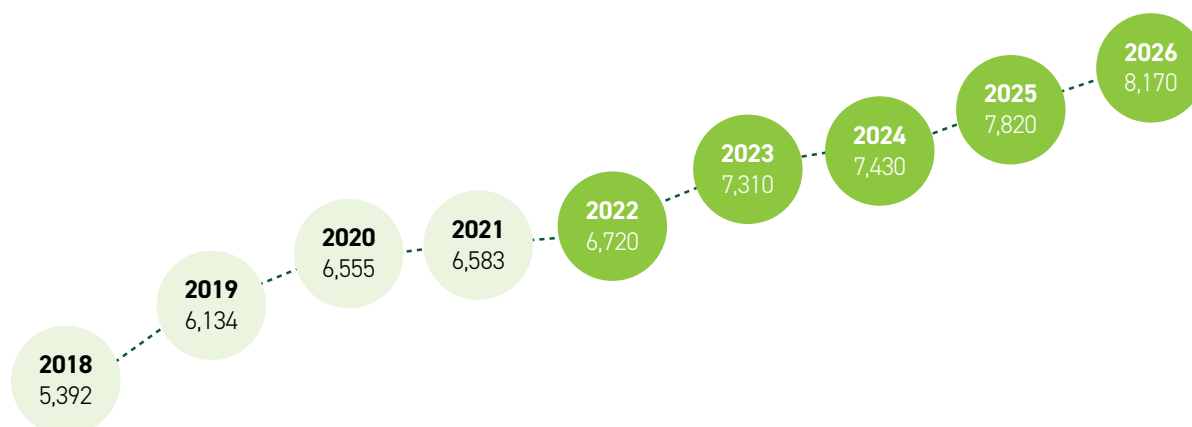


Table 13: Horticulture export revenue 2018–26

Year to 30 June, NZ\$ million

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Kiwifruit	1,861	2,302	2,534	2,705	2,800	2,990	3,160	3,400	3,590
Wine	1,694	1,807	1,909	1,858	1,940	2,180	2,020	2,070	2,110
Apples and pears	745	839	885	831	900	940	1,040	1,110	1,180
Fresh* and processed** vegetables	622	696	721	634	630	700	690	710	730
Other horticulture***	471	489	506	554	450	490	520	540	570
Total export value	5,392	6,134	6,555	6,583	6,720	7,310	7,430	7,820	8,170
Year-on-year % change	4%	14%	7%	0%	2%	9%	2%	5%	4%

* Includes onions, squash, capsicum, potatoes and other fresh vegetables.

** Includes frozen vegetables (including frozen potatoes, peas, sweetcorn, etc.), dried vegetables, dry legumes, prepared and/or preserved vegetables and vegetable juices.

*** Includes other fresh fruit (including avocados, cherries, blueberries, etc.), frozen and processed fruit, fruit juices, nuts and ornamentals.

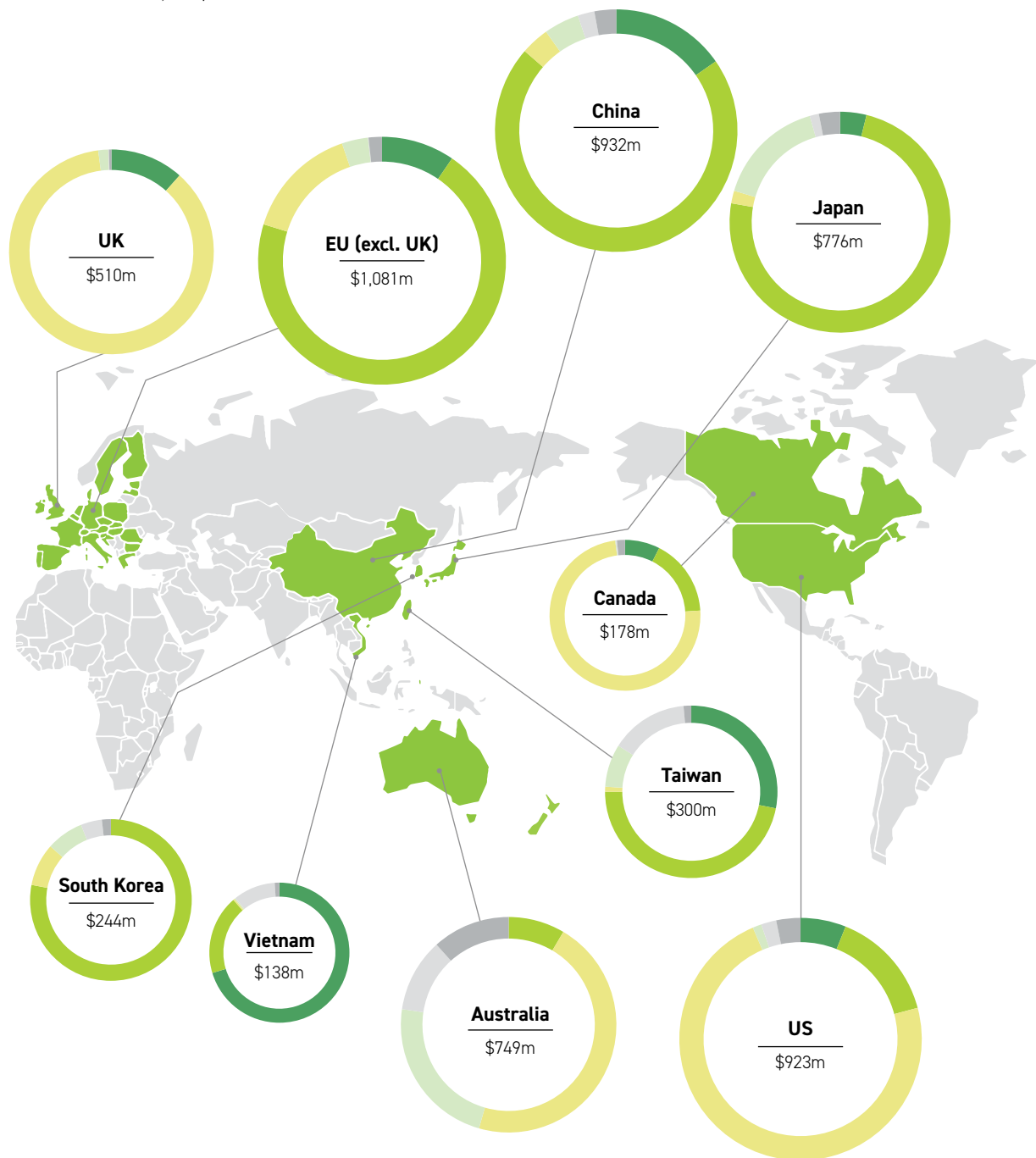
Percentages in the table are rounded to the nearest whole percent.







Source: Stats NZ and MPI.



Top 10 horticulture export destinations

Year to 31 March 2022, NZ\$ million



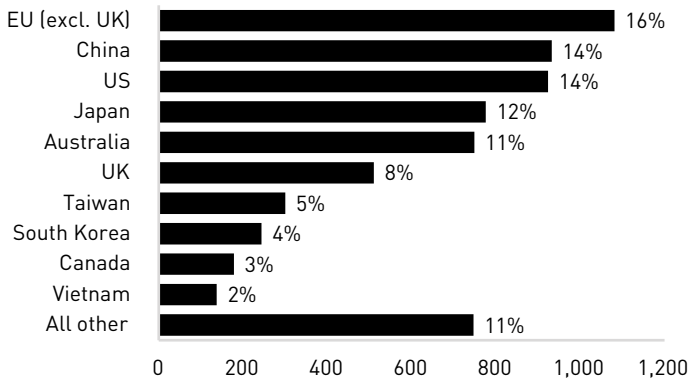
Product	Export revenue (NZ\$ million)	% of total
 Kiwifruit	2,747	42%
 Wine	1,897	29%
 Apples and pears	847	13%
 Fresh and processed vegetables	623	9%
 Other fresh fruit	161	2%
 Other horticulture	303	5%
Total	6,579	100%

Source: Stats NZ.

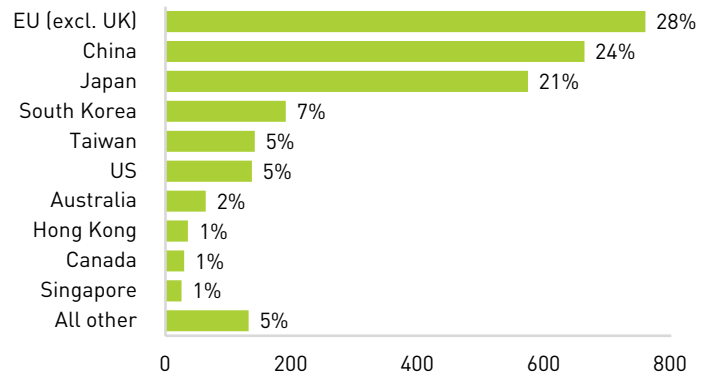
Top horticulture export markets

Year to 31 March 2022, NZ\$ million and percent

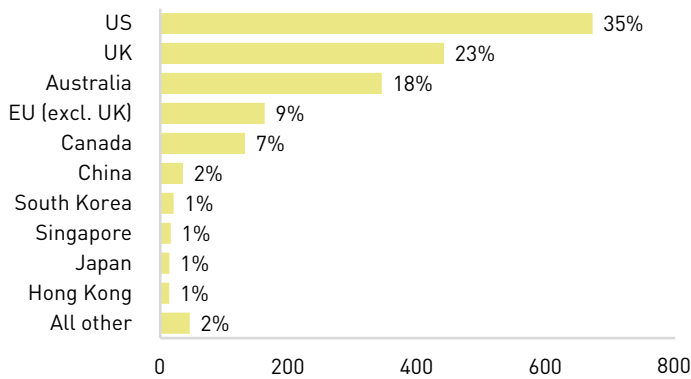
Total horticulture



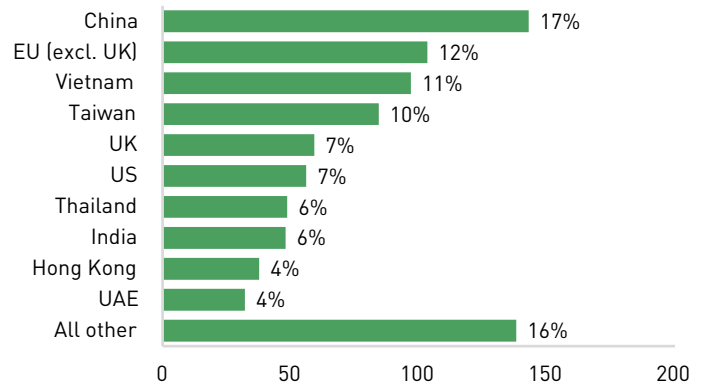
Kiwifruit



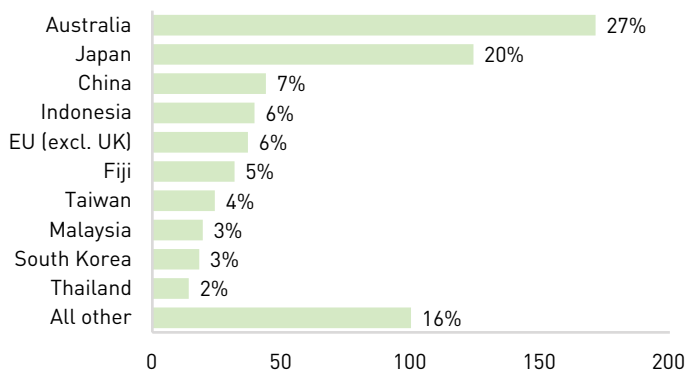
Wine



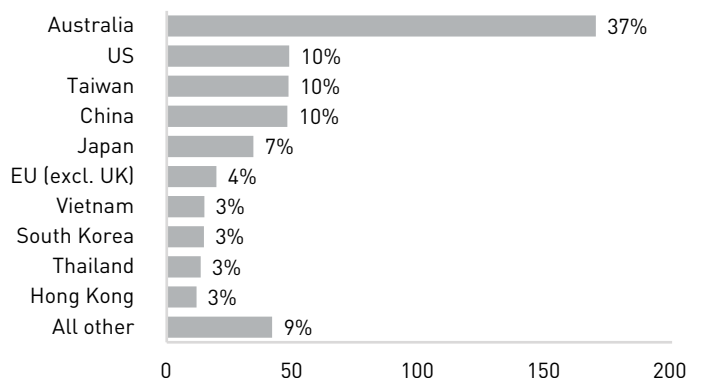
Apples and pears



Fresh and processed vegetables



Other horticulture



Apples and pears

The 2021/22 season has been challenging for New Zealand apple and pear growers and exporters. Community spread of the COVID-19 Omicron variant coincided with the peak harvest period, compounding existing labour shortages. Hawke's Bay, the main growing region, experienced unfavourable climatic conditions in spring and over the harvest period. COVID-19 induced disruptions, delays to shipping schedules, and shortages of refrigerated containers intensified this season.

As a result of these challenges, apple and pear production and export volumes for the 2022 crop are expected to be lower than the pre-harvest estimate and only slightly higher than the 2021 crop. Considerable uncertainty remains regarding final crop volumes.

Growers are likely to consolidate their plantings to the most profitable orchard blocks and varieties to mitigate increased production costs, constraints in seasonal labour supply and ongoing disruptions to shipping schedules in the short term. Annual export volumes are expected to increase steadily over the forecast period, assuming average climatic conditions, albeit at a slower pace than previous forecasts.

Production is expected to be below pre-harvest potential

Production of the 2022 apple and pear crop is expected to be substantially down on the pre-harvest estimate of 600,000 tonnes and only slightly above the 2021 crop despite an increase in planted area.

While there were no major frost or hail events in spring 2021, climatic conditions were not optimal over pollination, fruit set and the early stages of fruit growth with periods of dull and wet weather, in particular in the Hawke's Bay region (65 percent of New Zealand's apple and pear orchard area). Growing conditions were favourable in December and January with above-average temperatures helping lift fruit size. Increased cyclonic activity typical of the La Niña weather pattern brought three heavy rainfall events to the Hawke's Bay and Gisborne regions between February and April 2022, disrupting fruit ripening and harvest. The Nelson-Tasman region (24 percent of New Zealand's planted area) experienced more-favourable growing and harvest conditions with only a few rainy days interrupting harvest.

Production in the Nelson region is expected to be higher than last year's hail-affected crop. Indications from industry are that production in the Hawke's Bay region will be below pre-harvest estimates and is likely to be lower than last year's harvest. Contributing factors include:

- variable fruit numbers across orchard blocks and varieties influenced by weather conditions over pollination and fruit set;
- above-average incidence of russet on susceptible apple varieties, attributed to a cooler spring;
- periods of mild, cloudy weather between February and April, which delayed fruit colour development, with some crops having to be bypassed for export or not harvested;
- a shortage of labour at harvest exacerbated by staff absenteeism from COVID-19 infections and isolation requirements and wet weather reducing the number of harvest days.

Volumes of Envy™, Dazzle™ and Rockit™ apples are expected to be higher as new and recent plantings ramp up their production.

Investment in automation continues on orchards and in post-harvest facilities to improve labour efficiency and reduce emissions. Significant multi-year investments are being made in new coolstore and packhouse builds and upgrades. New orchard developments and replantings are in intensive narrow growing structures, which enable the use of mobile platforms to assist with harvesting and, in time, robotic harvesters.

Increasing costs of production, ongoing shortages of skilled and unskilled labour and the likelihood that shipping disruptions will continue until 2023/24 will put pressure on growers' profit margins in the short to medium term. Growers are expected to continue removing poorer-performing orchard blocks and varieties. Some growers may choose not to replant and to change land use or to sell their properties. For these reasons, forecasts of little or no increase in the total planted area of apples and pears over a two-year period are maintained. However, production will increase driven by recent plantings maturing and productivity gains from high-density plantings.

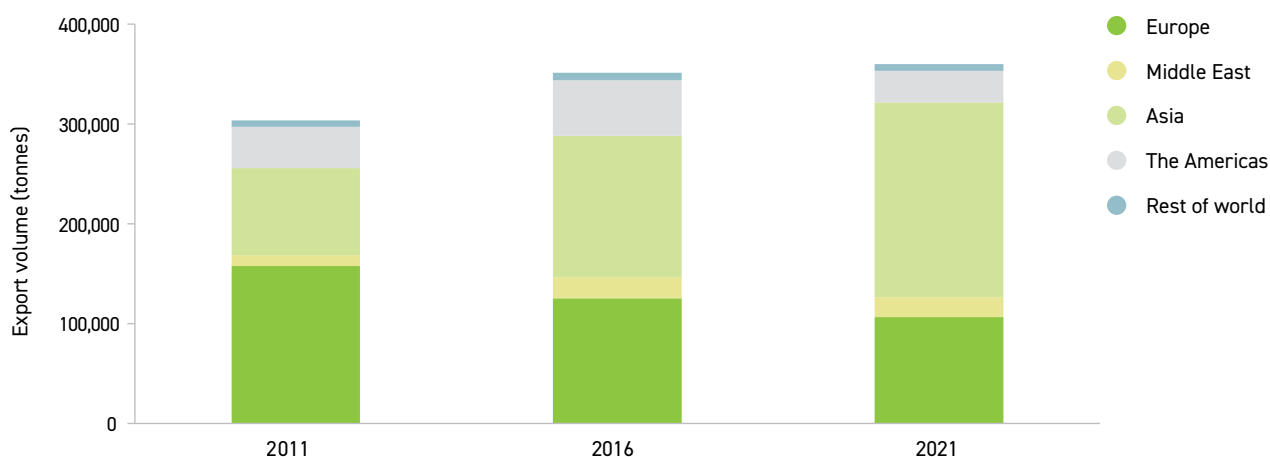
Market diversification continues

An export volume between 360,000 and 370,000 tonnes is estimated for the 2022 crop, up by 3 percent on the 2021 export crop. There may be downside to this forecast depending on disruptions to shipping services and availability of containers over the remainder of the exporting season, in particular to ports in the South Island.

Annual export volumes are expected to increase steadily over the forecast period in line with increasing production. The diversification of New Zealand's apple and pear exports towards expanding markets in Asia continues alongside investment in new varieties better aligned with consumer preferences (Figure 41).

Figure 41: New Zealand apple and pear exports by destination 2011, 2016 and 2021

Year to 31 December



Source: Stats NZ and MPI.

Market conditions mixed

Market conditions for the 2022 exporting season are mixed. Good demand is being reported for New Zealand apples in Asia. Larger northern hemisphere apple stocks and inflation pressures on consumers (from higher energy prices in particular) are creating some uncertainty about the scale of demand from European markets. A similar weighted average export price to the prior season (2021) is forecast, taking into account several upside and downside factors.

Upsides:

- Higher proportion of high-value varieties in the export mix for the 2022 season, including Envy™, Dazzle™ and Rockit™ apples.
- Reduced New Zealand apple and pear crop.
- Lower NZD against the USD compared with the 2021 exporting season.

Downsides:

- Higher apple stocks in Europe and the US compared with the previous year.
- Higher shipping and distribution costs.



Table 14: Apple and pear production, export price, volume and value 2018–26

Year to 31 December

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Planted area (hectares)*	10,218	10,603	10,838	11,168	11,200	11,200	11,250	11,300	11,400
Total production (tonnes)	585,000	570,000	590,000	530,000	540,000	600,000	625,000	640,000	655,000
Export volume (tonnes)	373,953	394,729	403,588	359,782	369,000	405,000	432,000	450,000	468,000
Export volume (million cartons)**	20.78	21.93	22.42	19.99	20.50	22.50	24.00	25.00	26.00
Export price (\$/carton)	37.30	39.67	40.87	42.45	42.00	43.00	44.00	45.00	46.00
Total export value (\$ million)	775	870	916	848	861	968	1,056	1,125	1,196
Year-on-year % change	11%	12%	5%	-7%	2%	12%	9%	7%	6%

* Planted area includes producing and non-producing orchards.

** A carton is equivalent to 18 kilograms.

Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ, New Zealand Apples and Pears Inc. and MPI.



Kiwifruit

Table 15: Kiwifruit production, export price, volume and value 2018-26

Year to 31 March

Product	Actual					Forecast			
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Export volume (million trays)									
Green kiwifruit	72	84	73	73	80	68	64	61	60
Gold kiwifruit	54	68	78	88	96	107	113	120	130
Total export volume	125	152	151	161	177	175	177	181	190
Export price (NZ\$/tray*)									
Green kiwifruit	10.50	11.61	11.95	12.37	11.39	12.50	12.50	13.00	13.00
Gold kiwifruit	16.56	18.46	19.18	20.18	18.95	19.00	19.50	19.50	20.00
Total export price	13.09	14.67	15.67	16.65	15.52	16.50	17.00	17.50	17.50
Export revenue (NZ\$ million)									
Green kiwifruit	753	976	876	901	915	855	815	780	770
Gold kiwifruit	887	1,256	1,487	1,775	1,828	2,035	2,205	2,350	2,570
Total export revenue	1,639	2,232	2,363	2,676	2,743	2,890	3,025	3,130	3,340
Total production (million trays)	134	185	163	187	206	203	204	216	232
Total producing area (000 hectares)	13	13	13	13	14	13	13	14	14

* A tray is equivalent to 3.6 kilograms.

Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ and MPI.

Current season harvest progressing well despite challenges

The 2021/22 kiwifruit crop increased 12 percent over the 2020 crop, driven by increasing gold producing area and the second-highest green yields on record.

Mid-harvest estimates of the 2022/23 crop indicate a reduction this season of approximately 3 percent overall. A small amount of new Ruby Red™ (Red 19) production comes online this season. Despite the estimated drop, this season's production is the second-highest ever, and the five-year average volume growth rate remains at 8 percent per year following last season's 12 percent increase. This compares with an average increase in producing area of 2 percent per year.

The industry is managing another large-volume harvest by incentivising growers to produce fruit early in the season and spread the workload over as long a timeframe as possible. This will help with the lower harvest and post-harvest workforce capacity, ensure there is continuity of

fruit on northern hemisphere shelves and reduce late-season fruit quality issues. An advertising campaign, *Opportunity Grows Here*, is running aimed at attracting New Zealand workers to the industry to help make up for the shortfall in backpackers and cover absenteeism of New Zealand workers who fall ill or are isolating due to COVID-19.

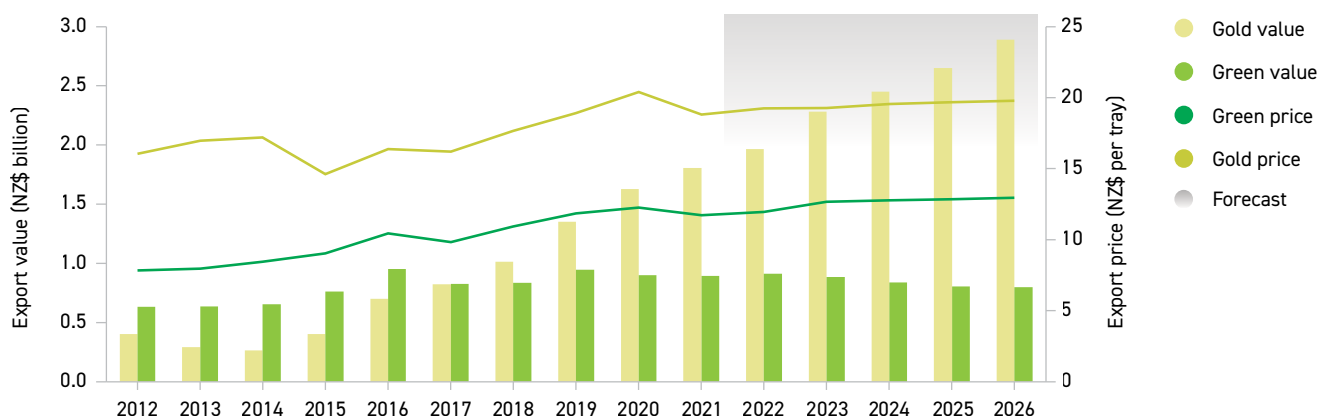
Export revenue steadily increases

For the year to 31 March 2022, export revenue increased 2.4 percent to \$2.7 billion, with volumes up 10 percent and prices down 7 percent. Kiwifruit made up 59 percent of horticulture export earnings (excluding wine). The previous season to 31 March 2021 saw a 13 percent increase in export revenue, so more-modest growth in 2021 gives a five-year average growth in revenue of 11 percent.

The forecast export revenue for the year to 30 June 2022 increases 7 percent to \$2.8 billion off the back of the two largest harvests on record in 2021/22 and 2022/23 (Figure 42).

Figure 42: Continued export growth from gold kiwifruit

Year to 30 June 2012–26, green and gold revenue and price



Source: Stats NZ and MPI.

Orchard gate returns fall slightly

Based on the effects of COVID-19, supply chain issues and some fruit quality issues caused by softer fruit and shipping disruption, Zespri forecasts orchard gate return per hectare for the 2021 crop to fall 3 percent for both green and gold varieties. Conventional (non-organic) Gold3 kiwifruit continue to receive more than double the returns of green orchards on a per hectare basis. Continued demand for fresh fruit in well-established markets, particularly Europe, China and Japan, puts Zespri kiwifruit in a good position to capitalise on its strategy of marketing the health benefits of kiwifruit while providing superior-tasting fruit and a reliable brand. The Australian market, which is open to non-Zespri marketed fruit, accounted for 2.3 percent of export earnings.

Licence bids reach record prices

Licence releases for 2022 were 350 hectares of Red19 and 350 hectares of Gold3, half of what was released in each of the previous four seasons' conventional gold release. Zespri has indicated that growth in Gold3 production will need to be managed going forward to ensure harvest logistics can cope and that market demand is grown ahead of supply. While both licence pools were undersubscribed with 324 hectares of SunGold and 280 hectares of RubyRed kiwifruit licence allocated in 2022, the top price for Gold3 increased by 45 percent to \$801,000 per hectare, and Red19 almost doubled to \$147,000 per hectare. Sale prices of top-performing Gold3 kiwifruit orchards above \$2 million per hectare were reported by the real estate industry earlier this year, indicating that, while high revenue levels are possible, increasing licence and land prices mean return on investment will be a key consideration for investors in the sector.

Market share relatively stable

In 2021/22, the EU, China and Japan were the top three destination markets with 73 percent of export revenue. Since 2017/18, two of the fastest-growing markets have been:

- South Korea, with New Zealand's export market share rising from 4.8 to 6.9 percent of the market (\$79 million to \$190 million);
- the US, with New Zealand's export market share increasing from 3.7 to 5 percent (\$60 million to \$136 million).

The Russia-Ukraine conflict could affect New Zealand kiwifruit export performance to a small degree due to Chilean exports being redirected from Russia to other markets such as Europe. Chile, the other main southern hemisphere exporter of kiwifruit, sends 20–50 million trays to Russia annually. A higher volume of Chile exports shifting from Russia to Europe could increase competition with New Zealand kiwifruit exports as both countries have the same export season. New Zealand sent 64 million trays of kiwifruit to the EU in 2021.



Wine

With higher production volumes in 2022, wine production and export volumes are expected to rebound following last year's small harvest. Overseas demand remains strong, and now New Zealand producers should have enough supply to replenish depleted stocks throughout the supply chain.

Export revenue is forecast to rise 4.4 percent in the year to 30 June 2022 despite last year's production falling 19 percent. This is due to wineries and exporters drawing down inventories to maintain sales volumes and the tight supplies contributing to much higher prices.

Record 2022 harvest projected

The 2022 vintage, mostly harvested in March and April, is provisionally estimated to reach a record 512,500 tonnes. This would be a 34 percent increase from the 2021 vintage, which suffered from low yields due to low temperatures at flowering and frosts in some regions (Figure 43). The 2022 vintage enjoyed good weather up to February and few irrigation restrictions. This is leading to above-average yields, especially in Marlborough.

Despite the higher volumes, the 2022 vintage has been challenged by inclement weather and the Omicron outbreak peaking at harvest.

The main wine regions received unseasonal rain in February and March, which was unwelcome at that stage in the grape growing calendar. This was thanks in part to La Niña conditions and the remnants of a tropical cyclone passing over New Zealand in February. The weather rewrote the harvest calendar as growers worked around the rain and dealt with disease pressure brought on by the wet and humid conditions. Some harvested early while others were delayed, depending on variety and region. Adding to the challenge, harvest coincided with the peak of New Zealand's COVID-19 Omicron outbreak, causing gaps in worker availability during a critical time.

Overseas demand remains strong

Overseas demand has been strong since the pandemic began, and there should be little trouble in finding customers for the record 2022 vintage. Demand is expected to remain strong among the main export destinations (US, UK, EU, Australia and Canada). Export revenue is forecast to increase 12 percent in the year to 30 June 2023 to \$2.2 billion.

The small 2021 vintage led to higher prices and depleted inventories. Export volume is expected to have fallen 4.5 percent in the year to 30 June 2022, while prices increased 12.8 percent in response to tighter supplies. A shift from lower-priced bulk exports to bottled exports also contributed to higher average export prices. In addition, export prices increased at least 6.5 percent in most categories.

Owing to the large 2022 vintage, most of these trends are expected to reverse for the year to 30 June 2023. Once the 2022 vintage reaches maturity, exports are expected to ramp up as quickly as congested supply chains will allow, with export volumes forecast to reach a record 318 million litres. While demand remains strong, the recovery in production is likely to push prices down towards the long-term trend and shift back towards bulk wine exports (Figure 44). This is forecast to result in 7 percent lower export prices for the year to 30 June 2023.

In the past year, demand has been greater than New Zealand's tight supply, but there have been shifts by destination over the past year or two with strong export growth to the US and Canada offset by declines in Australia, the UK and Europe. Factors driving these market shifts include strong competition between markets for limited New Zealand supply and differing experiences with COVID-19 related public health measures. With restrictions lifting in most countries and a larger 2022 vintage due to hit the market from June onwards, trade is expected to increase to all key destinations in the year to 30 June 2023. New Zealand's recently signed free trade agreement with the UK should also be positive for trade growth once it enters into force.

Despite this growth, the wine industry remains reliant on just a few markets, with the top five destinations accounting for 92 percent of exports by revenue. South Korea is one of the fastest-growing markets and is now the seventh-largest export destination. Exports having risen from \$4.5 million in the year to 31 March 2020 to nearly \$21 million in 2022.

Wine industry growth limited by available land in Marlborough

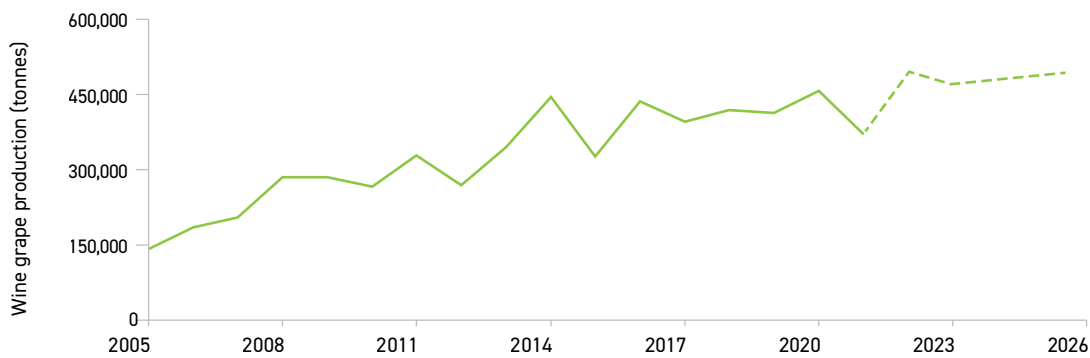
Beyond the ups and downs from one season to another, the wine industry is expected to continue along its long-term growth trajectory, although perhaps at a slower rate than the past decade.

Grape growing and winemaking remain attractive investment options, especially in Marlborough. However, the latest Vineyard Report from New Zealand Wine shows planted area growing much more slowly through 2024.

In Marlborough, land suitable for conversion to viticulture is increasingly scarce, limiting further expansion opportunities. Outside Marlborough, viticulture faces stronger land use competition with other horticultural production, and viticulture is expected to expand by less than 200 hectares from 2021 to 2024. As a result, Marlborough is expected to remain the dominant wine region in New Zealand, accounting for 70 percent of area.

Figure 43: Record wine production projected in 2022 vintage

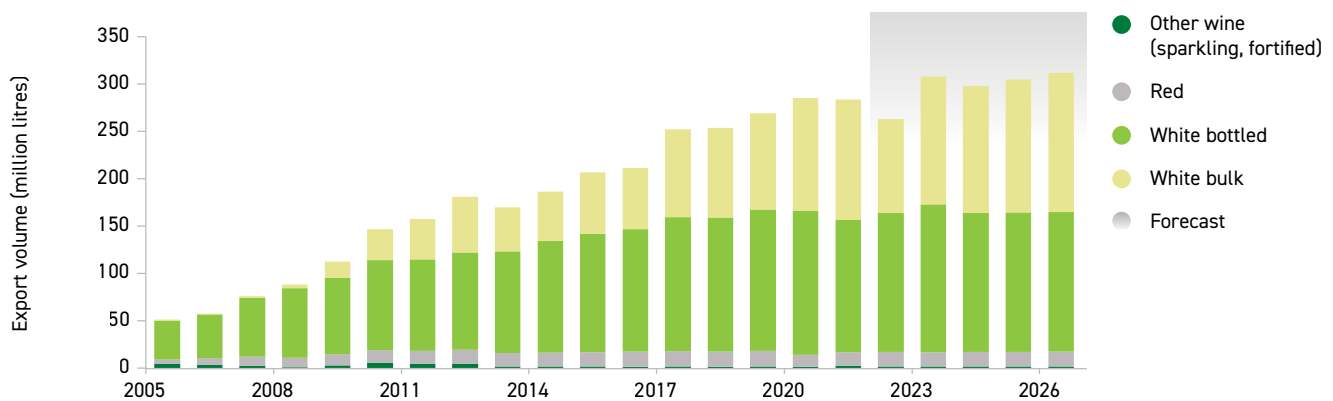
Year to 30 June



Dotted lines are forecast years.
Source: New Zealand Wine and MPI.

Figure 44: Bulk wine export volume expected to recover in 2023

Year to 30 June



Source: Stats NZ and MPI.

Table 16: Wine production, export price, volume and value 2018-26

Year to 30 June

	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Area harvested (hectares)	38,073	39,061	39,935	40,320	41,000	41,700	42,500	43,300	44,100
Grape production (tonnes)	419,000	413,000	457,000	370,000	512,500	471,000	480,000	489,000	498,000
Wine production (million litres)	302	297	329	265	369	340	345	350	360
Export volume (million litres)	254	269	285	284	263	318	298	305	312
Export price (NZ\$/litre)	6.67	6.72	6.70	6.55	7.40	6.85	6.80	6.75	6.75
Export value (NZ\$ million)	1,694	1,807	1,909	1,860	1,940	2,190	2,020	2,070	2,110

Source: MPI, New Zealand Wine and Stats NZ.

Other horticulture

Avocados

The 2021/22 avocado season has been difficult

Avocado export revenue reached \$79.2 million in the year to 31 March 2022, down 61 percent compared with the previous season. The 2021/22 season has been challenging, mostly due to a congested Australian market and shipping issues.

New Zealand avocado exports to Australia, our main export destination, dropped 76.1 percent to \$44.0 million compared with the 2020/21 season. In April–May 2021, Australia experienced a domestic oversupply of avocados due to excellent growing conditions and high crop yields in Western Australia. As a result, domestic prices dropped to a 15-year record low of AU\$1 per avocado.

New Zealand exporters were contending with major shipping issues (delays, ships changing routes and soaring freight costs), and nearly 10 percent of export volume ended up in the New Zealand market as planned ships were either not available, delayed or rerouted. Avocados are not stored but harvested to meet market demand. Therefore, if a vessel is suddenly not available or delayed, a new destination needs to be found for the avocados sitting in a container.

On the upside, New Zealand met its strategic objective to decrease its reliance on Australia and increase volumes to Asia, supported in part through the Primary Growth Partnership with MPI – New Zealand Avocados Go Global – which focuses on market diversification. A low-value and congested Australian market meant more New Zealand avocados were sent to Asian markets in the 2021/22 season. This resulted in a threefold increase in volume to Asia from 541,265 trays in the 2020/21 season to 1.5 million trays this season.

Growth in New Zealand avocado export volume was most significant for South Korea, Hong Kong, China, Taiwan, Singapore and Malaysia (Figure 45). Export values to Asia more than doubled from last season to reach \$32.9 million. Pricing in Asia is lower than previously achieved in Australia, hence a substantially lower overall export value. However, if the growth in export volume to Asia continues, this is a positive sign towards increased export diversification.

New Zealand supply for the 2021/22 season was consistent with previous years. In the domestic market, avocado growers sold 3.5 million trays, a 40 percent increase from the 2020/21 season. Despite lower domestic prices this season, the market was able to absorb the substantial volume increase.

Challenges remain for the upcoming season

Avocados are native to Central America, so New Zealand's wet and windy climate makes avocado production a constant challenge. Avocado growers in New Zealand will also face increased competition in Asian markets from South American growers and possibly Australian growers as they are investing heavily in Asian market access strategies.

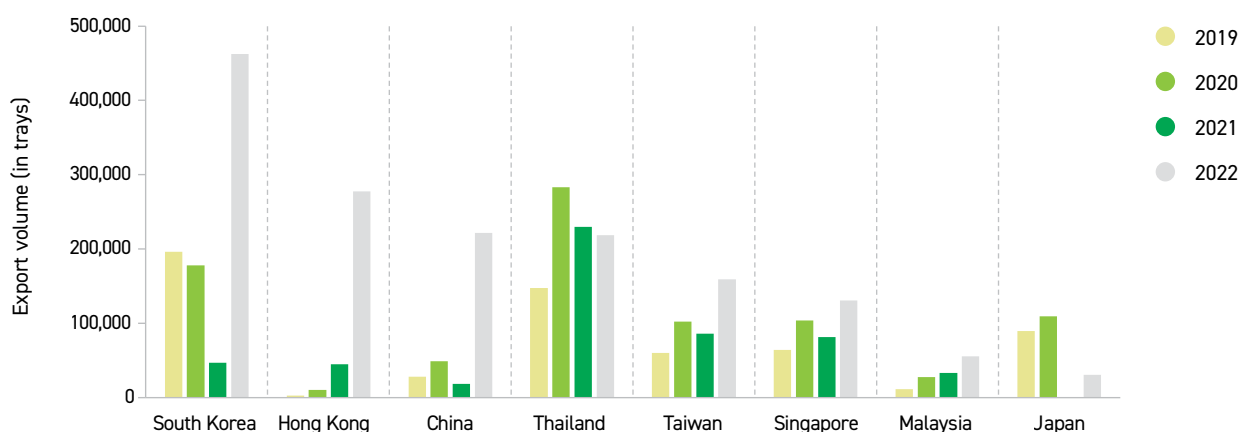
COVID-19 related supply chain issues, higher shipping costs and higher input costs of fertiliser, petrol and labour will remain a challenge for avocado growers and exporters in the near to medium term.

There are 1,800 orchards in New Zealand with yields ranging from under 7 tonnes per hectare to 59 tonnes per hectare. Better adoption of best practice is seeing yields slowly increase, which will be necessary for growers to remain economically sustainable.

New plantings in Northland are coming into production and will increase overall volume in 2022/23 while Bay of Plenty is forecast to have a smaller crop in the coming year. As a result, export volumes are forecast at 4.1 million trays, slightly up on the 2021/22 export volume.

Figure 45: Asian demand for New Zealand avocados is picking up

Year to 31 March: export volume in trays (1 tray = 5.5 kg)



Source: Stats NZ and MPI.

Cherries

Cherry export revenue for the 2021/22 season is the second-best performance on record

New Zealand cherry exports increased 40.5 percent to \$77.8 million for the 2021/22 season due to increased export volumes and prices. Export volumes reached 3,223 tonnes, up 26.8 percent on 2020/21. The average export price rose to \$24 per kilogram, up 10.8 percent. This is the second-best export performance on record after the 2017/18 season (\$84 million).

In Hawke's Bay, the past season was dominated by La Niña weather patterns, which brought heavy rainfall and easterly winds to the region. Growers had to deal with heightened disease pressures due to warmer, more-humid and wet weather conditions. The crop load was around 80 percent of normal production across the summer fruit industry in the region, which eased pressure on finding labour for picking fruit.

The main cherry crop in Central Otago has benefited from more-favourable growing and harvest conditions than recent years, with only a bit of rain in December. The 2021/22 season was characterised by a greater crop load and cooler spring, which has resulted in a smaller fruit size. The increased volume made up for the smaller size, and fortunately, there were no major weather events that affected fruit quality, unlike in the previous season.

Demand for export cherries remained steady, mostly thanks to the Chinese New Year falling within the New Zealand harvest window. Additionally, logistics and customs delays encountered by Chilean cherry exporters into Asia made New Zealand cherries, shipped by air freight, a preferred alternative. Over the medium term, cherry exporters anticipate continued growth in demand from Asian markets other than China such as Taiwan and Vietnam (Figure 46).

Increasing production and demand from Asian markets are expected to support export growth

Annual export volumes are forecast to rise consistently in the near to medium term in accordance with rising production. Cherry growers continue to invest in new varieties that yield more and better-quality fruit. Due to rising cherry production and increased demand from Southeast Asian markets, annual export volumes are forecast to grow steadily in the near to medium term.

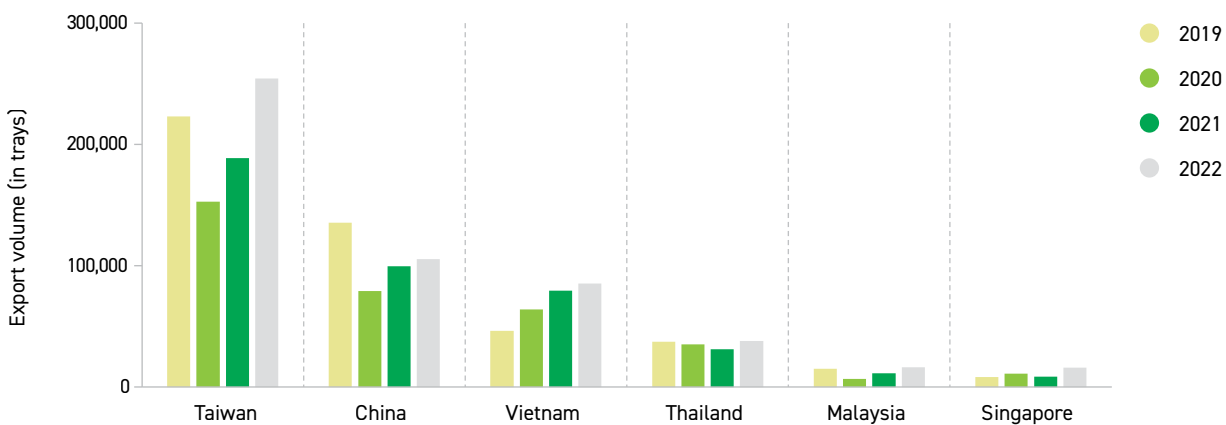
Air freight capacity is expected to increase when tourists return to New Zealand. This is likely to reduce freight costs to market for export fruit such as cherries. With summer holidays coinciding with the main harvest period, university and high school students are anticipated to become a greater source of labour than in the past, especially since labour shortages are expected to persist in the short to medium term.

Cherry export revenue is forecast to increase to \$82 million in the year to 30 June 2023, with around 3,300 tonnes of cherries exported. These forecasts may be revised downward depending on freight issues and container availability.



Figure 46: Cherry exports to Asian markets are expanding

Year to 31 March: export volume in trays (1 tray = 5.5 kg)



Source: Stats NZ and MPI.

Fresh and processed vegetables

Total fresh and processed vegetable export revenue is forecast to reach \$630 million for the year to 30 June 2022, down slightly on the prior year. Lower export volumes are expected for onions and squash, whilst exports of frozen peas have increased.

Vegetable growers are expected to continue to exercise caution regarding their planting programmes throughout 2022/23 in response to rising costs of key inputs such as fuel and fertiliser and labour constraints. The anticipated ongoing disruptions to shipping routes into 2023 and associated container shortages will also be a key consideration for growers of export vegetable crops.

A challenging season

Vegetable growers endured a multitude of challenges during the 2021/22 season, some of which are likely to persist in the short to medium term.

The closure or scaling back of restaurants in spring 2021 due to COVID-19 restrictions, in particular in the Auckland and Waikato regions, impacted demand for asparagus, with several growers forced to leave crops unharvested.

The detection of pepino mosaic virus in glasshouse-grown tomato crops in autumn/winter 2021 has halted exports of fresh tomatoes to Australia and some Pacific Island nations due to biosecurity concerns.

Several vegetable growing regions experienced adverse climatic conditions in 2021/22. Heavy rainfall in December 2021 in Horowhenua District damaged leafy green vegetables and delayed sowing and planting of summer crops. Dry

conditions in late spring and early summer in parts of the Auckland and Waikato regions impacted bulb size and yields of onions crops. Several heavy rainfall events in February and March 2022 interrupted the harvest of squash, sweetcorn, tomatoes and leafy greens in Gisborne District with some yield and quality impacts.

High rainfall, humidity and lack of sunshine in November and December impacted yields of process pea crops in Canterbury. In contrast, a record process tomato crop was harvested in Hawke's Bay despite several heavy rainfall events over the harvest period from February to April.

Competitiveness is key to future export growth

The export volume of onions from the 2022 crop is forecast at around 160,000 tonnes, down 20 percent on the previous year due to a reduced planted area and yields. Fewer onions will be exported to European markets in 2022 mainly due to higher freight costs and ongoing disruptions to shipping schedules and routes. Demand from markets in Asia is reported as strong.

Increased export volumes of frozen peas and frozen and processed potatoes are the main drivers of the forecast increase in processed vegetable exports in the year to 30 June 2022.

The anticipated steady recovery in export volumes is reliant on fewer shipping constraints with resultant lower costs and the ability of growers to secure productivity gains and/or higher prices to offset higher production costs. In addition, onion growers will be seeking improved market access to markets in Asia prior to any significant increase in plantings.



Table 17: Vegetable export volumes and value 2018–26

Year to 30 June

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Fresh vegetables*									
Export volume (000 tonnes)**	277	307	348	345	270	300	300	320	345
Export value (NZ\$ million)**	225	303	300	282	240	270	280	300	320
Processed vegetables***									
Export volume (000 tonnes)	213	210	221	178	200	215	210	210	210
Export value (NZ\$ million)	396	393	421	352	385	425	410	415	415
Total fresh and processed vegetables									
Export volume (000 tonnes)	491	518	569	523	470	515	510	530	555
Export value (NZ\$ million)	622	696	721	634	630	700	690	710	730

* Includes onions, squash, capsicum, potatoes and other fresh vegetables.

** Stats NZ data for export volumes for squash in 2020 and 2021 does not align with industry data, overestimating export volumes in these years by 20 to 25 percent. Export volumes for the March 2022 quarter are better aligned. Stats NZ data is reported in this table.

*** Includes frozen vegetables (including frozen potatoes, peas, sweetcorn, etc.), dried vegetables, dry legumes, prepared and/or preserved vegetables and vegetable juices.

Totals may not add due to rounding.

Source: Stats NZ and MPI.



Seafood



- New Zealand's seafood export revenue is forecast to increase 9 percent to \$1.9 billion for the year to 30 June 2022, revised up from the previous forecast due to a lift in prices and volumes.
- Prices have increased due to tight global supply, demand recovering and food service reopening despite ongoing freight issues. However, lockdowns in various countries are putting downward pressure on prices.
- Record prices for wild capture and aquaculture exports are being partially offset by increased operating costs, which are putting strain on businesses.
- The future of the aquaculture industry may be driven by open ocean salmon farming. Decisions on resource consents for the first open ocean salmon aquaculture farms are expected in the next 12 months, with each application representing potentially substantial lifts in production.

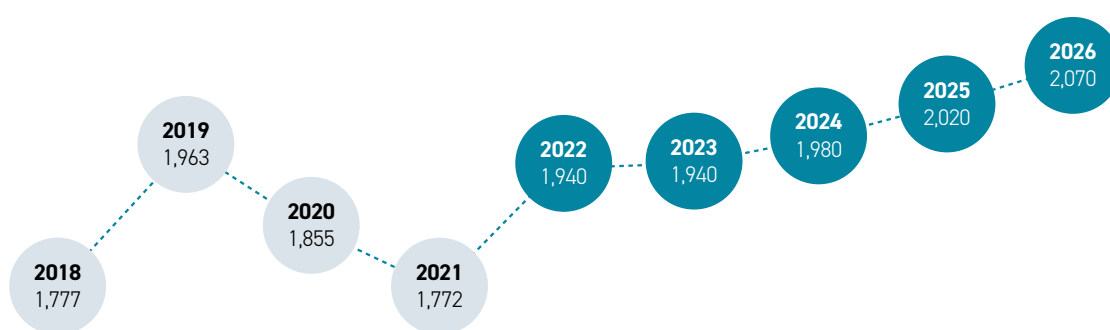


Table 18: Seafood export price, volume and value 2018–26

Year to 30 June

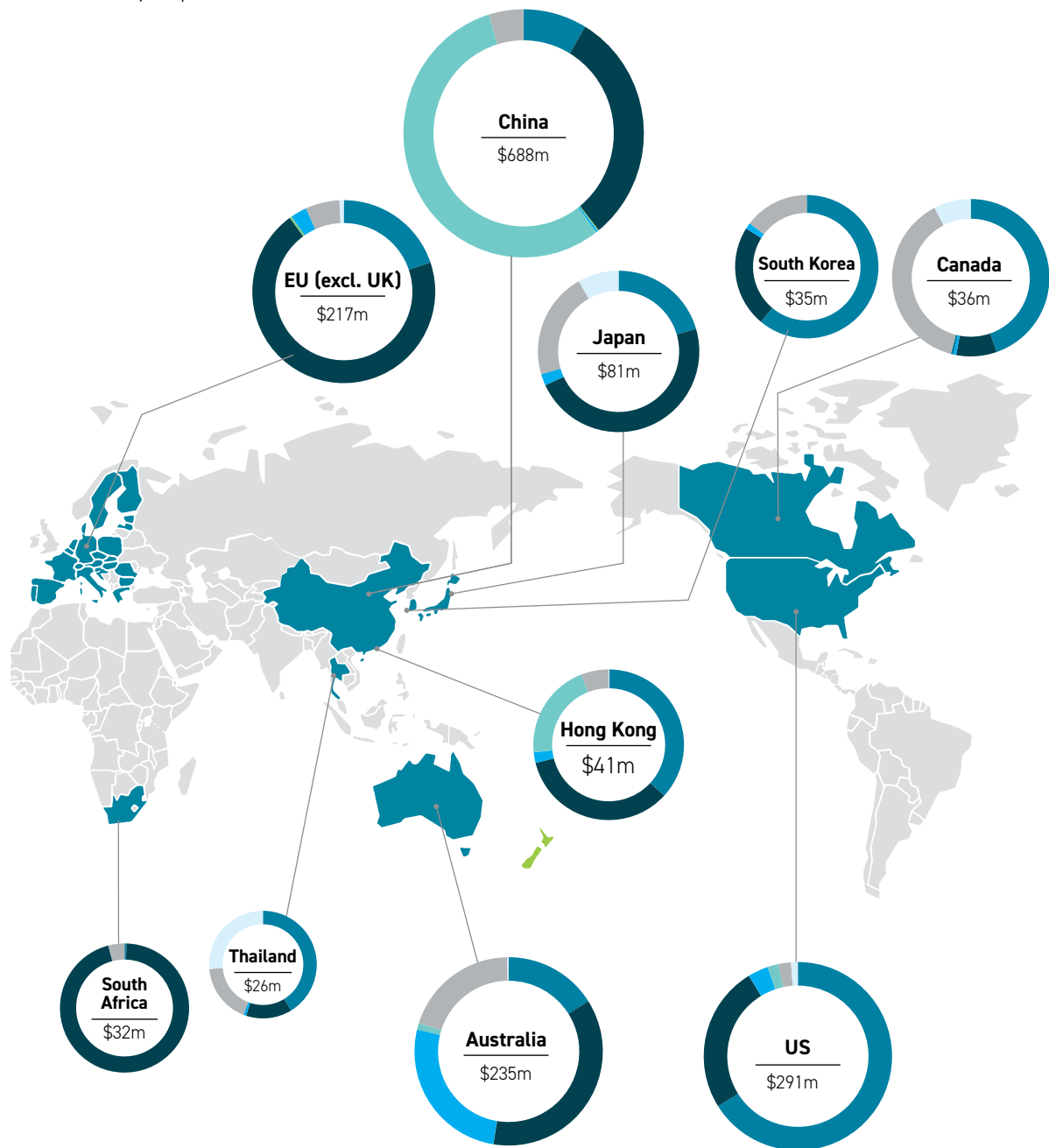
Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Wild capture									
Export volume (tonnes)	239,512	238,864	232,267	207,084	221,200	217,700	214,100	212,000	211,200
Average export price (NZ\$/kg)	5.73	6.32	6.01	6.51	6.55	6.65	6.80	6.95	7.05
Export value (NZ\$ million)	1,372	1,509	1,397	1,348	1,450	1,450	1,460	1,470	1,490
Aquaculture									
Export volume (tonnes)	39,462	38,767	36,188	39,005	42,700	42,200	43,200	44,200	45,300
Average export price (NZ\$/kg)	10.28	11.70	12.67	10.88	11.55	11.60	11.95	12.35	12.75
Export value (NZ\$ million)	406	454	459	425	490	490	520	550	580
Seafood									
Export volume (tonnes)	278,974	277,631	268,455	246,089	263,900	259,900	257,300	256,200	256,500
Average export price (NZ\$/kg)	6.37	7.07	6.91	7.20	7.35	7.46	7.70	7.88	8.07
Total export value (NZ\$ million)	1,777	1,963	1,855	1,772	1,940	1,940	1,980	2,020	2,070
Year-on-year % change	1.9%	10.4%	-5.5%	-4.5%	9%	0%	2%	2%	2%

Percentages in the table are rounded to the nearest whole percent.
Source: Stats NZ and MPI.



Top 10 seafood export destinations

Year to 31 March 2022, NZ\$ million



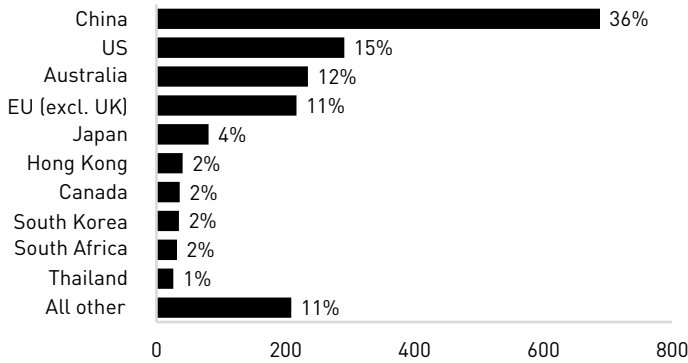
Product	Export revenue (NZ\$ million)	% of total
Deepwater	709	38%
Aquaculture	474	25%
Inshore shellfish	417	22%
Inshore finfish	95	5%
Pelagics	28	1%
Freshwater	3	0%
Other fish products	165	9%
Total	1,891	100%

Source: Stats NZ.

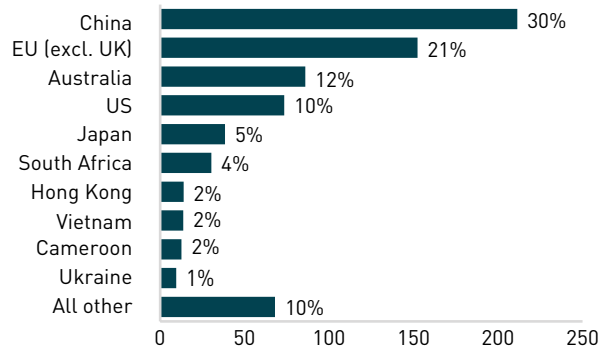
Top seafood export markets

Year to 31 March 2022, NZ\$ million and percent

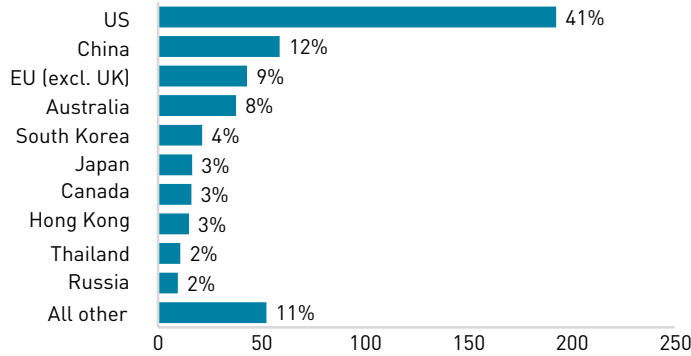
Total seafood



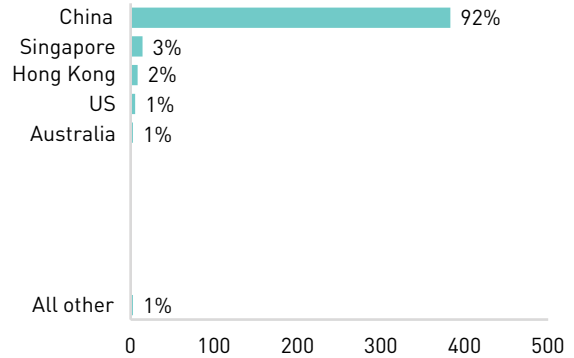
Deepwater



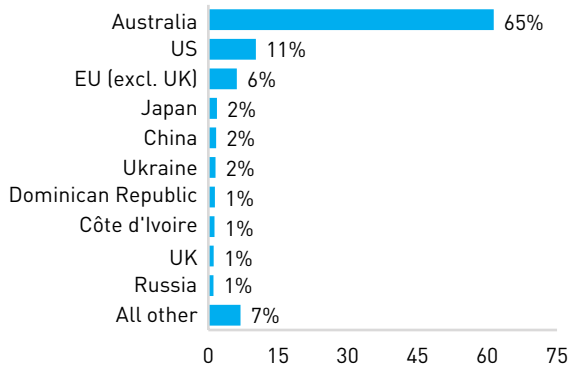
Aquaculture



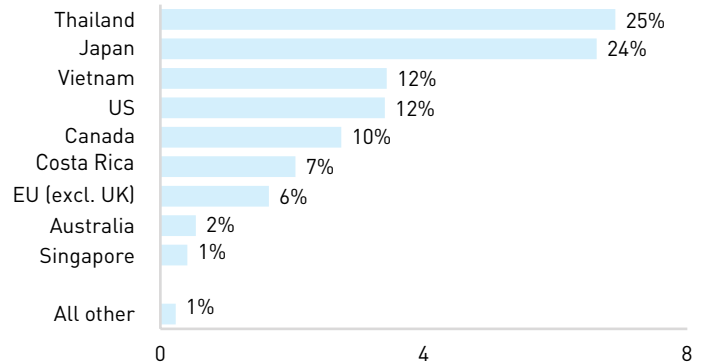
Inshore shellfish



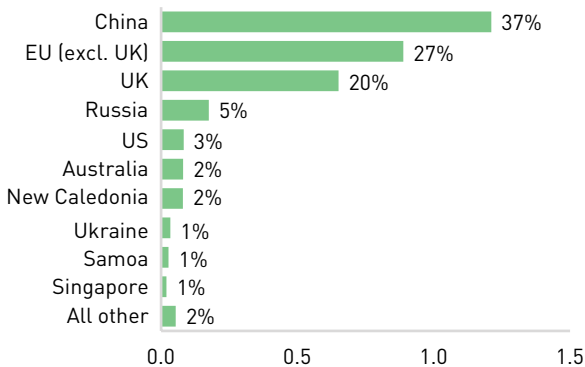
Inshore finfish



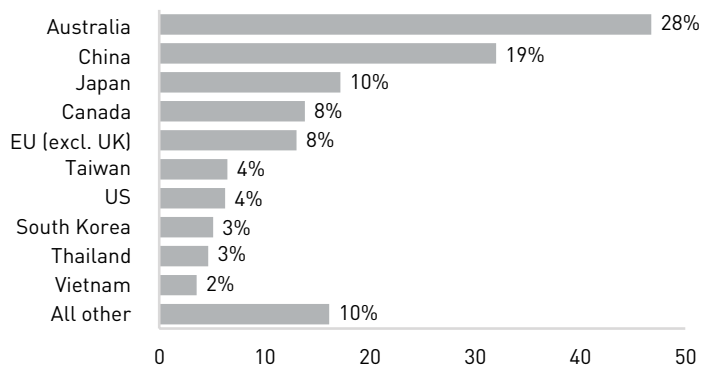
Pelagics



Freshwater



Other fish products



Source: Stats NZ.



The seafood sector has benefited from strong export growth over the past year, with export revenue forecast to reach \$1.9 billion for the year to 30 June 2022. This growth has been driven by strong export performance across key species, including rock lobster, mussels and salmon. Despite increased export revenue, the seafood sector continues to face challenges, with rising production costs putting pressure on profitability. These trends, both positive and negative, are expected to continue into the coming year.

Current growth is primarily being driven by strong prices, with wild capture prices increasing to an average of \$6.53 per kilogram and aquaculture prices increasing to \$11.53 per kilogram. Higher prices are also a reflection of higher input costs, including shipping disruptions from COVID-19, rising fuel costs and labour challenges. Freight issues are expected to persist throughout the next year, and fuel prices are expected to remain high due to the Russia-Ukraine conflict.

Key freight issues include a shortage of chilled shipping containers and ships docking at New Zealand ports as well as various congestion and scheduling issues, which reduce certainty about collection and delivery timing.

Export revenue is expected to remain at \$1.9 billion for the year to 30 June 2023. This reflects a slight fall in export volumes and a small rise in overall prices as processors pass on higher operating costs to consumers.

Seafood export revenue driven by several key species

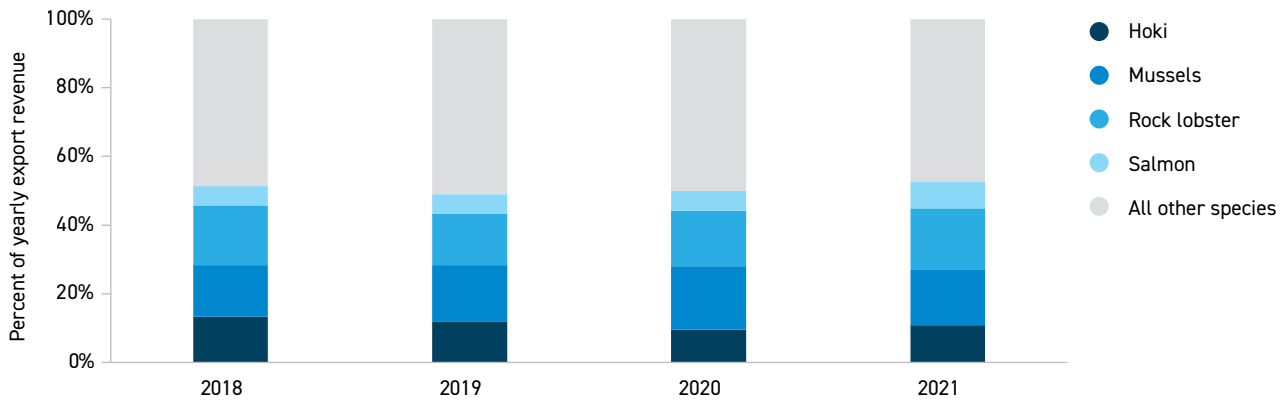
Rock lobster, mussels, hoki and salmon are key contributors to seafood export revenue and collectively accounted for 53 percent of total seafood exports in 2021. Figure 47 highlights exports of these key species over time. Export volumes and prices for these species have a strong effect on overall exports for the seafood sector.

Wild capture species facing mixed performance

Wild capture exports are forecast to rise to \$1.4 billion for the year to 30 June 2022, a 7 percent increase on the previous year. This growth indicates slightly higher export volumes and stronger prices. Wild capture exports are likely to grow further in the year to 30 June 2023 as prices for key species increase (Figure 48). Although wild capture contains many different species, there are several key high-value export species such as rock lobster, hoki and squid.

Figure 47: Four key seafood export species account for half of total export revenue

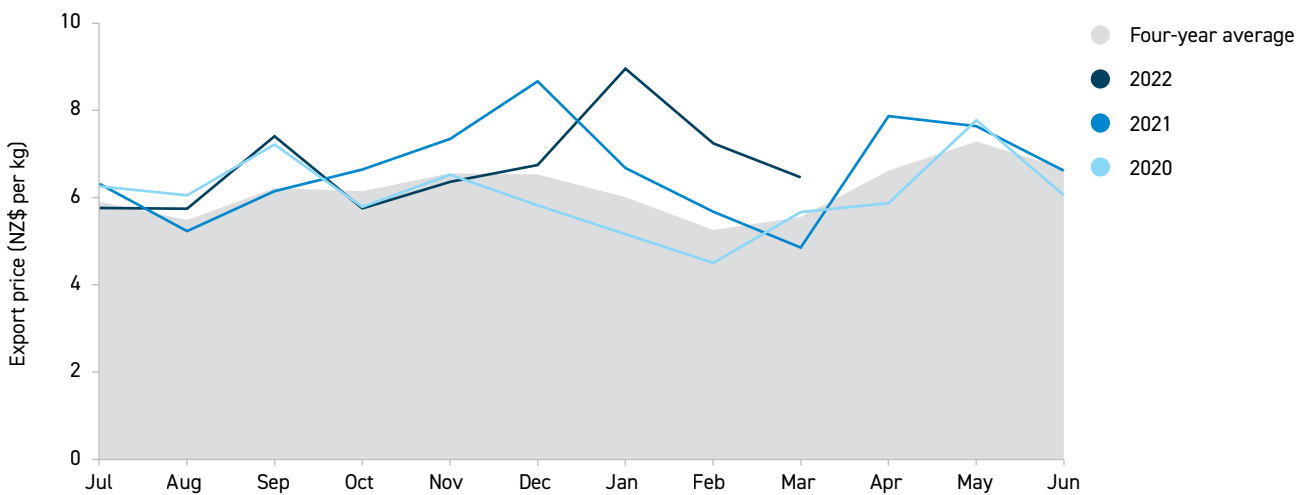
Year to 31 December



Source: Stats NZ and MPI.

Figure 48: Wild capture prices remain high

Year to 30 June, 2020-22



Four-year average calculated over 2017-21 on a year to 30 June basis.
Source: Stats NZ and MPI.



Rock lobster export revenue reached a record \$354 million for the year to 31 March 2022

This export revenue performance was driven by a new high export price of \$132 per kilogram over the same period. This export revenue represents a 10 percent increase on last year's record revenue despite a 5 percent fall in export quantities. China's import restrictions on Australian rock lobster have increased demand for New Zealand product and pushed prices up.

Hoki export revenue increased by 12 percent to \$200 million for the year to 31 March 2022

This growth is a reflection of an 8 percent increase in export quantity and a 4 percent increase in prices. Although the total allowable commercial catch (TACC) has been falling, the amount the industry has collectively decided to reduce has decreased at a faster rate from 20,000 tonnes to 10,000 tonnes, allowing exports to increase.

Tuna exports have continued to fall, decreasing 36 percent to \$26 million for the year to 31 March 2022

The decrease in tuna export revenue has been due to a fall in albacore and skipjack tuna, which has fallen by \$7 million and \$6 million, respectively, primarily from decreased exports to Thailand and Vietnam. COVID-19 related disruption has meant that fishers have also struggled to get fresh southern bluefin tuna to the Japanese market.

Squid catch not prioritised due to low market prices

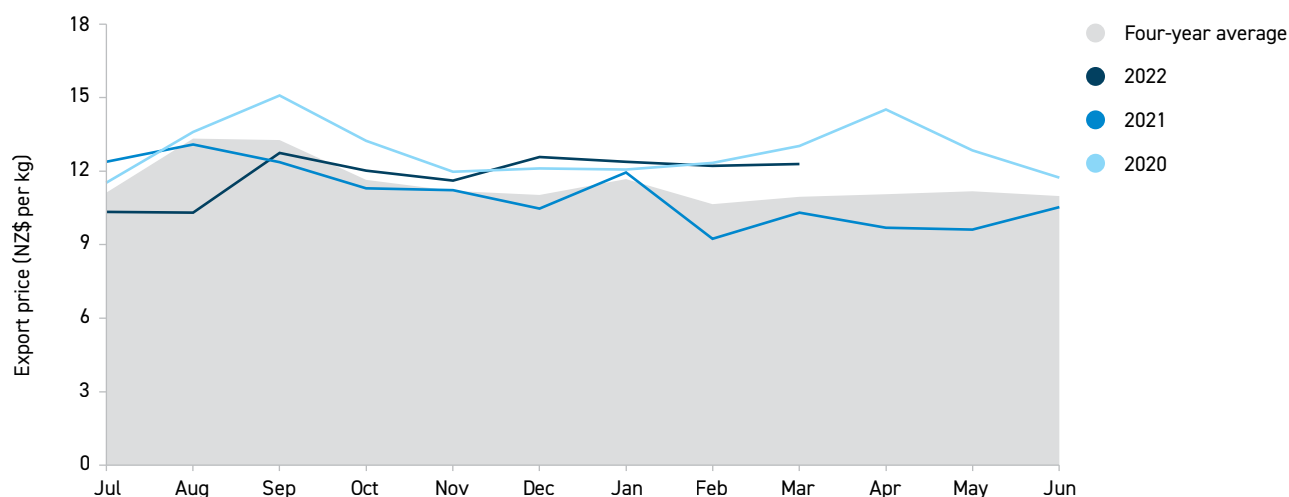
Another important species in the wild capture category is squid. Squid export revenue and volumes have continued to fall, decreasing to \$124 million for the year to 31 March 2022. This is around half the export revenue received from squid in the March 2020 year. This decrease is a result of less fishing due to lower prices.

The aquaculture sector continues to recover from COVID-19

Aquaculture sector export revenue is forecast to reach \$490 million for the year to 30 June 2022. This is a 16 percent increase on the previous year and a 9 percent rise from pre-COVID-19 levels. Growth in aquaculture export revenue reflects a strong ongoing recovery from COVID-19 impacts. It has been supported by the resumption of food service trade in the US, increasing export volumes to that market. While prices are expected to remain strong (similar to levels in Figure 49), challenges to salmon productivity and constrained mussel spat supply will mean export revenues will remain stable at around \$490 million for the year to 30 June 2023. Future production is expected to be impacted by warming waters as a result of climate change. Industry is working to mitigate these impacts by shifting production and changing farm management practices.

Figure 49: Aquaculture export prices remain firm

Year to 30 June, 2020–22



Four-year average calculated over 2017–21 on a year to 30 June basis.

Source: Stats NZ and MPI.



Mussel export revenue rose 5 percent to \$307 million for the year to 31 March 2022

Rising mussel exports were mostly driven by greater demand from the US as food service trade reopened. The US accounted for 35 percent of total export quantity in the year to 31 March 2022. Export volumes rose 14 percent to 33,149 tonnes for the year to 31 March 2022. Export prices remained weaker than previous years. While export volumes have bounced back from pre-COVID-19 levels, prices and revenue are yet to fully recover, partially due to lower contracted prices.

The government has partnered with industry and iwi to develop a spat hatchery in Te Moana-a-Toi Bay of Plenty, which will grow future mussel production. Having a reliable source of hatchery spat is an important step to enable the sector to be resilient and unlock growth potential.

Salmon exports have continued to grow, reaching \$148 million for the year to 31 March 2022

This strong performance represents a 42 percent increase on the previous year and is 28 percent higher than the previous record of \$115 million for the year to 30 March 2020. Salmon export growth is driven by a 36 percent volume increase from higher production and as frozen stockpiles from the previous year are sold down.

Growth in export value is primarily being driven from an increase in chilled salmon trade, with export volumes doubling and revenue nearly doubling to \$30 million. Increases in total salmon export volumes are due to reopening of US food service trade.

La Niña years have resulted in warmer waters and increased salmon mortality rates, as observed last summer. Changes to farm management practices and improving fish health can mitigate these impacts to safeguard future production and growth. Overall, salmon losses have been partially offset by increased salmon production across some regions, but it may result in a reduction in export volumes over the coming two years. Supply chain constraints have also made sourcing feed from Australia difficult, increasing production costs.

Oyster export revenue reached \$19 million, up 22 percent from last year

Export revenue growth was driven by a 20 percent increase in export volumes and a 1 percent rise in prices for the year to 31 March 2022. Prices reached a high of \$17.10 per kilogram for oysters.

Aquaculture sector has strong growth potential

The Government's Aquaculture Strategy sets a goal of \$3 billion in annual sales for the New Zealand aquaculture sector. The strategy focuses on increasing the value derived from existing farm space as well as supporting the development of new industries, including open ocean, land-based and seaweed aquaculture.

Decisions on resource consents for the first open ocean salmon aquaculture farms are expected in the next 12 months, with each application representing potentially substantial lifts in production. However, there will be a lag between consent decisions and delivering increased production as open ocean salmon farming systems for New Zealand are developed.

As part of a broad work programme under the strategy, a key focus for the Government is considering how it can support the development of open ocean aquaculture through the reform of the resource management system.

Latest sustainability round sees small impact on exports

Following the latest sustainability consultation, the Minister for Oceans and Fisheries has made decisions on sustainability measures for selected fish stocks as part of the April 2022 sustainability round. Changes in catch levels impact the total allowable catch (TAC), which includes commercial, recreational and customary fishers.

From an export perspective, the impact on total catch limits is low, with the main change being seen in rock lobster catch limits. Overall, the TAC increased by around 165 tonnes with approximately 60 tonnes allocated to the TACC. The overall increase is in the Southern catchment area, with declines in the Otago and Northland catchment areas. This is in effect since 1 April 2022.

Further information on rock lobster catch and other species can be found on MPI's website, including the Minister's decision letter, advice papers and submissions received during this consultation.

Operating costs continue to rise

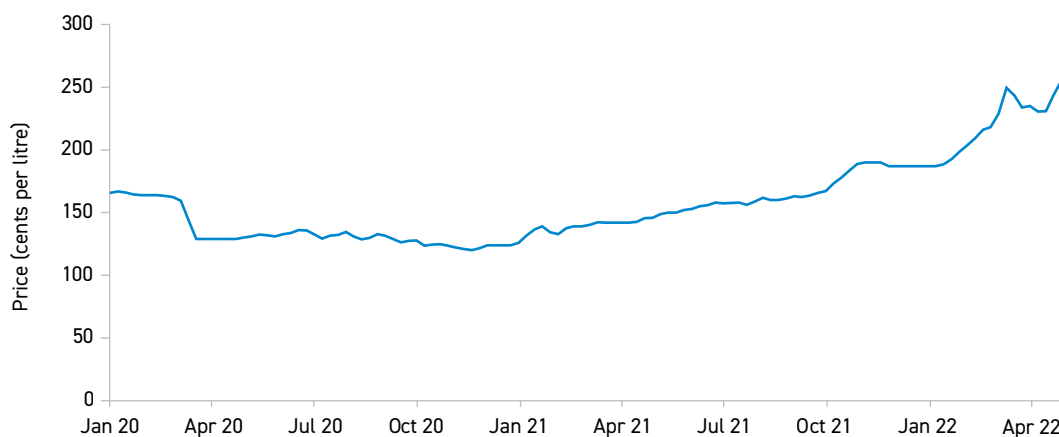
Although prices in export markets remain strong, operating costs continue to rise. Soaring fuel prices are adding uncertainty to the sector in the wake of the Russian invasion of Ukraine. The impact in New Zealand is less severe than that of Europe as New Zealand's fuel is imported mainly from refineries in Asia, the Middle East and the Pacific rather than Russia. Figure 50 shows the impact of the current fuel crisis on diesel prices.

The New Zealand Government responded to these price pressures by reducing the petrol tax and road user charges. However, these reductions do not benefit the seafood sector as the fishing fleet doesn't pay road user charges.

The rise in diesel prices has affected fishers all around the world with some crews deciding not to go fishing in recent months as the cost of fuel would make it difficult just to break even. While the impact of fuel costs is expected to be less severe in New Zealand than in countries that rely directly on Russia for fuel, New Zealand fishers' profitability is likely to be affected in the coming years.

Figure 50: Invasion of Ukraine and imposed sanctions on Russia cause diesel price spike

New Zealand weekly main port price (cents per litre of diesel)



Source: MBIE.



Arable



- The sector has faced a challenging season and difficult harvest in 2022 impacting crop yields and quality.
- Lower export volumes are expected to decrease total arable export returns by 2 percent to \$255 million in the year to 30 June 2022 and cause a fall of 6 percent in the year to 30 June 2023.
- Overall grain yields were back 4 percent, but the total tonnage was on a par with the 2021 harvest due to a 4 percent increase in the planted area.
- Domestic grain prices surged in 2022 driven by tight domestic and international supply following a gradual rise from April 2021.

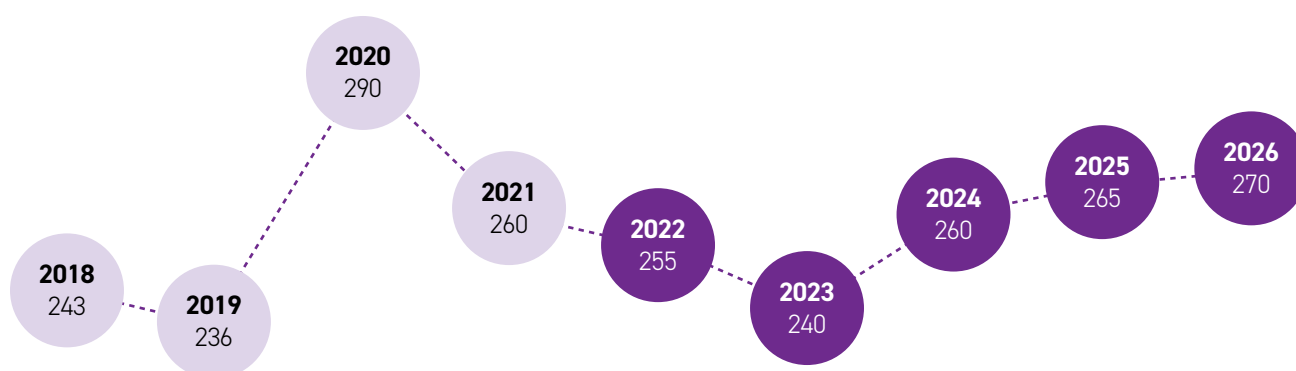


Table 19: Arable export revenue 2018–26

Year to 30 June, NZ\$ million

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Vegetable seeds	92	87	112	88	85	90	95	95	95
Ryegrass seeds	55	60	73	80	70	65	70	75	75
Clover seeds	28	20	31	26	20	20	25	25	25
Other grains and seeds*	68	69	74	66	70	70	70	70	70
Total export value	243	236	290	260	255	240	260	265	270
Year-on-year % change	23%	-3%	23%	-10%	-2%	-6%	8%	2%	2%

* Includes maize, other grains and oil seeds.

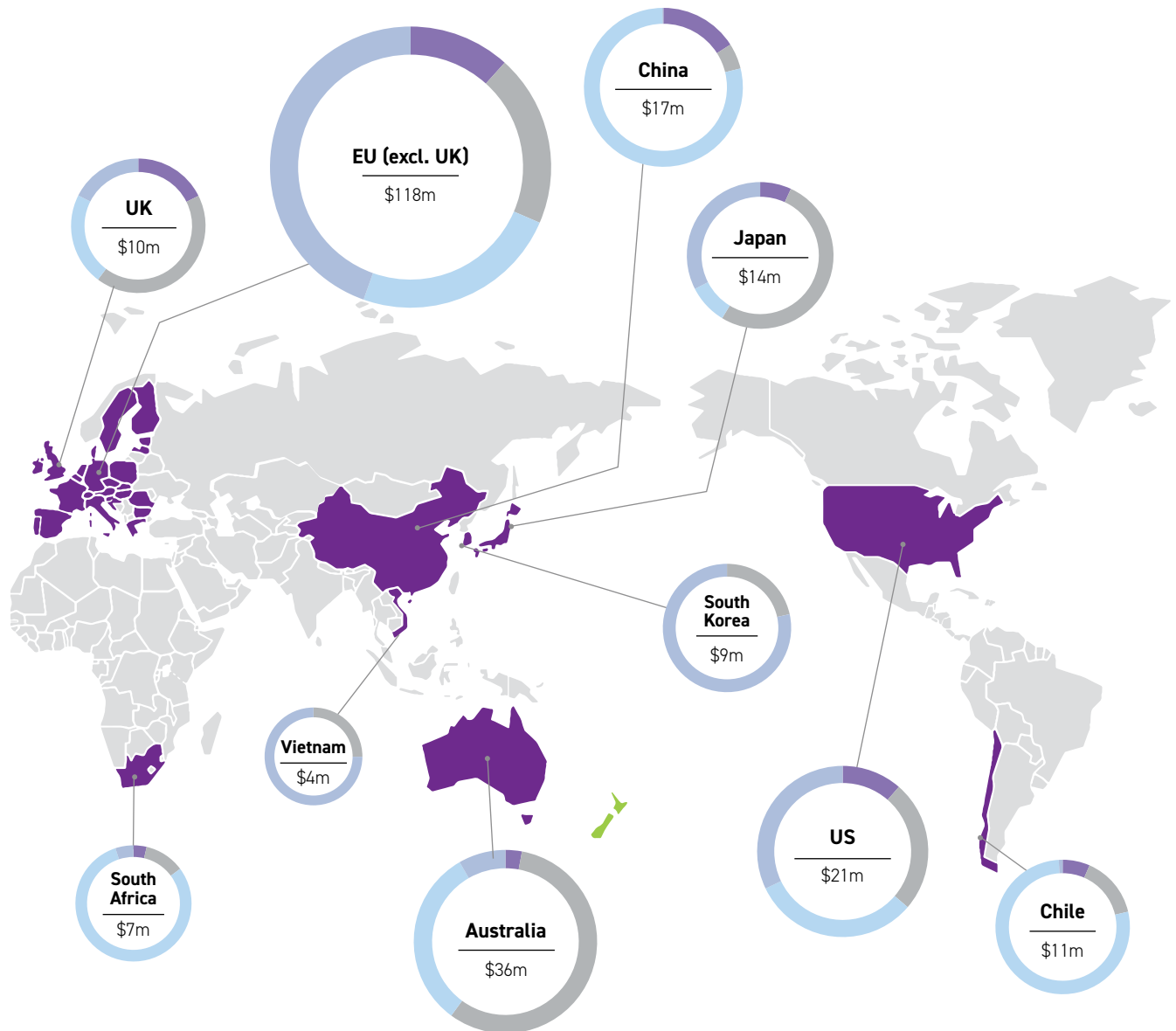
Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ and MPI.



Top 10 arable export destinations

Year to 31 March 2022, NZ\$ million

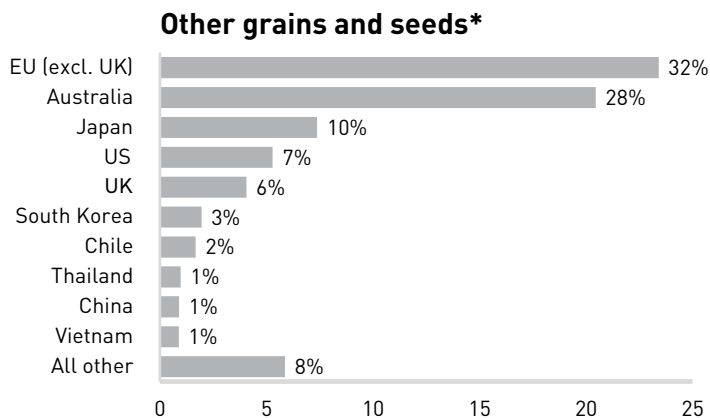
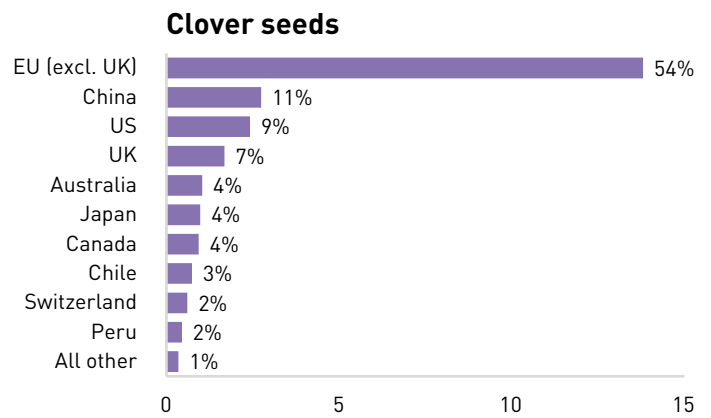
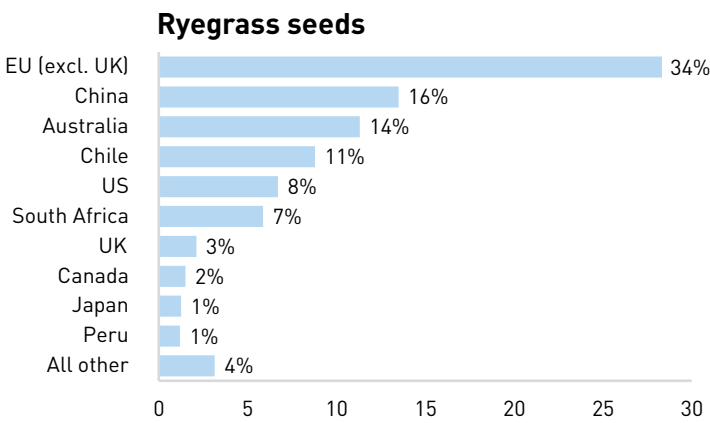
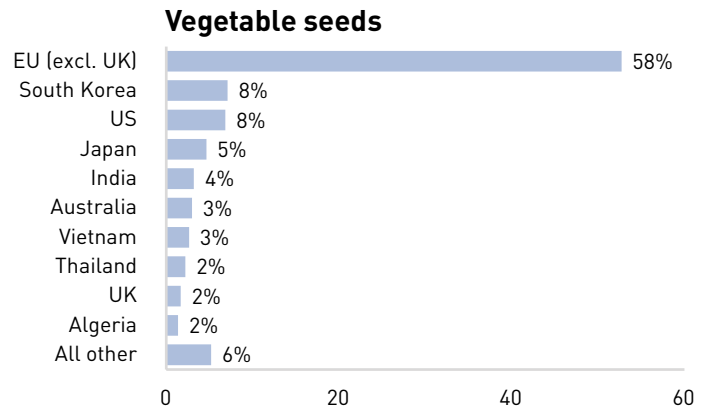
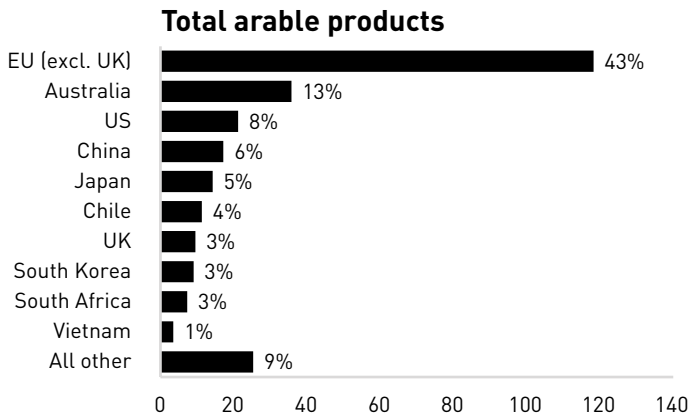


Product	Export revenue (NZ\$ million)	% of total
● Vegetable seeds	90	33%
● Ryegrass seeds	84	31%
● Clover seeds	26	9%
● Other grains and seeds*	73	27%
Total	273	100%

* Includes other arable and cereals.
Source: Stats NZ.

Top arable export markets

Year to 31 March 2022, NZ\$ million and percent



Source: Stats NZ.



Challenging season

The 2021/22 season is being ranked by growers as one of the worst on record. The unprecedented wet season caused yield reductions to crops in Canterbury and parts of the North Island.

In Canterbury, conditions took a turn for the worse from late spring. High rainfall, humidity and lack of sunshine in November and December increased disease pressure and impacted pollination over that period. The warm January benefited the later flowering crops, including many of the vegetable seed crops. Persistent rain from late January disrupted the harvesting of grass, clover, cereals and some of the brassica seeds, lowering yields and quality and creating considerable demand for drying services. The disrupted harvest delayed the planting of autumn crops.

In February, Cyclone Dovi caused flooding in Wairarapa, ruining many crops and causing widespread sprouting, and flattened some maize crops in Taranaki and Waikato.

A converse season was experienced in Southland with good growing conditions and a smooth harvest achieving above-average yields.

As with most primary sectors, production costs have risen considerably with price hikes in key inputs – fertiliser, fuel, chemicals and machinery. Farmers are having to bear most of the inflationary pressures with much of the harvest contracted before they became apparent. For arable farmers with livestock, good returns from stock are helping to offset lower crop margins.

Grain tonnage holds due to increase in planted area

Yields and the quality of cereal crops were impacted by the difficult season, but an increase of 3,700 hectares in planted area kept the total harvest tonnage on par with the 2021 harvest (Table 20). Tonnages were lower for milling wheat (down 35 percent) and malting barley (down 29 percent) due to reduced yields and planted areas. Tonnages were up for feed wheat (4 percent) and feed barley (14 percent) from an increase in planted area with yields down on last season.

Table 20: Estimated national cereal harvest 2019–22

Year to 31 March

		Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats	Total
Estimated total tonnes								
2022 harvest	tonnes	66,714	352,068	41,113	304,427	18,749	10,175	793,245
2021 harvest	tonnes	103,362	337,638	57,671	266,229	16,878	12,122	793,900
2020 harvest	tonnes	102,756	350,944	75,608	262,092	12,815	10,485	814,700
2019 harvest	tonnes	78,109	319,991	76,170	307,530	19,689	7,135	808,624
Estimated total hectares								
2022 harvest	ha	7,774	35,370	5,929	43,472	2,916	1,728	97,188
2021 harvest	ha	11,706	33,394	7,201	36,599	2,358	2,242	93,500
2020 harvest	ha	11,347	34,353	11,019	34,081	2,109	1,891	94,800
2019 harvest	ha	8,594	36,406	10,780	44,720	3,351	1,343	105,194
Comparison of yields (t/ha) between last four harvests								
2022	t/ha	8.6	10.0	6.9	7.0	6.4	5.9	8.2
2021	t/ha	8.8	10.1	8.0	7.3	7.2	5.4	8.5
2020	t/ha	9.1	10.2	6.9	7.7	6.1	5.5	8.6
2019	t/ha	9.1	8.8	7.1	6.9	5.9	5.3	7.7

Sources: Foundation for Arable Research AIMI Survey of Cereal Areas and Volumes – April 1 2022.
 Foundation for Arable Research AIMI Survey of Cereal Areas and Volumes – October 1 2021 & 2020.



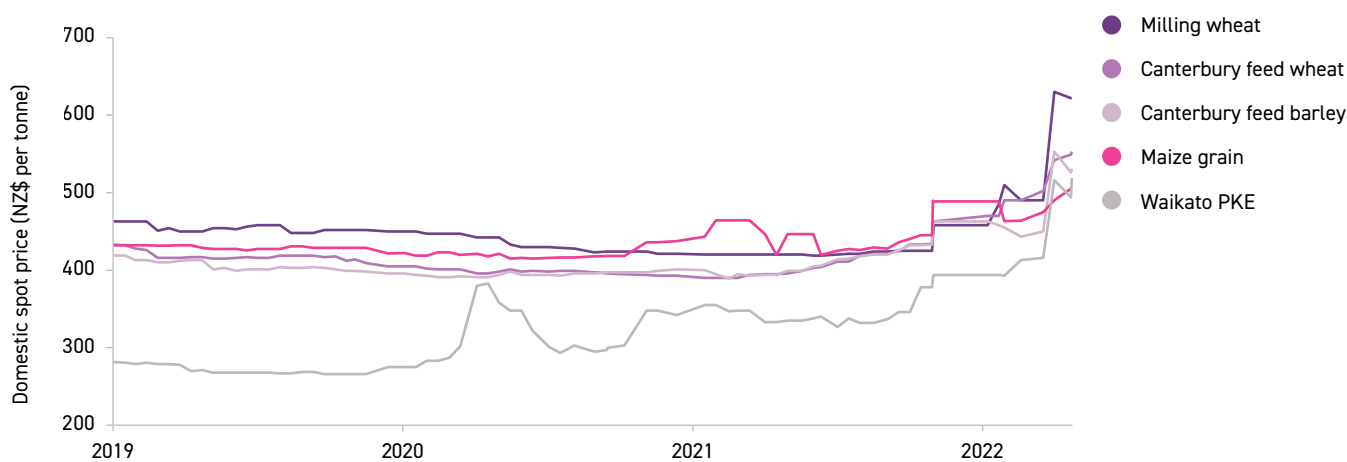
Domestic grain prices gradually increased over the latter half of 2021 driven by steady demand from the dairy sector and low stocks (Figure 51). From February 2022, domestic prices increased considerably following the invasion of Ukraine by Russia – two of the main grain exporters (about 30 percent of global wheat exports between them). This caused volatility and increases in international grain prices. By April 2022, domestic spot milling wheat prices were \$200 per tonne higher than April 2021 at \$620 per tonne and feed wheat and barley prices had increased by \$150 per tonne to \$550 and \$530 per tonne.

Growers will not fully benefit from the current prices, with over half the 2022 harvest sold on pre-harvest contracts. At the time of writing, feed wheat contracts for 2023 were not available, but early milling wheat contracts were reflecting the spot price.

The AIMI Survey shows 73 percent of the 2022 harvest had been sold by 1 April 2022, with 56 percent sold on pre-harvest contracts and 17 percent at spot prices (Figure 52).

Figure 51: Surge in spot prices for domestic grains and PKE in 2022

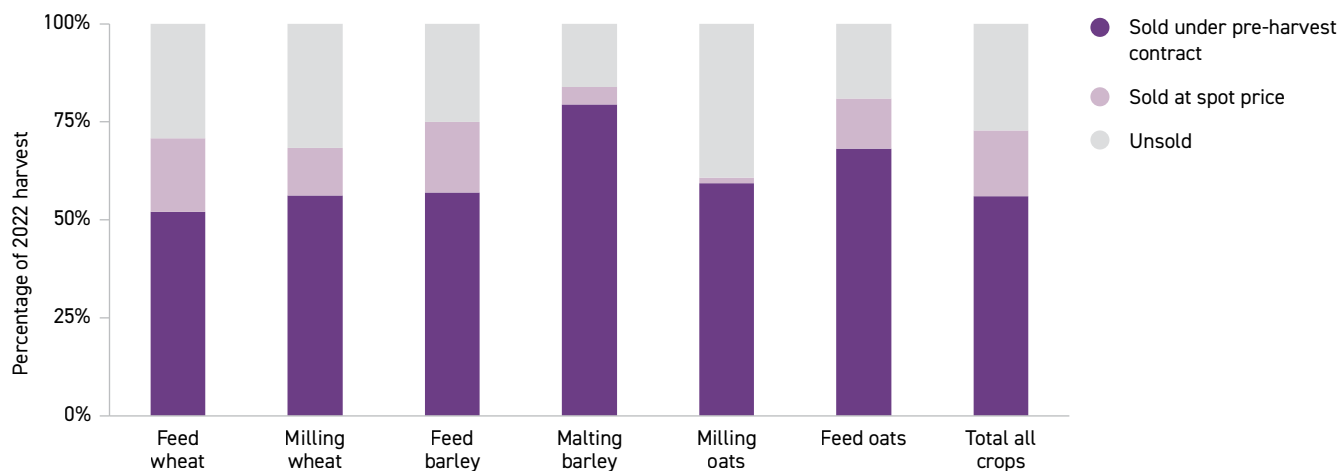
Year to 31 December



Source: NZX Grain and Feed Insight.

Figure 52: Bulk of the 2022 grain harvest sold

At 1 April 2022



Source: Foundation for Arable Research AIMI Survey of Cereal Areas and Volumes – 1 April 2022.

Autumn/winter sowing intentions in the AIMI survey show growers planning to increase the area of feed barley by about 20 percent, little change in the feed wheat area and falls of 1,000 hectares in both the milling wheat and malting barley areas.

Some seed crops abandoned

The full impact of the difficult season won't be known until cleaning and quality testing of seed crops is completed. Early indications are that ryegrass and clover seed crops have yield reductions of 30 percent or more for some species, and about a third of white clover crops were written off due to sprouting.

Mixed results for the harvest of vegetable and oil seeds are expected with the harvest not quite finished at the time of writing. Yields for pea seed crops were down considerably, but average yields are expected for many of the other crops.

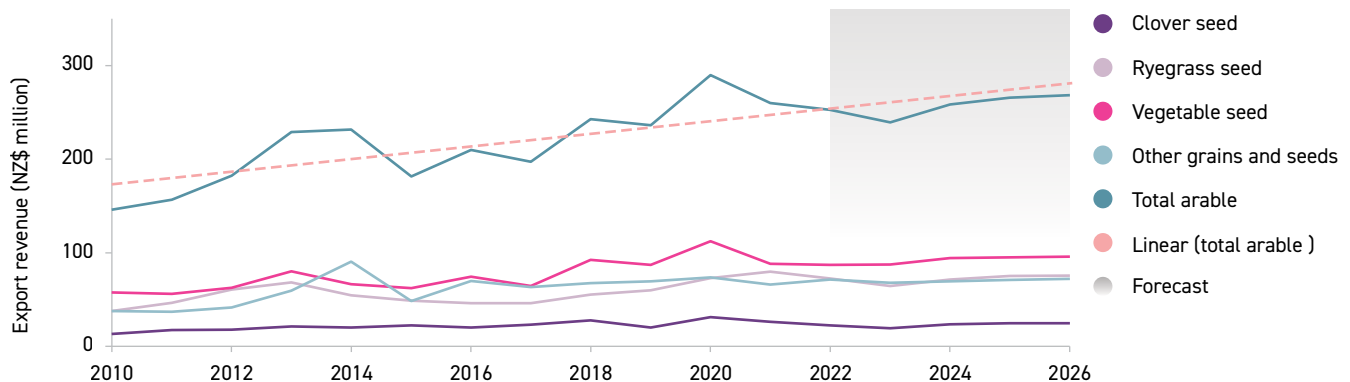
Difficulty meeting export demand

Herbage seed demand has remained strong in most international markets due to lower availability and higher consumption as a result of high commodity prices along with strong demand from the turf market. The 2021 harvest in the key production regions of the US was extremely poor due to drought, and yields were below average in the European seed producing countries except for Denmark. Drought lowered yields in South America's 2022 harvest. New Zealand seed exporters will struggle to meet demand following the poor harvest, and companies that contracted on volume rather than area are likely to have to buy their way out of contracts (Figure 53).

In general, demand for New Zealand vegetable and oil seeds remains steady. Less demand for canola and red beet seed is expected, with much of it usually destined for Russia and Ukraine via Europe but difficult to deliver at present.

Figure 53: Arable export revenue fluctuates between years but continues to trend up

Year to 30 June, NZ\$ million



Source: Stats NZ and MPI.



Due to rising input prices, arable farmers are being very selective in what small seed crops they grow for the 2023 harvest, although many herbage seed contracts for the 2022/23 season were in place before the inflationary pressures were known. There is pressure on New Zealand seed companies to get better pricing from international companies so they can pay growers more to maintain growing areas.

The seed companies also need extra margins to cover the increasing freight costs. Exporting is described as a daily nightmare with freight prices trebled and booking space difficult to get and many shipping lines not offering space to smaller players. Getting seed to New Zealand faces similar challenges, and the delays have contributed to some later plantings.

Processed food and other products



- The processed food and other products sector is expected to grow export revenue by 3 percent to just over \$3.2 billion in the year to 30 June 2022 led by a 13 percent increase in the other products category, which is forecast to hit \$820 million.
- Export revenue from honey is forecast to fall from last year's record to \$440 million, with downward pressure on volume in the year to 30 June 2022.
- Export revenue in the year to 30 June 2022 from live animal exports is forecast to be ahead of the previous year, increasing 9 percent to \$560 million due to sustained high demand for live cattle.
- Of the other categories in the sector, very little movement is forecast with all products matching the previous year's performance so far in the year to 30 June 2022.

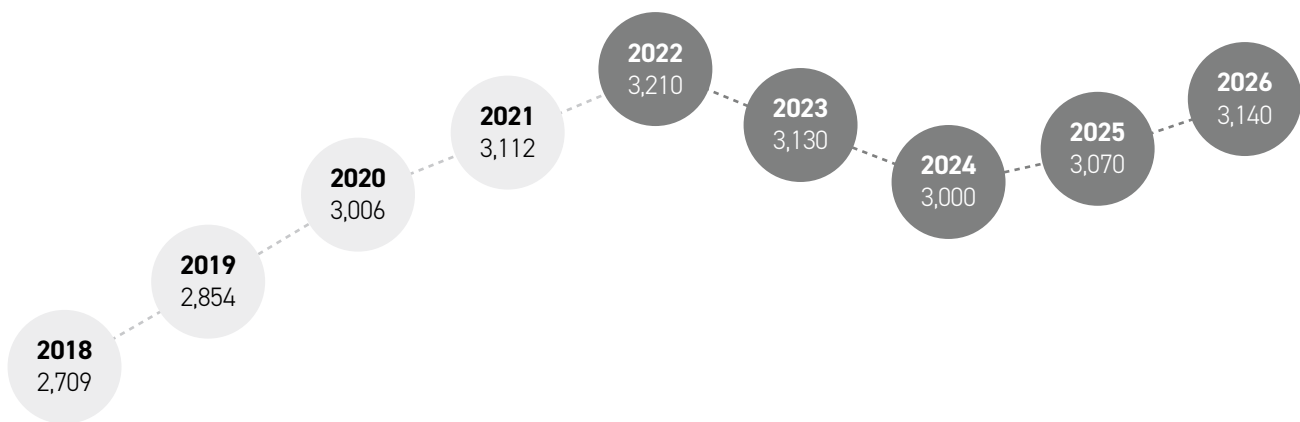


Table 21: Processed food and other products export revenue 2018–26

Year to 30 June, NZ\$ million

Product	Actual				Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Innovative processed foods	759	788	785	645	640	680	750	770	790
Honey	348	355	425	482	440	410	390	390	400
Sugar and confectionery products	263	225	250	285	290	290	310	320	340
Cereal products	306	306	292	282	290	300	310	310	290
Live animals*	241	239	290	513	560	450	210	210	220
Soup and condiments	184	196	198	181	170	180	190	190	210
Other products**	609	746	766	724	820	820	850	870	890
Total export value	2,709	2,854	3,006	3,112	3,210	3,130	3,000	3,070	3,140
Year-on-year % change	3%	5%	5%	4%	3%	-2%	-4%	2%	2%

* Includes horses, cattle, poultry, goats and other animals.

** Includes beverages, vegetable-based dyes and spices.

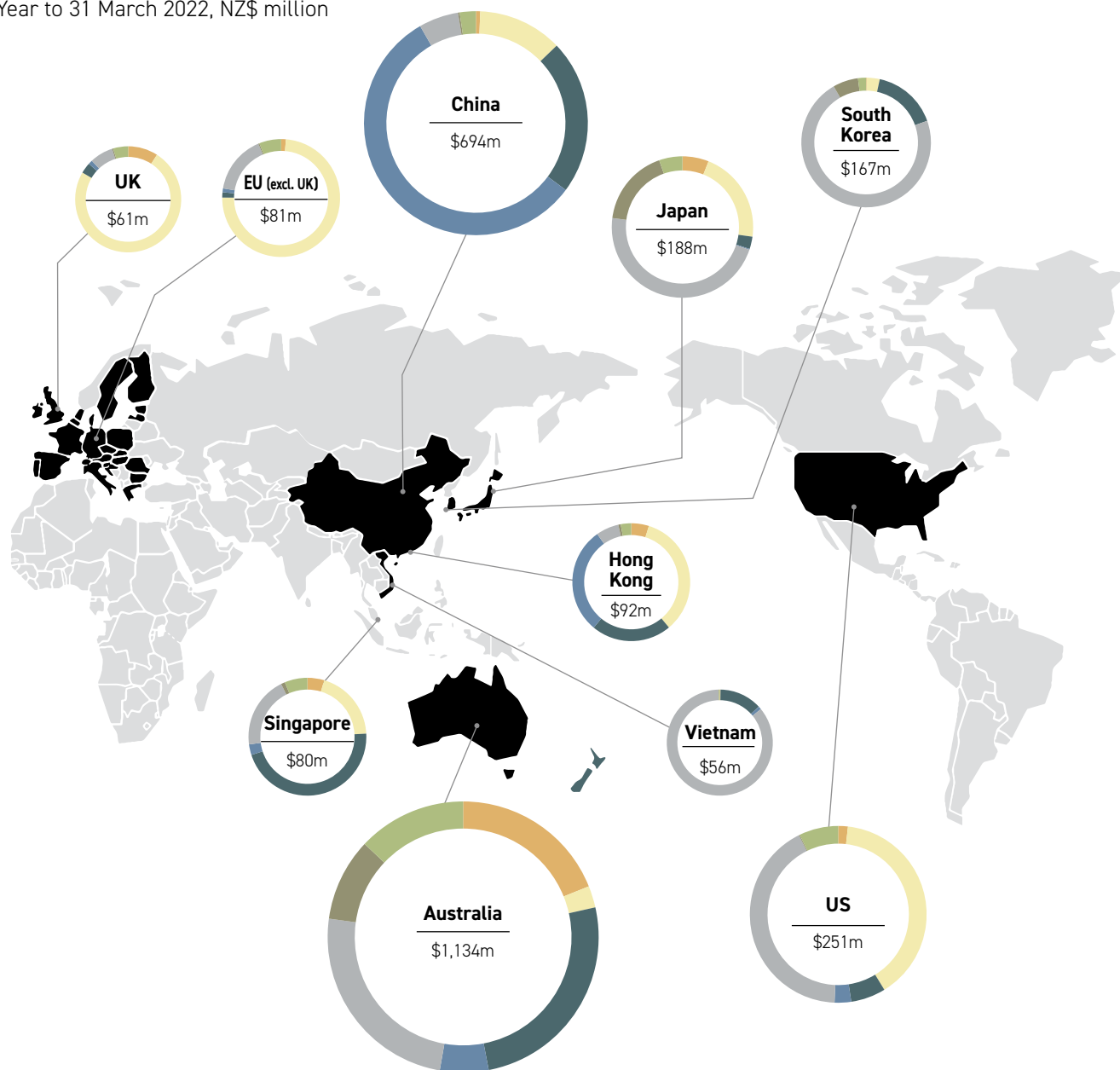
Percentages in the table are rounded to the nearest whole percent.

Source: Stats NZ and MPI.



Top 10 processed food and other products export destinations

Year to 31 March 2022, NZ\$ million



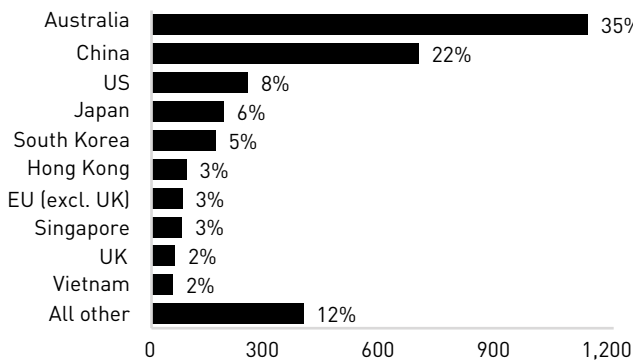
Product	Export revenue (NZ\$ million)	% of total
Innovative processed foods	648	20%
Live animals	531	17%
Honey	456	14%
Sugar and confectionery products	291	9%
Cereal	286	9%
Soups and condiments	176	6%
Other	811	25%
Total	3,198	100%

Source: Stats NZ.

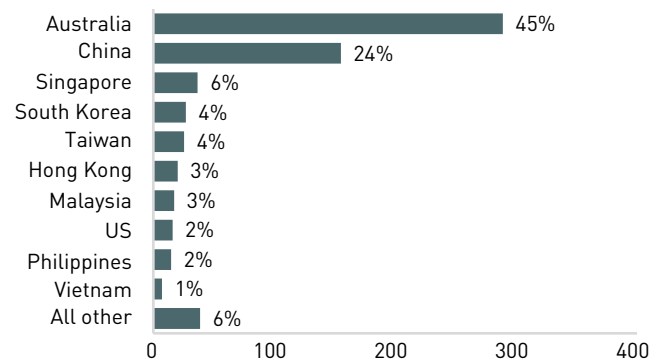
Top processed food and other products export markets

Year to 31 March 2022, NZ\$ million and percent

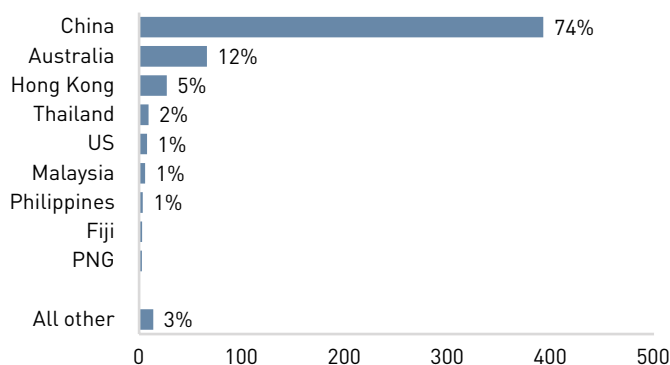
Total processed food and other products



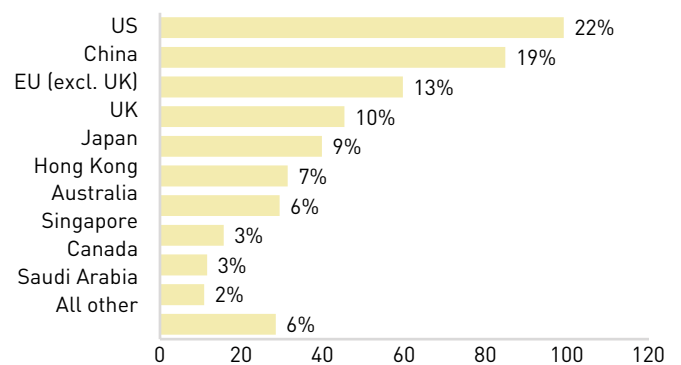
Innovative processed foods



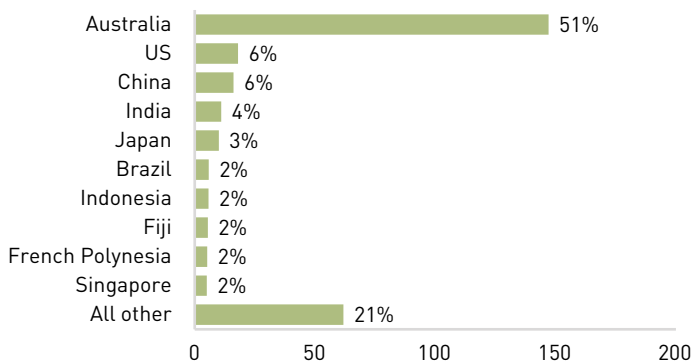
Live animals



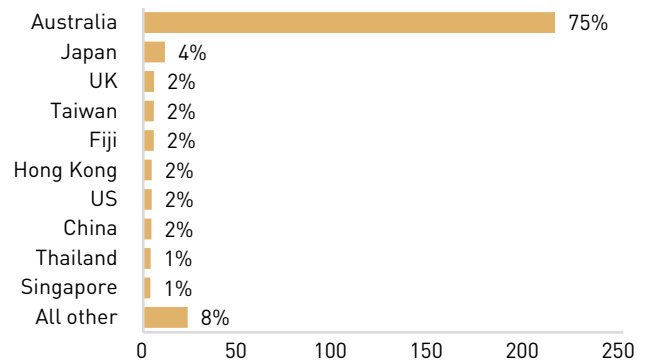
Honey



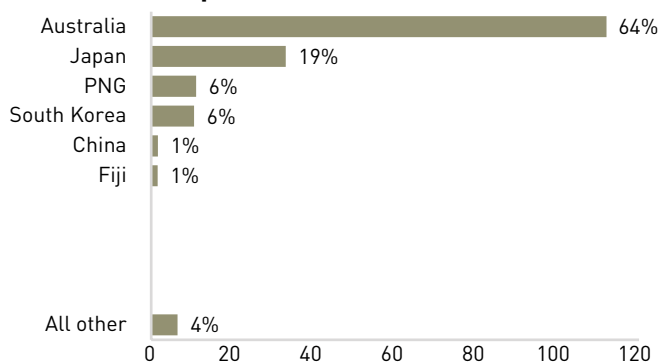
Sugar and confectionery products



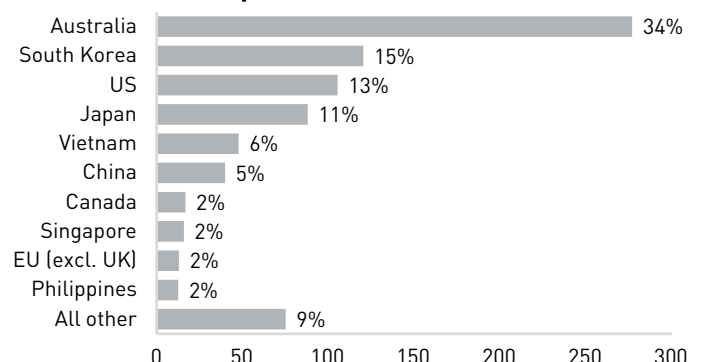
Cereal products



Soups and condiments



Other products



Source: Stats NZ.

The processed food and other products sector is diverse and includes processed foods, live animals and honey. Processed foods include items such as soft drinks, beer, snack bars and tomato sauce. Export revenue for this sector is forecast to reach \$3.2 billion in the year to 30 June 2022, a moderate increase of 3 percent on the previous year. This is being driven by a strong performance in other products, for example, beer, spirits and non-alcoholic drinks, and an increase of forecast revenue from live animal exports. However, these gains are partially offset by a forecast reduction in honey. Innovative processed foods are forecast to bounce back to pre-COVID-19 levels until the year to 30 June 2024.

Honey seeing variable export prices but volume down in 2022

Export revenue from honey of all types is forecast to reach \$440 million in the year to 30 June 2022, \$42 million lower than the previous year. Demand soared after the onset of the pandemic as people sought health-boosting foods, and a record export volume contributed to a record total revenue of \$482 million in 2021. However, those volumes could not be sustained in the first three quarters of 2022 (Figure 54), and total export volume is forecast to fall by 15 percent to approximately 11,000 tonnes for the year.

Exporters are facing uncertainty heading into the next couple of seasons with the demand picture yet to settle into a new normal after COVID-19. With international borders opening, exporters will have a greater opportunity to be present in key markets, which should help to get an accurate picture of demand and drive sales.

Exports over the coming 12-month period will not be limited by supply, with high stocks of honey remaining from previous harvests. For the 2022 season, beekeepers and honey producers are estimating a crop close to the long-term average after a series of strong harvests, especially in 2019 and 2020 (Table 22). Honey exporters will be looking for both domestic and overseas stocks to clear to support higher prices in the coming seasons.

Overall, the average price of honey has increased in 2022, but it has been variable across different honey types (Figure 55). Monofloral mānuka has maintained a high value for the first three quarters of 2022 supporting average prices of \$55.83 per kilogram, an 8.3 percent increase on 2021. Non-mānuka honey average prices saw spikes in the December and March quarters of this year to be up 20 percent compared with 2021. With multifloral mānuka falling 10 percent in 2022, the average prices of these two honey types are now closely matched.

Although not reflected in export figures, the domestic market for mānuka is set to rebound with the opening up of borders and return of tourists who drive domestic sales.

Table 22: Honey production and exports 2018–21

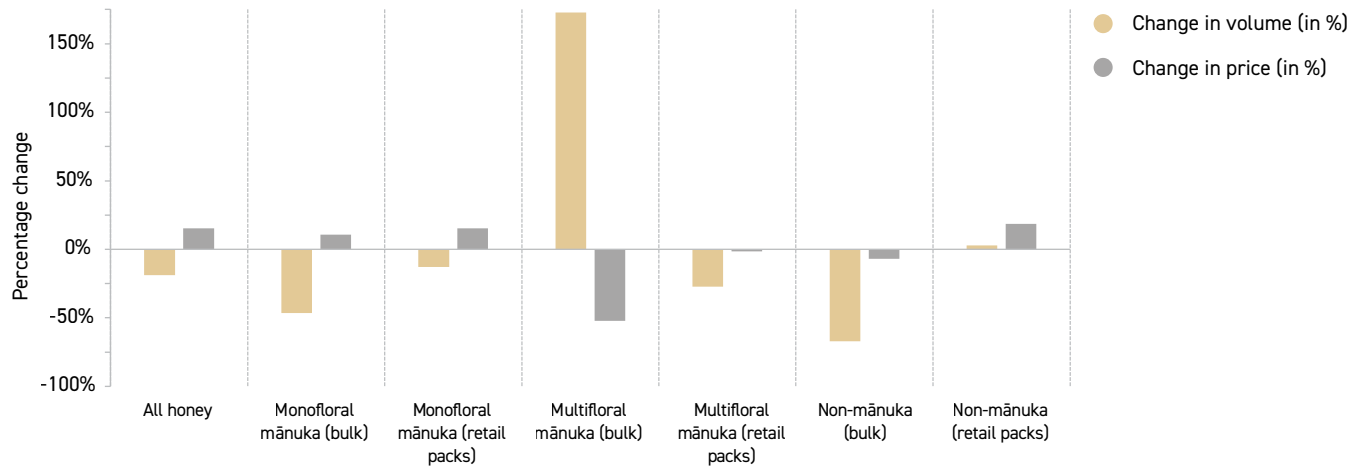
Year to 30 June

	Actual			
	2018	2019	2020	2021
Honey production (tonnes)	20,000	23,000	27,000	20,500
Export volume (tonnes)	8,692	8,065	10,288	12,788
Average export price (NZ\$/kg)	40.04	44.02	41.28	38
Total export value (NZ\$ thousand)	348,009	355,060	424,694	481,571
Year-on-year % change	11%	2%	20%	13%

Source: Stats NZ and MPI.

Figure 54: Average prices up but volume down on year

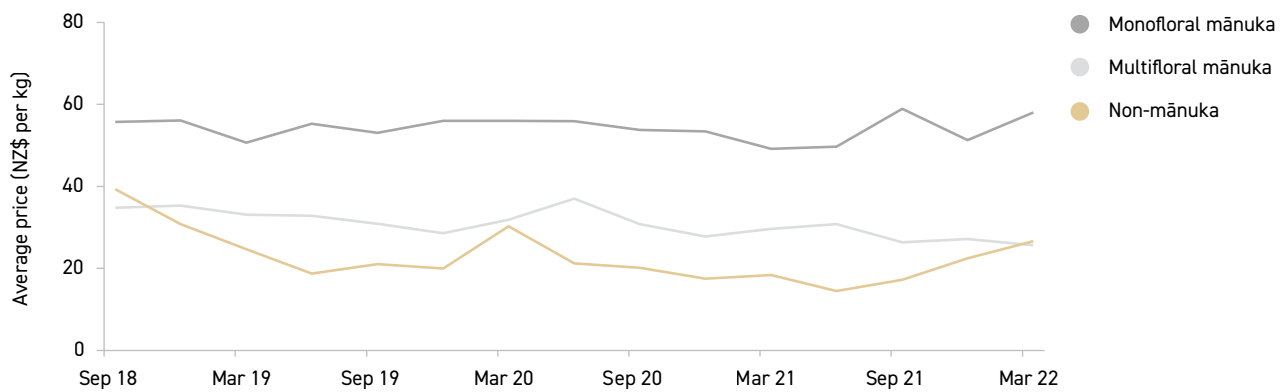
Percentage change from March quarter 2021 to March quarter 2022



Source: Stats NZ and MPI.

Figure 55: Monofloral mānuka prices hold while other honeys converge

Year to 30 June 2022, NZ\$ per kg



Source: Stats NZ and MPI.



Live animals demand still strong but will begin to fall away in 2023

In 2021, live cattle export demand to China emerged as the most significant contributor to live animal exports as China improves its dairy herd genetics. Live cattle export revenue grew by \$216 million or 180 percent from 2020 to 2021 and now makes up around two-thirds of total live animal exports.

The elevated demand for cattle remains, and 2022 revenue for the live animal category is forecast to reach \$560 million, approximately 9 percent higher than last year. However, constraints in shipping, logistics and labour have delayed sailings, and it is possible that some of the forecast revenue will actually be realised in the 2022/2023 year.

The export of live cattle will cease following the introduction of a ban on the shipment of live animals by sea in April 2023. This is reflected in reduction in forecast revenue for 2023 and significant reductions in 2024 and onwards.

Other products lead revenue growth in the year to 30 June 2022

With a forecast revenue of \$820 million, the other products category will comprise approximately a quarter of the revenue in this sector in the year to 30 June 2022 with growth also expected through to 2026.

Other products is a very diverse category that includes soft drinks, beer and spirits as well as various niche foods. In the year to 30 June 2021, these four product groups made up more than 50 percent of revenue in the category.

Growth of 13 percent (\$96 million) is forecast in the year to 30 June 2022, which is primarily driven by a 44 percent increase in revenue from various niche foods in the first three quarters of the year.

Australia is the primary market for these products with a 40 percent share of revenue in the year to 30 June 2021. There are signs of market diversification with the US and South Korea increasing their share of exports over the first three quarters of 2022.

Other categories remain stable

Export revenue from innovative processed foods is not forecast to bounce back to pre-COVID levels in 2022 and will be relatively stable at \$640 million. Revenue for the first three quarters of 2022 has been similar to the same period in the previous year. This category provides approximately a fifth of revenue in the processed food and other products sector and is comprised of products like dietary and vitamin supplements and prepared frozen meals.

Innovative processed foods and the remaining categories of sugar and confectionery, cereal products, and soups and condiments are collectively forecast to decrease by just \$3 million or 0.2 percent in the year to 30 June 2022. Australia is the dominant market for these products, and the categories have likely been less affected by freight disruptions associated with congestion in China and a scarcity of shipping containers than other primary sector products.

Despite the stable forecast, there may be cause for optimism for 2023 onwards, as it is possible that exporters of consumer-ready, retail-packed products will have greater ability to respond to cost inflation by raising prices. They may also benefit from an international trend to bring manufacturing back onshore to address global geopolitical instability and food security concerns. There is evidence of this occurring in New Zealand with Arnott's returning to baking in New Zealand after 25 years with a new facility in West Auckland, although it is yet to be seen what proportion of this production is exported.



Workforce in the food and fibre sector

The workforce is critical to the success of the food and fibre sector, and a wide range of skills are required

Producing food and fibre means managing complex biological, food safety and logistics systems and being able to respond to and meet consumer needs. Jobs in the sector, the skills required and the numbers of jobs in different roles are changing and will continue to change as land use changes and the sector transforms.

The food and fibre sector's value chain brings together production, processing/ commercialisation and supporting roles

Some products are transformed during processing/ commercialisation, for example, milk into cheese, grapes into wine and logs into engineered timber. For other products, the focus is on ensuring food reaches consumers in the best fresh state it can, for example, apples, meat and kiwifruit.

Not only is the food and fibre sector an important part of the New Zealand economy and exports, it also employs a substantial proportion of the New Zealand workforce.

To continue to grow and transform the sector and increase exports, the sector will also need to transform its workforce, making it more diverse and more highly skilled. The diversity of the sector means there are a range of roles and huge opportunities for people to find rewarding careers within the sector.



Large workforce with many different roles and skill requirements

The food and fibre sector employed 367,000 people in 2019, accounting for 1 in 7 of the New Zealand workforce. This includes:

- 108,000 people employed in production;
- 146,000 people employed in processing and commercialisation, for example, dairy, meat or seafood processing, wood processing and wholesale products;
- 113,000 people employed in support services, for example, road freight or veterinarians.

The processing and commercialisation workforce is 35 percent greater than the production workforce. This highlights the importance of these activities to ensure that consumers, both in New Zealand and international markets, receive high-quality, safe food and fibre.

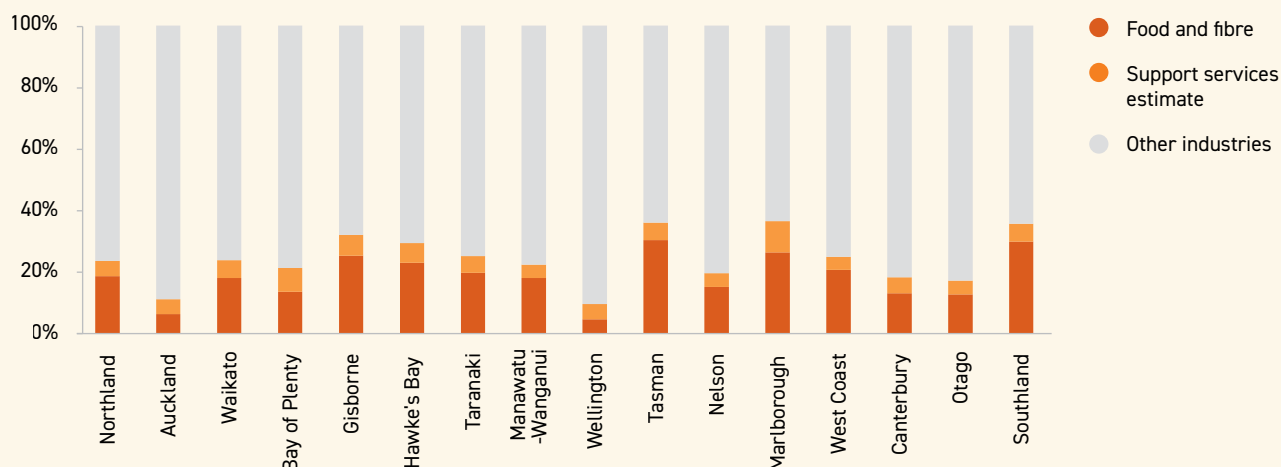
Important source of employment in the regions

Food and fibre sector employment varies across the regions. In regions without a city of 100,000 or more residents, the food and fibre sector employs more than 20 percent of the workforce. Southland has the highest proportion at 28 percent of the workforce, and the Wellington region has the lowest proportion at 8 percent of the workforce.

The food and fibre sector dominates the workforce in rural regions as a proportion of the workforce (Figure 56). However, the number of people working in the food and fibre sector is highest in Auckland, Canterbury and Waikato (Figure 57).

Figure 56: Food and fibre sector is a significant employer in rural regions

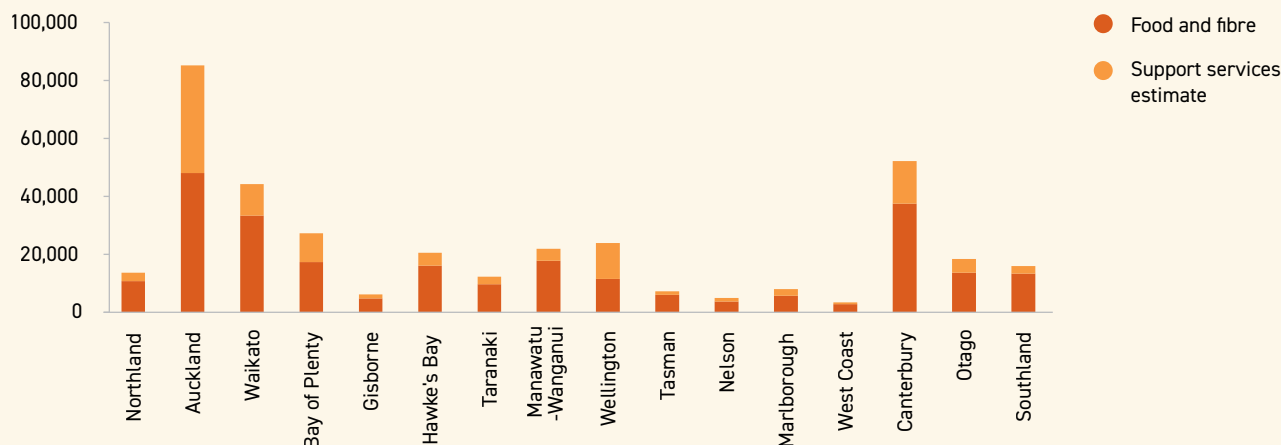
Food and fibre workforce as a proportion of regional workforce, 2019



Source: MPI Food and Fibre Workforce: Snapshot.

Figure 57: Auckland region has the largest food and fibre workforce

Food and fibre workforce count by region, 2019



Source: MPI Food and Fibre Workforce: Snapshot.

The workforce is broadly similar to New Zealand's on some measures but differs on others

The food and fibre workforce is broadly similar to the New Zealand workforce in terms of age, ethnicity and education and differs from the New Zealand workforce in terms of gender balance and proportion self-employed.

A higher share of self-employed workers

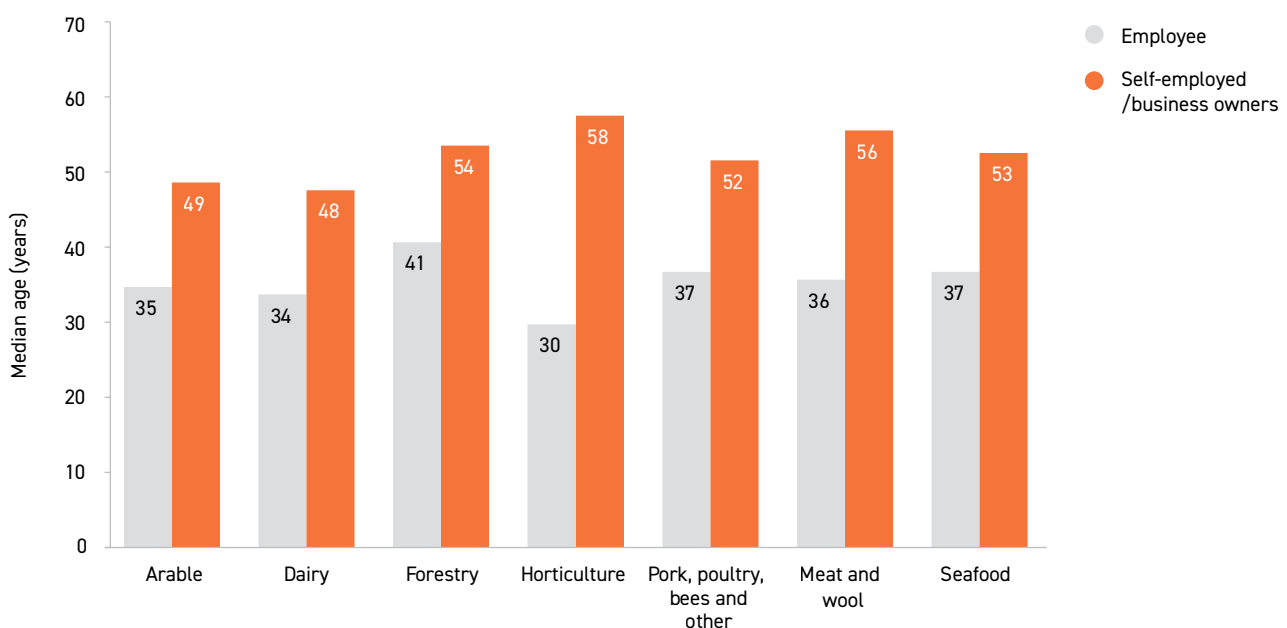
The food and fibre workforce has a higher proportion of people in self-employment (14 percent) than the national average (10 percent). Self-employment is often associated with owning a business (including contractors) and land ownership. The highest levels of self-employment are found in the production sections of both the dairy sector (28 percent) and red meat and wool sector (30 percent).

At an aggregate level, the production workforce is younger than the processing/commercialisation workforce. There is a wide variation between sectors (Figure 58). For example, 47 percent of workers in horticulture production are aged under 30 years, whereas 31 percent of workers in red meat and wool production are aged 55 and over. The median age of employees is 30–41, while self-employed workers (which includes farm, orchard or factory owners) have a median age of 48–58.



Figure 58: Employees are younger than self-employed/business owners

March 2019, median age of the food and fibre workforce by sector and employment status



Source: MPI Food and Fibre Workforce: Snapshot.

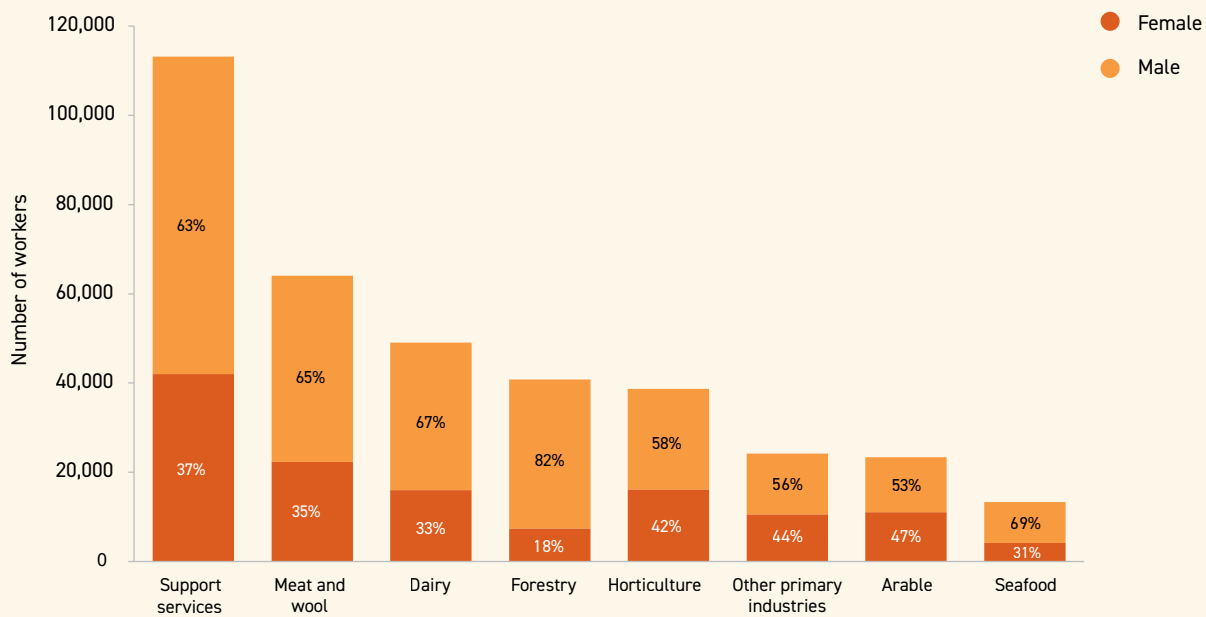
A sector with an increasing share of women

The food and fibre sector is not as gender balanced as the New Zealand workforce being 65 percent male compared with 52 percent male. From 2012 to 2019, the number of women working in the food and fibre sector increased, lifting the proportion of females employed in the sector from 33 percent to 35 percent. Women are an increasing proportion of new entrants, although the gender balance for new entrants is still less than the gender balance of the New Zealand workforce.

The gender balance varies widely in the food and fibre sector (Figure 59). Some substantial workforces have among the highest male proportions, making it difficult to increase the overall proportion of females. For example, forestry and wood processing, with the third-largest sector workforce (excluding support services), is more than 80 percent male. The arable sector, with the second-smallest workforce, is 53 percent male. The gender balance in the arable sector is similar to the gender balance in the New Zealand workforce.

Figure 59: Gender balance varies by sector

Gender representation for the food and fibre workforce, 2019



Source: MPI Food and Fibre Workforce: Snapshot.

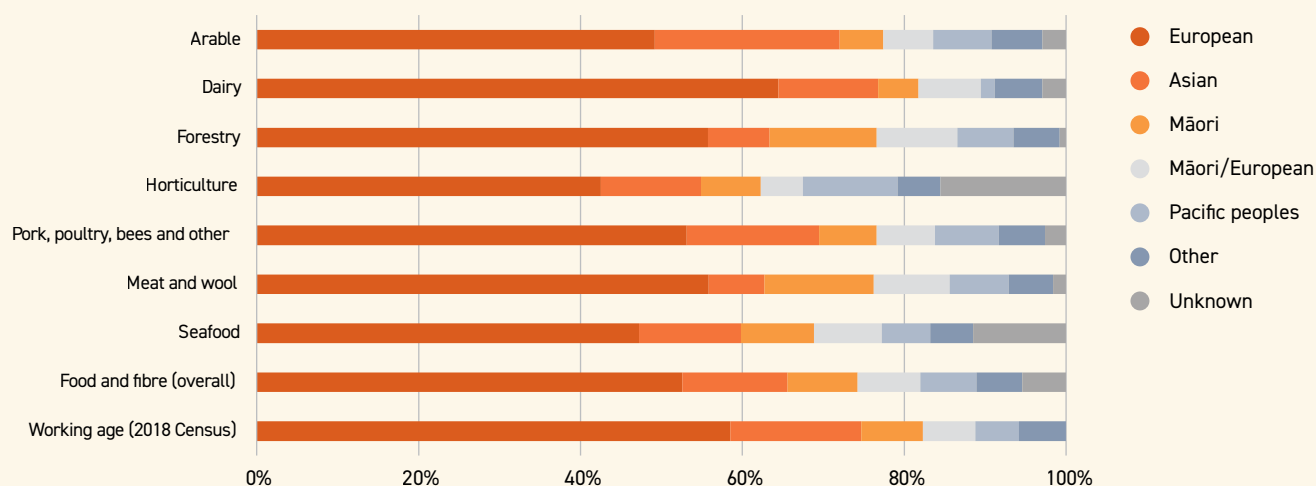


An ethnically diverse sector

Consistent with the New Zealand population, the majority of workers across all sectors and value chains identify as European. Figure 60 illustrates the ethnic diversity within each industry.

Figure 60: Ethnic diversity varies by industry

2019



Source: MPI Food and Fibre Workforce: Snapshot.

The proportion of people who identify as Māori is higher in the food and fibre workforce than in the general New Zealand working-age population, with the exception of the arable and dairy sectors.

People who identify as Pacific peoples are underrepresented in all production sectors except horticulture. The RSE scheme, where workers from eligible Pacific countries come to New Zealand for seasonal work in the horticulture and viticulture industries, may explain this overrepresentation. People who identify as Pacific peoples are overrepresented in all processing/commercialisation sectors except dairy, possibly due to large processing/commercialisation workforces being based in the Auckland region.

People who identify as Asian are underrepresented overall with some overrepresentation in arable processing/commercialisation and red meat processing/commercialisation.

Qualifications at all levels are desired in the food and fibre sector

The food and fibre sector offers a wide range of opportunities for people with a wide range of skills and qualifications. There are many positions with low barriers to entry where people can start working while they gain experience and qualifications. While many people may not have formal qualifications, they are highly skilled due to on-the-job training and experience.

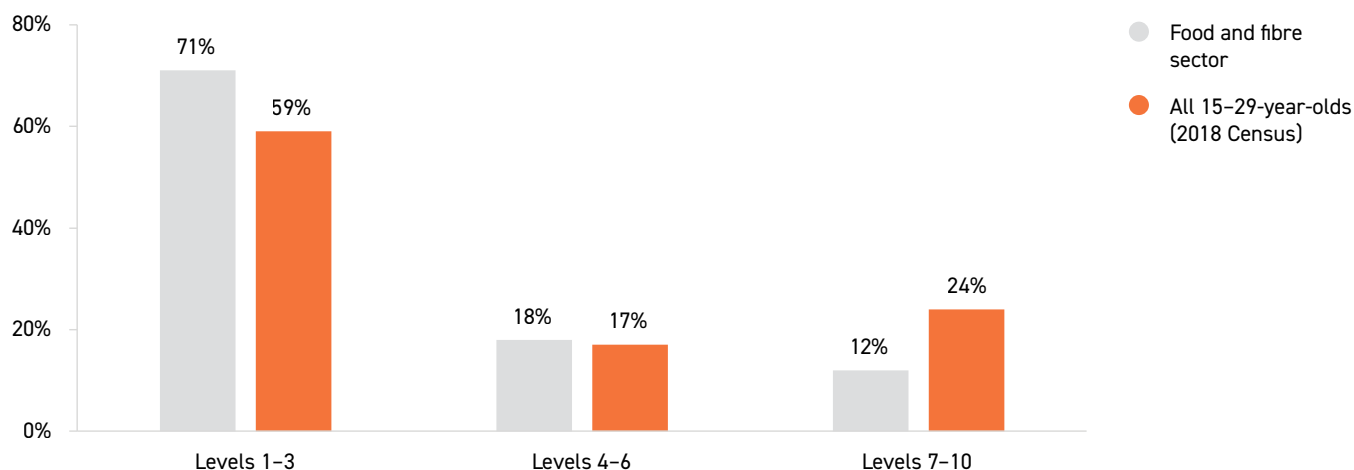
Reliable datasets on formal qualification levels are available for those in the 15–29 age band, so discussion on formal qualifications is limited to this age group. Qualification data is based on the New Zealand Qualifications Authority framework:

- Levels 1–3 are certificates.
- Levels 4–6 are certificates and diplomas.
- Levels 7–10 are degrees and graduate and postgraduate diplomas, master's degrees and PhDs.

The food and fibre workforce has higher levels of qualifications at levels 1–3 and levels 4–6 than the New Zealand equivalent population and lower levels of qualifications at levels 7–10 (Figure 61).

Figure 61: Lower levels of formal qualifications than New Zealand average

For 15–29-year-olds, highest formal qualification level in the food and fibre workforce compared with New Zealand population, 2019



Source: MPI Food and Fibre Workforce: Snapshot.

A higher proportion of workers with qualifications at levels 7–10 are found in the processing/commercialisation part of the value chain (15 percent) compared with the production part of the value chain (7 percent). This holds for all sectors. Dairy processing has a greater proportion of workers with qualification at levels 7–10 (37 percent) compared with the proportion in production (7 percent) and is the only part of the food and fibre sector to have a higher proportion of workers with qualifications at levels 7–10 than the New Zealand population aged 15–29 (24 percent).

Forestry has the highest share of workers in the food and fibre sector (25 percent) whose highest qualifications are at

levels 4–6. The share of workers with qualifications at levels 4–6 ranges from 14 to 19 percent in other primary industries. This is comparable to the food and fibre sector overall (18 percent) and New Zealand (17 percent).

Workers in the food and fibre sector have qualifications from a wide range of fields of study. As expected, agriculture, environmental and related studies are important. This includes horticulture, forestry and fisheries studies along with natural and physical sciences. Other important fields of study include engineering and related technologies as well as management and commerce. Information technology also features significantly in support services.



The workforce varies by sector

Meat and wool makes up 17.5 percent of the food and fibre workforce

The meat and wool sector includes sheep and beef and deer farming, meat (beef, sheep, venison) processing and wholesaling, shearing, scouring, wool and hide processing and textile manufacturing.

The meat and wool workforce makes up 17.5 percent of the food and fibre workforce. The workforce has decreased by 7 percent between 2012 and 2019.

Meat and wool workforce statistics:

- 64,055 people (17.5 percent of food and fibre workforce), down 7 percent between 2012 and 2019.
- 29,040 people in production (45 percent) and 35,015 people in processing/commercialisation (55 percent).
- The production workforce decreased by 12.9 percent between 2012 and 2019, and the processing/commercialisation workforce decreased by 1.4 percent.

Dairy represents 13.4 percent of the food and fibre sector workforce

The dairy sector includes dairy farming and dairy processing along with cheese, ice-cream and other dairy product manufacturing and wholesaling.

The dairy workforce makes up 13.4 percent of the food and fibre workforce. The total number employed in dairy has increased by 1 percent between 2012 and 2019. During this period, there has been a reduction in the production workforce and an increase in the processing/commercialisation workforce.

Dairy workforce statistics:

- 49,080 people (13.4 percent of food and fibre workforce), up 1 percent between 2012 and 2019.
- 33,100 people in production (67 percent) and 15,980 people in processing/commercialisation (33 percent).
- The production workforce decreased by 8.1 percent between 2012 and 2019, and the processing/commercialisation workforce increased by 26.7 percent.



Horticulture has 10.6 percent of the food and fibre sector workforce

The horticulture industry is a diverse sector that includes apples, wine, kiwifruit and vegetables.

The horticulture workforce is 10.6 percent of the food and fibre workforce. Horticulture has a seasonal workforce, and the seasonal demand for labour means migrant workers are important, especially those on RSE visas and working holiday visas. In March 2019, the seasonal peak for the workforce was approximately 43,000. This is higher than the workforce count (38,730) that has been calculated on a quarterly average basis. The seasonal nature of this workforce and the use of temporary labour from labour supply services make it difficult to get an accurate count of the workforce using a standard statistical approach.

Horticulture workforce statistics:

- 38,730 people (10.6 percent of food and fibre workforce), up 7.8 percent between 2012 and 2019.
- 24,930 people in production (64 percent) and 13,800 people in processing/commercialisation (36 percent).
- The production and processing/commercialisation workforces increased by 7.8 percent between 2012 and 2019.

Forestry and wood processing employs 11.1 percent of the food and fibre workforce

Forestry includes silviculture and harvesting along with sawmilling, wood product manufacturing, pulp and paper production, furniture making, timber wholesaling and fire protection services.

The forestry and wood processing workforce makes up 11.1 percent of the food and fibre workforce. The sector is substantially more male dominated than other sectors, with men making up 82 percent of workers.

Forestry and wood processing workforce statistics:

- 40,835 people (11.1 percent of food and fibre workforce), up 6.8 percent between 2012 and 2019.
- 8,500 people in production (21 percent) and 32,335 people in processing/commercialisation (79 percent).
- The production workforce increased by 2.4 percent between 2012 and 2019, and the processing/commercialisation workforce increased by 8.1 percent.



Pork, poultry, bees and other represents 6.6 percent of the food and fibre workforce

Pork, poultry, bees and other is made up of a diverse range of activities, including pig farming, poultry farming and processing, beekeeping, horse farming, hunting and trapping, and other livestock farming such as alpacas.

The pork, poultry, bees and other workforce makes up 6.6 percent of the food and fibre workforce. The workforce has increased 28.9 percent between 2012 and 2019.

Pork, poultry, bees and other workforce statistics:

- 24,220 people (6.6 percent of food and fibre workforce), up 28.9 percent between 2012 and 2019.
- 6,520 people in production (27 percent) and 17,700 people in processing/commercialisation (73 percent).
- The production workforce increased by 25.6 percent between 2012 and 2019, and the processing/commercialisation workforce increased by 30.1 percent.

Arable employs 6 percent of the food and fibre workforce

The arable sector includes grain and seed production along with a diverse range of downstream industries such as flour milling and bread, bakery, cake and beer manufacturing. It also includes grain storage and wholesaling.

The arable workforce makes up 6 percent of the food and fibre workforce. Almost 9 out of 10 workers are in processing/commercialisation, especially flour milling, bread making, baking and beer brewing.

Arable workforce statistics:

- 23,395 people (6 percent of food and fibre workforce), up 7 percent between 2012 and 2019.
- 2,530 people in production (11 percent) and 20,865 people in processing/commercialisation (89 percent).
- The production workforce increased by 1.2 percent between 2012 and 2019, and the processing/commercialisation workforce increased by 7.7 percent.



Seafood represents 3.6 percent of the food and fibre workforce

The seafood sector includes the deepsea and inshore fisheries, aquaculture and seafood processing and wholesaling along with ship and boat building and repair services.

The seafood workforce makes up 3.6 percent of the food and fibre workforce.

Seafood workforce statistics:

- 13,335 people (3.6 percent of food and fibre workforce), up 2.3 percent between 2012 and 2019.
- 3,285 people in production (25 percent) and 10,050 people in processing/commercialisation (75 percent).
- The production workforce increased by 75.7 percent between 2012 and 2019, and the processing/commercialisation workforce decreased by 9.9 percent.

Support services

There are many people employed in businesses that operate in the food and fibre sector that cannot be attributed to a single sector and value chain. This is a wide and disparate group of businesses that can include functions as diverse as veterinary services, rural consulting, truck driving and freight services and even outsourced functions such as accountancy or human resources. However, all of these services are necessary for the food and fibre sector.

Support services workforce statistics:

- 113,157 people (30.8 percent of food and fibre workforce), up 24.5 percent between 2012 and 2019.



The food and fibre workforce is made of predominantly New Zealand citizens and residents

The workforce for the majority of sectors is over 90 percent New Zealand citizens and residents. Temporary migrants are also an important part of the workforce. Prior to border closures, temporary migrants on Essential Skills Work Visas and other visas holders were over 10 percent of the workforces for dairy and seafood.

Table 23 shows the source of workers in an average month prior to the impact of border closures.



Table 23: Source of workers before the border closures

Annual average for the year to 31 March 2019

	New Zealand citizens and residents	Working holiday scheme	Recognised Seasonal Employer	Essential Skills and other work visas
Arable production	90%	5%	n/a	5%
Arable processing	91%	1%	n/a	8%
Dairy production	87%	2%	n/a	11%
Dairy processing	96%	0%	n/a	4%
Forestry production	96%	1%	n/a	3%
Forestry processing	96%	0%	n/a	3%
Horticulture production	62%	10%	24%	5%
Horticulture processing	89%	4%	1%	6%
Pork, poultry, bees and other production	92%	2%	n/a	6%
Pork, poultry, bees and other processing	93%	1%	n/a	6%
Red meat and wool production	99%	1%	n/a	0%
Red meat and wool processing	95%	0%	n/a	5%
Seafood production	86%	3%	n/a	10% (7% fishing crew)
Seafood processing	88%	4%	n/a	9% (3% fishing crew)

Source: MPI Food and Fibre Workforce: Snapshot.

RSE scheme and working holiday scheme – a seasonal labour source for horticulture

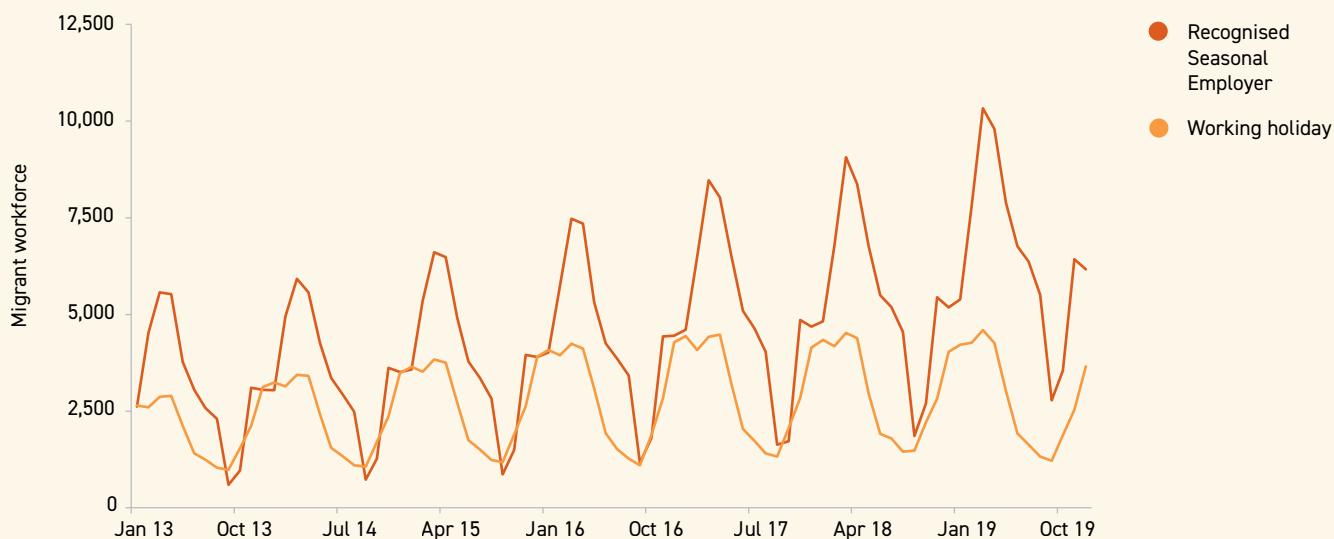
While the horticulture sector predominantly employs New Zealanders, it relies on a large number of migrant workers to support seasonal peaks. Almost a third of the workforce in 2019 were temporary migrants on RSE visas and working holiday (and extension) visas.

The annual pattern of employing RSE visa holders and working holiday visa holders in the horticulture sector is reasonably consistent, with the number employed in both groups reaching their peak around March:

- The number of onshore RSE workers employed reaches a peak in March and then drops sharply (Figure 62).
- Working holiday visa holder participation follows a similar pattern, with peaks during harvest in summer and autumn and lowest numbers in early spring. Unlike RSE, this represents a fraction of the working holiday visa holders onshore and is an estimate of participation based on 2016/17 and 2018/19 participation data.

Figure 62: Estimate of migrant horticultural workforce – working holiday and RSE

Monthly data, January 2013 – December 2019



Source: MPI Food and Fibre Workforce: Snapshot.



Some workers were able to enter while borders were closed

While the borders were closed, some migrant workers were still able to enter to work in the food and fibre sector. This, along with the effort put into training and upskilling New Zealanders, helped to mitigate worker shortages in the sector.

The single-largest economic-based class border exception was for experienced RSE workers. The Government also approved class border exceptions to bring in migrant workers for a number of the food and fibre sectors:

- Dairy workers (dairy farm managers and dairy farm assistants).
- Meat processing workers (including halal butchers).
- Deepsea fishers and seafood processing workers.
- Shearers and wool handlers.
- Rural contractors (mobile plant machinery operators).
- Silviculture forestry workers and wood processors and manufacturers.

In addition, migrant workers who met the 'other critical worker' criteria were also able to enter while borders were closed. These were a mix of short-term roles (less than six months) such as sheep pregnancy scanners and longer-term roles such as veterinarians.

As the borders open, the Immigration Rebalance provides the framework for accessing migrant workers.

Trends and the future workforce

Jobs in the food and fibre sector, as well as the skills required and the numbers of people in different roles, are changing and will continue to change as the sector transforms. The food and fibre sector is facing rapid shifts in consumer preferences, technology, regulation, competition and community expectations. These shifts will impact the workforce needs and skills required.

Developing and growing the workforce of the future will require the food and fibre sector to attract, upskill and retain people assisted through the *Opportunity Grows Here* campaign. Employment conditions, actual and perceived, influence the willingness of people to train and gain the skills needed to work in the sector.

Workforce forecasts, including scenarios, will be published later in 2022. These will include projected demand for different primary industry roles and skill levels. The aim is to examine what labour and skills the food and fibre sector will need by 2032 to deliver on four alternative futures:

- A status quo scenario that assumes a future level of production and processing/commercialisation based on the current situation.
- Increased automation and mechanisation.
- Transformation enabled through the *Fit for a Better World* roadmap.
- A Māori aspiration scenario.





Greenhouse gas emissions

Between 2019 and 2020, total agricultural emissions decreased by 0.093 megatonnes of carbon dioxide equivalent (Mt CO₂e, 0.2 percent).

Agricultural emissions increased rapidly until 2005. Agriculture emissions peaked in 2014 and have declined by 1.2 percent (0.5 Mt CO₂e) in the years 2015 to 2020.

Between 2021 and 2022, total agricultural emissions are estimated to decrease by 1.6 percent.

2022
↓
-0.6 Mt CO₂e

Between 2020 and 2021, total agricultural emissions are estimated to have remained stable.

2021
↓
-0.02 Mt CO₂e

Emissions are forecast to decline steadily between 2022 and 2025 by 2.8 percent.

2022-25
↓
-1.1 Mt CO₂e



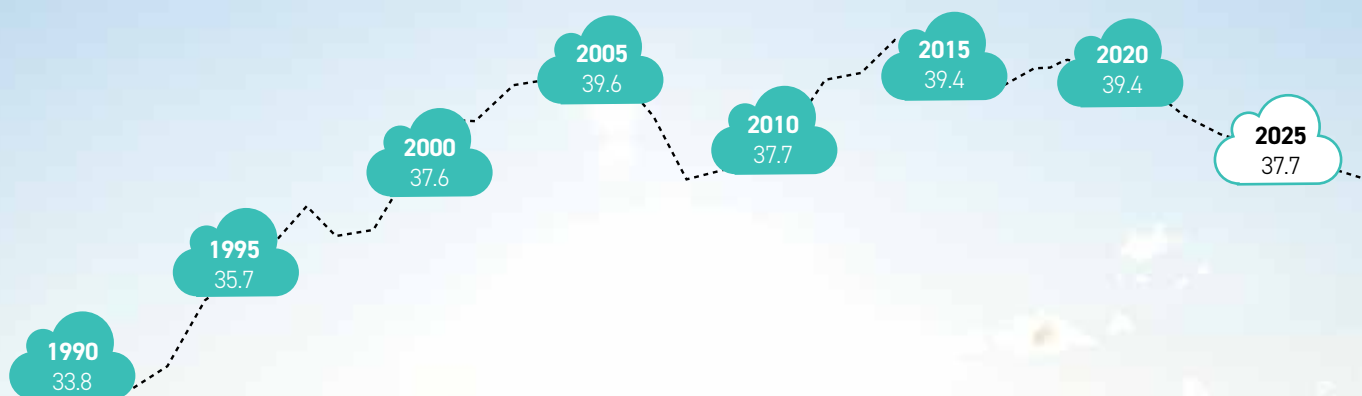


Table 24: Agricultural GHG emissions 2017–25

(Mt CO₂e)

By gas	Actual (inventory)				Forecast				
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Long-lived gases	8.7	8.9	8.9	9.0	9.0*	8.9*	8.8	8.8	8.7
Methane	30.3	30.5	30.6	30.5	30.4*	29.9*	29.4	29.2	29.0
Total	39.1	39.4	39.5	39.4	39.4*	38.8*	38.3	38.0	37.7
Change		0.3	0.2	-0.1	0.0	-0.6	-0.6	-0.3	-0.3
Percent change		0.7%	0.4%	-0.2%	0.0%	-1.6%	-1.4%	-0.7%	-0.7%

By source	Actual (inventory)				Forecast				
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Dairy cattle	18.5	18.5	18.5	18.5	18.3*	17.8*	17.8	17.8	17.8
Non-dairy cattle	6.6	6.6	7.0	7.1	7.3*	7.3*	7.0	6.9	6.8
Sheep	9.7	9.7	9.6	9.3	9.3*	9.2*	8.9	8.8	8.7
Other	4.4	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.5
Total	39.1	39.4	39.5	39.4	39.4	38.8	38.3	38.0	37.7

* Estimated using provisional values.

Source: MPI.



Agricultural greenhouse gas emissions are the result of biological processes

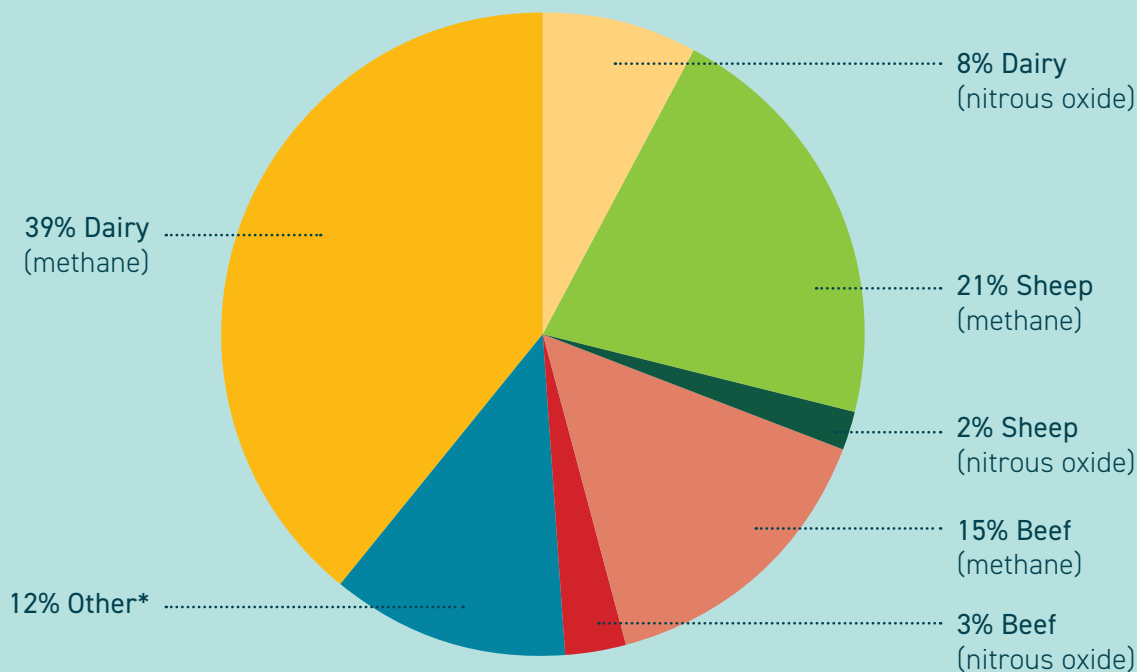
Agricultural greenhouse gas emissions are generated by biological processes in crop and livestock production and by the use of fertiliser. These activities release methane, nitrous oxide and carbon dioxide into the atmosphere. All greenhouse gas emissions have been converted to CO₂ equivalent, where "equivalent" means "having the same warming effect as CO₂ over a period of 100 years".

Agriculture accounted for 50 percent of New Zealand's gross emissions in 2020. Emissions from the agriculture sector totalled 39.4 Mt CO₂e.

Enteric fermentation was the main source of agriculture emissions

Enteric fermentation contributed 73 percent (28.8 Mt CO₂e) of the sector's emissions. Agricultural soils (20 percent) was the second largest source followed by manure management (4.4 percent). Urea application and liming contributed 1.4 percent and 1 percent respectively. Field burning of agricultural residues contributed the remaining 0.1 percent.

New Zealand agricultural emissions profile in 2020



* Includes other animal categories, fertiliser use, and cropping.
Source: MPI.

Progress towards methane target

New Zealand has set a target to reduce biogenic methane emissions in 2030 by 10 percent relative to 2017 levels.

In 2020, agriculture methane emissions were slightly above (0.4 percent) 2017 levels but are projected to fall by around 5 percent by 2025.

Between 2020 and 2021, total agricultural emissions are estimated to have remained stable

Provisional data on livestock populations and production suggests dairy emissions will decrease by 1.2 percent, with sheep emissions expected to decrease by 0.5 percent.

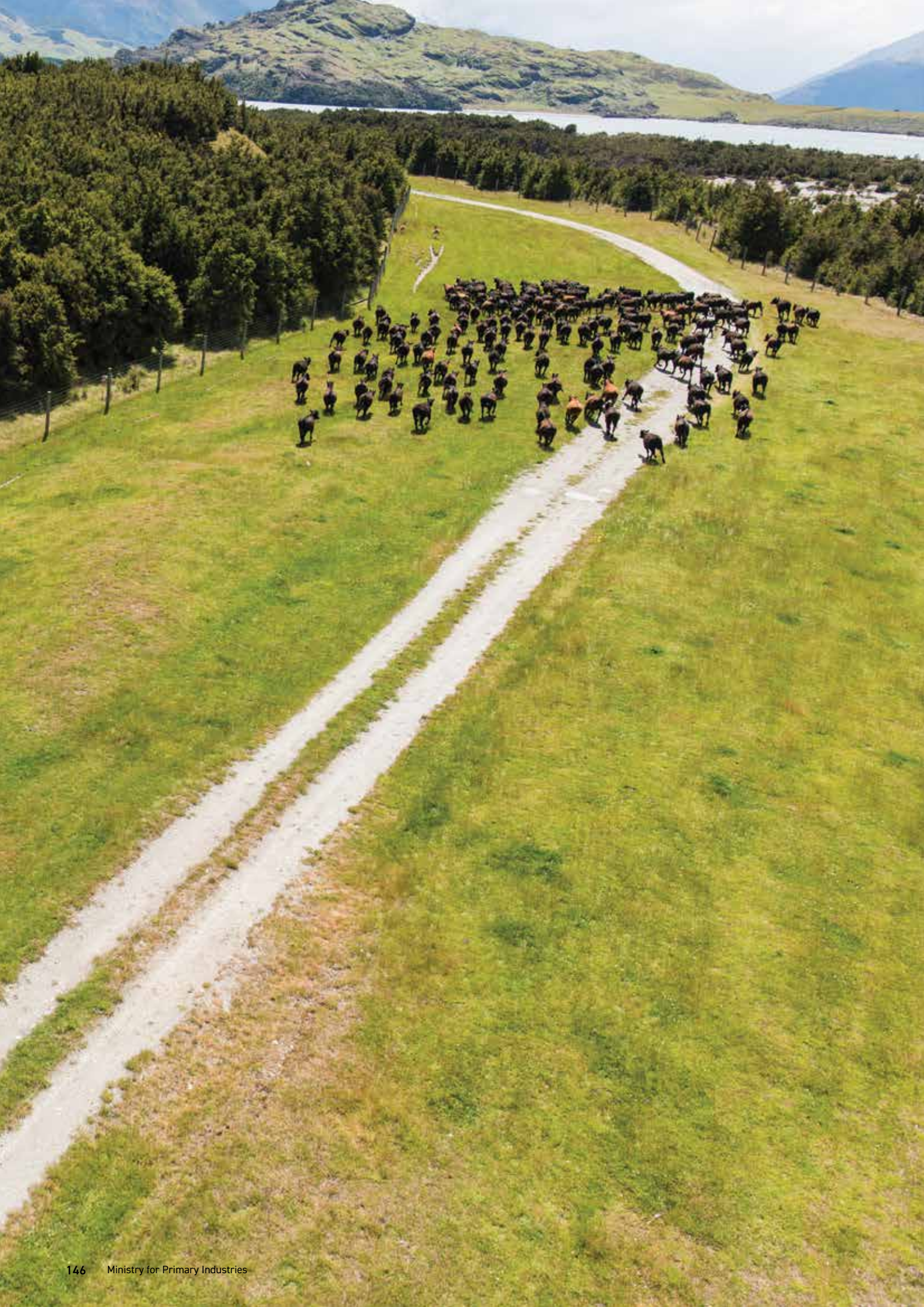
Emissions are forecast to decline steadily between 2022 and 2025 by 1.1 Mt CO₂e (2.8 percent)

This is due to the forecast decreases in emissions from dairy cattle, non-dairy cattle and sheep as well as decreased emissions from synthetic fertiliser.

The forecast figures for 2023–25 are consistent with the baseline emissions reported in the Emissions Reduction Plan

The forecasts are based on modelled changes in afforestation and land use, economic modelling, water policy modelling and the expected pricing of agricultural emissions.

These figures don't reflect the effect of additional actions that have been included in the recently published Emissions Reduction Plan. The Government has committed \$710 million through Budget 2022 to lower agricultural emissions, create a new Centre for Climate Action on Agricultural Emissions and expand the contribution of forestry to reduce carbon emissions.



Gross agricultural revenue and expenditure

Data on agricultural revenue is part of the national accounts published by Stats NZ, which include the gross revenue received by agricultural businesses and their expenditure or intermediate consumption.

The difference between these figures is the value added or contribution to gross domestic product (GDP). New Zealand's total GDP for the year to 31 December 2021 was \$350 billion, which is the sum of value added from all economic activities.

For example, if a farmer received \$100 revenue for producing goods and paid \$60 to other businesses in the process, their contribution to GDP is \$40.

Supporting businesses in the primary sector also add to GDP. Upstream businesses such as feed and fertiliser suppliers, freight or professional services contribute to GDP through the revenue they receive from the farmer, less their consumption.

Similarly, downstream businesses such as meat processors add value from sale of the processed goods, less their own costs, some of which was paid to the farmer.

The food and fibre sector's contribution to GDP is shown in Figure 63, which includes agricultural production and processing as well as forestry and seafood.

Agricultural sector income is closely linked to export income, as are seafood and forestry (although these are not included in the agricultural accounts). Because a high proportion of agricultural production is exported, export revenue forecasts have a direct effect on farmers' and growers' incomes and the level of wealth in the sector.

The latest national accounts data to 31 March 2020 (Figure 64) shows that the agricultural sector's gross revenue increased 45 percent to \$30 billion since 2016.

Intermediate consumption increased 21 percent to \$16 billion over the same period (Figure 64). The largest contributor to intermediate consumption was feed and grazing at 23 percent of total, followed by fertiliser lime and seeds at 15 percent. The proportions of spending on these categories have been moving in opposite directions in the last five years. This suggests that farmers (especially for dairy) may have spent more on imported feed than fertiliser since it is a more flexible way of boosting production while milk prices remain high.

While intermediate consumption remains fairly steady, gross revenue is more variable and therefore the value added also varies in dollar terms. However, agricultural sector contribution to the total GDP of all industries remains consistent at 9–10 percent since 2016 and 11 percent when forestry and fisheries are included (Figure 63).

Agricultural sector net income is the difference between contribution to GDP minus wages, interest and other costs. Agricultural sector net income has risen from \$3.4 billion in 2018 to \$4.2 billion in 2020.

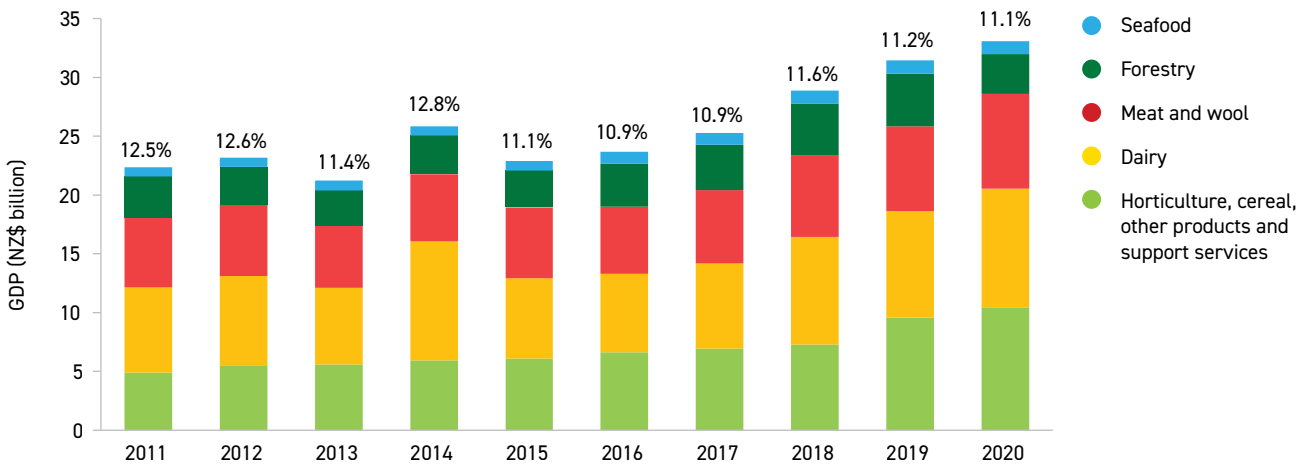
For the year to 31 March 2021, MPI forecasts:

- total gross agricultural revenue to increase 4 percent to \$31.5 billion;
- intermediate consumption to increase 5 percent to \$17.1 billion, giving a 3 percent increase in GDP contribution over 2020;
- total income across the sector to increase 2 percent to \$4.3 billion.



Figure 63: Food and fibre proportion of GDP has remained steady

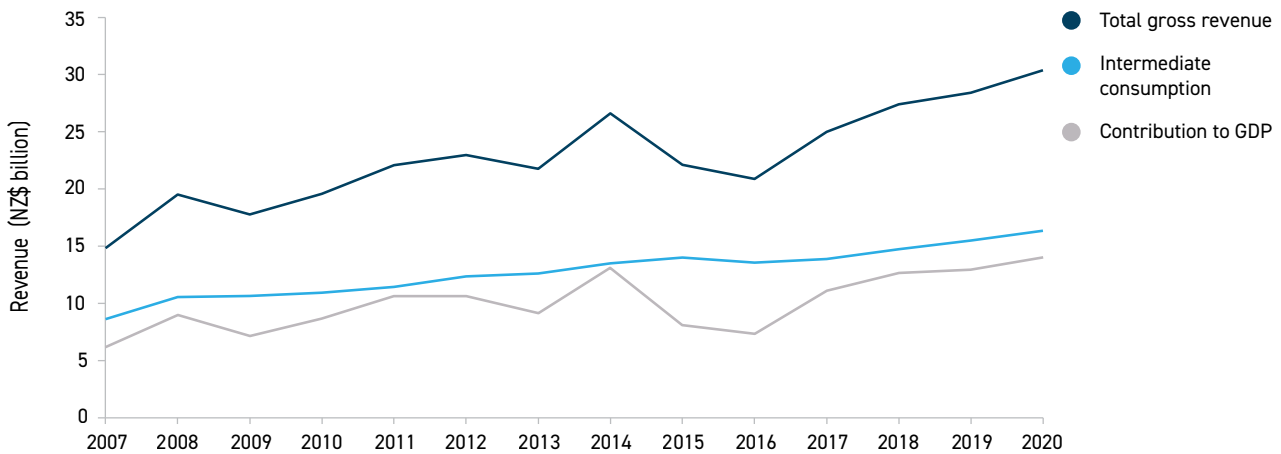
Year to 31 March, percent is of total New Zealand GDP all industries



Source: Stats NZ.

Figure 64: Agricultural revenue has grown faster than expenditure since 2016

Year to 31 March, components of agricultural GDP



Source: Stats NZ.

Table 25: Gross agricultural revenue and expenditure 2018-26

Year to 31 March, NZ\$ million

	Actual			Estimate	Forecast				
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Dairy	12,424	12,468	13,698	15,030	17,660	16,910	16,460	17,120	18,840
Cattle	3,172	3,218	3,437	3,290	3,960	3,970	3,770	3,820	3,810
Sheepmeat	2,860	3,308	3,307	3,140	3,470	3,600	3,380	3,420	3,640
Wool	548	600	518	360	440	360	400	410	410
Deer	215	214	194	160	190	180	180	190	190
Pigs	161	164	178	180	180	180	180	180	180
Poultry/eggs	212	221	231	240	250	260	270	270	280
Other farming	258	267	240	230	260	270	250	260	270
Sales of live animals	1,010	1,007	1,075	1,020	1,180	1,210	1,140	1,160	1,190
Value of livestock change	72	-148	-107	10	0	-40	-50	10	50
Fruit	3,373	3,986	4,219	4,580	4,480	4,960	5,110	5,340	5,680
Vegetables	1,156	1,156	1,199	1,120	1,040	1,130	1,140	1,180	1,210
Other horticulture	580	560	607	570	530	570	580	590	610
Crops and seeds	674	734	729	730	720	580	670	690	700
Agricultural services	224	232	222	230	260	260	250	260	280
Non-farm income	459	442	623	650	730	720	710	730	780
TOTAL GROSS REVENUE	27,398	28,429	30,370	31,540	35,350	35,140	34,450	35,630	38,100
Intermediate consumption	14,749	15,497	16,341	17,100	18,310	19,030	19,370	19,800	20,550
CONTRIBUTION TO GDP	12,649	12,932	14,029	14,440	17,050	16,100	15,090	15,830	17,550
Wages	2,627	2,751	2,838	2,950	3,060	3,220	3,420	3,620	3,810
Depreciation	3,618	3,931	3,945	4,060	4,170	4,290	4,410	4,530	4,660
Net indirect taxes*	918	968	986	1,080	1,280	1,210	1,130	1,190	1,320
OPERATING SURPLUS	5,486	5,282	6,260	6,350	8,540	7,390	6,130	6,490	7,770
Interest paid	2,549	2,606	2,494	2,150	1,860	3,270	3,690	3,780	3,780
Interest received	443	385	444	100	240	870	1,180	1,210	1,210
AGRICULTURE SECTOR INCOME	3,380	3,061	4,210	4,310	6,920	4,990	3,620	3,920	5,200

* Net indirect taxes are indirect taxes less subsidies.

Source: Stats NZ and MPI.

Economic Intelligence Unit online resources

More primary industry data can be found on the MPI website: www.mpi.govt.nz/EIU



Market Insights

Reports that provide insights into consumer preferences and purchasing behaviour as well as in-depth research into the channels that supply them.



Situation and Outlook for Primary Industries

The latest update and underlying data for our outlook on the food and fibre sector plus access to previous SOPI reports.



Farm Monitoring

Reports assessing the annual production and financial performance of typical farm or orchard businesses.



Data

A range of publicly available data covering primary industry production and trade.



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